TRANSPORTATION ENERGY CONSERVATION DATA BOOK

A Selected, Annotated Bibliography, Edition 3

By
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R. S. Weaver

November 1978

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Oak Ridge National Laboratory
Oak Ridge, Tennessee

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U. S. DEPARTMENT OF ENERGY

Division of Transportation Energy Conservation

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A SELECTED BIBLIOGRAPHY, EDITION 3

A. R. Ahrenschaft  L. K. Flemons
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FOREWORD

In January 1976, the Transportation Energy Conservation Division (TEC) of the Department of Energy (DOE) contracted with the Oak Ridge National Laboratory (ORNL) to develop a data base which would be used by the TEC staff in evaluation of current and proposed transportation-related technologies. In conjunction with this data collection and analysis activity, the ORNL Transportation Program is developing a comprehensive library of documents relevant to transportation end-use activities and energy conservation; this document collection is managed by the Energy and Environmental Response Center of the Information Center Complex at ORNL.

The first edition of the Transportation Energy Conservation Data Book was published in October 1976. Four quarterly supplements and the Transportation Energy Conservation Data Book, Edition 1.5 were issued to augment the original document; each included an annotated bibliography. In October 1977, Transportation Energy Conservation Data Book, Edition 2 was published. As a result of the extensive development of the collection


of documents relevant to transportation energy conservation, Transportation Energy Conservation Data Book: A Selected, Annotated Bibliography, Edition 2 was published as a separate document and was made available on a limited basis.

Due to the favorable response to that publication, Transportation Energy Conservation Data Book: A Selected Bibliography, Edition 3 is also being published as a separate report. This volume is a selected, keyworded bibliography of 819 references that represent the most current and relevant documents dealing with transportation energy demand and conservation. Also included are ten reviews of important data sources used in compiling Transportation Energy Conservation Data Book, Edition 3. Some of these reports were prepared for the TEC Division of DOE (e.g., SRI's reports on rail energy use and diesel cars); others were developed for agencies such as the National Academy of Sciences, the Congressional Budget Office, and the Department of Transportation.

Transportation Energy Conservation Data Book: A Selected Bibliography, Edition 3 was prepared not only to augment the Transportation Energy Conservation Data Book, Edition 3 and to assist TEC, but also to better document the developing resources at ORNL. Users are encouraged to send comments concerning errors or omissions, areas of emphasis, and document organization to the Data Management and Analysis Group, Energy Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830.

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Nonhighway Transport Systems and Special Projects
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Office of the Assistant Secretary for Conservation and Solar Applications
Department of Energy
(Telephone: 202-376-4616)


ACKNOWLEDGMENTS

The authors would like to acknowledge the support of Philip Patterson, Division of Transportation Energy Conservation of the Department of Energy, and the authors of the Transportation Energy Conservation Data Book, Edition 3 — Debbie Shonka, David Greene, Axel Rose, Jennifer Hill, Ken Reed, Eric Chen, Tim Gangaware, Brad Murphy, and Gwen Walton — who provided helpful suggestions and guidance in the preparation of this bibliography. Finally, thanks to Sherry Alcorn and Faye Fletcher of the Information Center Complex Computer Production Group, who carried out the computer production of the report, and to Carol McGlothlin, Information Center Complex Publications Office, for editorial assistance.
HIGHLIGHTS

This bibliography, the second in a series of reports on energy conservation and consumption in the transportation sector, was compiled as part of the continuing technical information support provided by the Energy and Environmental Response Center (EERC) to the Energy Division of the Oak Ridge National Laboratory. The EERC maintains an on-line bibliographic data base documenting energy conservation and consumption in various economic sectors. The citations in this bibliography were selected from a comprehensive file of transportation materials.

A companion volume, Transportation Energy Conservation Data Book, Edition 3 (ORNL-5493) is an encyclopedia of statistical data on energy utilization by major transportation modes, research and development of alternate transportation modes and fuels (electric vehicles and alcohol fuels), and other pertinent factors influencing energy consumption in the transportation sector. These same subjects are included in this bibliography, which is a desk-top compilation of references. The data in the data book were taken from certain key research studies. Reviews of these studies are included in this bibliography.

All references are keyworded and arranged alphabetically by author or corporate author if individual authors are not cited in the document. Reports sponsored by the Transportation Energy Conservation Division of the Department of Energy are listed in a separate section. Author, corporate author, sponsor, report number, keyword, and permuted title indexes are provided.

INTRODUCTION

Of the 71.1 quads of energy consumed in the United States in 1975, 18.5 quads were used by the transportation sector in the form of oil-derived fuels - gasoline for automobiles; diesel fuels for trucks, trains, and buses; and kerosene for jet aircraft. Major conservation efforts have been launched by the Division of Transportation Energy Conservation (TEC)
of the Department of Energy to improve the efficiency of conventional vehicles and to develop electric vehicles and alternate fuels for gasoline. To support TEC's program, the Oak Ridge National Laboratory compiled a desktop reference of transportation statistics.

As a companion volume to the Transportation Energy Conservation Data Book, Edition 3 (ORNL-5493), this bibliography provides references on energy consumption by major transportation modes; conservation alternatives; research, development, and demonstration of alternate modes of transportation and fuels; and other factors influencing energy utilization in the transportation sector. Reviews of ten selected studies documenting energy use by different transportation modes are included in this bibliography. Reports sponsored by the Department of Energy (formerly the Energy Research and Development Administration), Division of Transportation Energy Conservation, are listed in a separate section. These references are also included in the main bibliography.

The 819 references contained in this bibliography are an update of Transportation Energy Conservation Data Book: A Selected, Annotated Bibliography, Edition 2 and are alphabetically arranged by author or corporate author. The sample reference below illustrates the format.

Sample

Author ——————— Martini, W.R.
Corporate author ——— Washington, University of, Joint Center for Graduate Study
Address: 100 Sprout Rd., Richland, WA 99352
Title: Stirling Engine Design Manual

Publication date ——— 1978, April
Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation; National Aeronautics and Space Administration, Lewis Research Center
Keywords: STIRLING ENGINES; DESIGN; MANUALS; BIBLIOGRAPHIES; PERFORMANCE; OPTIMIZATION; SIMULATION; MODELS; DIAGRAMS; RESEARCH
Availability: NTIS
The following indexes are provided: (1) author, (2) corporate author (the organization which performed the study), (3) sponsor (the organization which provided partial or complete funding for the study), (4) report number, (5) keywords (words which describe the main concepts of the document), and (6) permuted title. The permuted title index lists each document alphabetically by principal words in the title.

This bibliography was compiled as a result of the continuing technical information support which the Energy and Environmental Response Center, Information Center Complex, provides to the Energy Division of the Oak Ridge National Laboratory. These citations were selected from a comprehensive file of over 3000 documents concerning transportation energy consumption and conservation. This on-line retrievable data base is continually expanded and updated.

AVAILABILITY OF REPORTS

If no information on document availability is provided, or if only a price is listed, the document may be obtained from either the corporate author or the sponsor. Explanation of other availability information in citations is given below:

GPO – For sale by the Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
(Prices subject to change)

NTIS – For sale by the National Technical Information Service
U.S. Department of Commerce
Springfield, Virginia 22161
(Prices subject to change)
REVIEWS OF SELECTED STUDIES
The U.S. Environmental Protection Agency (EPA) fuel economy ratings provide a complete data base for estimating fuel economy trends, but there has been much debate concerning whether these ratings are representative of actual fuel economy experienced on the road. Energy and Environmental Analysis, Inc., in collaboration with the U.S. Department of Energy, has completed the first significant contribution towards resolving this issue.¹ They study addresses whether EPA certification test results reflect actual on-the-road fuel economy for recent model years (1974-1977) and whether improvements in average EPA fuel economy with successive model years can be viewed as an expected reduction in actual fuel consumed per automobile-mile.

In its current phase, the study restricts its attention to available fuel economy measurements reported from (1) drivers' experiences (fleets and individual consumers) and (2) driving cycle results obtained from dynamometer and road tests. These observations, to be compared with each other and with EPA certification results published in the well-known mileage guide, fall into five categories:

1. Drivers' experiences
   a. **Consumer driving records** in which drivers kept track of gasoline purchased and miles driven. Although this is the most ideally suited data base for the analysis, this source consists primarily of surveys by private corporations (an automobile manufacturer and several oil companies).
   b. **Owner estimates** not based on actual measurements. These data are taken from the EPA emission factors program as well as from consumer complaint files.

2. Driving cycle results
   a. **Fleet driving records** from privately (several corporations) and publicly (state governments) owned fleets. This data base comprises more observations than any other on-the-road data source.
b. **In-use dynamometer tests**, some of which were performed as part of the EPA emissions factor program. The remainder were carried out by several corporations (primarily oil companies), many of which supplied consumer driving records as well.

c. **Road tests** which measure on-the-road fuel economy on prescribed driving cycles (e.g., Consumers Union).

Approximately 5000 in-use vehicles representing model years 1974 through 1977 comprise the data base summarized in Table 1.

The study systematically compares these observations with EPA certification test results on a model-to-model basis in search of various types of discrepancies:

1. Absolute differences between EPA ratings and on-the-road experience
2. Relative differences (i.e., whether the EPA-implied ranking of models corresponds with the ranking from actual experience)
3. Variation of the discrepancies over time (more minor effects, among manufacturers for example, are also explored)

The causes for the discrepancies, although discussed only briefly in the study, were seen to stem from two sources: (1) vehicle differences which reflect the extent to which the prototype EPA-tested vehicle represents all cars of that model type and which would be seen in a comparison of EPA certification ratings with in-use dynamometer results and (2) operational differences which would be seen in a comparison of the in-use dynamometer tests and on-the-road performance (the effect of variable driving practices among vehicles tested was felt to be suppressed in the aggregation of results for each model type).

Alternative statistical techniques were tested, and the final form of the regression analysis was based on a simple linear relationship between on-the-road and EPA fuel economy measurements:

\[
\text{on-road miles per gallon} = \alpha + \beta \times (\text{test miles per gallon})
\]  

(1)

Within each of the five basic data types, the average of (often several) in-use results for each model was used to avoid undue weighting of a model with many observations. (The results changed significantly between individual and aggregated treatment of models.) A comparison of two data sets involved a linear regression (Eq. 1) of these average data by model type.
Table 1. Summary of data sources for comparison of in-use experience with EPA certification results

<table>
<thead>
<tr>
<th>Source</th>
<th>Model year</th>
<th>Total number of data points</th>
<th>Fleet operations</th>
<th>Owners estimates</th>
<th>Consumer driving</th>
<th>Dynamometer tests</th>
<th>Road tests</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA certification</td>
<td>1974-1977</td>
<td>1831</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Union Oil</td>
<td>1975</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Dupont</td>
<td>1974-1976</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Motors</td>
<td>1975-1976</td>
<td>1714</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobil Oil</td>
<td>1974-1977</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Shell Oil</td>
<td>1975-1977</td>
<td>30</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Motor Trend</td>
<td>1974-1977</td>
<td>121</td>
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<td></td>
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<tr>
<td>Shell Canada</td>
<td>1975</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Consumer Letters</td>
<td>1974-1977</td>
<td>134</td>
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<td>Consumers Union</td>
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<td>83</td>
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<td>TRW</td>
<td>1974-1977</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maryland Department of Transportation</td>
<td>1974-1977</td>
<td>845</td>
<td></td>
<td></td>
<td></td>
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<td>Maine Department of Transportation</td>
<td>1974-1977</td>
<td>18</td>
<td></td>
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<td>EPA emission factors data</td>
<td>1974-1976</td>
<td>1287</td>
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<td>Hydrocarbons</td>
<td>1977</td>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>J. Class Leasing</td>
<td>1977</td>
<td>5</td>
<td></td>
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<td>Texaco Oil</td>
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<td>EPA</td>
<td>1974-1976</td>
<td>687</td>
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<td>API</td>
<td>1974-1975</td>
<td>4075</td>
<td></td>
<td></td>
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<td>AT&amp;T</td>
<td>1976</td>
<td>3</td>
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<tr>
<td>Amoco Oil</td>
<td>1974-1977</td>
<td>156</td>
<td></td>
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</tbody>
</table>

*Driving cycle: C — certification test procedure; S — SAE driving cycle; O — other.*

To determine which observations would provide a valid representation of on-the-road experience to compare with EPA tests, the five basic data types were analyzed with the following conclusions:

1. Road-test fuel economy results (Consumers Union and Motor Trend) are systematically higher than on-the-road experience.
2. Owner estimates compare quite closely with actual on-the-road measurements but are eliminated from the final analysis because of their inherent uncertainty. As expected, a separate set of owner estimates from consumer complaints are considerably lower than on-the-road experience, by an average of 1 mpg.
3. In-use dynamometer test results compare fairly closely with EPA ratings, with the results for each model year falling systematically above the ratings for low-mileage cars and below the ratings for high-mileage cars.
4. Fleet and consumer-driving fuel economy records give sufficiently similar results for all model years so that they can be combined for comparison with EPA tests.

With this preliminary analysis, fleet results combined with consumer-driving results were adopted as the data base most representative of on-the-road experience. These results were compared with EPA certification (composite, city) and in-use dynamometer test results.

The results of comparing these on-the-road results with EPA composite fuel economy ratings for each model year are summarized in the linear fits in Fig. 1. The EPA tests fairly closely approximate on-the-road experience for 1974 models; they are progressively less representative with each newer model year through 1977. The divergence is substantial for higher-mileage cars. This analysis suggests that, for a car whose actual fuel economy is 20 mpg, the EPA testing overestimates actual fuel economy by 20% in 1976 and 30% in 1977.

Throughout the analysis, the effects of vehicle mileage are obviously important but are difficult to quantify; the sample would ideally include 1974 model-year cars with fuel economy records from 1974, when they were new, as well as from a more recent year. In the study, no adjustment was made for vehicle mileage with the justification, supported by an earlier study, that fuel economy tends to improve during a vehicle's first few years.
An interesting result is that if EPA city instead of composite results are used in the analysis, the same trend of increasing discrepancy with recent model years is evident. For 1974 models, EPA city tests underestimate on-the-road performance, but in 1977 they overestimate a 20-mpg performance by 15%. Thus, the EPA city rating, which is viewed by many as the "worst" fuel economy a car is likely to experience, actually underestimates actual mileage for recent models.
Given this absolute discrepancy between EPA results and actual fuel economy, an analysis of ranking was applied to the observations to determine whether EPA results provide a valid relative ranking of models for any model year. For each comparison, the likelihood of a reversal of rank for a given miles-per-gallon difference was calculated. For on-the-road compared with EPA results, the likelihood is 40% for a difference of 1 mpg but is only 10% if the results differ by 4 mpg. Because EPA composite tests for many models overestimate on-the-road performance by 4 mpg or more, the ranking may apply to more models than one could infer from the way the conclusions are presently stated in the report. In the next phase of the study, alternative ways of presenting the ranking analysis should be explored.

The study realistically presents its conclusions as preliminary, with plans for augmenting the data base and applying more sophisticated statistical methods. A major effort in augmenting the data base is needed. Answering unresolved questions and verifying preliminary conclusions will require a new large set of systematic measurements by individual drivers so that accuracy and consistency of data can be assured. (The small set of "consumer driving" data in this study were generated by corporations and to some extent may be inherently similar to fleet data.) With a planned extensive data collection program, vehicle mileage could become a significant variable in the analysis to help explain the trends seen for successive model years. Further resolution of EPA results versus actual fuel economy results is sufficiently important to warrant a major data collection effort. The methodology developed for this study may well serve as the model for future analyses of the problem.

References


Reviewed by
Margaret Fels
Princeton University
Princeton, New Jersey
The overall goal of the study was to assess the energy conservation potential of available modes.

In order to include a complete range of contributions to the overall energy use, a hierarchy of four levels of comprehensiveness was developed, as shown in Fig. 1. Energy intensiveness measures the energy required to move the vehicle and is generally expressed as energy use per passenger-mile (propulsion energy use per vehicle-mile divided by the average occupancy per vehicle). Line-haul energy includes in the propulsion energy secondary energy contributions from vehicle manufacture, station operation, etc. Modal energy measures the average energy consumed per mile of a trip, which may include an access mode in addition to the main mode, and extra nonproductive travel miles (circuity) due to transit routing. Program energy, the amount of energy saved per mile for a trip by the new mode when compared with the alternative mode used before the new mode was available, provides a measure of fuel savings to be attributed to new modes.

Because of the number of different estimates available for the components which make up these measures of energy efficiency, a range of estimates is carefully presented for each component. Tables 1 and 2 represent excellent summaries of existing estimates for vehicle propulsion energy and average occupancy. Similar tables for indirect energy requirements and access modes are included in the report. Tables 3-5 summarize the resulting middle estimate adopted in the study. Analogous tables are also provided for low and high estimates.

Although the estimates of line-haul and modal energy are valuable, the lengthy conclusions of the study are derived exclusively from the program energy. Unfortunately, as one proceeds up the hierarchy from energy intensiveness to program energy, the available data become very sparse and much less reliable. For example, the estimates of percentage of trip devoted to access are generalized from a single data point for the Lindenwold Line.
<table>
<thead>
<tr>
<th>Basic energy components</th>
<th>Measures of energy use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propulsion energy per vehicle-mile</td>
<td>Energy intensiveness</td>
</tr>
<tr>
<td>Average number of occupants</td>
<td>Line-haul energy</td>
</tr>
<tr>
<td>Station and maintenance energy</td>
<td>Modal energy</td>
</tr>
<tr>
<td>Construction energy</td>
<td>Program energy</td>
</tr>
<tr>
<td>Vehicle manufacturing energy</td>
<td></td>
</tr>
<tr>
<td>Mode of access</td>
<td></td>
</tr>
<tr>
<td>Fraction of trip devoted to access</td>
<td></td>
</tr>
<tr>
<td>Circuity</td>
<td></td>
</tr>
<tr>
<td>Source of new patronage</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Various estimates of vehicle propulsion energy for urban transportation modes: averages for general urban areas and specific cities (systems)

<table>
<thead>
<tr>
<th>Mode of transportation</th>
<th>Vehicle propulsion energy$^d$</th>
<th>City (system)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(mpg)$^b$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Btu/mile)</td>
<td></td>
</tr>
<tr>
<td>Automobile</td>
<td>16,790</td>
<td>General urban (six seat)$^c$</td>
</tr>
<tr>
<td>7.5</td>
<td>9,260</td>
<td>General urban$^d$</td>
</tr>
<tr>
<td>11.4</td>
<td>10,970</td>
<td>General urban$^e$</td>
</tr>
<tr>
<td>13.9</td>
<td>8,990</td>
<td>New York metropolitan area (1972)$^f$</td>
</tr>
<tr>
<td>15.0</td>
<td>8,330</td>
<td>General urban (four seat)$^g$</td>
</tr>
<tr>
<td>22.5</td>
<td>5,260</td>
<td>General urban (light car)$^g$</td>
</tr>
<tr>
<td>Vanpool</td>
<td>13,900</td>
<td>Minneapolis$^h$</td>
</tr>
<tr>
<td>9.0</td>
<td></td>
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<tr>
<td>Dial-a-ride</td>
<td>29,780</td>
<td>Los Angeles$^i$</td>
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<tr>
<td>4.2</td>
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<td>General urban (gas vehicle)$^g$</td>
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<td>7.0</td>
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<td>Nine cities$^d$</td>
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<td>General urban (diesel vehicle)$^g$</td>
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<td>241,240</td>
<td>New York City (Staten Island Rapid Transit)$^k$</td>
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<tr>
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<td>240,880</td>
<td>Boston (includes light rail)$^k$</td>
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<td>93,830</td>
<td>Cleveland$^k$</td>
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<td>92,560</td>
<td>New York City (Transit Authority)$^k$</td>
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<td>Philadelphia$^k$</td>
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<td>1.44</td>
<td>73,180</td>
<td>New York City (Transit Authority)$^f$</td>
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<td>1.71</td>
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<td>2.02-3.31</td>
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<td>Five cities (1964)$^l$</td>
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<td>2.04</td>
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<td>2.41</td>
<td>51,879</td>
<td>Chicago$^k$</td>
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<td>4.00</td>
<td>31,300</td>
<td>Cleveland$^e$</td>
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<tr>
<td>Mode of transportation</td>
<td>Vehicle propulsion energy&lt;sup&gt;a&lt;/sup&gt;</td>
<td>City (system)</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>(mpg)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>(Btu/mile)</td>
</tr>
<tr>
<td>Heavy rail (new)</td>
<td>1.07</td>
<td>117,100</td>
</tr>
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<td></td>
<td>1.15</td>
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<td></td>
<td>1.23</td>
<td>101,780</td>
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<td></td>
<td>1.44</td>
<td>86,900</td>
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<td></td>
<td>1.45</td>
<td>86,100</td>
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<tr>
<td></td>
<td>1.78</td>
<td>70,080</td>
</tr>
<tr>
<td></td>
<td>2.13</td>
<td>58,800</td>
</tr>
<tr>
<td></td>
<td>2.23</td>
<td>56,175</td>
</tr>
<tr>
<td></td>
<td>2.57-2.84</td>
<td>44,000-48,580</td>
</tr>
<tr>
<td>Commuter rail</td>
<td>0.80</td>
<td>154,500</td>
</tr>
<tr>
<td></td>
<td>0.96</td>
<td>129,900</td>
</tr>
<tr>
<td></td>
<td>1.14</td>
<td>109,350</td>
</tr>
<tr>
<td></td>
<td>1.21</td>
<td>103,500</td>
</tr>
<tr>
<td></td>
<td>1.21</td>
<td>103,000</td>
</tr>
<tr>
<td></td>
<td>1.27</td>
<td>98,213</td>
</tr>
<tr>
<td></td>
<td>1.80-2.90</td>
<td>43,150-69,540</td>
</tr>
<tr>
<td>Light rail</td>
<td>1.19</td>
<td>105,000</td>
</tr>
<tr>
<td></td>
<td>1.45</td>
<td>86,400</td>
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<td></td>
<td>1.54</td>
<td>81,284</td>
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<td></td>
<td>1.66</td>
<td>75,147</td>
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<tr>
<td></td>
<td>2.17</td>
<td>57,750</td>
</tr>
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<td></td>
<td>2.41</td>
<td>51,992</td>
</tr>
<tr>
<td>Bus</td>
<td>3.6</td>
<td>34,940</td>
</tr>
<tr>
<td></td>
<td>3.6</td>
<td>34,740</td>
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<td></td>
<td>3.8</td>
<td>32,660</td>
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<td>4.0</td>
<td>31,270</td>
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Table 1 (continued)

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<th>Mode of transportation</th>
<th>Vehicle propulsion energy&lt;sup&gt;a&lt;/sup&gt;</th>
<th>City (system)</th>
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<tbody>
<tr>
<td></td>
<td>(mpg)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>(Btu/mile)</td>
</tr>
<tr>
<td>Personal rapid transit</td>
<td>6.2-13.1</td>
<td>9,560-20,205</td>
</tr>
<tr>
<td>Group rapid transit</td>
<td>9.6-31.0</td>
<td>4,030-13,000</td>
</tr>
<tr>
<td>Shuttle loop transit</td>
<td>4.2-15.4</td>
<td>8,100-30,000</td>
</tr>
<tr>
<td></td>
<td>7.4-11.4</td>
<td>11,000-17,000</td>
</tr>
<tr>
<td>Downtown people mover</td>
<td>5.3</td>
<td>23,800</td>
</tr>
<tr>
<td></td>
<td>5.0</td>
<td>25,200</td>
</tr>
<tr>
<td></td>
<td>1.75</td>
<td>71,400</td>
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<sup>a</sup>Not all sources have used the same conversion factors between different energy units. For consistency, estimates have been converted by using the following equations: 1 gal gasoline = 125,071 Btu and 1 Kwhr(e) = 10,500 Btu.

<sup>b</sup>Miles per gallon of gasoline or equivalent.


Metropolitan Atlanta Rapid Transit Authority. No date. The effects of MARTA on gasoline consumption in the Atlanta region.


Source: Adapted from D. Kulash, R. Mudge, and D. Prywse. 1977. Urban transportation and energy: The potential savings of different modes. Congressional Budget Office report to U.S. Senate Committee on Environmental and Public Works. Serial No. 95-8. Table 1.
Table 2. Various estimates of vehicle occupancy for urban transportation modes: averages for general urban areas and specific cities (systems)

<table>
<thead>
<tr>
<th>Mode and city (system)</th>
<th>Vehicle occupancy (passenger-miles per vehicle-mile)</th>
<th>Load factor (passenger-miles per seat-mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automobile</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National home-to-work and work-related travel(a)</td>
<td>1.4</td>
<td>0.28</td>
</tr>
<tr>
<td>Average for specific cities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philadelphia(d)</td>
<td>1.14</td>
<td>0.23</td>
</tr>
<tr>
<td>New Jersey(d)</td>
<td>1.12-1.24</td>
<td>0.22-0.25</td>
</tr>
<tr>
<td>Albuquerque(d)</td>
<td>1.43</td>
<td>0.29</td>
</tr>
<tr>
<td>Chicago(d)</td>
<td>1.43</td>
<td>0.29</td>
</tr>
<tr>
<td>San Diego(d)</td>
<td>1.48</td>
<td>0.30</td>
</tr>
<tr>
<td>Baltimore(d)</td>
<td>1.49</td>
<td>0.30</td>
</tr>
<tr>
<td>New York metropolitan area(e)</td>
<td>1.5</td>
<td>0.30</td>
</tr>
<tr>
<td>National urban area averaged(d)</td>
<td>1.63</td>
<td>0.33</td>
</tr>
<tr>
<td><strong>Light rail</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average for specific cities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newark(f)</td>
<td>9.4</td>
<td>0.15</td>
</tr>
<tr>
<td>Philadelphia (SEPTA, city)(f)</td>
<td>17.7</td>
<td>0.28</td>
</tr>
<tr>
<td>Philadelphia (SEPTA, Red Arrow)(f)</td>
<td>17.8</td>
<td>0.28</td>
</tr>
<tr>
<td>San Francisco(f)</td>
<td>23.6</td>
<td>0.37</td>
</tr>
<tr>
<td>Cleveland(d)</td>
<td>26.5</td>
<td>0.42</td>
</tr>
<tr>
<td>Pittsburgh(f)</td>
<td>27.8</td>
<td>0.44</td>
</tr>
<tr>
<td><strong>Heavy rail</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York/New Jersey (PATH)(f)</td>
<td>17.3</td>
<td>0.24</td>
</tr>
<tr>
<td>Chicago (1973)(g)</td>
<td>18.6</td>
<td>0.26</td>
</tr>
<tr>
<td>New York City (Transit Authority, 1973)(g)</td>
<td>19.7</td>
<td>0.27</td>
</tr>
<tr>
<td>Boston (includes light rail)(f)</td>
<td>25.6</td>
<td>0.36</td>
</tr>
<tr>
<td>Chicago(f)</td>
<td>20.7</td>
<td>0.29</td>
</tr>
<tr>
<td>Cleveland(f)</td>
<td>23.9</td>
<td>0.33</td>
</tr>
<tr>
<td>New York City (Transit Authority)(f)</td>
<td>25.0</td>
<td>0.35</td>
</tr>
<tr>
<td>Philadelphia (SEPTA)(f)</td>
<td>28.8</td>
<td>0.40</td>
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<tr>
<td><strong>New systems</strong></td>
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<td></td>
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<tr>
<td>San Francisco (BART)(f)</td>
<td>19.8</td>
<td>0.27</td>
</tr>
<tr>
<td>San Francisco (BART, 1975)(g)</td>
<td>21.4</td>
<td>0.30</td>
</tr>
<tr>
<td>Philadelphia (Lindenwold)(f)</td>
<td>22.5</td>
<td>0.31</td>
</tr>
<tr>
<td>National urban area average(f)</td>
<td>24.5</td>
<td>0.34</td>
</tr>
<tr>
<td><strong>Urban bus</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average for specific cities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuquerque(d)</td>
<td>4.9</td>
<td>0.10</td>
</tr>
<tr>
<td>Southern Connecticut(e)</td>
<td>9.8</td>
<td>0.20</td>
</tr>
<tr>
<td>Chicago(d)</td>
<td>10.9</td>
<td>0.22</td>
</tr>
<tr>
<td>San Diego(d)</td>
<td>11.7</td>
<td>0.23</td>
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Table 2 (continued)

<table>
<thead>
<tr>
<th>Mode and city (system)</th>
<th>Vehicle occupancy (passenger-miles per vehicle-mile)</th>
<th>Load factor (passenger-miles per seat-mile)</th>
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<tbody>
<tr>
<td>New York City (Transit Authority)</td>
<td>13.8</td>
<td>0.28</td>
</tr>
<tr>
<td>Baltimore</td>
<td>19.1</td>
<td>0.28</td>
</tr>
<tr>
<td>National urban area average, 1973</td>
<td>11.5</td>
<td>0.23</td>
</tr>
<tr>
<td>Dial-a-ride</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nine cities</td>
<td>1.00-2.86</td>
<td>0.05-0.15</td>
</tr>
<tr>
<td>Seven cities</td>
<td>0.8-3.3</td>
<td>0.04-0.17</td>
</tr>
<tr>
<td>Median</td>
<td>1.62</td>
<td>0.09</td>
</tr>
<tr>
<td>Commuter rail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average for specific cities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York metropolitan area</td>
<td>24.2</td>
<td>0.24</td>
</tr>
<tr>
<td>Boston</td>
<td>25.6</td>
<td>0.26</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>29.4</td>
<td>0.29</td>
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<tr>
<td>New York metropolitan area</td>
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<td>0.32</td>
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<td>Chicago</td>
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<td></td>
</tr>
<tr>
<td>Burlington Northern</td>
<td>58.7</td>
<td>0.59</td>
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<tr>
<td>Chicago and Northwestern</td>
<td>47.7</td>
<td>0.48</td>
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<td>Illinois Central</td>
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<td>0.60</td>
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<td>Milwaukee</td>
<td>50.2</td>
<td>0.50</td>
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<tr>
<td>Norfolk and Western</td>
<td>20.7</td>
<td>0.21</td>
</tr>
<tr>
<td>Rock Island</td>
<td>36.7</td>
<td>0.37</td>
</tr>
<tr>
<td>San Francisco</td>
<td>47.5</td>
<td>0.48</td>
</tr>
<tr>
<td>National urban area average</td>
<td>42.6</td>
<td>0.43</td>
</tr>
<tr>
<td>Vanpool</td>
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<td></td>
</tr>
<tr>
<td>Minneapolis (3M Company)</td>
<td>10.5</td>
<td>0.87</td>
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<td>New York/New Jersey (Port Authority)</td>
<td>2.94</td>
<td>0.59</td>
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<td>El Segunda, California</td>
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<td>Boston</td>
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<td>Connecticut</td>
<td>3.70</td>
<td>0.74</td>
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E Tri-State Regional Planning Commission. 1975. Energy propulsion
efficiency of tristate ground modes of passenger transportation. Interim
Technical Report 4502-2601. pp. 12, 48. (Data are for 1972.)
of rail transportation in the United States. Vol. II, Rail passenger
transportation. Prepared for Energy Research and Development Administration.
E Ellis, R., and A. Sherret. 1976. Transportation and travel impact of
BART, interim service findings. Peat Marwick, Mitchell and Company.
S Stuntz, M. S., Jr., and E. Hirst. 1975. Energy conservation potential
of urban mass transit. Prepared for Federal Energy Administration, Conserva-
tion Paper No. 34.
146-174 in Urban transportation efficiency. American Society of Civil
Engineers.
K O'Malley, B. 1977. Port Authority carpool program telephone follow-
up survey. Pages 125-145 in Urban transportation efficiency. American
Society of Civil Engineers.
F Federal Highway Administration. 1975. Carpool incentive and
opportunities.
H Heaton, C. 1976. Case study evaluation of the Boston area carpooling
program. Prepared for the U.S. Department of Transportation.
Gudatis, C. 1977. Successful approaches to increased ride sharing in
Connecticut. In Urban transportation efficiency. American Society of Civil
Engineers.
Table 3. Middle estimates of basic components of operating energy intensiveness
and line-haul energy by urban transportation modes
(Btu/vehicle-mile)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Propulsion energy</th>
<th>Average number of occupants</th>
<th>Station and maintenance energy</th>
<th>Construction energy</th>
<th>Vehicle manufacturing energy</th>
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<tbody>
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<td>Single-occupant automobile</td>
<td>11,000</td>
<td>1.0</td>
<td>2,000</td>
<td>125</td>
<td>1,100</td>
</tr>
<tr>
<td>Average automobile</td>
<td>11,000</td>
<td>1.4</td>
<td>2,000</td>
<td>125</td>
<td>1,100</td>
</tr>
<tr>
<td>Carpool</td>
<td>11,000</td>
<td>3</td>
<td>2,000</td>
<td>125</td>
<td>1,100</td>
</tr>
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<td>Vanpool</td>
<td>14,000</td>
<td>9</td>
<td>2,000</td>
<td>200</td>
<td>2,000</td>
</tr>
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<td>Dial-a-ride</td>
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<td>1.6</td>
<td>2,000</td>
<td>200</td>
<td>2,000</td>
</tr>
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<td>Heavy rail (old)</td>
<td>61,000</td>
<td>24</td>
<td>9,000</td>
<td>3,000</td>
<td>1,500</td>
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<td>Heavy rail (new)</td>
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<td>21</td>
<td>15,000</td>
<td>4,000</td>
<td>1,500</td>
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<tr>
<td>Commuter rail</td>
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<td>7,000</td>
<td>1,200</td>
<td>2,500</td>
</tr>
<tr>
<td>Light rail</td>
<td>75,000</td>
<td>20</td>
<td>7,000</td>
<td>1,700</td>
<td>2,000</td>
</tr>
<tr>
<td>Bus</td>
<td>30,000</td>
<td>11.5</td>
<td>900</td>
<td>370</td>
<td>1,200</td>
</tr>
<tr>
<td>Personal rapid transit</td>
<td>11,000</td>
<td>2</td>
<td>5,000</td>
<td>300</td>
<td>1,000</td>
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<tr>
<td>Group rapid transit</td>
<td>20,000</td>
<td>6</td>
<td>6,000</td>
<td>600</td>
<td>1,000</td>
</tr>
<tr>
<td>Shuttle loop transit</td>
<td>23,000</td>
<td>10</td>
<td>7,000</td>
<td>600</td>
<td>1,000</td>
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</table>

Table 4. Middle estimates of access, circuity, and source of patronage by urban transportation modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Mode of access (%)</th>
<th>Percentage of trip devoted to access</th>
<th>Circuity (relative to trip by auto)</th>
<th>Percentage of new patrons by former mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>NA</td>
<td>0</td>
<td>1.0</td>
<td>NA</td>
</tr>
<tr>
<td>Carpool</td>
<td>NA</td>
<td>0</td>
<td>1.15</td>
<td>15 bus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25 carpool</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60 single-occupant auto</td>
</tr>
<tr>
<td>Vanpool</td>
<td>NA</td>
<td>0</td>
<td>1.2</td>
<td>5 bus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40 carpool</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>55 single-occupant auto</td>
</tr>
<tr>
<td>Dial-a-ride</td>
<td>NA</td>
<td>0</td>
<td>1.4</td>
<td>10 bus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25 walk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45 auto (15 taxi)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 new tripb</td>
</tr>
<tr>
<td>Heavy rail (old)</td>
<td>20 bus</td>
<td>15</td>
<td>1.2</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>40 auto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 walk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy rail (new)</td>
<td>10 bus</td>
<td>18</td>
<td>1.3</td>
<td>45 bus</td>
</tr>
<tr>
<td></td>
<td>70 auto</td>
<td></td>
<td></td>
<td>35 auto</td>
</tr>
<tr>
<td></td>
<td>20 walk</td>
<td></td>
<td></td>
<td>10 new tripb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 other</td>
</tr>
<tr>
<td>Commuter rail</td>
<td>5 bus</td>
<td>18</td>
<td>1.3</td>
<td>30 bus</td>
</tr>
<tr>
<td></td>
<td>15 walk</td>
<td></td>
<td></td>
<td>40 auto</td>
</tr>
<tr>
<td></td>
<td>80 auto</td>
<td></td>
<td></td>
<td>10 new tripb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 other</td>
</tr>
<tr>
<td>Light rail</td>
<td>20 bus</td>
<td>10</td>
<td>1.2</td>
<td>50 bus</td>
</tr>
<tr>
<td></td>
<td>50 walk</td>
<td></td>
<td></td>
<td>30 auto</td>
</tr>
<tr>
<td></td>
<td>30 auto</td>
<td></td>
<td></td>
<td>10 new tripb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 other</td>
</tr>
<tr>
<td>Bus (express)</td>
<td>25 auto</td>
<td>10</td>
<td>1.1</td>
<td>25 bus</td>
</tr>
<tr>
<td></td>
<td>75 walk</td>
<td></td>
<td></td>
<td>55 auto</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 new tripb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 other</td>
</tr>
</tbody>
</table>

Note: a. NA – Not applicable.
b. There is no diversion from a former mode; a person who previously did not use a mode of urban transportation is using the new mode.

Table 5. Middle estimates for various measures of energy requirements by urban transportation modes (Btu/passenger-mile)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Operating energy intensity</th>
<th>Line-haul energy</th>
<th>Modal energy</th>
<th>Program energy (net savings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-occupant automobile</td>
<td>11,000</td>
<td>14,220</td>
<td>14,220&lt;sup&gt;a&lt;/sup&gt;</td>
<td>NA&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Average automobile</td>
<td>7,860</td>
<td>10,160</td>
<td>10,160&lt;sup&gt;a&lt;/sup&gt;</td>
<td>NA</td>
</tr>
<tr>
<td>Carpool</td>
<td>3,670</td>
<td>4,740</td>
<td>5,450</td>
<td>4,890</td>
</tr>
<tr>
<td>Vanpool</td>
<td>1,560</td>
<td>2,020</td>
<td>2,420</td>
<td>7,720</td>
</tr>
<tr>
<td>Dial-a-ride</td>
<td>9,690</td>
<td>12,310</td>
<td>17,230</td>
<td>(12,350)&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Heavy rail (old)</td>
<td>2,540</td>
<td>3,100</td>
<td>3,990</td>
<td>NA</td>
</tr>
<tr>
<td>Heavy rail (new)</td>
<td>3,570</td>
<td>4,550</td>
<td>6,580</td>
<td>(980)&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Commuter rail</td>
<td>2,625</td>
<td>2,890</td>
<td>5,020</td>
<td>970</td>
</tr>
<tr>
<td>Light rail</td>
<td>3,750</td>
<td>4,280</td>
<td>5,060</td>
<td>30</td>
</tr>
<tr>
<td>Bus</td>
<td>2,610</td>
<td>2,820</td>
<td>3,070</td>
<td>3,590&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Personal rapid transit</td>
<td>5,500</td>
<td>8,650</td>
<td>e</td>
<td>e</td>
</tr>
<tr>
<td>Group rapid transit</td>
<td>3,330</td>
<td>4,600</td>
<td>e</td>
<td>e</td>
</tr>
<tr>
<td>Shuttle loop transit</td>
<td>2,300</td>
<td>3,160</td>
<td>e</td>
<td>e</td>
</tr>
</tbody>
</table>

<sup>a</sup>By definition, there are no access energy requirements for automobiles, so modal energy equals line-haul energy.
<sup>b</sup>NA — Not applicable.
<sup>c</sup>Energy loss.
<sup>d</sup>For new express bus service. Conventional bus service would show smaller savings.
<sup>e</sup>Data not available for access modes and source of patronage since these modes are still largely under development.

commuter rail service combined with the authors' judgement: "The access factor is likely to be smaller for systems that are less suburb-oriented and for those with more extensive line-haul networks (such as buses)."

Data on access modes, circuities, and sources of new patronage from new lines are similarly created. The conclusions based on this evaluation of program energy point to vanpooling and buses as offering the greatest energy conservation potential, with rapid rail transit demonstrating a negative program energy due to an overall increase in energy consumed for travel after the institution of the new system.

The latter conclusion generated considerable controversy and culminated in a large set of rebuttals which appeared in the hearings.\(^2\) The negative program energy for rail transit originates to a great extent from new trips generated by a new system: the net energy effect of new trips is to add energy to the total energy use for travel. Many critics objected to this method of energy accounting for new trips which, over the longer run, might lead to even greater energy use in the absence of the new mode. In addition, the study was criticized for comparing modes on an average basis rather than in the context of specific systems.

These comments notwithstanding, the Congressional Budget Office study presents the best, most concise summary of estimates of energy use by existing modes in the literature. Used in the proper context, these estimates can be valuable input for energy analyses of urban transportation systems.

References


Reviewed by
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The Energy Information Administration 1977 Annual Report to Congress outlines the activities of the Energy Information Administration (EIA) in 1977, presents historical data on the energy situation, and gives projections for energy development and use through the year 2000. The report is published in three volumes. Volume I describes the organization, responsibilities, activities, and accomplishments of each office within EIA. Volume II, Forecasts of Energy Supply and Demand, presents separate short-term and mid-term projections, assuming the continuation of existing energy policies, but with assumed variations in levels of economic growth, growth of oil and gas production, and real price in world oil. Volume III, Statistics and Trends of Energy Supply, Demand, and Prices, contains statistical charts and tables of exploration, development, production, processing, distribution, sale, and consumption of various energy sources, both past and present.

The EIA report is significant because it not only presents the current state of the energy situation, but it also forecasts the effects of existing energy policy. According to EIA, the United States has been a net importer of fossil fuels since 1953, with the gap between imports and exports increasing steadily. All EIA projections imply that existing U.S. energy policy will not be able to reduce this growing dependence on imports.

Assuming the continuation of existing energy policy, EIA projects that energy use through 1990 will grow at a lower rate than the growth rate experienced since 1960. This lower rate of energy use is a result of conservation and of consumer reaction to higher energy prices. However, domestic energy production is projected to increase at lower rates than the projected increase in consumption. Although rapid increases are projected in the domestic supply of coal, nuclear, and other domestic fuel sources, total domestic oil and gas production is projected to decrease or, at best, to be sustained at current levels. Thus, dependence on foreign oil and other imports will continue to grow.
The short-term and mid-term EIA projections were obtained from an integrated framework of several models incorporated with macroeconomic forecasts and energy supply and price assumptions (Fig. 1), assuming the continuation of existing energy policies. These assumptions were used to prepare projections based on combinations of energy demand, domestic energy supply, and increasing world oil prices. Because of possible future resource and environmental limitations on existing energy systems and because of EIA's use of historical relationships between economic growth and energy consumption, EIA did not make projections beyond the year 1990. Rather, they compared the EIA short-term and mid-term projections with long-term projections developed by other organizations. EIA's projections are in line with the range covered by these long-term projections.

The EIA report gives a historical view of the U.S. energy situation and an analysis of existing energy policy. Obviously, if these policies are changed, the results could vary widely. Thus, EIA's projections of the effect of new and emerging technologies are limited by the current governmental support for these technologies; any questions about the effects of more vigorous conservation efforts, new programs, and more support for the development of emerging technologies are not considered in this report.

References


Reviewed by
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Oak Ridge, Tennessee
THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM'S
REPORT ON ENERGY INTENSITY OF TRANSPORTATION MODES

In 1977 the National Cooperative Highway Research Program (NCHRP) compiled a synthesis (NCHRP Synthesis 43) of transportation practices entitled Energy Effects, Efficiencies, and Prospects for Various Modes of Transportation. It emphasizes an analysis of transportation energy use data, concentrating on total direct consumption and conservation potential. In addition to an original analysis of the data, the report presents summary data from recent studies.* Energy efficiencies derived by the various studies are listed without criteria for evaluation or comparison of their accuracies. The synthesis contains basic national energy consumption data and includes a breakdown by sector, a disaggregation within the transportation sector by transport mode, and a chart illustrating national energy trends.

The overall design, operation, and use of several passenger and freight transport modes are examined and related to the energy efficiency of that mode. The following data are presented in Chapter 2, which deals with passenger transport modes:

1. Passenger-miles
2. Transportation services rendered
   a. Vehicle-miles per year
   b. Passenger-miles per year
   c. Average vehicle occupancy
3. Fuel consumption
   a. Gallons per year
   b. British thermal units per year with percentage of total direct transportation energy
4. Average efficiency
   a. British thermal units per passenger-mile
   b. Passenger-miles per gallon

*Data from Aerospace Corporation's Characterization of the U.S. Transportation System and the Oak Ridge National Laboratory's Transportation Conservation Data Book: Edition 2 (ORNL-5320), both published after this report, are not included.
5. Fuel cost
   a. Percentage of total operating cost
   b. Percentage of total operating cost plus travel time cost

Some disaggregated data are presented for each mode.

Automobile use accounts for 90% of all passenger-miles and for 97% of passenger-miles in trips less than 30 miles; therefore, it is given special attention in this study. Average miles per gallon of the new car fleets in 1970, 1974, and 1975 and projected values for the new car fleets in 1980 and 1985 are presented. These projections reflect both the driving habits of the population and anticipated technological changes in automobile manufacturing. Automobile weight, a major factor affecting mileage, can be reduced by various technological adjustments. The predicted fuel consumption values resulting from these and other changes are listed in the NCHRP synthesis. Special attention is also given to automobile fuel consumption and efficiency related to trip purpose.

The presentation of freight transportation data (Chapter 3) is similar to that for passenger data. It includes data for various freight transport modes:

1. Transportation services rendered
   a. Vehicle-miles per year
   b. Ton-miles per year

2. Fuel consumption

3. Average efficiency
   a. British thermal units per ton-mile
   b. Ton-miles per gallon

Most of the passenger and freight transport data are derived from 1972 statistics. Truck data are given special attention; disaggregations by duty and weight class are presented.* Pipeline transportation analysis is incomplete and inaccurate because of lack of data.

The authors of this synthesis recognized the pitfalls of a straight comparison of energy consumption data or British thermal units per passenger-mile among the different transport modes. For example, in a

*Most waterborne statistics were taken directly from the U.S. Army Corps of Engineers, Waterborne Commerce of the United States Part 5, National Summaries, 1973.
location with only one possible means of transportation (usually the automobile), a fair comparison cannot be made with other means of transport. Direct energy consumption and energy intensity alone are not always worthwhile information. Other factors such as the time factor and the hourly monetary value of the trip should be considered. In freight transport, British thermal units per ton-mile alone can be misleading. Some important factors to be considered in this case are the distance and speed at which the commodity is to be transported; the type, size, and density of the commodity; the cost of the commodity and the cost of its transport; and the availability of various transport modes. For example, water carriers transport long-haul bulk commodities; the railroads, dense commodities in large volume; and air carriers, small priority shipments. Trucks transport almost every commodity. The fact that the percentage of empty-haul-miles is different for each freight mode affects any comparison based strictly on British thermal units per ton-mile.

Figure 1, an example of a truck round trip, illustrates some of the factors that must be considered in analyzing energy efficiency. Varying any combination of percentage of empty-haul-miles, average miles per gallon, and amount and distance of cargo being hauled affects the energy efficiency results.

The authors asserted that their primary interest was not in restating the need for energy conservation or the need for implementation of policies to achieve greater conservation. However, a presentation of conservation techniques and a means for evaluation of the conservation potential of these techniques are presented in Chapter 4. For example, by using smaller cars Americans may save 361,000 bbl of gasoline per day; a savings of 84,000 bbl/day can be accomplished through the use of bus, train, and air carriers for intercity trips. Appendix B deals exclusively with fuel conservation techniques for automobiles and includes fuel economy potential by 1980 and 1985; relations among fuel economy, safety, and emissions; the effect of engineering and manufacturing "lead times" in forestalling implementation of fuel economy measures; test procedures to measure fuel economy; and means of enforcing an improvement standard.

The authors concluded that caution should be used in comparing energy efficiencies of the various transport modes. They also pointed to the need
Full load out, long dead head for partial return load

A-B loaded, 30 tons, 200 miles at 3.5 mpg = 57.14 gal
C-A loaded, 7 tons, 250 miles at 4.8 mpg = 52.08 gal
37 tons 109.22 gal

Ton-miles = (30 tons) x (200 miles) = 6000 ton-miles
(7 tons) x (250 miles) = 1750 ton-miles
7750 ton-miles

B-D Empty, 60 miles at 6 mpg = 10.00 gal
D-C Empty, 40 miles at 3 mpg (urban stop and go) = 13.33 gal
23.33 gal

Total = 132.55 gal

Ton-miles/gal = 7750 ton-miles ÷ 132.55 gal = 58.47 ton-miles/gal
Tons shipped per gallon = 37 tons ÷ 132.55 gal = 0.2791 ton/gal
Empty mileage of 100 miles ÷ 550 miles = 18.18%

Fig. 1. Hypothetical example of intercity truck operations analyzed for fuel consumption. Source: Adapted from National Cooperative Research Program. 1977. Energy effects, efficiencies, and prospects for various modes of transportation. NCHRP Synthesis 43. p. 29.
for accurate data relating to the allocation of gasoline for automobile, truck, and nonhighway use and to estimates of vehicle-miles and auto occupancy values.

Reviewed by
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In 1978, Oak Ridge National Laboratory (ORNL) published two reports describing the results of an investigation of gasoline use across states: *An Investigation of the Variability of Gasoline Consumption among States*, ORNL-5391, and *Econometric Analysis of the Demand for Gasoline at the State Level*, ORNL/TM-6326. Utilizing data on state gasoline sales for highway use from 1966 to 1975, the study first documented the degree of variability of usage from state to state and then attempted to explain the observed variation via an econometric analysis. The models developed in the course of the study are explanatory in nature and were not designed to be used for forecasting gasoline use.

Highway gasoline sales, whether normalized by number of households, number of drivers, or number of vehicles, varied considerably from one state to another (Fig. 1). In terms of gasoline sales per registered vehicles in 1975, Arkansas was highest with 900 gal and Pennsylvania lowest at 589 gal. Gasoline sales per registered vehicle varied less than sales per household or per licensed driver. In short, large geographic differences were found in the amounts of gasoline used by residents of different states.

A two-stage approach was employed in the econometric analysis of the factors influencing gasoline sales per household. In the first phase a national gasoline demand equation was estimated for the time series (1966-1975) of aggregate state data (Hawaii and Alaska were omitted due to lack of data on gasoline prices). Explanatory variables in this equation were vehicle ownership per household, price of regular gasoline, personal disposable income, number of drivers per household, household size, and gasoline-powered trucks as percentage of all gasoline-powered vehicles. This last variable was included in an attempt to account for nonhousehold gasoline use. Given the high percentage of gasoline trucks which are light trucks for predominantly personal transportation, this variable must be considered a very crude measure. State dummy variables were also included in the equation to account for cross-sectional effects not captured by the other variables. These state-specific coefficients, which ranged from +300 to -307 gal/year, capture the average state deviation from consumption levels.
Fig. 1. 1975 gasoline consumption per vehicle. Source: An investigation of the variability of gasoline consumption among states. ORNL-5391. Oak Ridge National Laboratory, Oak Ridge, Tenn. Fig. 2, p. 7.
predicted by the national demand equation for the study period. The national demand equation contained an estimated price elasticity of -0.33 and an income elasticity of 0.31, both within the range of existing estimates.

The results of the elasticity estimates of the national demand equation merely reinforce the findings of earlier studies. The ORNL study differs from earlier analyses in that it actually begins where the others ended. In the second phase of the analysis, the calculated average state deviations from predicted consumption levels were analyzed in an attempt to establish relationships between the deviations and individual state characteristics. The "state effects," as they are called, were regressed against a set of variables describing state spatial structure, physical geography, demographic factors, economic structure, and transportation infrastructure (Fig. 2). This analysis revealed that aggregate state gasoline use decreases with increasing population density, urbanization, agricultural employment, severity of winter weather, and small-car share of the vehicle fleet. Highway gasoline use increases as percentage of the population of working age and annual tourist expenditures per capita increase.

Although ORNL's study makes no policy recommendations, the findings clearly have implications for the regional effects of national transportation energy conservation policies. These findings imply that state consumption rates result from the complex interaction of environmental, economic, and demographic factors rather than from extravagant or frivolous gasoline consumption by the residents of certain states. Thus, one may expect policies such as fuel pricing or rationing to have differing impacts on the states largely due to factors beyond their immediate control.

The ORNL study has broken some new ground in the understanding of geographical patterns of energy use; however, the work leaves several questions unanswered. For example, a better understanding of the way business use of highway gasoline (and diesel fuel as well) varies geographically is clearly needed. Also, available data on state motor vehicle fleet compositions and fuel efficiencies were insufficient to test the importance of these factors in determining fuel use. Furthermore, additional investigation of alternative model specifications (such as allowing state-specific
Fig. 2. Gasoline consumption per vehicle at the state level: a conceptual diagram. Source: An investigation of the variability of gasoline consumption among states. ORNL-5391. Oak Ridge National Laboratory, Oak Ridge, Tenn. Fig. 6, p. 20.
price and income elasticities) is needed if a predictive model capable of analyzing the regional impacts of transportation energy conservation policies is to be constructed.

Reviewed by
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SRI'S REPORT ON DIESEL CARS IN THE UNITED STATES

The SRI report *Diesel Cars in the United States*,¹ published in August 1978, reviews existing data on the status of diesel autos in the United States and discusses prospects for energy savings through increased use of diesels. Experience with diesel cars in the United States is very recent and is limited primarily to luxury cars such as the Mercedes. Diesel sales totaled about 40,000 in 1977; the purchasers were predominantly highly affluent.

Manufacturers hope to devote a substantial fraction of production to diesel autos by 1985 in order to meet fleetwide fuel economy standards. There is, however, some doubt regarding diesels' capability of meeting legislated NOₓ emission standards. Evidence shows that a shift to diesels could conserve fuel; however, the savings are not as great as one might expect after reading automobile advertisements. The diesel versions of many cars do get about 50% better mileage, but this estimate does not take into account the substantially reduced horsepower of the diesel; for gas and diesel engines of comparable power, the difference in mileage drops to 25%. Furthermore, because diesel fuel contains more energy per gallon, the report points out that if one also standardizes for fuel input energy, the difference in overall energy efficiency between gas and diesel engines is only about 11%. One compensating factor is that diesel fuel requires less energy to refine; the possible refinery savings are estimated at between 1% and 10%.

Major topics discussed in the SRI report include:

1. Status of diesel cars: descriptions of currently available models, their physical characteristics, prices as compared with comparable gasoline models, sales history, and manufacturers' plans for the future.

2. Geographical distribution: available data on sales by region for Mercedes and Peugeot (SRI cautions that demand for these autos exceeds supply, and sales patterns reflect corporate allocation procedures more than intrinsic demand; hence, regression analysis is not possible.

3. Fuel availability: data on number of diesel service stations by state and on diesel and gasoline prices by city.
4. Energy savings: comparison of fuel economy for diesel and gas autos; a refinery model is used to assess savings in refining energy produced by a decrease in the gasoline/diesel output ratio.

5. Auto emissions: brief presentation of current emissions standards, implications for diesel.


In general, the study is a concise presentation of existing information but it does not answer the crucial question, Will diesels find consumer acceptance?

References


Reviewed by
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SRI'S REPORTS ON RAILROAD PASSENGER AND FREIGHT TRANSPORTATION

SRI has produced two companion studies, *Energy Study of Rail Passenger Transportation* and *Energy Study of Railroad Freight Transportation*. Each study consists of an executive summary volume and three analysis volumes. Overall, the two studies are very well done and represent a sound effort in dealing with a very broad but intricate problem.

**Energy Study of Rail Passenger Transportation**

Volume 1 of this study is the executive summary. Volume 2, *Description of Operating Systems*, is largely a technical discussion of existing rail passenger transportation facilities in the United States and of the measures used to describe these facilities. Definitions and descriptions of the modes to be considered are also provided. Because of difficulties in establishing baseline measures, either because of data availability or interpretation, the authors stated that the methods of assessing marginal, indirect, and joint impacts were sketchy in many places. The measures of system average intensity are British thermal units per passenger-mile and passenger-miles per gallon. The authors were thorough in developing measures of passenger service and estimates of energy use and energy intensity. The shortcomings of existing data were mentioned; however, the authors failed to identify what additional data should be collected.

Volume 2 contains a good, though brief, discussion of federal legislation that led to the National Rail Passenger Network (Amtrak). Wide variations in energy intensity across the system are noted; the estimates given lead to interesting conclusions about how to proceed with further development in terms of energy efficiency. The authors pointed out that given the same number of passenger-miles, older equipment is only about 10% less energy efficient than new equipment. However, if new equipment in the northeast rail corridor attracted significantly higher levels of patronage, substantial increases in efficiency would result.

For individual cities (regions) and existing heavy and light rail operations, facilities (track, stations, and equipment) as well as energy use are extensively analyzed. Cities included are Boston, Chicago, Cleveland, New York City and suburbs, Philadelphia, Pittsburgh, San Francisco,
and Washington, D.C. (preliminary). Fare schedules are also provided. In general, this volume is one of the better energy analyses of individual urban rail transit systems.

Volume 3, Institutions, briefly summarizes the institutions involved in rail passenger transportation. The somewhat superficial discussion covers the local, state, and federal agencies dealing with passenger services but does not deal with the interrelationships among those agencies. Also, from the perspective of this subject matter, energy, the study does not describe what role the respective agencies play in choosing modes in development situations.

Energy efficiency, improvements in energy efficiency, and the future of the industry are addressed in Volume 4, Efficiency Improvements and Industry Future. Energy demands are classified into direct, indirect, and capital energy demands. There is a good discussion of the technical methods of conserving energy, such as the use of single-end versus double-end controls on rail commuter vehicles. However, no estimates are made of how much could be saved either in specific cases or in more general situations.

Energy Study of Railroad Freight Transportation

Volume 1 of this study is an executive summary. Volume 2, Industry Description, contains a useful analysis and a good description for the novice in this field. Railroad operations such as train composition, switching and switching yards, and train control are detailed. Railroad costs are statistically analyzed. Using the Interstate Commerce Commission cost accounts and a model developed from the econometrics literature, the authors estimated that the long-run average cost tends to flatten after 500 miles of trackage; thus, efficient levels of operation are available to most Class I railroads. Costs are also estimated using the SRI model, which is labeled the "abstract railroad network." It divides rail operations into mainline rail, way train or branch delivery, switchyards and switching engines, and company costs. This approach tends to be mechanistic and therefore might overlook an item which an industry insider would consider essential to a particular operating plant.
Volume 2 outlines a potentially useful approach to low-density lines and to the abandonment of lines losing money (even on a short-run, marginal cost basis) but contributing to mainline traffic density. The authors stated, "It is possible that abandonment of low-density lines would create traffic losses for the remaining lines of such magnitude that average cost per ton-mile is not reduced or is increased." They concluded that longer trains are more efficient than shorter trains, which raises the question of how much service should be provided with more frequent, shorter trains. This analysis does not balance the effects of rising energy costs with the economic need of the rail industry to compete with other transportation modes through increased service (i.e., shorter trains and more energy consumed). A useful discussion might have included how the industry's competitive position was worsened due to higher energy costs and the tendency to use longer trains.

Volume 3, Regulation and Tariff, is particularly well written. The summary of the regulatory history is concise yet deals more than adequately with the topic. The number of government agencies involved in the modern regulation of the railroads is sizable; these agencies include the Interstate Commerce Commission and state public regulatory agencies, as well as the Federal Railway Administration, the U.S. Environmental Protection Agency, and the Occupational Safety and Health Administration. The range of regulations (i.e., the activities covered) is extensive; this volume briefly summarizes the general categories.

An example of the type of analysis presented is an informative discussion of the tapering rail tariff, general revenue increases, and regulatory exceptions (holddowns) to the general increase. Most of the holddowns occur in the long-distance ranges for specific commodities tariffs, and thus, long-distance shipment becomes increasingly subsidized by other traffic and by the shorter-haul traffic of that specific commodity. This practice, of course, distorts an efficient allocation of resources and clouds the proper locational decision by users of these commodities. One result is that more energy is consumed in the shipment, and this amount is estimated using the long-run average cost model. Also discussed are the effects of regulatory policies on cost and energy consumption and the intricate details of handling empty freight cars, including the cost of moving empty cars and the energy cost of regulations requiring the return of empty cars after use.
Volume 4 is entitled *Efficiency Improvements and Industry Future.* This volume indicates that the marketability of new technology is low at best, which is probably a very accurate portrayal of the current situation. According to SRI, impedances to adoption of technological advances include a capital-poor industry, low growth prospects, stringent government regulations, and a labor force which is reluctant to learn new skills without wage increases. Efficiency improvements discussed include the use of lighter equipment by eliminating the caboose and turbine locomotives; operational changes, such as reduction of empty-car mileage and reduction of routing circuitry; and equipment efficiency developments, such as flywheels and alternative fuels. The potential of each of these improvements, which appear as a shopping list, is evaluated, and the evaluations generally appear to be accurate. Intermodal cooperation and modal shifts to rail from more energy-intensive forms of transportation will produce additional savings in fuel consumption. At the center of this argument, however, is the issue of railroad service. Service is notoriously poor on some lines, and, as a first step, it must be improved before any of these potential savings will be realized.

Volume 4 concludes with recommendations. New hardware technology is at the top of the list; however, the chances of widespread development and adoption seem so poor that funding in this area may not prove to be cost-effective. Improvement in operations and intermodal systems analysis seem to be more likely. The final recommendation is for a relaxation of some regulatory policies; the mood in Washington seems favorable, and additional research in this area may hasten the relaxation process.

References


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TECNET TRANSPORTATION ENERGY USE MODEL

TECNET is a comprehensive transportation forecasting model based on an interindustry input-output model of the economy. Designed to explore the consequences of policy options, TECNET accepts a wide range of transportation-related parameters as input and produces a detailed analysis of the energy consequences of those parameters, featuring breakdowns by mode and urban or rural area. This study uses the TECNET model to explore ten possible future energy scenarios.¹

The importance of TECNET lies in its explicit accounting of indirect energy use in transportation. For example, the model can be used to determine how much energy is consumed in building and maintaining vehicles and facilities and in refining and distributing fuels. The input-output module of TECNET (based on INFORUM) permits the tracing of each industry's ultimate energy contribution to each transportation mode. In 1977, total transportation energy use was 1.42 times greater than direct or operating energy use.

Most important transportation variables of TECNET — mode split, load factor, and vehicle-miles traveled (VMT) per gross national product (GNP) — are exogenously specified and independent. This characteristic may be viewed as a severe shortcoming by the proponents of simulation models but as refreshing humility by their critics. In any case, a heavy burden is placed on the TECNET user, who must make his own assumptions about how these variables interact and their future values. In the hands of a knowledgeable analyst, the ability to specify so many major parameters can be a major advantage; however, unreasonable results can be easily generated if the user is not very careful. For example, in analyzing a gas rationing scenario the assumption is made that there is a simple proportional relationship between passenger-miles traveled (PMT) and gasoline consumption (i.e., a 25% decrease in gasoline supply causes a 25% decrease in PMT because auto load factor is assumed to stay constant). Or, as another example, the simple use of the model produces a result in which PMT is dependent on GNP only and is independent of the price of travel.

The base case assumes fleetwide auto mileage of 27.5 mpg by 1985 with no further improvement and continued reliance on internal combustion engines.
engines, increased bus and rail share, slight decreases in energy intensity for all modes, and continuing urbanization. The result is that total energy use (direct and indirect) grows slowly at first, 1.4% annually, as small cars increase their share of the market. After 1985, however, a constant miles-per-gallon value is assumed through the year 2000, giving a 2.2% annual growth of all transportation energy.

The high-conservation scenario differs from the base case in two important respects: (1) industrial adherence to the National Energy Plan, including increased conservation measures and a shift to coal and (2) domination of the auto fleet by nonconventional engines – Brayton, Stirling, and electric. The result is 25% less energy use than in the base case by the year 2000. To isolate the contribution of the alternative engines, an internal combustion engine (ICE) case was run. The ICE scenario is identical to the high-conservation scenario except for its assumption of a 100% ICE auto fleet. This substitution results in 26% higher direct-energy consumption by automobiles than in the high-conservation case, but overall energy use increases by only 3%.

In a further exploration of the merits of non-ICE engines, separate scenarios were run for the Stirling and Brayton engines. These scenarios share economic and industrial assumptions with the base case, but they assume 100% market penetration of the respective engine types by 2000. Comparison of the two scenarios illustrates TECNET's strong points. Both engines conserve operating energy, but lower weight and smaller reliance on aluminum by the Brayton give it an advantage in indirect energy. In addition, the Brayton scenario indicates substantially less pollution.

A number of sensitivity analyses, all variations of the base case, can be performed. The constant modal share holds modal shares constant but reflects continuing urbanization. The constant urban share holds the urban proportion of the population constant and varies modal share.

The shift scenario is of particular interest because it illustrates the importance of considering indirect energy use. This scenario postulates a 10% decline in urban auto share (to the benefit of rail and bus transit) and 10% declines in auto and air shares of nonurban traffic; these shifts are to occur in the first quarter of the next century. The result is an energy bill higher than in the more auto-oriented base case.
because indirect energy requirements per passenger-mile are one-third less for auto than for rail or air. This analysis is somewhat marred by a failure to distinguish between local rural travel and intercity travel; therefore, the model has increased urbanization resulting in decreased air PMT.

The rationing scenario explores the implications of a 25% reduction in gasoline sales to consumers during 1978. Not surprisingly, the economy registers a shift in expenditures from travel to luxuries. Even more surprising is the result, or assumption, that bus, rail, and air PMT will not increase and the counterfactual result that auto PMT falls by 25%.

Finally, the constant scenario, or "if this goes on" scenario, leaves modal shares and energy intensity values unchanged from current levels. Energy consumption in 2000 is 32% higher than in the base case.

These results must be interpreted with caution. TECNET is grandiose in scope. The values of most of the principal variables are not accurately ascertainable today, much less 25 or 50 years in the future. The lack of interaction among these variables is a serious flaw, and there is little explicit treatment of supply-and-demand forces. Nevertheless, TECNET appears to be a potentially useful tool for exploring policy options, especially in the short term.

References


Reviewed by
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TRW'S STUDY OF INCREASED DIESEL CAR PRODUCTION

In view of the significant increase in diesel car production in the last two years, TRW has carried out a study for the Office of Policy and Evaluation, U.S. Department of Energy, to examine the following three assumed levels of penetration of diesel cars into the new-car market:

1. Continued negligible penetration
2. Progressive penetration to 65% of new-car sales in 1995, at different growth rates:
   a. Linear at 3% increase per year
   b. Exponentially starting from 0.1% of new-car sales in 1977
3. Rapid penetration to 100% of new cars in 1982

Under each set of assumptions, the study estimates the increase in demand for diesel fuel (for automobiles), the resulting implications for refinery operations, and the potential petroleum savings.

As part of the TRW report, existing studies were reviewed. A useful index for measuring the change in the motor fuel mix is the gasoline-to-distillate ratio (G/D) whose current value is approximately 1.6. The findings of several relevant studies are summarized below in terms of this index.

1. Refinery operations
   a. Exxon study: A new refinery in 1990-2000 could achieve as much diesel as gasoline output (G/D = 1.0).
   b. Amoco and Mobil studies: The limit to refinery flexibility would be reached at G/D ratios of 0.6 to 0.7. A larger proportion of diesel (i.e., a lower ratio), if economical, would involve shifts in other product demands or new refining technology.

2. Diesel penetration
   a. Amoco and Mobil studies: If the increased distillate production is all used in diesel cars, a G/D ratio of 0.7 amounts to total motor fuel production consisting of 30% diesel, which is sufficient to sustain 40% of the total U.S. automobile fleet. A reasonable time frame is considered to be 1985 or beyond.
   b. Banner and Moore Associates study: Approximately 60% of the new-car fleet and 50% of the total car fleet in 1995 can be diesels.
with total motor fuel production including approximately 60% diesel fuels.

3. Petroleum savings
   a. Mobil and Banner and Moore Associates studies: A maximum petroleum savings of 5% would be achieved when diesel comprises 40% of the total motor fuel output.

Starting from these findings and building on an extensive in-house analysis of baseline transportation demand, the TRW study concludes that, in the near term, sufficient diesel output from refineries is feasible to meet demands even if the number of diesel cars increases rapidly:

1. High rate of penetration of diesels—(all new cars in 1982 and beyond being diesels) would require major changes in refining operations by 1983-84, necessitating major planning by 1979 or 1980.

2. Intermediate penetration (3% linear increase in 1976 to 65% of new-car sales in 1995) would necessitate the attainment of a G/D ratio of 0.7 in 1985 and 0.6 in 1988.

3. Intermediate penetration starting at a low rate (0.1% exponential growth to 65% of new-car sales in 1995) would delay the need for a G/D ratio of 0.7 to 1995, and the limit of 0.6 would not be needed until 2000.

Thus, it appears that in all cases sufficient lead time would be available for refineries to accommodate the demand shifts resulting from significant increases in diesel car sales.

In contrast to these hypothesized situations, U.S. automobile manufacturers were found to anticipate a very slow growth of the diesel car population, with imported diesels expected to comprise less than 5% of the total import fleet by 1985. A potential barrier to rapid penetration of diesel cars is emission control. These control measures include the NO standard of 0.4 gpm, if enforced (diesels meet the current NO standard of 2.0 gpm), and particulate standards which would probably be introduced if the diesel car population were increased substantially.

The resulting petroleum savings from increased reliance on diesel cars would be small at first, with long-run savings dependent on the overall fuel economy of new diesels compared with conventional cars on the
road now. The study does not analyze projections of diesel fuel economy except to point out that increased fuel economy over the present level would serve to counteract any barriers to high diesel penetration.

References


Reviewed by
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THE WHARTON EFA AUTOMOBILE DEMAND MODEL

The Wharton EFA Automobile Demand Model is probably the most sophisticated model for forecasting long-run automobile demand currently in operation. The model, completed in 1977 for the Department of Transportation, Transportation Systems Center, is distinguished by its attention to detail in its extensive data base and its competent and sometimes innovative econometrics. The authors described their model as providing "long-run policy analysis and forecasting of annual trends for U.S. auto stock, new sales, and their composition by size class." The basic model structure is that of lagged adjustment to "desired" levels of vehicle stock and composition which change in response to changing income, relative prices, and other factors.

With regard to their extensive data base, the authors stated, "It is our belief that the scope and magnitude of this data base is such that its potential usefulness rivals that of the model itself. For instance, we compiled 57 items of information for 2234 domestic cars (1947 to 1974) and 20 items for 982 foreign (1948 to 1975). In addition to this model specific data we compiled aggregate data on new registration and cars in operation, by state for 1969 through 1972, and for the United States for 1948 to 1974." The potential of this extensive resource of automobile data is yet to be tapped by other researchers.

One unique data item constructed by Wharton for this model is a measure of total vehicle operating cost per mile. This measure includes the total stream of costs incurred over the vehicle's lifetime (both of purchase and operation) discounted to present value. This value is, in fact, the total cost of the vehicle to all its owners. Although it is debatable whether consumers actually take all these factors into account in purchase decisions, the variable was found to be a critical one in determining both desired stock and its desired composition by size class in the Wharton equations. The cost per mile includes transportation charges and taxes and new car prices including options, as well as expenditures on fuel, maintenance, and repairs. Unfortunately, it also requires critical assumptions about future miles traveled and discount rates.
The basic structure of the Wharton model is illustrated in Fig. 1. At its heart are modules which predict the total demand for automobile stock and the composition of new car sales by size class. The demand for stock model is an updated version of the familiar stock adjustment model introduced in the 1950s by Chow and Nerlove. The key innovation in the Wharton model is the adaptation of the stock adjustment approach to the modelling of new car sales by size class. First, an equation was developed to forecast the "desired" size class composition of the vehicle fleet as a function of household size, income, the relative capitalized operating costs of the vehicles, public transit use, population age structure, metropolitan population, and regional dummy variables. Unlike typical stock adjustment models in which the "desired" demand equation is never
directly estimated, the authors chose to directly estimate a shares equation by making the heroic assumption that the size class composition of sales from 1972 to 1973 across states represented a long-run equilibrium size class distribution for the entire fleet. This is indeed a heroic assumption because it essentially requires that the existing size class shares in each state match the size class shares of new car sales. This assumption was not tested due to unavailability of data, but it is crucial to the correct application of the stock share adjustment approach. The Wharton model is the first of the several market shares demand models in existence to recognize that the existing distribution of motor vehicles can be adjusted only gradually to conform to changing consumer desires. The actual sales of vehicles by size class are expressed as a function of the gap between the desired and actual shares. This innovation is important because it is probably far easier to adjust the number of vehicles in the fleet than to adjust its composition over a short time.

Another distinctive aspect of the Wharton model is the way in which it estimates fuel efficiencies for vehicle classes. Rather than simply using a sales-weighted average calculated from data for a given year or years and then assumed to hold constant over time, the Wharton model estimates class-miles per gallon as a function of class-average inertial weight, engine displacement, transmission type, and fraction of the class with four or six cylinders. This approach allows the model to forecast future class-average miles per gallon, taking account of future changes in vehicle characteristics. These changes must be specified on the basis of the modeler’s judgement. The model cannot directly consider the impact of new technologies. A tricky question which is not addressed is the stability of class market share relationships in the future as class characteristics change.

The Wharton model also contains equations for estimating annual vehicle-miles traveled (VMT) per family unit as a function of the age distribution of the vehicle stock (similar to the Sweeney model1), real gasoline cost per mile, real income, and the percentage of family units earning more than $15,000 per year. The role of this VMT-estimating equation in the model is to predict total travel as an input to the demand for stock and scrappage. In conjunction with assumptions about the relative utilization of cars across size classes, however, the VMT estimate could
conceivably be combined with mileage estimates to forecast the demand for gasoline. This prediction was not made, and one senses it is largely because of dissatisfaction with the quality of the VMT data and the lack of data on VMT by car class. Finally, the model also contains subsidiary equations for analyzing the used car market in terms of total transactions and prices by class and vintage.

Though the Wharton model makes numerous assumptions, some of which are debatable, its complex specification and estimation, the breadth and depth of factors it considers, and the extensiveness of its data base cannot be matched by competing models. The Wharton model is the Cadillac of automobile-demand forecasting models.

References


Reviewed by
David L. Greene
Oak Ridge National Laboratory
Oak Ridge, Tennessee
Aerospace Corp., Environment and Energy Conservation Division, Mobile Systems Group
ADVANCE: El Segundo, CA 90245

TITLE: Lean Combustion in Automotive Engines: An Assessment of the Addition of Hydrogen to Gasoline as Compared to Other Techniques

Report No. CEC05/101-1, NASA/TM-7526, 1976, February
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: AUTOMOTIVE DIVISIONS; FUEL ECONOMY; FUEL CONSUMPTION; GARDINOL; HYDROGEN; COMBUSTION EFFICIENCY; THERMAL EFFICIENCY; TABLES (DATA); GRAPHS (CHARTS); ENGINEERS; AUTOMOBILES; ELECTRIC; HYDROGEN;
PRINTED; HYDROGEN STORAGE; PERFORMANCE
AVAILABILITY: NTIS

Liniten Research Manufacturing Co.


1978, April
SPONSOR: N.E. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: DESIGN; HYBRID ELECTRIC-POWERED VEHICLE; FLXWHEEL; AUTOMOBILES; TRANSIT; ROLES; PERFORMANCE; TURBINES; COSTS; DIAGRAMS

Firms & Whitney Aircraft Group, Government Products Division
ADVANCE: P.O. Box 2697, West Palm Beach, FL

Report No. 820/2657-1, 75 p.
1977, July
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: DESIGNATION; PRODUCTION; COST ANALYSIS; PRODUCTION; FORGING; TURBINES; AUTOMOBILES; TURBINE BLADES; ENGINEERI GAS TURBINE ENGINE; DESIGN; MATERIALS; MANUFACTURING; MOTORS; MANUFACTURING; DIAGRAMS; GRAPHS (CHARTS); PHOTOGRAPHS; TABLES (DATA)
AVAILABILITY: NTIS

Anderson, D.W.
National Aeronautics and Space Administration,
Sponsor: Energy Research and Development Administration, Division of Transportation Energy Conservation

Keywords: Automobiles; Energy Storage; Electric Vehicles; Renewables; Alternatives; History; Development; Testing; Transportation; Cost Analysis; Tables (Data); Patents; Hybrid Electric-Powered Vehicles; Energy Conservation; Batteries

Availability: NTIS

Dorsett, R.B.; Beuer, R.; Keller, G.
Technological Research and Technology Corp.
Address: 7655 Old Springhouse Rd., McLean, VA 22102

Title: Ten Scenarios of Transportation Energy Conservation Using YETNET

1976, June

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation, Data Analysis Branch

Keywords: Models; Transportation; Gasoline; Patents; Energy Conservation; Automotive Emitters; Dayton Cycle; Fuel/Ess; Internal Combustion Engines; Electric Impact; Energy Intensity; Market; Energy Consumption; Automobiles; Growth; Vehicle Miles Traveled; SDO National Project; Tables (Data)

Donnelly, J.J., Jr.; Premo, R.E.
Aerospace Corp., Environment and Energy Conservation Division, Mobile Systems Group, Office of Energy Conservation

Title: Fuel Consumption and Engine Horsepower Projections for the Highway Transportation Sector

78-03440
1978, April 26


Keyword: Fuel Consumption; Highway Transportation: Engine Horsepower Projections for the Highway Transportation Sector

Durbin, R.O.; Deslott, R.J.
National Aeronautics and Space Administration, Lewis Research Center
Address: Cleveland, OH 44135

Title: Test and Evaluation of 23 Electric Vehichles for State-of-the-Art Assessment


1976

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation

Keywords: Electric Vehicles; Testers; Hybrid Electric-Powered Vehicles; Renewable Energy Conservation; Tables (Data); Graphs (Charts); Fuel Consumption; Performance

Evan Research and Engineering Co., Government Research Laboratory, Science Application Inc., Corporation and Propulsion Technology Division
Address: Fort Belvoir, VA 22030

59-20335 Ventura Boulevard, Suite 423
Woodland Hills, CA 91364

Title: Project Characterization of Alternate Fuel Effects in Continuous Combustion Systems

Report No. TID-28463, Technical Progress Report
1978, January 11

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation

Keywords: Alternate Fuels; Combustion; Chemical Properties; Models; Combustion Properties; Boosts; Gas Turbine Engines; Hydrogen; Nitrogen; Thermochemical Properties; Turbulent Flow; Droplets; Sprays; Decomposition; Oxidation; Graphs (Charts)

Availability: NTIS

Foster, R.N.
University of Idaho, Byrd Program in Transportation, Fisher Technology Associates
Address: 104, Coral Gables, FL 33134

Title: Alternative Fuels and Intensity Tracking

1976, June

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation

Keywords: Alternate Fuels; Trucks; Intensity Transportation; Technology Assessment; Energy Conservation; Diesel Engines; Tractors; Internal Combustion Engines; Fuel Consumption; Highway Transportation; Ownership; Empty Backhaul; Energy Resources; Commercialization; Design; Demonstration; Tables (Data); Diagrams

Availability: NTIS

Foster, R.N.; Echols, W.J.D.
Fisher Technology Associates

Title: Hydrogen-Powered Office Vehicle Systems, A Feasibility Study

Report No. CON/4707-1, ETA-PR-70-250
1976, September

Sponsor: Energy Research and Development Administration, Division of Transportation Energy Conservation

Keywords: Hydrogen Fuels; Feasibility; Locomotives; Diesel Engines; Internal Combustion Engines; Modifications; Performance; Photographs; Tables (Data); Graphs (Charts)

Availability: NTIS

Gow, D.H.; Tracy, R.B.
SEI International, Center for Resource and Environmental Systems, Chelmsford and Hanover Group
Address: Hanover Park, IL 60135

Title: Diesel Cars in the United States

72-051
1978, August

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation

Keywords: Motor Vehicles; Diesel Engines; Trucks; Automotive Emissions; Standards; Diesel Fuels; Marketing; Fuel Economy; Costs; Harshness; Technology; Graphs; Costs, Transportation; Tables (Data); Electric Vehicles; Production; Sales; Automobiles

Availability: NTIS

Keywords: Energy Demand; Energy Supplies; Economic \( \ldots \) Energy Policy

Availability: NTIS
Groome, D. L.; O'Connor, T. P.

Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section

ADDRESS: Oak Ridge, TN 37830

TITLE: An Investigation of the Variability of Gasoline Conservation Among States


1978, April

SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation

DATA

SCOPE: ESTIMATING; ANALOGUES; MODEL; STATE ANALYSIS; SOCIO-ECONOMIC FACTORS; AGE GROUPS; EMPLOYERS; TOWNERS; VEHICLE MILES TRAVELED; VEHICLE REGISTRATION; AUTOMOBILES; OWNERS; AUTOMOBILE DRIVERS; ENERGY DEMAND; COMPARATIVE EVALUATIONS

AVAILABILITY: PHS

---

Groome, D. L.; O'Connor, T. P.; Patterson, P. D.;

Hone, A. B.; Smith, D. B.

Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section

ADDRESS: Oak Ridge, TN 37830

TITLE: Regional Transportation Energy Conservation Data Book

Edition 1

Report No. ORNL-5405 Special, 530 p.

1978, September

SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation

KEYWORDS: REGIONAL ANALYSIS; HIGHWAY TRANSPORTATION; FUEL CONSUMPTION; ATS TRANSPORTATION; BIL TRANSPORTATION; PIPELINE TRANSPORTATION; POPULATION; CARS; BANANALYSIS; TABLES (DATA); INTERNATIONAL ANALYSIS; VEHICLE MILES TRAVELED; MAPS; GRAPHS (CHARTS); TRANSPORTATION NODE CHOICE; TRUCKS; PASSENGERS; AUTOMOBILES; BUSES (VEHICLES); DIESEL FUELS; NATURAL GAS; TOWARDS; MODES; CASIO TRANSPORTATION; COMPARATIVE; REPORTS; COMPARATIVE EVALUATIONS

AVAILABILITY: PHS

---

Self Research and Development Co.

ADDRESS: Pittsburgh, PA

TITLE: Passenger Car Fuel Economy in Short Trip Operation: Alternative Fuels Utilization Program


1979, July

SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation

KEYWORDS: VEHICLE TRIPS; DISTANCE; AUTOMOBILES; FUEL ECONOMY; CARS; FUEL ADDITIVES; DESIGN; CUSTOMERS' COSTS; ECONOMIC ANALYSIS; DYNAMOMETERS; MANUFACTURABLE VARIATIONS; AUTOMOBILE EMISSIONS

AVAILABILITY: PHS, Stock No. 04-1-000-0512-3

---

Hamilton, W.

General Research Corp.

ADDRESS: Santa Barbara, CA 93105

TITLE: Electric Car Technology for Demonstration and Development


SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: DEMONSTRATION; DEVELOPMENT; FUEL ECONOMY; AUTOMOBILES; BATTERIES; LEAD-ACID BATTERIES; PERFORMANCE; GRAPHS (CHARTS); ENERGY CONSUMPTION

---

Hamilto, W.

General Research Corp.

ADDRESS: Santa Barbara, CA 93105

TITLE: Urban Applications and Energy Impacts of Future Electric Cars


SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: URBAN TRANSPORTATION; FORECASTING; ELECTRIC VEHICLES; AIR POLLUTION; NOISE POLLUTION; ENERGY CONSUMPTION; PETROLEUM; LIFE-CYCLE COST; LOS ANGELES; PHILADELPHIA; ST. LOUIS (MISSOURI)

---

Hock, R. A.; Chang, R. H.; Hess, H. E.; Caccob, R.

Engelhard Industries, a Division of Engelhard Minerals & Chemicals Corp.

ADDRESS: Nauclo Park, Edison, NJ 08817

TITLE: Durability Testing at One Atmosphere of Advanced Catalysts and Catalyst Supports for Automobile Gas Turbine Engine Combustor

Part 1


1977, June

SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: TESTING; CATALYSTS; AUTOMOBILES; GAS TURBINE ENGINE; COMBUSTION; PERFORMANCE; EMISSIONS; FUELS; AUTOMOBILES; LIFE DURABILITY; TABLES (DATA); GRAPHS (CHARTS)

AVAILABILITY: PHS

---

Hill, S. A.

Tellus-Central Motors, General Products Division

ADDRESS: 78 Sunset Street, Hackett, RI 02842

TITLE: Automotive Diesel Technology Program

Final Report, Period June 1976-April 1977


1977, August

SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation

KEYWORDS: AUTOMOBILES; DIESEL FUELS; TECHNOLOGY, RESEARCH PROGRAMS; FUEL ECONOMY, DESIGN; AUTOMOBILE EMISIONS; SIMULATION; EXHAUST SITATION SYSTEM

AVAILABILITY: PHS

---

Hitts Associates Inc.

ADDRESS: Columbia, MD 21046

TITLE: Evaluation Methodology for Near Term Devices and Strategies to Reduce Highway Vehicle Fuel Consumption

Linsen, R.S.; Barber, B.P.; Jordan, A.C.; Seaborn, C.C.; Jet Propulsion Laboratory, Information Division, Information Center Complex, Energy Information Center

**Title:** Transportation Energy Conservation Data Book: A Selected, Annotated Bibliography, Edition 2

**Report No.** OFM/221-115 (Part II of OFM-5320), 272 p.

1977, October

**Sponsor:** Energy Research and Development Administration, Division of Transportation Energy Conservation

**Keywords:** TRANSPORTATION; ENERGY CONSERVATION; AIR TRANSPORTATION; ALTERNATE FUELS; AUTOMOBILES; BUSES (VEHICLES); CARGO TRANSPORTATION; PETROL (FUELS); MONOXYL; ENVIRONMENTAL IMPACT; ECONOMICS; COMPARISON (CHARTS); EQUIPMENT; GOVERNMENT POLICIES; RETROFIT DEVICES

**Availability:** NTIS

---

Jelavich, H.R.; Fawcett (Jack) Associates Inc.

**Address:** 9052 E. Main Avenue, Suite 1150, Chevy Chase, MD 20815

**Title:** A Study of the Determinants of Freight Modal Choice

Conference paper presented at Transportation Research Board Meeting Session Number 143, January 19, 1976, 21 p.

1976, January

**Sponsor:** U.S. Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** CARGO TRANSPORTATION; UNITS: WEIGHT; INPUT-OUTPUT ANALYSIS; COMMODITIES; FUEL CONSUMPTION; MODELS; BATES (CONTS); DISTANCE: DEPENDENCIES

**Availability:** NTIS

---

Keller, J.L.; Nakaguchi, G.H.; Sara, J.C.; Union Oil Co. of California, Research Dept.

**Address:** Rose, CA

**Title:** Natural Gas Modification for Highway Vehicles Stage One.

Final Report

1976, July

**Sponsor:** U.S. Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** NATURAL GAS; ALTERNATE FUELS; ALCOHOL FUELS; MODIFICATIONS; COMMODITIES; PROPERTIES; VEHICLES; UTILIZATION; PERFORMANCE; ENVIRONMENTAL IMPACT

**Availability:** NTIS

---

Lemme, B.H.; Barber, K.F.

Nuelle Associates Inc.

**Title:** A Pictorial Characterization of Worldwide Electric and Hybrid Vehicles


1977, August

**Sponsor:** Energy Research and Development Administration, Division of Transportation Energy Conservation

**Keywords:** PHOTOGRAPHS; ELECTRIC VEHICLES; HYBRID ELECTRIC-PoweRED VEHICLES; DEFENSE FEDERAL REPUBLIC; ISRAEL; NETHERLANDS; SWEDEN; UNITED KINGDOM; FRANCE; ITALY; JAPAN; USA; MANUFACTURERS; MARKET; RESEARCH; DESIGN; INTERNATIONAL ANALYSIS

**Availability:** GPO, Stock No. 600-000-00855-2

---

Leising, C.J.; Fuchik, G.P.; Deigey, S.P.

Pinegold, J.G.

National Aeronautics and Space Administration, Jet Propulsion Laboratory

**Address:** California Institute of Technology, Pasadena, CA

**Title:** Utilization of Waste Heat in Trucks for Increased Fuel Economy. Final Report

Report No. RCPM/7010-02, 30 p.

1976, June

**Sponsor:** U.S. Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** WASTE HEAT; FUEL ECONOMY; UTILIZATION: TRUCKS; DIESEL ENGINES; SPARK IGNITION ENGINES; GAS TURBINE ENGINES; STIRLING ENGINES; RANKINE CYCLE ENGINES; REGENERATION; DRIVING CYCLE; ADIABATIC PROCESSES; REGENERATION; TURBOCHARGERS; THERMOCOUPLING; GRAPHS (CHARTS); TABLES (DATA); DIAGRAMS

**Availability:** GPO, Stock No. 600-000-00115-5

---

Lindsay-Kaufman Co.

**Address:** 53 Basket Lane, Tenafly, NJ 07670

**Title:** Projection of Light Truck Population to Year 2025

Report No. ORNL/Sub-79/4285/1, Special, 64 p.

1979, October

**Sponsor:** Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section, U.S. Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** TRUCKS; INVENTORIES; MARKETING; DEMAND; GROWTH; HIGHWAY TRANSPORTATION; UTILIZATION: VEHICLE REGISTRATIONS; SOCI-ECONOMIC FACTORS; FARES

**Availability:** NTIS

---

LSC Corp.

**Address:** 476 Data Circle, Sparks, NV 89431

**Title:** Evaluation of Selected Drive Components for a Plywood Powered Passenger Vehicle. Final Report. Phase I


1977, June

**Sponsor:** Energy Research and Development Administration, Division of Transportation Energy Conservation

**Keywords:** TRANSPORTATION; WATER; TEST; TABLES (DATA); FORECASTS; SAFETY

**Availability:** NTIS

---

...
Fasciato, D.; McCarlloch, J.; Gray, B.
Mechanical Technology Inc.
ADDRESS: Latrobe, PA 15650
TITLE: Nonmetallic Air Lubricated Compliant Surface Bearing for an Automotive Gas Turbine Engine. I - Journal Bearing Performance
1975, April
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation; National Aeronautics and Space Administration
KEYWORDS: AUTOMOTIVE ENGINES; GAS TURBINE ENGINES; DESIGN;(TESTS); PERFORMANCE; TEMPERATURE
AVAILABILITY: NTIS

Schatt, F.N.; Wagner, C.B.
Chrysler Corp.
ADDRESS: Detroit, MI
TITLE: Baseline and Future Electric Vehicle Development Program. Eighteenth Quarterly Progress Report
1977, April
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: GAS TURBINE ENGINES; DESIGN; PERFORMANCE; TABLES (DATA); IMAGES; VEHICLES; ENERGY CONSUMPTION
AVAILABILITY: NTIS

Schweitz, W.J.
National Aeronautics and Space Administration, Transportation Energy Conservation
ADDRESS: Cleveland, OH 44135
TITLE: Electric Vehicle and Their Impact on Electric Vehicles
1977
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; ELECTRIC CAR; COSTS; BATTERIES; PERFORMANCE; COMPARATIVE EVALUATIONS

Soltis, R.F.
Asst Engineering Inc.
ADDRESS: 436 South Fairview Avenue, Goleta, CA 93117
TITLE: Near-Term Electric Vehicle Program. Phase I, Final Report
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; DESIGN; BATTERIES; PERFORMANCE; TABLES (DATA); GRAPHS (CHARTS); IMAGES; LIFE-CYCLE COSTS; COSTS; EFFICIENCY; ENERGY CONSUMPTION; ENVIROMENTAL IMPACT; WEIGHT
AVAILABILITY: NTIS

Soltis, R.F.; Borek, J.H.; Dennis, J.H.; Dattel, R.O.
National Aeronautics and Space Administration, Lewis Research Center
ADDRESS: Cleveland, OH 44135
TITLE: Baseline Tests of the Kordesch Hybrid Passenger Vehicle
1978, June
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; TESTING;
ACCELERATION; ELECTRIC VEHICLE BASED; RESEARCHER TRANSPORTATION; FUEL ECONOMY; SPARK IGNITION ENGINES; PERFORMANCE; DIAGRAMS; CARDS; TESTING; COMPUTERS; AUTOMOBILES

Soltis, P.F.; Dusiata, A.C.; Sargent, W.B. National Aeronautics and Space Administration, Lewis Research Center ADDRESS: Cleveland, Ohio 44135 TITLES: Results of Baseline Tests of the Lucas Limousine

Report No. NASA TM X-73609, 27 p. 1977, January SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation KEYWORDS: ELECTRIC VEHICLES; TESTING; DRIVING CYCLE; PERFORMANCE; MILITARY; ENERGY CONSUMPTION; STANDARDS; PHOTOS; GRAPHS (CHARTS); ELECTRIC VEHICLE RANGE

Availabilty: NTIS

Swaitworth Research Institute; Cameron Engineers; Standard Oil Co. of Ohio: SORIO Petroleum Co. ADDRESS: 337, San Antonio, TX 78201; Denver, CO; SDYO, Grand Junction, CO TITLES: Simulation of Probable Automotive Fuels Composition: 1985-2000 and Executive Summary

Report No. NCP/EMER/4/1, 218 p.; Report No. NCP/1388-01/2 For Executive Summary, 55 p. 1978, No. SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation KEYWORDS: ALTERNATIVE FUEL MATERIALS; AUTOMOTIVE FUELS; DIESEL FUELS; BATTERIES; TRANSPORTATION; EFFECTIVE FUEL; TABLES (DATA); FORCASTING; ENERGY DEMAND; SYSTEMIC METHODOLOGY; SIMULATION; PROPERTIES; OIL SHALE; ALCOHOL FUELS; AUTOMOBILES; REWIND; COAL; PRODUCTION; HYDROCARBONS; INTERNAL CORUSTION ENGINES; OCTANE; GASOLINE

Availabilty: NTIS

Toole, W.L.; Grass, J.C.A.; Chilveres, A.C.; Irvins, N.C. Argonne National Laboratory ADDRESS: 9700 South Campus Ave., Argonne, IL 60439 TITLES: Cost Estimate for the Commercial Manufacture of Lithium/Ion Sulfide Cells for Load-Leveling

Report No. ANL-76-12, 67 p. 1976, March SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation KEYWORDS: COSTS; LITHIUM/METAL SULFIDE BATTERIES; LOAD MANAGEMENT; UTILITIES; MANUFACTURING; LITHIUM-ALUMINUM/METAL SULFIDE BATTERIES; PRICES; ECONOMICS; DIAGRAMS

Availabilty: NTIS

Taylar, R. National Aeronautics and Space Administration, Lewis Research Center ADDRESS: Cleveland, Ohio 44135 TITLES: Experimental Evaluation of Preheating-Prepurifying Fuel Injection Systems for a Gas Turfina Catalytic Combustor

Report No. CORS/1011-18, NASA TM-73535, paper presented at the Winter Annual Meeting, American Society of Mechanical Engineers, Atlanta, Georgia, November 27 - December 2, 1977, v.p. 1977, August SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation KEYWORDS: FUEL INJECTION SYSTEMS; THERMOCOUPONS; DIAGRAMS; GRAPH (CHARTS); GAS TURBINES; CATALYSTS; COMBUSTION; AUTOMOBILES

Availabilty: NTIS

Thermo Electron Corp. ADDRESS: 101 First Avenue, Waltham, MA 02154 TITLES: Feasibility Test on Compounding the Internal Combustion Engine for Automotive Vehicles, Task II. Final Report

Report No. CCO-26901-1, TM-1927-76-75, 250 p. 1976 SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation KEYWORDS: INTERNAL COMBUSTION ENGINES; DIESEL ENGINES; BANKING CYCLE ENGINES; PERFORMANCE; FUEL ECONOMY; SPEECS; DESIGN; GRAPHS (CHARTS); DIAGRAMS; AUTOMOBILES; VISIONS; FEASIBILITY; TESTING; WASTE HEAT; RECOVERY; UTILIZATION; DEMONSTRATION

Availabilty: NTIS


Performance


Availabilty: GPO, Stock No. 757-139/1201


Report No. DOE/CSC-0008, v.p. 1978, July SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation KEYWORDS: AUTOMOBILES; DRIVING; EMISSIONS; AUTOMOTIVE FUELS; FUEL ECONOMY; AUTOMOBILES; TRUCKS; TESTING; MEASURING INSTRUMENTS; DRIVING CYCLE; FEEDBACK; TABLES (DATA); GRAPHS (CHARTS); POSSIBLE VARIATIONS

Availabilty: NTIS

1977, September
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; PERFORMANCE; STANDARDS; RESEARCH; QUESTIONNAIRES; SURVEYS; TABLES (DATA); GRAPHS (CHARTS)

Union College, Graduate Studies and Continuing Education
ADDRESS: Schenectady, NY 12308
"TITLE: Fourth National Conference on the "Effects of Energy Constraints on Transportation Systems"

SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: TRANSPORTATION; CONFERENCES; ENERGY SHORTAGES; PLANNING; EFFICIENCY; INTERCITY TRANSPORTATION; PASSENGER TRANSPORTATION; CARGO TRANSPORTATION; AIR TRANSPORTATION; ENTERTAINMENT TRANSPORTATION; RAIL "TRANSPORTATION; GOVERNMENT POLICIES; ELECTRIC

VEHICLES; RESEARCH; ENERGY CONSUMPTION

Wagner, J.B.; Naughton, J.; Brooks, W.P.; Davis, B.
Brookhaven National Laboratory, National Center for Analysis of Energy Systems
ADDRESS: Upton, NY
"TITLE: Light Duty Highway Fleets: The Potential for Alternative Technologies in Fleets Operated by Corporations and State and Local Governments"

Interim briefing, presentation will be published as "Fleet Operator Vehicles: Summer 1977 Data," Report No. BNL-50904
1976, March 3
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: AUTOMOTIVE FLEETS; MODELS; FORECASTING; MARKET; VEHICLE REGISTRATIONS; AUTOMOBILES; HYBRID ELECTRIC-POWERED VEHICLES; PURCHASING; WEIGHT; EQUIPMENT; TRUCKS; HIGHWAY TRANSPORTATION; PASSENGER TRANSPORTATION; CAPACITY; DIESEL FUELS; AUTOMOTIVE ENGINES; SIZE; TABLES (DATA)
Aerospace Corp., Environment and Energy Division, Rocketdyne Systems Group
ADDRESS: El Segundo, CA 90245
Report No. CORR/1001-1, ATR-76(TS24)-1, 328 p. 1976, February
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: AUTOMOBILE ENGINES; FUEL ECONOMY; COMBUSTION; GASOLINE; HYDROGEN; COMPARATIVE EVALUATIONS; THERMAL EFFICIENCY; TABLES (DATA); GRAPHS (CHARTS); ENGINES; AIR-OXIDE; AUTOMOBILE FUELS; HYDROGEN FUELS; HYDROGEN STORAGE; PERFORMANCE
AVAILABILITY: NTIS

Air Research, Inc.
ADDRESS: Warren, NJ 08090
TITLE: Engine and Energy--Future Trends
1978, January 31
KEYWORDS: ENGINES; FORECASTING; FUEL ECONOMY; SMOKE EMISSIONS; ENGINES; STRATIFIED CHARGE ENGINES; ELECTRIC VEHICLES; GAS TURBINE ENGINES; R&D; METHANOL; HYDROGEN; FUEL CELLS; ALTERNATE FUELS; BATTERIES; ALCOHOLS; PRECINCT: OTTO CYCLE; REACTOR CYCLE; REACTOR CYCLE ENGINES; PHOTOGRAPHS; DIAGRAMS

Air Transport Association of America, Economics Dept. Institute for Energy Analysis
ADDRESS: 1709 New York Ave., NW, Washington, DC 20006
1977, January
KEYWORDS: FORECASTING; COMPARATIVE EVALUATIONS; DUPLICATION; DISENTANGLING; GROWTH; ECONOMIC CONDITIONS; STATISTICS; FINANCIAL DATA: EARNINGS; PROFITS; SERVICES; PERFORMANCE; CAPITAL

Air Research Manufacturing Co.
Report No. AIU-41/1, 19 p.
1978, April
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: DESIGN; HYBRID ELECTRIC-POWERED VEHICLES; FLYWHEELS; AUTOMOBILE TRANSMISSIONS; BRAYTON CYCLE; FUEL CONSUMPTION; COMPARATIVE EVALUATIONS; COSTS; DIAGRAMS

Albara, J.P.; Bawiec, W.J.; Hoomey, L.P.; Goddard, G.H.; Sheffer, G.L.
U.S. Dept. of Interior, Geological Survey
ADDRESS: Washington, DC
1976
KEYWORDS: MINERALS; FOSSIL FUELS; TABLES (DATA); FORECASTING; COAL REZVING; NATURAL GAS; SOLAR ENERGY; GEOThermal Energy; HYDRO Electric Energy; NUCLEAR Power Plants; HYDRO EleCric Power Plants; SyNERGISTIC FUELS; ENERGY DEMAND; ENERGY RESOURCES; MATERIALS; PHYSICAL ANALYSIS; COMPARISON; ELECTRIC POWER DEMAND; DEMAND (ECONOMICS)
AVAILABILITY: GPO, Stock No. 024-001-02867-1

Institute for Energy Analysis
ADDRESS: Oak Ridge Associated Universities, P.O. Box 177, Oak Ridge, TN 37830
1976, September
SPONSOR: Energy Research and Development Administration
KEYWORDS: ENERGY DEVELOPMENT; ENERGY DEMAND; TECHNOLOGY; PRICES; CROSS NATIONAL PRODUCT; FORECASTING; HISTORY; ENERGY CONSERVATION; TABLES (DATA)
AVAILABILITY: NTIS

Allan, E.W. (ed.)
U.S. Dept. of Transportation, Transportation Systems Center
ADDRESS: Kendall Square, Cambridge, MA 02142
TITLE: Transportation Systems Center Bibliography of Technical Reports: July 1970 - December 1976
Report No. DOT-TEC-OST-77-17, 238 p.
1977, April
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary
KEYWORDS: Industry; TRANSPORTATION; AIRCRAFT; FUEL CONSUMPTION; RACES (GROUP); RAILROADS; ROAD TRANSPORTATION; VEHICLES; ENVIRONMENTAL IMPACT; GOVERNMENT REGULATIONS; AIR TRANSPORTATION; AIRWAY TRANSPORTATION
AVAILABILITY: NTIS
<17> Allen, H.L.; Latrobe, K.J.; Kibler, R.N.
Pratt & Whitney Aircraft Group, Government
Product Division
ADDRESS: P.O. Box 2691, West Palm Beach, FL
TITLE: Pressure Measurement and Cost Analysis of
a NASA Production Forging Technique for
Automotive Turbine Wheels: Phase II, Final
Report, Period January 1976 through March 1977
Report No. C00/2457-1, 75 p.
1977, July
Sponsored by Research and Development Committee
Division, Division of Transportation
Energy Conservation
KEYWORDS: DEFORMATION; PROCESSES; COST
ANALYSIS; PRODUCTION; TOGGLING; TIRES;
WEIGHTS; TIRE DESIGN; ENGINEER; DATA;
TECHNIQUES; TOOLING; MANUFACTURING; INFRASTRUCTURE;
MATERIALS; MACHINING; MACHINERY; MANUFACTURING;
DIAGRAMS; GRAPHS (CHARTS); PHOTOGRAPHS; TABLES (DATA)
AVAILABILITY: NCR

<18> Altwasser, J.P.; Kalberlah, A.
Volkswagenwerk AG
ADDRESS: Wolfsburg, Germany
TITLE: A Comparison Between the Primary Energy
Consumption of Electric and Gasoline Powered
Vehicles
Paper presented at the Fourth International
Electric Vehicle Symposium (sponsored by the
Electric Vehicle Council and the
International Union of Producers and
Distributors of Electrical Energy), held in
Dusseldorf, Germany, August 31 - September 2, 1976.
1976, September
KEYWORDS: ENERGY CONSUMPTION; ELECTRIC VEHICLES;
EFFICIENCY; COMPARATIVE ANALYSIS; TESTING;
ENERGY CONVERSION; EFFICIENCY; ELECTRICAL EFFICIENCY;
AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016 $1.50

<19> Altwasser, J.P.; Kalberlah, A.; Szabados, N.
Volkswagenwerk AG
ADDRESS: Wolfsburg, Germany
TITLE: On the Relationship Between Gross Vehicle
Weight, Payload, Effective Range, and Cost of
Electric Vehicles
Paper No. 780220, presented at the Society of
Automotive Engineers' Congress and
exposition, Cobo Hall, Detroit, Michigan,
1978
KEYWORDS: ELECTRIC VEHICLES; WEIGHT; ELECTRIC
VEHICLE RANGE; COSTS; ENERGY STORAGE;
BATTERIES; PRICES; COMPARATIVE EVALUATION;
EVALUATING CYCLE
AVAILABILITY: Society of Automotive Engineers
Inc., 400 Commonwealth Drive, Warrendale, PA 15086 $2.50

<20> American Bus Association
ADDRESS: 1025 Connecticut Ave., Washington, DC
20036
TITLE: Report from the American Bus Association,
America's Number 1 Passenger Transportation Service
13 p.
1977
KEYWORDS: BUSES (VEHICLES); GRAPHS (CHARTS);

<21> American Gas Association, Financial and
Administrative Section, Committee on
Finance and Administration
ADDRESS: 555 S. Pennsylvania Ave., Room 700,
Omaha, NE 68102
TITLE: Flow of Methanol (a
Bibliography 1960-1977)
22 p.
1977, August
KEYWORDS: METHANOL; ALTERNATE FUELS; DISTRIBUTION;
PRODUCTION; BIBLIOGRAPHY; GASOLINE;
ALTERNATE FUELS
AVAILABILITY: Library, Northern Natural Gas
Company, 2173 Dodge Street, Omaha, NE 68102

<22> American Trucking Associations Inc.
ADDRESS: 1616 H Street NW, Suite 1200,
Washington, DC 20036
1978, May
KEYWORDS: TRANSPORTATION; STATISTICS; BASE
CONSTRUCTION; LIGHT TRANSPORTATION; AUTOMOBILES;
PEOPLE CARRIERS; BUSES (VEHICLES); PASSENGER
TRANSPORTATION; REVENUE; FUEL CONSUMPTION;
AVAILABILITY: NCR

<23> American Trucking Associations Inc., Dept. of
Research
ADDRESS: 1616 H Street NW, Washington, DC
20036
TITLE: Monthly Truck Tonnage Report
Monthly report, approximately 2 p.
KEYWORDS: TRUCK; CARGO TRANSPORTATION; TABLES
(DATA); INTENSITY TRANSPORTATION; REGIONAL
ANALYSIS; COMPARATIVE EVALUATION

<24> American Nuclear Society, Inc.
ADDRESS: 1515 Illinois Boulevard, Arlington, VA
22209
TITLE: Proceedings of the 12th Intersociety
Energy Conversion Engineering Conference.
Volumes 1 and 2
Proceedings of a conference held in Washington,
1977
KEYWORDS: FUEL ECONOMY; GAS TURBINE ENGINES;
AUTOMOTIVE ENGINES; HS RDA; ALTERNATE FUELS;
REACTION CYCLE; ELECTRIC VEHICLES; BATTERIES;
ENERGY CONSERVATION; EQUIPMENT; ENVIRONMENTAL
IMPACT; INDUSTRIAL SECTOR; UNCONVENTIONAL
ENERGY SOURCES; PHOTOVOLTAIC; ELECTRICITY;
ENG BICYCLE ENGINES; STEEL ENG; NUCLEONICS;
ENERGY CONVERSION; DESIGN; WASTE RECYCLE;
INDUSTRIES; ELECTRIC POWER; SOLAR COLLECTORS;
SOLAR ENERGY; PHOTOVOLTAIC CELLS;
PHOTOVOLTAIC CONVERSION; THERMAL ENERGY;
STORAGE EQUIPMENT; IRRADIATION; NUCLEAR POWER;
DISTRIBUTION; MODELS; NUCLEAR POWER

<25> American Public Transit Association
ADDRESS: 1700 17th Street NW, Suite 1200,
Washington, DC 20036
1978, May
KEYWORDS: TRANSPORTATION; STATISTICS; BASE
CONSTRUCTION; LIGHT TRANSPORTATION; AUTOMOBILES;
PEOPLE CARRIERS; BUSES (VEHICLES); PASSENGER
TRANSPORTATION; REVENUE; FUEL CONSUMPTION;
AVAILABILITY: NCR
<33> CONT.

1976
127 p.

TITLE: 2conometric Dimensions of Energy Technology. An Experimental Evaluation of Improvement Concepts


SPONSOR: Society of Automotive Engineers

KEYWORDS: GAS TURBINES; AUTOMOBILES; GAS TURBINE ENGINES; DIAGRAMS; GRAPHS (CHARTS); PERFORMANCE; TESTING; AUTOMOTIVE EMISSIONS

AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096

<34>

Argonne National Laboratory

Address: 9700 South Cass Avenue, Argonne, IL

Title: Development of Lithium/Metal Sulfide Batteries at Argonne National Laboratory:

Report No. ANE-77-18, 30 p.

1977, March

Sponsor: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: LITHIUM/METAL SULFIDE BATTERIES; ENERGY STORAGE; MATERIALS; ELECTRODES; ELECTRIC VEHICLES; LITHIUM-ALUMINUM/METAL SULFIDE BATTERIES; MICROCHIPS

AVAILABILITY: NTIS

<35>

Argonne National Laboratory

Address: 9700 South Cass Avenue, Argonne, IL

Title: High-Performance Batteries for Stationary Energy Storage and Electric-Vehicle Propulsion. Program Reports

Quarterly Program Reports, v.p.

Quarterly

Sponsor: Energy Research and Development Administration, U.S. Dep. of Energy

KEYWORDS: ENERGY STORAGE; ELECTRIC VEHICLES; TESTING; MATERIALS; UTILIZATION

AVAILABILITY: NTIS

<36>

Arkel, P.H.: Goletz, T.

Chrysler Corp.

Address: Detroit, MI

Title: Upgrading Automotive Gas Turbine Technology. An Experimental Evaluation of Improvement Concepts


SPONSOR: Society of Automotive Engineers

KEYWORDS: GAS TURBINES; AUTOMOBILES; GAS TURBINE ENGINES; DIAGRAMS; GRAPHS (CHARTS); PERFORMANCE; TESTING; AUTOMOTIVE EMISSIONS

AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096

<37>

Ashland, G.A.; Spigl, C.L.; Nejser, R.J.

Phillips Research Laboratories

Address: Holland

Title: Design Considerations on a Thermal Energy Storage Stirling Engine Automobile


SPONSOR: Society of Automotive Engineers

KEYWORDS: STIRRING ENGINES; THERMAL ENERGY STORAGE EQUIPMENT; DESIGN: GRAPHS (CHARTS); DIAGRAMS; PERFORMANCE; SALTS; HEAT PIPES; FLUORIDES

AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<38>

Association of American Pipe Lines

Address: 1725 20th Street NE, Washington, DC 20006


1976, June 10

KEYWORDS: PETROLEUM; PIPELINE TRANSPORTATION; PETROLEUM PRODUCTS; HISTORY; WATER TRANSPORTATION; TRENCHES; RAIL TRANSPORTATION; TONNAGE; STATISTICS; TABLES (DATA)

<39>


Address: 1725 L Street NW, Washington, DC 20036

Title: Yearbook of Railroad Facts: 1976 Edition


1976

KEYWORDS: RAILROADS; ENERGY DEMAND; STATISTICS: RAIL TRANSPORTATION; PASSENGER TRANSPORTATION; CARGO TRANSPORTATION; DEFENSE; FINANCIAL DATA; CAPITAL COSTS; EMPLOYMENT; INCOME; FUEL CONSUMPTION; TABLES (DATA); EQUIPMENT; HISTORY; TONNAGE; MAINTENANCE

<40>


Address: Washington, DC 20036

Title: Indexes of Railroad Material Prices and Wage Rates: Railroads of Class I

Quarterly publication. Series GRWII, 8 p.

KEYWORDS: RAIL TRANSPORTATION; PRICES; MATERIALS; WAGES; RATES (FACTOR); FUELS; REGIONAL ANALYSIS; TABLES (DATA)

<43>

KEYWORDS: ENERGY DEMAND; ENERGY SUPPLIES; ECONOMETRIC STUDIES; ENERGY POLICY; CARBONIZATION; FUEL PRICES; ELECTRIC UTILITIES; ELECTRICITY PRICES; RAILROADS;タク; INDUSTRIES; AUTOMOBILES; SALES; IMPORTS; INDUSTRIAL SECTOR; FUEL CONSUMPTION; ELECTRIC FUEL DEMAND; RESIDENTIAL SECTOR

ECONOMIC IMPACT OF AUTOMOBILE ENERGY CONSUMPTION; A USE-DIFFERENCES STUDY


Association of American Railroads, Economics and Research Board

76

ADDRESS: Washington, DC 20034

TITLE: Railroads and Their Operating Influence in the Several States as of December 31, 1972


KEYWORDS: RAILROADS; NATION; REGIONAL ANALYSIS; COSTS; ECONOMIC ANALYSIS; AUTOMOBILE

ADDRESS: California, Tables (Data); Operating Costs

AVAILABILITY: NTIS

62 p.

1975, December

ECONOMIC IMPACT OF ELECTRIC POWERED VEHICLES; PRODUCTION; COSTS


1974, November

Sponsor: ATOMIC ENERGY COMMISSION, ASSISTANT ADMINISTRATOR FOR CONSERVATION

ADDRESS: Washington, DC

TITLE: New Automotive Power Systems


1974, November

KEYWORDS: AUTOMOBILE; RESEARCH; FUEL ECONOMY; AUTOMOBILE ENGINE; ELECTRIC VEHICLES; US MARKET; FUEL CONSUMPTION

AVAILABILITY: NTIS

DATE OF PUBLICATION: 1976

ADDRESS: Stanford, Stanford

TITLE: Background Material for States

ADDRESS: Stanford, Stanford

AVAILABILITY: NTIS

ADDRESS: Stanford, Stanford

AVAILABILITY: NTIS
Barnard, M.J.; La Belle, S.J.; Miller, R.J.
Argonne National Laboratory, Energy and Environmental Systems Division
ADDRESS: 9700 South Cass Avenue, Argonne, IL 60439
TITLE: Transportation Energy Scenario Analysis Technical Report No. 11: Examination of Four Planning Scenarios
INFORMAL REPORT, REPORT NO. ANL/ES-TR-1 1978, 106 P.
Sponsor: U.S. Dept. of Energy, Transportation Energy Conservation Division, Data Analysis Branch
Keywords: POPULATION; TRANSPORTATION SYSTEMS; ELECTRICAL VEHICLES; ALTERNATIVE FUELS; ENERGY CONSUMPTION; ENERGY CONSERVATION; PRICE FIATERS; ECONOMIC ANALYSIS; AUTOMOBILES; GOVERNEMENT; ENERGY CONSERVATION; GRAPH (CHARTS); GASOLINE; VEHICLE MILES TRAVELED; GOVERNEMNT POLICIES; ENERGY CONSERVATION
Availability: NTIS
BPI Systems Inc.

TITLE: Fuel Economy Through Teamwork: Operating Economy Program

KEYWORDS: Energy Savings in School Transportation


Sponsor: U.S. Dept. of Transportation, Office of Energy Research and Development, Energy Conservation Administration, Division of Transportation, Washington, DC 20461


SPONSOR: National Aeronautics and Space Administration, Lewis Research Center

KEYWORDS: ELECTRIC VEHICLES; TESTING; TIRE TESTS; WIND; FRICTION; BATTERIES; EFFICIENCY

AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15086 43.50

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TITLE: Electric and Hybrid Vehicle Performance and Design Goal Determination Study


Sponsor: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; PERFORMANCE; FUEL CONSUMPTION; LEAD-ACID BATTERIES; ENERGY STORAGE; URBAN TRANSPORTATION; PASSENGER TRANSPORTATION; BUSES (VEHICLES); FUEL ECONOMY; OPERATING COSTS; GRAPHS (CHARTS); MODELS; STANDARD; DESIGN; TABLES; TESTS; WIND: FRICTION; TIRES; ROAD VELOCITY; TIRES; ROAD; DISPLAY


SPONSOR: U.S. Dept. of Transportation, Office of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

---

BPI Systems Inc.

ADDRESS: Phoenix, AR 85068

TITLE: Fuel Economy Through Teamwork: Driving for Fuel Economy


1977, October 7

SPONSOR: U.S. Dept. of Transportation

KEYWORDS: PASSENGER TRANSPORTATION; BUSES (VEHICLES); FUEL ECONOMY; PLANNING; SCHOOLS; OPERATING COSTS; PUBLIC RELATIONS

AVAILABILITY: U.S. Dept. of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

---

BPI Systems Inc.

ADDRESS: Phoenix, AR 85068

TITLE: Fuel Economy Through Teamwork: Purchasing for Fuel Economy


1977, October 7

SPONSOR: U.S. Dept. of Transportation

KEYWORDS: PASSENGER TRANSPORTATION; BUSES (VEHICLES); FUEL ECONOMY; PURCHASING

AVAILABILITY: U.S. Dept. of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

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BPI Systems Inc.

ADDRESS: Phoenix, AR 85068

TITLE: Fuel Economy Through Teamwork: The Science of Saving Fuel

Energy Savings in School Transportation Publication Series No. 1, 3 p.

1977, October 7

SPONSOR: U.S. Dept. of Transportation

KEYWORDS: FUEL ECONOMY; BUSES (VEHICLES); DESIGN

AVAILABILITY: U.S. Dept. of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

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BPI Systems Inc.

ADDRESS: Phoenix, AR 85068

TITLE: Fuel Economy Through Teamwork: Operating for Fuel Economy

Energy Savings in School Transportation Publication Series No. 4, 7 p.

1977, October 7

SPONSOR: U.S. Dept. of Transportation

KEYWORDS: PASSENGER TRANSPORTATION; BUSES (VEHICLES); FUEL ECONOMY; OPERATING COSTS; PLANNING

AVAILABILITY: U.S. Dept. of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

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BPI Systems Inc.

ADDRESS: Phoenix, AR 85068


140 p.

1977, October

SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Voluntary Truck and Bus Fuel Economy Program

KEYWORDS: PASSENGER TRANSPORTATION; FUEL ECONOMY; PLANNING; SCHOOLS; BUSES (VEHICLES); HARDWARE; PLANNING; OPERATING COSTS; PUBLIC RELATIONS

AVAILABILITY: U.S. Dept. of Energy, Voluntary Truck and Bus Fuel Economy Program, Washington, DC 20461

---

Brinkman, R.D.; Gallopoulos, N.E.; Jackson, H.V. General Motors Corp., Research Laboratories

ADDRESS: Warren, MI 48090

TITLE: Performance Valuation, Fuel Economy, and Driveability of Vehicles Fueled with Alcohol-Gasoline Blends

SPOKESMAN: Society of Automotive Engineers

KEYWORDS: FOIL ECONOMY; AUTOMOTIVE EMISSIONS; ALTERNATIVE FUELS; RESEARCH; TESTS; TESTING; GASOLINE; ALCOHOLS; AUTOMOTIVE FUELS; PERFORMANCE; GRAPHS (CHARTS)

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096

Frontenac, L.; Costello, R.; Haxland, C.; Schiff, S.
S. Dept. of Transportation, Transportation Systems Center: Oak Ridge National Laboratory, Health Physics Division; R.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Policy, Plans and International Affairs

ADDRESS: DOT/TSC, Russell Square, Cambridge, MA 02138; ORNL, Oak Ridge, TN 37830; DOT, Washington, DC 20590


1975, November

SPOKESMAN: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for System Development and Technology

KEYWORDS: REGIONAL ANALYSIS; POPULATION (STATISTICS); EMPLOYMENT; SOCIO-ECONOMIC FACTORS; GRAPHS (CHARTS); TABLES (DATA); TRAVEL; MILEAGE; COMPLETION; AGE GROUPS; SEX; AUTOMOBILES; OWNERS; HOUSING

AVAILABILITY: NTIS

ADDRESS: Redford, MI

TITLE: Effect of Automatic Vehicle Monitoring

Receipt on Transit Schedule adherence Monitoring


SPOKESMAN: U.S. Dept. of Transportation, Urban Mass Transportation Administration, Office of Research and Development

KEYWORDS: SCHEDULING; MONITORING; TRANSPORTATION SYSTEMS; BUSES (VEHICLES); MODELS; GRAPHS (CHARTS)

AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave., NW, Washington, DC 20418

17.70 for Transportation Research Record 606

Bruck, H.W.; Berard, J.; Devallecq, O.; Jones, D.W., Jr.
California, University of, Institute of Transportation Studies, California

ADDRESS: Berkeley, CA

TITLE: Full Application of the Technology Implementation Planning Process: Selected New Automotive Engines


1977, September

SPOKESMAN: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: AUTOMOTIVE ENGINES; PLANNING; TECHNOLOGY; DIESEL ENGINES; STIRLING ENGINES; FUEL ECONOMY; GOVERNMENT POLICIES; ALTERNATIVE FUELS; RESEARCH; COSTS; UTILIZATION; AUTOMOTIVE INDUSTRY; PRODUCTION; COMMERCIALIZATION

Bullard, C.R.; Posner, P.S.; Piletli, D.A.
Illinois, University of, Center for Advanced Transportation Research and Development

ADDRESS: Urbana, IL 61801

TITLE: Energy Analysis: Handbook for Combining Process and Input-Output Analysis


1976, October

SPOKESMAN: Energy Research and Development Administration, Assistant Administrator for Planning Analysis and Evaluation

KEYWORDS: INPUT-OUTPUT ANALYSIS; ENERGY CONSUMPTION; ENERGY INTENSITY; ENERGY FLOW; ENERGY MODELS; ANALYTICAL MODELS; TABLES (DATA); SYSTEMS ANALYSIS; PRODUCTION

Burke, D.; McFarland, W.P.
Texas Transportation Institute

ADDRESS: College Station, TX

TITLE: Analysis of the National Energy Plan: The Effects on Transportation


1977, May

KEYWORDS: NATIONAL ENERGY PLAN; TRANSPORTATION; TEXAS; GASOLINE; TAXES; SPEED LIMITS; ENERGY CONSUMPTION; FUEL ECONOMY; ENERGY CONSERVATION; PRICES; GOVERNMENT POLICIES; STANDARDS; TABLES (DATA); FORECASTING; ATTENTION FUELS; COAL; BUSES (VEHICLES); TRAINS; STATE ANALYSIS

AVAILABILITY: Center for Energy and Mineral Resources, Texas Ag University, College Station, TX

Burns, L.D.; Golob, T.F.
General Motors Corp., Research Laboratories, Transportation and Urban Analysis Dept.

ADDRESS: Warren, MI 48090

TITLE: The Role of Accessibility in Basic Transportation Choice Behavior

Report No. GMR-1900, reprinted from Transportation, 5, 175-198

1976

KEYWORDS: PASSENGER TRANSPORTATION; AUTOMOBILES; DRIVING CYCLE; TRAFFIC FLO; TRAVEL TIME; BENEFIT COST ANALYSIS; TABLES (DATA); POPULATION (STATISTICS); EMPLOYMENT, OCCUPATIONS; PERFECT-MODE TRAVEL; TRANSPORTATION MODE CHOICE; MODELS

Georgia Institute of Technology, School of Civil Engineering; Clemson University, Dept. of
Civil Engineering, Continuing Engineering Education Association, Educational Division, Planning and Design Section: R.R. Dept. of Transportation, Federal Highway Administration, National Highway Institute
ADDRESS: 762, Atlanta, GA 30333; C. Como, DC 20590; WASHINGTON, DC

TITLES: Conference Report: Energy Conservation in Transportation and Construction
Report No. PP-295267, T.H.E.-M.T.76-8001; conference held on December 2-5, 1975, Atlanta, Georgia, 308 p.
1976, May 10
KEYWORDS: ENERGY CONSERVATION; TRANSPORTATION; CONSTRUCTION; CONFERENCE; ENERGY CONSUMPTION; PUBLIC TRANSPORTATION; RAIL TRANSPORTATION; EFFICIENCY; ENERGY SUPPLIES; HIGHWAY INSTITUTE; TRAFFIC; TRAFFIC DATA (TRAFFIC); TRAFFIC CONSERVATION
AVAILABILITY: NTS

<106>

Beck, J.O.; Turner, L.R.
U.S. Dept. of Defense, Army Material Development and Readiness Command, Foreign Science and Technology Center

ADDRESS: Washington, DC 20301

TITLES: Electric Vehicle Research, Development, and Vehicle Assessment Rept (7)
1977, January
KEYWORDS: ELECTRIC VEHICLES, RESEARCH PROGRAMS; INTERNATIONAL ANALYSIS; HYBRID ELECTRIC-POWERED VEHICLES; BATTERY; ELECTRIC TRANSPORTATION; TRANSPORTATION SYSTEM; UTILIZATION; MILITARY EQUIPMENT; FORECASTING
AVAILABILITY: NTS

<107>

Campbell, K.A.
Electric Vehicle Council

ADDRESS: 90 Park Ave., New York, NY 10016

Paper presented at the Fourth International Electric Vehicle Symposium, held in Dusseldorf, Germany, August 31 - September 2, 1976, 2 p.
1976, September
KEYWORDS: ELECTRIC VEHICLES; FORECASTING; ENERGY CONSERVATION; TRANSPORTATION; FUTURITY; ENERGY CONSUMPTION; VEHICLE REGISTRATION; TABLES (DATA); VOLUME; ENERGY USE; RESIDENTIAL SECTOR; LOAD MANAGEMENT; ELECTRIC POWER DEMAND
AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016

<108>

Campbell, K.A.
Electric Vehicle Council

ADDRESS: 90 Park Ave., New York, NY 10016

Paper No. 770074, presented at Society of Automotive Engineers Congress and Exposition, February 23, 1976, Detroit, MI, 12 p.
1976
SPOKESMAN: Society of Automotive Engineers

KEYWORDS: ELECTRIC VEHICLES; ELECTRIC VEHICLES; ELECTRIC VEHICLES; VOLUME; PERFORMANCE; EFFICIENCY; MAINTENANCE; TEMPERATURE; AUTOMOBILE INDUSTRY; ELECTRIC POWER DEMAND; ELECTRIC VEHICLES

AVAILABILITY: Society of Automotive Engineers Inc., 200 Commonwealth Drive, Warrendale, PA 15086

<109>

Campbell, K.; Scott, R.; Uhlia, B.
Richards, University of, Highway Safety Research Institute

ADDRESS: San Pedro, CA 90743

TITLES: Highway Safety Benefits of the Energy Crisis on U.S. Toll Roads
1976, June
SPOKESMAN: U.S. Dept. of Transportation, National Highway Traffic Safety Administration

KEYWORDS: DRIVER; SAFETY; ACCIDENTS; ENERGY

<110>

Campbell, K.; Uhlia, B.; Todd, R.
Richards, University of, Highway Safety Research Institute

ADDRESS: San Pedro, CA 90743

TITLES: Highway Safety Benefits of the Energy Crisis on U.S. Toll Roads
1976, June
SPOKESMAN: U.S. Dept. of Transportation, National Highway Traffic Safety Administration

KEYWORDS: DRIVER; SAFETY; ACCIDENTS; ENERGY
Carr, T. O.; Kyslen, A. S.; Sanborn, J. Brookhaven National Laboratory, National Center for Analysis of Energy Systems, Policy Analysis Division; State University of New York, Institute for Energy Research

**Title:** Lead Use - Energy Simulation Model: A Computer-Based Model for Exploring Energy Use and Energy Relationships

**Report No.:** NNL 50534, 69 p., 1977, June

**Sponsor:** Federal Energy Administration, Office of Energy Conservation and Environment

**Keywords:** COMPUTERIZED SIMULATION; LEAD USE; RESIDENTIAL SECTOR; TRANSPORTATION; INDUSTRIAL SECTOR; ENERGY DEMAND; MONETARY ANALYSIS; NEW YORK; SUBURBAN AREAS

**Availability:** NTS

---

Carter, J. C.

**Title:** The Capital Stock Adjustment Process and the Demand for Gasoline: A Market Share Approach

**Report No.:** NNL 50533, 132 p., 1977, June

**Sponsor:** Federal Energy Administration, Office of Energy Conservation and Environment

**Keywords:** PLANNING; LAND USE; ENERGY CONSUMPTION; LOCAL GOVERNMENT; GOVERNMENT POLICIES; ENERGY CONSUMPTION; TECHNOLOGY (ARIZONA); LONG DURATION (NEW YORK); RESIDENTIAL SECTOR; COMMERCIAL SECTOR; ENERGY DEMAND; TRANSPORTATION ENERGY INTENSITY; MONETARY ANALYSIS; COMPUTERIZED SIMULATION; ELECTRICITY (ECONOMICS); FORECASTING; TAXES; TECHNOLOGY ASSESSMENT

**Availability:** NTS

---

Cataldo, B. L.

**Title:** Response of Lead-Acid Batteries to Chopper-Controlled Discharge: Preliminary Results

**Technical Memorandum, Report No. CTR-1044-1.** NBS TN-73834, 8 p., 1978, February

**Sponsor:** Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** LEAD-ACID BATTERIES; SIMULATION; ELECTRIC VEHICLES; VELOCITY; CONTROLLER; ELECTRIC DISCHARGES; CAPACITY; DESIGN; ENERGY LOSSES

**Availability:** NTS

---

Cataldo, B. L.

**Title:** National Aeronautics and Space Administration, Lewis Research Center

**Address:** Cleveland, OH 44135

**Title:** Response of Lead-Acid Batteries to Chopper-Controlled Discharge: Preliminary Results

**Technical Memorandum, Report No. CTR-1044-1.** NBS TN-73834, 8 p., 1978, February

**Sponsor:** Dept. of Energy, Division of Transportation Energy Conservation

**Keywords:** LEAD-ACID BATTERIES; SIMULATION; ELECTRIC VEHICLES; VELOCITY; CONTROLLER; ELECTRIC DISCHARGES; CAPACITY; DESIGN; ENERGY LOSSES

**Availability:** NTS

---

Catto, D.; Rodokohr, M.; Sweeney, J. L.

**Title:** Demand for Gasoline: Application of Commodity Hierarchy Theory


**Keywords:** GASOLINE; FUEL CONSUMPTION; DEMAND (ECONOMICS); MODELS; CLASSIFICATIONS; TABLES (DATA); AUTOMOBILES; FUEL ECONOMY

**Availability:** NTS

---

Catto, D.; Rodokohr, M.; Sweeney, J. L.

**Title:** The Capital Stock Adjustment Process and the Demand for Gasoline: A Market Share Approach

**Report No.:** NNL 50533, 132 p., 1977, June

**Sponsor:** Federal Energy Administration, Office of Energy Conservation and Environment

**Keywords:** PLANNING; LAND USE; ENERGY CONSUMPTION; LOCAL GOVERNMENT; GOVERNMENT POLICIES; ENERGY CONSUMPTION; TECHNOLOGY (ARIZONA); LONG DURATION (NEW YORK); RESIDENTIAL SECTOR; COMMERCIAL SECTOR; ENERGY DEMAND; TRANSPORTATION ENERGY INTENSITY; MONETARY ANALYSIS; COMPUTERIZED SIMULATION; ELECTRICITY (ECONOMICS); FORECASTING; TAXES; TECHNOLOGY ASSESSMENT

**Availability:** NTS

---

Catto, D.; Rodokohr, M.; Sweeney, J. L.

**Title:** The Capital Stock Adjustment Process and the Demand for Gasoline: A Market Share Approach

**Report No.:** NNL 50533, 132 p., 1977, June

**Sponsor:** Federal Energy Administration, Office of Energy Conservation and Environment

**Keywords:** PLANNING; LAND USE; ENERGY CONSUMPTION; LOCAL GOVERNMENT; GOVERNMENT POLICIES; ENERGY CONSUMPTION; TECHNOLOGY (ARIZONA); LONG DURATION (NEW YORK); RESIDENTIAL SECTOR; COMMERCIAL SECTOR; ENERGY DEMAND; TRANSPORTATION ENERGY INTENSITY; MONETARY ANALYSIS; COMPUTERIZED SIMULATION; ELECTRICITY (ECONOMICS); FORCASTING; TAXES; TECHNOLOGY ASSESSMENT

**Availability:** NTS

---

Catto, D.; Rodokohr, M.; Sweeney, J. L.

**Title:** The Capital Stock Adjustment Process and the Demand for Gasoline: A Market Share Approach

**Report No.:** NNL 50533, 132 p., 1977, June

**Sponsor:** Federal Energy Administration, Office of Energy Conservation and Environment

**Keywords:** PLANNING; LAND USE; ENERGY CONSUMPTION; LOCAL GOVERNMENT; GOVERNMENT POLICIES; ENERGY CONSUMPTION; TECHNOLOGY (ARIZONA); LONG DURATION (NEW YORK); RESIDENTIAL SECTOR; COMMERCIAL SECTOR; ENERGY DEMAND; TRANSPORTATION ENERGY INTENSITY; MONETARY ANALYSIS; COMPUTERIZED SIMULATION; ELECTRICITY (ECONOMICS); FORECASTING; TAXES; TECHNOLOGY ASSESSMENT

**Availability:** NTS
Charles River Associates Inc.

1050 Massachusetts Ave., Cambridge, MA 02138

TITLE: Methodology for Predicting the Demand for New Electricity-Using Goods


1977, December

SPONSOR: Electric Power Research Institute

KEYWORDS: ELECTRIC POWER DEMAND; EQUIPMENT; MODELS; MARKETS; MARKET; HEAT PUMPS; AUTOMOBILES; ATTITUDES; IMPORTS; PRICES

AVAILABILITY: Electric Power Research Institute, 3412 Millview Avenue, Palo Alto, CA 94304

Charles River Associates Inc.

1050 Massachusetts Avenue, Cambridge, MA 02138

TITLE: Consumer Behavior Toward Fuel Efficient Vehicles: Literature Review


1978, January 9

SPONSOR: U.S. Dept. of Transportation, National Highway Traffic Safety Administration

KEYWORDS: BEHAVIOR; CONSUMERS; AUTOMOBILES; PUBLIC OPINION; ATTITUDES; SURVEYS; PURCHASING; RATES; COSTS; UTILIZATION; PRICES; FUEL ECONOMY; TRUCKS; BUSES (VEHICLES)

Charles River Associates Inc.

1050 Massachusetts Avenue, Cambridge, MA 02138

TITLE: Price Elasticity Estimates for Transport Fuel Consumption and Travel Demand: A Review and Bibliography

Interim Report, 03 p.

1975, June

SPONSOR: Federal Energy Administration

KEYWORDS: ELASTICITY (ECONOMICS); FUEL CONSUMPTION; PRICES; GASOLINE; DIESEL FUELS; JET ENGINE FUELS; TRANSPORTATION; PASSENGER TRANSPORTATION; RATES (COSTS); CARGO TRANSPORTATION; ECONOMETRIC MODELS; URBAN AREAS; AUTOMOBILES; BIBLIOGRAPHIES

<124>

Charles River Associates Inc., Cambridge Systematics Inc.

1050 Massachusetts Avenue, Cambridge, MA 02138; CSI, Cambridge, MA 02139


1977, March

SPONSOR: Federal Energy Administration, Office of Conservation, Transportation Programs

KEYWORDS: ENERGY CONSERVATION; CARGO TRANSPORTATION; INTERSTATE TRANSPORTATION; GOVERNMENT POLICIES; STOCKS; ENERGY CONSERVATION; MARKET EFFICIENCY; INTERSTATE COMMERCE COMMISSION; ECONOMIC ANALYSIS; TABLES (DATA); REGULATIONS; FUEL CONSUMPT: DEMAND (ECONOMICS)

AVAILABILITY: NTIS

<125>

Cherniavsky, R.A.; Rysman, A.S.; Davidson, J.W.

Brookhaven National Laboratory, National Center for Analysis of Energy System, Energy Models Group

ADDRESS: Upton, NY 11973

TITLE: Multi-Objective Function Analysis of ERDA Forecast-1, Year-2000 Scenario


1977, May

SPONSOR: Energy Research and Development Administration, Office of Planning, Analysis and Evaluation

KEYWORDS: FORECASTING; PETROLEUM; IMPORTS; ENERGY SYSTEMS; ENERGY MODELS; OPTIMIZATION; CAPITAL COSTS; ENVIRONMENTAL IMPACT; TABLES (DATA)

AVAILABILITY: NTIS

<127>

Chang, S.C. (ed.): Stone M.G. (ed.)

U.S. Dept. of Energy; Lawrence Livermore Laboratory

ADDRESS: DOE, Washington, DC; LL, University of California, Berkeley, CA 94720

TITLE: 1977 Flywheel Technology Symposium Proceedings

1977, March


SPONSOR: U.S. Dept. of Transportation

KEYWORDS: FLYWHEELS; UTILIZATION; TRANSPORTATION; HYDROGEN ELECTRIC-POWERED VEHICLES; DESIGN; ENERGY STORAGE; ELECTRIC VEHICLES; TESTING; TECHNOLOGY ASSESSMENT; MATERIALLY; COMPARATIVE EVALUATION; DIAGRAMS; COSTS; GRAPHS (CHARTS); COMPARATIVE ASSESSMENTS; TABLES (DATA)

AVAILABILITY: NTIS

<129>

Chang, J.C.

Airesearch Manufacturing Co.

ADDRESS: Torrance, CA

TITLE: Computer Simulation of an Advanced Hybrid Electric-Powered Vehicle


1978, March

KEYWORDS: HYBRID ELECTRIC-POWERED VEHICLES; COMPUTERIZED SIMULATION; REGENERATIVE FUEL CELLS; PLUGGERS; LEAD-ACID BATTERIES; REGENERATIVE SHAKING; ENERGY STORAGE; ENERGY CONVERSION; GRAPHS (CHARTS)

AVAILABILITY: Society of Automotive Engineers

1050 Commonwealth Drive, Naraen, PA 15065 $2.50
Clark, R. (ed.)
National Academy of Sciences, National Research Council, Transportation Research Board
ADDRESS: 2101 Constitution Ave NW, Washington, DC 20418
TITLE: Urban Transportation Alternatives: Evolution of Federal Policy
1977
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration
AVAILABILITY: $6.40

Clark, R. (ed.)
National Academy of Sciences, National Research Council, Transportation Research Board
ADDRESS: 2101 Constitution Ave NW, Washington, DC 20418
TITLE: Urban Transportation Alternatives: Evolution of Federal Policy
1977
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration
AVAILABILITY: $6.40

Association of American Railroads, Mechanical Division
ADDRESS: Washington, DC
TITLE: Car and Locomotive Cyclopedia of American Practises
1974

Cohen, G.S.; Tribitsu, H.M.; Westergen, D.T.
New York State Dept. of Transportation, Planning and Research Bureau, Planning Research Unit
ADDRESS: Albany, NY 12232
TITLE: Intercity Rail Patronage in the NYC - Buffalo Corridor: Models and Forecasts. Volume III
1977
SPONSOR: N.Y. Dept. of Transportation, Office of University Research

<1556> Corrigan, B.; Fricheitas, J.D.; Samuelson, R.J. TITLE: The Carter Energy Plan - Some Answers to the Questions
Livermore Research Laboratory


1976, April 19

SPONSOR: Energy Research and Development Administration, University of California

KEYWORDS: TRANSPORTATION; BATTERIES; PLATEHELS; HYBRID ELECTRIC-POWERED VEHICLES; ENERGY CONSUMPTION; ALTERNATE FUELS; ELECTRIC VEHICLES; BATTERY-ACID BATTERIES; PERFORMANCE; SYSTEM DESIGN; ENERGY DEMAND; DESIGN; ELECTRIC VEHICLES PAPERS

AVAILABILITY: NTIS

<cite>
Lawrence Livermore Laboratory

TITLE: Determination of the Effectiveness and Feasibility of Regenerative Braking Systems on Electric and Other Automobilies. Volume I - Summary

Report No. UCRL-52306/1, 76 p.

1977, September 9

SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; REGenerative BRAKING; HISTORY; RECOVERY; UTILIZATION; PLATEHELS; POWER TRAIL SYSTEMS; DIAGRAMS; BATTERIES; TABLES (DATA); GRAPHS (CHARTS)

AVAILABILITY: NTIS
</cite>
<185> Doegett, R. W.; Rayer, R. E.
International Research and Technology Corp.
ADDRESS: 7655 Old Springhouse Rd., McLean, VA 22102
TITLE: The Transportation Energy Conservation Network (TECNET): A Summary Description
Report No. IRT-19900/1, 35 p.
1978, March 14
SPONSOR: Oak Ridge National Laboratory, Energy Program, Data Management and Analysis Group
KEYWORDS: TRANSPORTATION; ENERGY CONSERVATION; ECONOMIC IMPACT; ENERGY CONSUMPTION; ENVIRONMENTAL IMPACT; TABLES (DATA); MODELS; GOVERNMENT POLICIES; SIMULATION; MATERIALS; TRANSPORTATION

<185> Doegott, R. W.; Rayer, R. E.; Meller, M.
International Research and Technology Corp.
ADDRESS: 7655 Old Springhouse Rd., McLean, VA 22102
TITLE: Ten Scenarios of Transportation Energy Conservation Using TECNET
1976, June
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation, Data Analysis Branch
KEYWORDS: Forecasting; Models; Transportation; Emissions; Ramifications; Energy Conservation; Automotive Engines; Brayton Cycle; Stirling Engines; Internal Combustion Engines; Energy Consumption; Energy Intensity; Market; Energy Consumption; Automobiles; Growth; Vehicle Miles Traveled; Gross National Product;Release; Tables (Data)

<185> Sachar, A. P.
General Motors Corp., Research Laboratories
ADDRESS: Warren, MI
TITLE: Transient System Optimization of an Experimental Engine Control System Over the Federal Emissions Driving Schedule
1978
KEYWORDS: Fuel Economy; Automotive Emission Control; Automotive Engines; Fuel Consumption; Diagnosis; Emission; Driving (Chassis); Catalytic Converters
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15086 $2.50

<185> Sennelly, J. J., Jr.; Reamler, R. D.
Aerospace Corp., Environment and Energy Conservation Division, Mobile Systems Group, Office of Energy Conservation
TITLE: Fuel Consumption and Engine Horsepower Projections for the Highway Transportation Sector
78 p.
1978, April 28
KEYWORDS: Fuel Consumption; Engine Horsepower Projections for the Highway Transportation Sector
AVAILABILITY: NTIS

<185> Donovan, R. M.
Donovan, Hammett and Rattien Inc.
ADDRESS: 7655 Thomas Jefferson St., Suite 419, Washington, DC 20007
TITLE: Energy, the Environment, and Land Use: Literature Review
Report No. UCRL-13710(Pt. 1), 190 p.
1976, November 5
SPONSOR: Lawrence Livermore Laboratory, Office of Environmental Policy
KEYWORDS: Bibliographies; Energy Supplies; Coal; Nuclear Energy; Petroleum; Natural Gas; Alternate Fuels; Electric Power Generation; Energy Consumption; Energy Conservation; Residential Sector; Commercial Sector; Transportation; Agriculture; Land Use; Environmental Impact
AVAILABILITY: NTIS

<185> Donovan, R. M.
Donovan, Hammett and Rattien Inc.
ADDRESS: 7655 Thomas Jefferson St., Suite 419, Washington, DC 20007
TITLE: Energy, the Environment, and Land Use: Final Report
1976, November 5
SPONSOR: Lawrence Livermore Laboratory, Office of Environmental Policy
KEYWORDS: Land Use; Environmental Impact; Energy Conservation; Energy Consumption; Energy Demand; Pollution; Economic Analysis; Site Selection; Coal; Transportation; Production; Consumption; Transportation
AVAILABILITY: NTIS

<185> Duffy, R. A.; Elden, G. L.; Hamilton, C. R.; Drago, V. S.
Beattie Columbus Laboratory
ADDRESS: 505 King Avenue, Columbus, OH 43201
TITLE: General Aviation Dynamics: An Extension of the Cost Impact Study to Include Interactions in the Forecasting of General Aviation Activity. Volume I-IV
Report No. FA4-83-77-20, 4 p.
1977, April
SPONSOR: Dept. of Transportation, Federal Aviation Administration, Office of Aviation Policy, Aviation Forecast Branch
KEYWORDS: Forecasting; Aviation; Operating Costs; Models; Data Bases; Simulation; Aircraft; Fuel Consumption; Utilization; Tables (Data); Grapes (Chains); Government Policies; Regulations; Demand (Economics); Air Transportation; Operation
AVAILABILITY: NTIS

<185> Dupree, W. G., Jr.
U.S. Dept. of Interior, Bureau of Mines, Division of Intermine Studies
ADDRESS: Washington, DC 20240
TITLE: Energy Consumption in the Transportation Sector
Paper presented at the Fourth National Conference on the Effects of Energy Constraints on
187> Cotton. Transportation Systems, held at Union College, Schenectady, New York, on August 1-5, 1977, 61 p. 1977

KEYWORDS: ENERGY CONSERVATION; TRANSPORTATION; PETROLEUM; PETROLEUM PRODUCTS; LIQUEFIED PETROLEUM GASES; FT ENGINE OILS; GASOLINE; DISTILLATES; FUEL OIL; RESIDUAL OILS; TABLES (DATA); GRAPHS (CHARTS); REGIONAL ANALYSIS


SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation

KEYWORDS: ELECTRIC VEHICLES; TESTING; HYBRID ELECTRIC-POWERED VEHICLES; REGENERATIVE BRAKING; ENERGY CONSUMPTION; TABLES (DATA); GRAPHS (CHARTS); FUEL CONSUMPTION; PERFORMANCE


SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Policy, Planning and International Affairs, Office of Transportation Energy Conservation

KEYWORDS: ENERGY CONSERVATION; LEGISLATION; EFFICIENCY; TRAVEL; DAYLIGHT SAVING TIME; TRANSPORTATION; ELECTRIC POWER; PUBLIC OPINION; CRIME; GOVERNMENT POLICIES; ACCIDENTS; TABLES (DATA)


KEYWORDS: ALTERNATE FUELS; AUTOMOBILE ENGINES; ETHANOL; METHANOL; GASOLINE; PERFORMANCE; CORPORATE EVALUATIONS; FUEL-EFFICIENCY; AUTOMOBILE EMISSIONS; TESTING; ENGINE (CHARTS); DRIVING (CLE)


SPONSOR: U.S. Dept. of Energy, Energy Information Administration, Office of Energy Data

KEYWORDS: ENERGY CONSUMPTION; ECONOMIC ANALYSIS; INDUSTRY; DATA BASES; FUELS; INDUSTRIAL SECTOR; MANUFACTURING; HEATING; INDUSTRY; TEXTILE INDUSTRY; AGRICULTURE; RESIDENTIAL SECTOR; ELECTRIC UTILITIES; COMMERCIAL SECTOR; RENTING; DEFENSE; INCOME; REGIONAL ANALYSIS; TRANSPORTATION; AUTOMOBILES; AIR TRANSPORTATION; BUSES; TRANSPORTATION; TABLES (DATA); BIBLIOGRAPHIES; AIBLIOGRAPHIES


SPONSOR: Electric Vehicle Council

KEYWORDS: ELECTRIC VEHICLES; RESEARCH; BATTERIES; DRIVE TRAIN SYSTEMS; ELECTRIC POWER DEMAND; UTILITIES; ENVIRONMENTAL IMPACT; PASSENGER TRANSPORTATION; AUTOMOBILES; ELECTRIC VEHICLE RANGE; MARKET; TRUCKS; MAINTENANCE; HYBRID ELECTRIC-POWERED VEHICLES; UTILIZATION; ELECTRIC RAIL SYSTEMS; PERFORMANCE; EFFICIENCY; ECONOMIC ANALYSIS; PRODUCTION; BUSES (VEHICLES); ELECTRIC CYCLE; INTERNATIONAL ANALYSIS; DIAGRAMS; PHOTOGRAPHS


KEYWORDS: BIBLIOGRAPHIES; ENERGY CONSERVATION; SOLAR ENERGY; ENERGY CONSUMPTION; BUILDINGS; BEHAVIOR; ENERGY POLICY; ECONOMICS; WASTE PROCESSES; ENERGY DEMAND; ENERGY SHORTAGES; ENERGY RESOURCES; FOSSIL FUELS; AGRICULTURE; HUNGER; INDUSTRIES; TRANSPORTATION

AVAILABILITY: U.S. Dept. of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830

194> Energy Research and Development Administration, Division of Transportation Energy Conservation ADDRESS: Washington, DC TITLE: State-of-the-Art (SOA) Test and Data Project Review and Year-Term Electric Vehicle BSD Program Review 1979, May 20

KEYWORDS: ELECTRIC VEHICLES; TESTING; HYBRID ELECTRIC-POWERED VEHICLES; BS EPID; VELOCITY; GRAPHS (CHARTS); PHOTOGRAPH; RESEARCH; PERFORMANCE
<203>
Kelley Corp.
ADDRESS: 330 South Fourth Street, Richmond, VA 23219
TITLE: Emissions and Fuel Economy of the
Touring Flow System for European 4-Cyl
Engines
Paper No. 760054, published in TRANSACTIONS of the
Society of Automotive Engineers, Vol. 1, No. 2, December 1976
SPOONS: Society of Automotive Engineers, 
Milwaukee Section
KEYWORDS: FUEL ECONOMY; AUTOMOTIVE REESSIONS;
STANDARDS; AUTOMOTIVE FUELS; AUTOMOTIVE
POLICIES; DESIGN; TESTING; GRAPHS (CHARTS);
AUTOMOTIVE TRANSMISSIONS; VELOCITY; TABLES (DATA)
AVAILABILITY: Society of Automotive Engineers
2500 Commonwealth Drive, Warrendale, PA 15096 for TRANSACTIONS of the
Society of Automotive Engineers.

<204>
Evans, L.
General Motors Corp., Research Laboratories
ADDRESS: Warren, MI 48090
TITLE: Patent Emissions, Fuel Consumption and
Traffic; Relations Derived from Urban
Driving Schedule Data
1977, December 7
KEYWORDS: AUTOMOBILE EMISSIONS; FUEL CONSUMPTION;
TRAFFIC; URBAN TRANSPORTATION; VELOCITY;
TRAFFIC TUNES; VEHICLE TRIPS; HYDROCARBONS;
COMPOUND RATIO; VELOCITY ORIGINS; TABLES (DATA); GRAPHS (CHARTS)

<205>
Evans, L.; Neman, R.; Loo, T.W.
General Motors Corp., Research Laboratories
ADDRESS: Warren, MI 48090
TITLE: Baseline Consumption in Urban Traffic
Paper No. 760054, presented at the Automotive
Engineering Congress and Exposition, Detroit, 
SPOONS: Society of Automotive Engineers
KEYWORDS: TRAFFIC; URBAN TRANSPORTATION; FUEL
CONSUMPTION; FUEL ECONOMY; CARBON;
EMISSION ANALYSIS; VEHICLE TRIPS; VELOCITY
AVAILABILITY: Society of Automotive Engineers
Inc., 400 Commonwealth Drive, Warrendale, PA 15096 82.73

<206>
Executive Office of the President
ADDRESS: Washington, DC
TITLE: Economic Report of the President Together
With the Annual Report of the Council of
Economic Advisers Transmitted to the Congress
January 1978
Annual report, 386 p.
1978
KEYWORDS: ECONOMICS; ECONOMIC POLICY; GOVERNMENT
POLICIES; INTERNATIONAL RELATIONS; INFLATION;
EMPLOYMENT; EMPLOYMENT; PRODUCTION; TAXES;
STATISTICS
AVAILABILITY: GOP, Stock No. 040-000-00389-4

<207>
Executive Office of the President, Office of the
Budget
ADDRESS: Washington, DC 20503
TITLE: The United States Budget in Brief - Fiscal
Year 1978
84 p.
1977, January 17
KEYWORDS: REPORTS; FORECASTING; ECONOMIC POLICY;
GOVERNMENT POLICIES; ENERGY POLICY; TAXES;
TABLES (DATA)
AVAILABILITY: GOP, Stock No. 040-000-00133-6

<208>
NASA Research and Engineering Co., Government
Research Laboratories; Science Application
Inc., Combustion and Propulsion Technology
Division
ADDRESS: TRB, P.O. Box 8, Linden, NJ 07036;
703235 Ventana Boulevard, Suite 423, 
Woodland Hills, CA 91363
TITLE: Fundamental Characterization of Alternate
Fuel Effects in Continous Combustion Systems
Report No. TID-28463, Technical Programs Report
No. 1, v.p.
1976, January 7
SPOONS: U.S. Dept. of Energy, Division of
Transportation Energy Conservation
KEYWORDS: ALTERNATE FUELS; COMBUSTION; CHEMICAL
PROPERTIES; MODELS; COMBUSTION PROPERTIES;
MODELS; GAS TURBINE ENGINES; HYDROGEN;
HYDROGEN TERMINOLOGY; THERMODYNAMIC PROPERTIES;
TURBULENT FLOW; DROPLET S; REACTIONS; COMPOUND
TRAFFIC; GRAPHS (CHARTS)
AVAILABILITY: NTSB

<209>
Tulcrafter, R.O.
Parsons Engine Co.
ADDRESS: United Kingdom
TITLE: Gas Emissions and Fuel Economy of the
Light Duty Diesel Truck
Paper No. 770236, presented at the Society of
Automotive Engineers International Congress and
Exposition, Cobo Hall, Detroit, Michigan, 
1977
SPOONS: Society of Automotive Engineers
KEYWORDS: ENGINE COMPOSITION SIMULATION; DIESC;
ENGINES; AUTOMOBILE REESSIONS; CARBON;
COMPOUNDS; HYDROGEN; HYDROCARBONS;
GRAPHS (CHARTS); FUEL ECONOMY; TESTS; BURNT
AVAILABILITY: Society of Automotive Engineers
Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<210>
Parratt (Jack) Associates Inc.
ADDRESS: 5454 Wisconsin Avenue, Chevy Chase, MD
20015
TITLE: Update to the National Energy Accounts:
Volume II. Program Documentation
1977, September
SPOONS: Federal Energy Administration
KEYWORDS: ENERGY FLUXES; TABLES (DATA); COMPUTER
PROGRAMS

<211>
Parratt (Jack) Associates Inc.
ADDRESS: 5454 Wisconsin Avenue, Chevy Chase, MD
20015
TITLE: Update to the National Energy Accounts:
(211) CORR.
Volume 1: Methodology
1977, September
Economic Development Administration, Office of Energy Systems Data
KEYWORDS: ENERGY SUPPLIES; PRODUCTION; EXPORTS; PRICES; ENERGY CONSERVATION; MANUFACTURING; INDUSTRIAL SECTOR; HEATING; TRANSPORTATION; AGRICULTURE; CONSTRUCTION; UTILITIES; COMMERCIAL SECTOR; REPORTS; ENERGY CONVERSION; ENERGY FLOWS; ELECTRIC POWER; NATURAL GAS; FUEL OIL; FOSSIL FUELS

Interdisciplinary Group for Ecology, Development, and Energy (ICED); Arizona, University of.
ADDRESS: 213 21 Street, Tucson, AZ 85721
TITLE: Energy Use Management: Proceedings of the International Conference. Volumes I and II
Conference held at Tucson, Arizona, October 24-28, 1977, 1053 p. for Volume I, 754 p. for Volume II
1977
KEYWORDS: TRANSPORTATION; AUTOMOBILES; FUEL ECONOMY; ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; VEHICLES; URBAN TRANSPORTATION; PUBLIC TRANSPORTATION; INTERCITY TRANSPORTATION; CARGO TRANSPORTATION; PASSENGER TRANSPORTATION; PIPELINES; TELECOMMUNICATION; AGRICULTURE; LIVESTOCK; PRODUCTION; FOOD INDUSTRY; OPEC; DEVELOPING COUNTRIES; NUCLEAR ENERGY; ENERGY SUPPLIES; LAND USE; TECHNOLOGY; ENERGY CONSERVATION; ENERGY MANAGEMENT; ECONOMICS; ENERGY DEMAND; UNCONVENTIONAL ENERGY SOURCES; ACCOUNTING; INDUSTRIAL SECTOR; ENERGY CONSUMPTION; PERFORMANCE; DESIGN; WASTE HEAT; HEAT RECOVERY; NATURAL GAS; COAL; LOAD MANAGEMENT; ELECTRIC POWER; INDUSTRIES; COMMERCIAL SECTOR; AIR CONDITIONING; SPACE HEATING; BUILDINGS; STANDARDS; CONSTRUCTION; COMPUTERIZED SIMULATION; OPERATION; RESIDENTIAL SECTOR; SOIL COMFORT; APPLIANCES; SOLAR ENERGY
AVAILABILITY: Pegamon Press, Harwell House, Fairview Park, Elmsford, New York, NY 10523

Econometric Demand Model
1976, September
KEYWORDS: ENERGY DEMAND; PROJECT INDEPENDENCE; ECONOMETRIC MODELS; PETROLEUM PRODUCTS; NATURAL GAS; ELECTRIC POWER; COAL; RESIDENTIAL SECTOR; COMMERCIAL SECTOR; INDUSTRIAL SECTOR; TRANSPORTATION; SIMULATION; ENERGY MODELS; TABLES (DATA)
AVAILABILITY: NTIS

(215) Federal Energy Administration, Office of Energy Information and Analysis, Office of Data and Analysis
ADDRESS: Washington, DC 20461
1977, June
KEYWORDS: FORECASTING; MODELS; COMPUTER PROGRAMS; DATA BASES; ALTERNATIVE FUELS; COMPARATIVE EVALUATIONS; PROJECT INDEPENDENCE; US FAE; ENERGY DEMAND; ENERGY SUPPLIES; PETROLEUM; NATURAL GAS; COAL; ELECTRIC UTILITIES; ECONOMICS; TRANSPORTATION
AVAILABILITY: NTIS

Federal Energy Administration, Office of Energy Information and Analysis, Office of Data and Analysis
ADDRESS: Washington, DC 20461
1977, June
KEYWORDS: FORECASTING; MODELS; COMPUTER PROGRAMS; DATA BASES; ALTERNATIVE FUELS; COMPARATIVE EVALUATIONS; PROJECT INDEPENDENCE; US FAE; ENERGY DEMAND; ENERGY SUPPLIES; PETROLEUM; NATURAL GAS; COAL; ELECTRIC UTILITIES; ECONOMICS; TRANSPORTATION
AVAILABILITY: NTIS

Federal Energy Administration, Office of Energy Information and Analysis, Office of Data and Analysis
ADDRESS: Washington, DC 20461
1977, June
KEYWORDS: FORECASTING; MODELS; COMPUTER PROGRAMS; DATA BASES; ALTERNATIVE FUELS; COMPARATIVE EVALUATIONS; PROJECT INDEPENDENCE; US FAE; ENERGY DEMAND; ENERGY SUPPLIES; PETROLEUM; NATURAL GAS; COAL; ELECTRIC UTILITIES; ECONOMICS; TRANSPORTATION
AVAILABILITY: NTIS

(217) Federal Energy Administration, Office of Energy Information and Analysis, Office of Data and Analysis; ICF Inc.
ADDRESS: FEA, Washington, DC; ICF, 1900 M Street NW, Suite 400, Washington, DC 20036
1976, September
KEYWORDS: PROJECT INDEPENDENCE; PRICES; PETROLEUM; NATURAL GAS; SUPPLY (ECONOMICS); ENERGY MODELS; RESERVES; GEOLOGY; ECONOMIC MODELS; ENERGY SUPPLIES
AVAILABILITY: NTIS

Federal Energy Administration, Office of Energy Information and Analysis, Office of Data and Analysis; ICF Inc.
ADDRESS: FEA, Washington, DC; ICF, 1900 M Street NW, Suite 400, Washington, DC 20036
TITLE: Project Independence Evaluation System (PIES) Documentation. Volume 15. Methodology for Improving the Price Sensitivity of the PIES Oil and Gas Supply Curves to Responses to Non-Constant Prices
1976, September
KEYWORDS: PETROLEUM; NATURAL GAS; PROJECT INDEPENDENCE; SUPPLY (ECONOMICS); PRICES; ENERGY SUPPLIES; INVESTMENTS
AVAILABILITY: NTIS
ATTITUDES; ENVIRONMENTAL FACTORS

Friedenber, E.L.; Curry, E.
U.S. Dept. of Commerce, Bureau of Economic Analysis
ADDRESS: Washington, DC
TITLE: Per Capita Income; Regional and Metropolitan-Homestayl Patterns, 1965-75
Reprint from Survey of Current Business, November, 1977, 14-18
1977, November
KEYWORDS: REGIONAL ANALYSIS; INCOME; URBAN AREAS; RURAL AREAS; MIGRATION; INDUSTRIES; SOUTHEASTERN STATES; POPULATION (STATISTICAL); SOUTHWESTERN STATES; ROCKY MOUNTAINS; MANUFACTURING; GRAPHS (CHARTS); LABOR MIGRATION; HIRINGS; TALEBS (DATA); STATE ANALYSIS

Development Sciences Inc.
ADDRESS: East Sandwich, MA
TITLE: Application of New Energy Analysis to Consumer Technologies
Report No. ERDA 77-14, 371 p.
1977, February
SPONSOR: Energy Research and Development Administration, Office of Planning, Analysis, and Development
KEYWORDS: NET ENERGY; ENERGY CONSUMPTION; ENERGY DEPOTS; ENERGY SUPPLIES; RESIDENTIAL SECTOR; SPACE HEATING; HOT WATER HEATING; AIR CONDITIONING; ELECTRIC POWER; NATURAL GAS; PETROLEUM; COAL; SOLAR SPACE HEATING; BED WORMS; ANNUAL CYCLE ENERGY SYSTEM; STEAM; ELECTRIC POWER; AUTOMOBILES; ELECTRIC VEHICLES; TRANSPORTATION; INPUT-OFFSET ANALYSIS; TABLES (DATA); NUCLEAR ENERGY; GEOTHERMAL ENERGY; HYDROELECTRIC POWER; INDUSTRIAL SECTOR
AVAILABILITY: NTVIS

Fried, H.; Haven, J.; Wall, M.
Boston College, Laboratory of Psychosocial Studies
ADDRESS: Chestnut Hill, MA
TITLE: Travel Behavior — A Synthesized Theory
Draft report, c.p.
1977, March
KEYWORDS: TRANSPORTATION; TRAVEL BEHAVIOR; SOCIO-ECONOMIC FACTORS; URBAN TRANSPORTATION;

<236> COPT.
Systems, A Feasibility Study
Report No. CORR/4707-1, NIA-PF-70, 250
1976, September
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: HYDROGEN FUELS; RAIL TRANSPORTATION; RAILROAD FUELS; TRANSPORTATION; DIESEL ENGINES; INTERNAL COMBUSTION ENGINES; MODIFICATIONS; PERFORMANCE; PHOTOGRAPHS; TABLES (DATA); GRAPHS (CHARTS)
AVAILABILITY: NTVIS

<237> COPT.
Development Sciences Inc.
ADDRESS: East Sandwich, MA
TITLE: Application of New Energy Analysis to Consumer Technologies
Report No. ERDA 77-14, 371 p.
1977, February
SPONSOR: Energy Research and Development Administration, Office of Planning, Analysis, and Development
KEYWORDS: NET ENERGY; ENERGY CONSUMPTION; ENERGY DEPOTS; ENERGY SUPPLIES; RESIDENTIAL SECTOR; SPACE HEATING; HOT WATER HEATING; AIR CONDITIONING; ELECTRIC POWER; NATURAL GAS; PETROLEUM; COAL; SOLAR SPACE HEATING; BED WORMS; ANNUAL CYCLE ENERGY SYSTEM; STEAM; ELECTRIC POWER; AUTOMOBILES; ELECTRIC VEHICLES; TRANSPORTATION; INPUT-OFFSET ANALYSIS; TABLES (DATA); NUCLEAR ENERGY; GEOTHERMAL ENERGY; HYDROELECTRIC POWER; INDUSTRIAL SECTOR
AVAILABILITY: NTVIS

<238>

<239> COPT.
Friedenber, E.L.; Curry, E.
U.S. Dept. of Commerce, Bureau of Economic Analysis
ADDRESS: Washington, DC
TITLE: Per Capita Income; Regional and Metropolitan-Homestayl Patterns, 1965-75
Reprint from Survey of Current Business, November, 1977, 14-18
1977, November
KEYWORDS: REGIONAL ANALYSIS; INCOME; URBAN AREAS; RURAL AREAS; MIGRATION; INDUSTRIES; SOUTHEASTERN STATES; POPULATION (STATISTICAL); SOUTHWESTERN STATES; ROCKY MOUNTAINS; MANUFACTURING; GRAPHS (CHARTS); LABOR MIGRATION; HIRINGS; TALEBS (DATA); STATE ANALYSIS

<240> COPT.
Gaddy, J.L.
Missouri, University of, Dept. of Chemical Engineering
ADDRESS: Rolla, MO 65401
TITLE: Toward Establishing a National Energy Policy
Energy Communications, 3(3), 273-291
1977
KEYWORDS: COAL; ENERGY CONSUMPTION; ELECTRIC POWER GENERATION; PETROLEUM; COAL LIQUEFACTION; COAL GASIFICATION; RESERVES; ENERGY POLICY; ENERGY RESOURCES; NATURAL GAS; EXPORTS; TALEBS (DATA); ENERGY CONVERSION; EFFICIENCY; SPACE HEATING; BATTERIES; FOSSIL FUELED POWER PLANTS; PETROCHEMICALS; TRANSPORTATION

<241> COPT.
Galbraith, A.J., Jr.
Lockheed Missiles and Space Co. Inc., Lockheed Palo Alto Research Laboratory
ADDRESS: Palo Alto, CA
TITLE: The Lithium-Water-Air Battery for Automotive Propulsion
<256>
<256> CONT.

GASOLINE; DIESEL FUELS; FOSSIL FUELS; TABLES (DATA): GRAPHS (CHARTS); DATA BASES; SOLID; ALLOYS; CARBON; VEHICLE; RESIDENTIAL SECTOR; INTRACITY TRAFFIC; COMMERCIAL SECTOR; NONRESIDENTIAL SECTOR; PERSONAL OILS; DITTERLILES; FUEL OIL; COMPUTER PROGRAMS; SEASONAL VARIATIONS.

AVAILABILITY: NTIS

<257>
Goldman, C.H.
Mobil Research Corp.
ADDRESS: P.O. Box 1025, Princeton, NJ 08540
TITLE: A Synthesized Engine Oil Providing Economy Benefits

Paper No. 768054, published in SAE SP-411, 11-21
1976, ANNUAL
SPONSOR: Society of Automotive Engineers, Milwaukee Section
KEYWORDS: AUTOMOTIVE ENGINES; PERFORMANCE; FUEL ECONOMY; LUBRICATING OILS; COMPARATIVE FUELS; COSTS; TESTING; IMPORTS
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 for SAE SP-411

<258>
Golob, T.F.; Nicotaidis, G.C.
General Motors Corp., Research Laboratory.
ADDRESS: Warren, MI 48090
TITLE: Comparison of Segmentations for Modeling Consumers' Preferences for Transportation Modes

1976, 38 p.
KEYWORDS: MODELS; CONSUMERS; ATTITUDES; MARKET; OTTAWA-CARLETON (CANADA): TRANSPORTATION PLANNING; URBAN TRANSPORTATION; DEMOGRAPHY; SOCIO-ECONOMIC FACTORS; TRAVEL; DEMAND (ECONOMICS); FORECASTING; SURVEYS; TABLES (DATA): GRAPHS (CHARTS): TRANSPORTATION MODE CHOICE

<259>
Gorham, W.C.
Northern California Gas Co.
ADDRESS: Los Angeles, CA
TITLE: Use of Natural Gas as a Primary Vehicular Fuel for a Public Utility Fleet

1975
SPONSOR: Society of Automotive Engineers
KEYWORDS: AUTOMOTIVE: WHITES; AUTOMOTIVE FLEETS; NATURAL GAS; AUTOMOTIVE FLEETS: LOS ANGELES; AUTOMOTIVE EMISSION CONTROL MODIFICATIONS; UTILIZATION; FUEL CONSUMPTION; MAINTENANCE; OPERATING COSTS; PUBLIC UTILITIES; ALTERNATE FUELS
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<260>
Gooding, D.L.
New York State Dept. of Transportation, Planning Division
ADDRESS: Albany, NY 12232
TITLE: Automotive Energy Use: A Baseline Projection for New York State

1977, August
SPONSOR: U.S. Dept. of Transportation
KEYWORDS: ENERGY CONSERVATION; FORECASTING; AUTOMOBILES; FUEL CONSUMPTION; EFFICIENCY; GROWTH; VEHICLES; DIESEL; CARBON; VEHICLE REGISTRATIONS; TABLES (DATA): REGIONAL ANALYSIS; FUEL ECONOMY; HIGHWAY TRANSPORTATION; URBAN TRANSPORTATION; VEHICLE MILES TRAVELED

<261>
Gordon Associates Inc.
ADDRESS: 711 Third Ave., New York, NY

1976, June 25
SPONSOR: Federal Energy Administration, Office of Industrial Reporting Programs
KEYWORDS: ENERGY CONSERVATION; PETROLEUM INDUSTRY; COAL INDUSTRY: EQUIPMENT; DESIGN; DIAGRAMS; HEAT EXCHANGERS; TABLES (DATA); OCTANE; PETROLEUM REFINING; CONCRETE; ASPHALTS; LUBRICATING OILS; CAPITAL COSTS; ECONOMIC ANALYSIS; PETROLEUM PRODUCTS; EFFICIENCY; COKE; FORECASTING; GASOLINE; ENERGY CONSUMPTION; POLLUTION CONTROL; CAPACITY; PETROLEUM

AVAILABILITY: NTIS

<262>
Gould, R.H.; Malliaris, A.C.
U.S. Dept. of Transportation, Transportation System Center.
ADDRESS: Kendall Square, Cambridge, MA 02142
TITLE: Highway Fuel Consumption Computer Model: Version 1

1976, April
SPONSOR: U.S. Dept. of Transportation, Office of the Assistant Secretary for Systems Development and Technology; U.S. Dept. of Transportation, Office of the Assistant Secretary for Policy and International Affairs
KEYWORDS: MODELS; AUTOMOBILES; FUEL CONSUMPTION; URBAN TRANSPORTATION; VEHICLE MILES TRAVELED; VEHICLE REGISTRATIONS; VEHICLE MILES TRAVELED; GRAPHS (CHARTS)

AVAILABILITY: NTIS

<263>
Gray, R.; Pratsch, L.; Sterling, R.
U.S. Environmental Protection Agency; U.S. Dept. of Energy; Assistant Secretary for Conservation and Solar Applications, Transportation Planning Office
ADDRESS: Washington, DC
TITLE: Vanpooling: An Update

1976, May
KEYWORDS: VANPOOLS; STATE ANALYSIS; COSTS; BIBLIOGRAPHY; OWNERSHIP; GROWTH; OPERATION

AVAILABILITY: GPO
Considerations in Redesigning a Gasoline Engine into a Diesel Engine for Passenger Car Service


KEYWORDS: ELECTRIC VEHICLES; DIESEL ENGINES; AUTOMOTIVE ENGINEERING; CONVERSION; DIAGNOSIS; AUTOMOBILES; MANUFACTURING; DESIGN

AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

Nagen, D.L.

TITLE: Methanol: Its Synthesis, Use as a Fuel, Economic, and Hazards


1976, December

SPONSOR: National Aeronautics and Space Administration

KEYWORDS: ELECTRIC VEHICLES; ENERGY FLOW; PROPULSION; ENERGY DEMAND

AVAILABILITY: NTIS
<279> COMP.
ELECTRIC VEHICLES; AIR POLLUTION; NOISE;
POLLUTION; ENERGY CONSUMPTION; PETROLEUM;
LIT-CYCLE COST; LOS ANGELES; PHILADELPHIA;
SAINT LOUIS (MISSOURI)

<280>
Hamilton, W.
General Research Corp.
ADDRESS: Santa Barbara, Ca.
TITLE: Basic Requirements for Urban Cars

KEYWORDS: TPAM TRANSPORTATION; AUTOMOBILE DRIVERS; VEHICLE MILES TRAVELED; VEHICLE TRIPS; RESEARCH; LOS ANGELES; WASHINGTON DC; OWNERSHIP; AGE GROUPS

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $2.50

<281>
Hamilton, W.; Haqey, G.
General Research Corp.; Energy Research and Development Administration
ADDRESS: ERDA, Washington, DC
TITLE: Impacts of Future Use of Electric Cars in U.S. Cities
Paper presented at the Fourth International Electric Vehicle Symposium, held in Dusseldorf, Germany, August 31 - September 2, 1976, 13 p.

SPONSOR: Electric Vehicle Council; International Union of Producers and Distributors of Electrical Energy

KEYWORDS: ELECTRIC VEHICLES; TRANSPORTATION; LEAD-ACID BATTERIES; ENERGY; FORECASTING; GRAPHS (CHARTS); NICKEL-ZINC BATTERIES; COSTS; "ABLES (DATA)"; AIR POLLUTION; SAINT LOUIS (MISSOURI); PHILADELPHIA; LOS ANGELES; GOVERNMENT POLICIES; PETROLEUM

AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016 $1.50

<282>
Hamilton, W.P.
General Research Corp.
ADDRESS: P.O. Box 3687, Santa Barbara, CA 93105
TITLE: Applicability of Electric Cars
1977, December

SPONSOR: U.S. Dept. of Energy

KEYWORDS: AUTOMOBILE DRIVERS; DISTANCE; ELECTRIC VEHICLE RANGE; VEHICLE PARKING; VELOCITY; FORECASTING; SURVEYS; VEHICLE TRIPS; URBAN AREA; PASSengers; GRAPHS (ChARTS); NiCROnS; PASSENGER TRANSPORTATION; BATTERIES; BATTERY CHANGING

<284> Hanbo, K.K.
General Motors Corp., Buick Motor Division
TITLE: High Performance Electric Commercial Vehicles for City Use

SPONSOR: Society of Automotive Engineers

KEYWORDS: ELECTRIC VEHICLES; VANS; LEAD-ACID BATTERIES; ELECTRIC POWER DEMAND; RATES; ECONOMICS; URBAN TRANSPORTATION

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $2.75

<285> Harris, R.G.
California, University of, School of Business Administration
ADDRESS: Berkeley, CA
TITLE: Economies of Traffic Density in the Rail Freight Industry
Bell Journal of Economics, 8(2), 556-564
1977, Autumn

SPONSOR: Alfred P. Sloan Foundation

KEYWORDS: RAIL TRANSPORTATION; ECONOMICS; TRAFFIC; COSTS; ECONOMIC ANALYSIS; GOVERNMENT POLICIES; RATES (COSTS)

<286> Hartgen, D.T.
New York State Dept. of Transportation, Planning Division
ADDRESS: Albany, NY 12232
TITLE: Ridesharing Behavior: A Review of Recent Findings

TRANSPORTATION RESEARCH RECORD 565, 1-5
1976
SPONSOR: National Academy of Sciences, Transportation Research Board

KEYWORDS: TRANSPORTATION; PLANNING; LEAD USE; LOCAL GOVERNMENT; GROWTH; GOVERNMENT POLICIES

AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave., NW, Washington, DC 20418 $6.00 for Transportation Research Record No. 565

<287> Hartgen, D.T.
New York State Dept. of Transportation, Planning Division
ADDRESS: Albany, NY 12232
TITLE: Ridesharing Behavior: A Review of Recent Findings

TRANSPORTATION RESEARCH RECORD 565, 1-5
1976
SPONSOR: National Academy of Sciences, Transportation Research Board

KEYWORDS: TRANSPORTATION; PLANNING; LEAD USE; LOCAL GOVERNMENT; GROWTH; GOVERNMENT POLICIES

AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave., NW, Washington, DC 20418 $6.00 for Transportation Research Record No. 565
<925> COPT.
Paper published in Transportation Research Record 987, 30-41
1976
SPONSOR: National Academy of Sciences, Transportation Research Board
KEYWORDS: RESEARCH; TRAVEL TIMES; MOBILITY; VEHICLE TRIPS
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418
$7.45 for Transportation Research Record 587

<br><br>

<926> Wills, A.R.
California Institute of Technology
ADDRESS: Pasadena, CA 91109
TITLE: Caltech Seminar Series on Energy Consumption in Private Transportation: A Survey of the Literature
Report No. PB-233549, DOT-TST-75-6, 28 p.
1976, June 10
SPONSOR: U.S. Dept. of Transportation
KEYWORDS: CONSUMPTION; ENERGY CONSUMPTION; AUTOMOBILES; MARS TRANSPORTATION; SOCIO-ECONOMIC FACTORS
AVAILABILITY: NTIS

<br><br>

<927> Nicks, G.; Oliver, R.W.; Petecena, G.L.
Southern California Association of Governments
ADDRESS: Anaheim, CA 92802
TITLE: Planning for the Automobile in the SCAG Region: An Evaluation of Alternatives for Reducing Automobile Emissions and Fuel Consumption
1976, August
SPONSOR: U.S. Dept. of Transportation, Federal Highway Administration
KEYWORDS: PLANNING; AUTOMOBILES; AUTOMOTIVE EMISSIONS; FUEL CONSUMPTION; CALIFORNIA; INSPECTION; MAINTENANCE; STANDARDS; FUEL ECONOMY; GASOLINE; ALLOCATIONS; RATIOS; PRICES; TAXES; USE; VEHICLE REGISTRATION; TRAFFIC CONTROL; ENERGY CONSUMPTION; GOVERNMENT POLICIES; SPEED LIMITS; TABLES (DATA); FORECASTING; STATE GOVERNMENT
AVAILABILITY: NTIS

<br><br>

<928> Hill, S.M.
Teledyne Continental Motors, General Products Division
ADDRESS: 76 Getty Street, Muskegon, MI 49442
TITLE: Automotive Diesel Technology Program: Final Report, Period June 1975-April 1977
Report No. 28V-1099-1, 122 p.
1977, August
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: AUTOMOBILES; DIESEL ENGINES; DESIGN; AUTOMOTIVE EMISSIONS; SIMULATION; EXHAUST REINCIRCULATION SYSTEMS
AVAILABILITY: GO

<br><br>

<929> Hill, R.M.; Dodg, J.L.
Teledyne Continental Motors, General Products Division
ADDRESS: 76 Getty Street, Muskegon, MI 49442
TITLE: Automotive Diesel Technology Program: Final Report, Period June 1975-April 1977
Report No. 28V-1099-1, 122 p.
1977, August
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: AUTOMOBILES; DIESEL ENGINES; TECHNOLOGY; RESEARCH PROGRAMS; FUEL ECONOMY; DESIGN; AUTOMOTIVE EMISSIONS; SIMULATION; EXHAUST REINCIRCULATION SYSTEMS
AVAILABILITY: GO

<br><br>

<930> Hilla, F.J.; Schlyerbach, C.G.
Mobil Research and Development Corp.; Mobil Oil Corp.
ADDRESS: Washington, D.C. 20460
TITLE: Diesel Fuel Properties and Engine Performance
1977
SPONSOR: Society of Automotive Engineers
KEYWORDS: DIESEL FUELS; PERFORMANCE; TESTING; TABLES (DATA); AUTOMOTIVE EMISSIONS; EUROPE; FUEL CONSUMPTION; PETROLEUM REFINING; AUTOMOBILES
AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<br><br>

<931> Hinton, R.G.; Forrest, L.; Buclon, B.P.; Davey, T.H.; Sheahan, R.A.; Swan, K.B.
Aerospace Corp., Environment and Energy Conservation Division
ADDRESS: El Segundo, CA 90245
TITLE: Survey of Driver Aid Devices for Improved Fuel Economy
1976, November
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology, Office of Systems Engineering, U.S. Dept. of Transportation, Transportation Systems Center
KEYWORDS: FUEL ECONOMY; FLOWMETERS; ACCELEROMETERS; FLOWMETERS; ENERGY CONSERVATION; TABLES (DATA); GRAPHS (CHARTS); COMPARATIVE EVALUATIONS; AUTOMOBILE DRIVERS; BEHAVIOR; EQUIPMENT; VELOCITY; ACCELERATION
AVAILABILITY: NTIS

<br><br>

<932> Hittman Associates Inc.
ADDRESS: Columbus, OH 43204
1977, August
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: HIGHWAY TRANSPORTATION; ENERGY

<br><br>
<302> COST.
CONSUMPTION: EFFICIENCY; FUEL ECONOMY; PATTERN; RETROFITTING: COMPARATIVE EVALUATIONS; TRUCKS; AUTOMOBILES; MARKET; PASSENGER TRANSPORTATION; CARGO TRANSPORTATION: BUSES (Vehicles); MODELS; MOBILITY: ENVIRONMENTAL IMPACT; ECONOMICS; GRAPHS (CHARTS); EQUIPMENT; GOVERNMENT POLICIES; RETROFIT DEVICES

<303> Nach, I.
Resources for the Future Inc.
ADDRESS: 1755 Massachusetts Avenue NW., Washington, DC 20036
TITLE: Energy Use in the United States by State and Region
Research Paper R-9, 737 p.
1978, April
KEYWORDS: STATE ANALYSIS; PRICES; ENERGY CONSUMPTION: ACCOUNTING; TABLES (DATA); ENERGY SOURCES: REGRESSION ANALYSIS; PETROLEUM PRODUCTS: NATURAL GAS; ELECTRIC POWER: COAL; HYDROELECTRIC POWER; NUCLEAR POWER; COMPARATIVE EVALUATIONS; REGIONAL ANALYSIS: RESIDENTIAL SECTOR; INDUSTRIAL SECTOR: COMMERCIAL SECTOR: GOVERNMENT POLICIES; CARBON; PETROLEUM PRODUCTS

<304> Noord, W.P.; Levinson, H.S.
Smith (Wilton) and Associates
ADDRESS: Los Angeles, CA
TITLE: Attitude Surveys, Transit Planning, and Automobile-Use Constraints
Paper published in Transportation Research Record 625, 1-9
1977
SPONSOR: National Academy of Sciences, Transportation Research Board
KEYWORDS: ATTITUDES; PASSENGER TRANSPORTATION; PLANNING; AUTOMOBILES; SURVEYS; AUTOMOBILES; DRIVERS; MASS TRANSPORTATION; TRAVEL TIME; BUSES (Vehicles); QUESTIONNAIRES; VEHICLE MAINTENANCE; COSTS
AVAILABILITY: National Academy of Sciences, Transportation Research Record, 2001 Constitution Ave. NW, Washington, DC 20418 $3.20 for Transportation Research Record 625

<305> Hofmair, P.; Wiedemann, R.
Volkswagen AG
ADDRESS: Germany
Papern No. 750591 presented at the Society of Automotive Engineers West Coast Meeting, Jack Tar, San Francisco, CA, August 9-12, 1976, 42 p.
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: SYSTEMS ANALYSIS; ENGINE; BAKING CYCLE ENGINES; DIESEL ENGINES; STRATIFIED CHARGE ENGINES; INTERNAL COMBUSTION ENGINES; GAS TURBINE ENGINES; COMPARATIVE EVALUATIONS; EMISSION REDUCTION: PM EMISSIONS: FUEL ECONOMY; DESIGN STRUCTURE; GRAPHS (CHARTS)
AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15086

<306> Nolte, R.M.
Ilan - Amilly and Federation
TITLE: Coordination of Urban Development and Planning and Developing Transportation Facilities: What Can We Learn from Abroad?
Paper presented at the 54th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 565, 47-52
1976
SPONSOR: National Academy of Sciences, Transportation Research Board
KEYWORDS: TRANSPORTATION; PLANNING; LEGAL ASPECTS; FINANCING; COMPARATIVE EVALUATIONS
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $6.00 for Transportation Research Record No. 565

<307> Hopkins, J.B.
U.S. Dept. of Transportation, Transportation Systems Center
ADDRESS: Kendall Square, Cambridge, MA 02142
Report No. PB-244150, FRA-ORD-75-74.1
1975, May
SPONSOR: U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development
KEYWORDS: FUEL CONSUMPTION: RAIL TRANSPORTATION; MODELS; FORECASTING; LOAD FACTOR; WEIGHT; HIGHWAY TRANSPORTATION; CARGO TRANSPORTATION: PASSENGER TRANSPORTATION: GRAPHS (CHARTS); EFFICIENCY TRANSPORTATION; VELOCITY
AVAILABILITY: NTIS

<308> Hopkins, J.B.; Newfell, A.T.
U.S. Dept. of Transportation, Transportation Systems Center
ADDRESS: Kendall Square, Cambridge, MA 02142
1977, September
SPONSOR: U.S. Dept. of Transportation, Federal Railroad Administration, Office of Research and Development
KEYWORDS: RAILROADS: FUEL CONSUMPTION: RAIL TRANSPORTATION: CARGO TRANSPORTATION: VELOCITY; WEIGHT; TABLES (DATA)
AVAILABILITY: NTIS

<309> Novovi, R.D.
General Motors Corp., Research Laboratories, Transportation and Urban Analysis Dept.
ADDRESS: Warren, MI 48090
TITLE: An Attitudinal Model of Carpooling Behavior
1975, August 31
KEYWORDS: ATTITUDES: MODELS; CARPOOLING; BEHAVIOR: MEASUREMENT; INCENTIVES; QUESTIONNAIRES


Paper presented at the Fourth International Electric Vehicle Symposium, held in Dusseldorf, Germany, August 31 - September 2, 1976, 17 p.
1976, September.
KEYWORDS: DEVELOPMENT; ELECTRIC VEHICLES; TABLES (DATA); GRAPHS; CHARTS; ENERGY CONSUMPTION; LEAD-ACID BATTERIES; AUTOMOBILES; TRUCKS; COMPARATIVE EVALUATIONS; ENERGY CONSERVATION; PERFORMANCE
AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016 $1.50

<318>

International Road Federation
ADDRESS: 1023 Washington Building, Washington, DC
Annual publication 1975
KEYWORDS: STATISTICS; ROADS; TABLES (DATA); PRODUCTION; EXPORTS; VEHICLES; INTERNATIONAL TRADE; VEHICLE REGISTRATIONS; IMPORTS; TRAFFIC; AUTOMOTIVE FUELS

<322>

Interstate Commerce Commission
ADDRESS: Washington, DC
1978
KEYWORDS: TRANSPORTATION; REGULATIONS; CONSUMERS; PROTECTION; RAIL TRANSPORTATION; CARGO TRANSPORTATION; PIPELINE TRANSPORTATION; TARIFFS; WATER TRANSPORTATION; LEGISLATION; FINANCIAL DATA; FINANCIAL MANAGEMENT
AVAILABILITY: GPO, Stock No. 026-000-01096-9

<323>

Interstate Commerce Commission, Bureau of Accounts
ADDRESS: Washington, DC 20423
TITLE: Freight Commodity Statistics: Motor Carriers of Property, Year Ended December 31, 1974
97 p.
KEYWORDS: COMMODITIES; REGIONAL ANALYSIS; TABLES (DATA); CARGO TRANSPORTATION; REVENUE; Tonnage; Trucks; Statistics; Weight
AVAILABILITY: GPO $1.75, Stock No. 026-000-01054-3, Catalog No. IC 1-9022:97A

<325>

Interstate Commerce Commission, Bureau of Accounts
ADDRESS: Washington, DC
TITLE: Traffic Commodity Statistics: Motor Carriers of Property, Year Ended December 31, 1975
97 p.
KEYWORDS: COMMODITIES; REGIONAL ANALYSIS; TABLES (DATA); CARGO TRANSPORTATION; REVENUE; Tonnage; Trucks; Statistics; Weight
AVAILABILITY: GPO $1.75, Stock No. 026-000-0069-1

<327>

IHLY, R.
ADDRESS: General Technical Services Inc.
TITLE: Projections of Automobile Use and Ownership Based on Lifestyle Factors: First Year Analysis and Scenarios
1977, July
KEYWORDS: AUTOMOBILES; OWNERSHIP; FORECASTING; VEHICLE TRIPS; VEHICLE MILES TRAVELED; MODELS

<319>

Ikerd, A.S.: Carson, S.L.
General Technical Services Inc.
ADDRESS: 8794 West Chester Pike, Upper Darby, PA 19082
1977, September
SPONSOR: G.S. Dept. of Transportation, Transportation Systems Center, Office of System Research and Analysis
KEYWORDS: PHYSICS; STATISTICAL ANALYSIS; URBAN AREAS; TRANSPORTATION; BOLTZMANN STATISTICS; SYSTEMS ANALYSIS; MODELS; PLANNING
AVAILABILITY: NTIS

<320>

Ikerd, A.S.: Carson, S.L.
General Technical Services Inc.
ADDRESS: 8794 West Chester Pike, Upper Darby, PA 19082
1977, September
SPONSOR: G.S. Dept of Transportation, Transportation Systems Center, Office of System Research and Analysis
KEYWORDS: POPULATION (STATISTICS); SYSTEMS ANALYSIS; POPULATION DYNAMICS; SOCIOCIZATION FACTORS; URBAN AREAS; HISTORY; TRANSPORTATION; MODELS
AVAILABILITY: NTIS

<321>

Izai, K.
Toyota Motor Co., Ltd.
ADDRESS: Toyota, Japan
TITLE: Development of Electric Vehicles at Toyota
Transport Statistics in the United States

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC

Title: Transport Statistics in the United States for the Year Ended December 31, 1975. Part I: Railroads, Their Lessors and Proprietary Companies, and Electric Railways

Annual report, 186 p.

Keywords: Rail Transportation; Railroads; Financial Data; Regional Analysis; Income; Operating Costs; Cargo Transportation; Equipment; Tables (Data); Balance Sheets; Revenue; Expenses; Statistics; Passenger Transportation

Availability: GPO, Stock No. 026-000-01087-4; See AD 70-4994 for 1974 Statistics

---

Transportation; Regional Transportation

<326>

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC


Annual report, 149 p.

Keywords: Air Transportation; Airlines; Financial Data; Regional Analysis; Income; Operating Costs; Cargo Transportation; Equipment; Tables (Data); Balance Sheets; Revenue; Expenses; Statistics; Passenger Transportation

Availability: GPO, Stock No. 026-000-01088-2; See AD 70-5000 for 1974 Statistics

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Transportation; Regional Transportation

<327>

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC


11 p.

Keywords: Cargo Transportation; Financial Data; Revenue; Statistics; Ownership; Tables (Data)

Availability: GPO $0.40, Stock No. 026-000-01089-0

---

Transportation; Regional Transportation

<328>

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC

Title: Transport Statistics in the United States for the Year Ended December 31, 1975. Part IV: Private Car Lines

6 p.

Keywords: Statistics; Ownership; Rail Transportation; Refrigeration; Finacial Data; Operation; Revenue; Tables (Data)

Availability: GPO $0.35, Stock No. 026-000-01092-7

---

Transportation; Regional Transportation

<329>

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC

Title: Transport Statistics in the United States for the Year Ended December 31, 1975. Part V: Motor Carriers

28 p.

Keywords: Cargo Transportation; Statistics; Revenue; Regional Analysis; Intercity Transportation; Financial Data; Operation; Tables (Data); Income; Equipment; Transportation

Availability: GPO

---

Transportation; Regional Transportation

<330>

Interstate Commerce Commission, Bureau of Accounts

Address: Washington, DC 20423

Title: Class I Railroads: Financial and Operating Statistics for the Twelve Months Ended December 31, 1975

Semi-Annual publication, Statement No. 100, 19 p.

Keywords: Railroads; Financial Data; Statistics; Tables; Revenue; Operating Costs; Rail Traffic; Income; Passenger Transportation; Equipment; Cargo

---

Transportation; Regional Transportation

<331>

Stick, R.B.; Pascale, R.P.

National Academy of Sciences, National Research Council, Transportation Research Board, TRISSET Secretariat

Address: 2101 Constitution Ave., Washington, DC 20550

Title: TRISSET: Directory to Transportation Research Information Resources


1976, May

Sponsor: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology, Transportation Research Activity Information Service

Keywords: Directories; Transportation; Rail Transportation; Highway Transportation; Urban Transportation; Data Bases; Public Transportation; Environmental Quality; Information; Information Systems

Availability: NTIS

---

Transportation; Regional Transportation

<332>

Irving-Cloud Publishing Co.

Address: 7300 N. Cicero Ave., Lincolnwood, IL 60646

Title: An Analysis of Marketing Trends in the Automotive Service Industry Through 1975

V.P.

1975, December

Keywords: Marketing; Automotive Industry; Services; Tables (Data); Statistics; Gasoline; Maintenance; Sales; Employment; Financial Data; Repair; Automobiles

---

Transportation; Regional Transportation

<333>

Janicki, R.

Title: The Diesels Are Coming

California Highway Patrolmen, 41(11), 10, 58

1978, January

Keywords: Diesel Engines; Automobiles; Fuel Economy; Comparative Evaluations; Diagnoses; Ignition Systems; Compression; Fuel Injection Systems; Pre-Chamber Engines; Public Opinion

---

Transportation; Regional Transportation

<334>

Jalavich, M.S., Pescott (Jack) Associates Inc.

Address: 5456 Wisconsin Avenue, Suite 1150, Chevy Chase, MD 20015

Title: A Study of the Determinants of Freight Model Choice


1978

Sponsor: U.S. Dept. of Energy, Division of Transportation Energy Conservation

Keywords: Cargo Transportation; Decisions; Weight; Input-Output Analysis; Commodity; Forecasting; Models; Rates (Costs); Distance; Determinants

---
K'YVORDS: MARKET; Kalish, Kalish, <336>
AVAILABILITY: Society of Automotive Engineers
KYeORDS:
Paper No. <335>
TITLE: Energy Efficiency Improvement Target in
AVAILABILITY: KYNORDS:
TITLE:
Hitachi Ltd., Masama, R.; <338>
AVAILABILITY:
KEYWORDS: BICYCLES: ACCIDENTS; SURVEYS; Preliminary Research Report
ADDESS:
1.S. Kaplan, <337>
AVAILABILITY: Electric Vehicle Council,
SPONSOR: Electric Vehicle
1971, 22
b. OTIESTNAIRES
Development Association Inc. Transportation Admirlistration
INC.,
COMPUTERIZED
February Exposition, Cobo Hall, Detroit, Michigan,
AVAILABILITY:
EVALUATIONS;
ENGINEERS' VEHICLES; INTERNAL
KEYWORDS: ELECTRIC VEHICLES; PER'OPMARCE; KEIORDS:
ADDRESS: 100 Commonwealth Drive, Warrendale, PA
15096 $2.50

Kaplan, J.A.
N.J. Dept. of Transportation, Federal Highway
ADDRESS: 400 7th St. SW, Washington, DC 20590
"TITLE: The Potential Market for On-the-Road Electric Vehicles
1975, July
KEYWORDS: BICYCLES: ACCIDENTS; SURVEYS; DEMOGRAPHIC SURVEYS; VEHICLE TREES; AGE
AVAILABILITY: NTIS

Hattori, S.; Sawa Hash; Hitachi Ltd., Hitachi Laboratory
ADDRESS: Japan
TITLE: The Efficiency Improvement of Electric Vehicles by Regenerative Braking
Paper No. 780291, presented at the Society of Automotive Engineers' Congress and
1978
KEYWORDS: ELECTRIC VEHICLES; REGENERATIVE BRAKING; DESIGN: EFFICIENCY; ELECTRIC VEHICLE
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA
15096 $2.50

Kearney (A.I.) Inc.
ADDRESS: 100 South Wacker Drive, Chicago, IL
60606
TITLE: Urban Goods Movement Demonstration Project Design Phases I and II. Executive Summary
1976, May
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration
KEYWORDS: CARGO TRANSPORTATION; AIR POLLUTION; NOISE POLLUTION; ELECTRIC CONSUMPTION; COSTS;
TABLES (DATA); TRANSPORTATION; COMPARATIVE EVALUATIONS; FUEL CONSUMPTION; TRUCKS;
TRAFFIC; LAND USE; PASSENGER TRANSPORTATION; URBAN TRANSPORTATION; COMMODITIES
AVAILABILITY: NTIS

Keck, C.A.; Bilbao, W.S.; Hilic, P.L.;
Trentacoste, M.T.
New York State Dept. of Transportation, Planning Division
ADDRESS: Albany, NY 12232
TITLE: Changes in Individual Travel Behavior During the Energy Crisis, 1973-74
1974, August
SPONSOR: U.S. Dept. of Transportation
KEYWORDS: ENERGY CONSERVATION; TRAVEL; BEHAVIOR; GASOLINE; CANOEING; NEW YORK; URBAN
TRANSPORTATION; SHORTAGES; VEHICLE REGISTRATION; ATTITUDES; AUTOMOBILE DRIVERS;
SURVEYS; QUESTIONNAIRES; RESIDENTIAL SECTOR; TABLES (DATA); FUEL ECONOMY; FUEL
CONSUMPTION; PURCHASING; DEMAND (ECONOMICS)

Keller, J.L.; Nakaguchi, G.H.; Here, J.C.
Union Oil Co. of California, Research Dept.
ADDRESS: Brea, CA
TITLE: Methanol Fuel Modification for Heavy Vehicle Use. Final Report
1974, July
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: METHANOL; ALTERNATE FUELS; ALCOHOL FUELS; ENGINES; MODIFICATIONS; GASOLINE;
PROPERTIES; VEHICLES; UTILIZATION; PERFORMANCE; ENVIRONMENTAL IMPACT;
TRANSPORTATION; WATER; TESTING; TABLES (DATA); TOXICITY; SAFETY
AVAILABILITY: NTIS
<38> Reed, J.A.; LeMat, R.P.
Mathematical Policy Research Inc.: Hendrickson Corp.
ADDRESS: 3491 L Street NW, Washington, DC 20037; 3401 L Street NW, Suite 416, Washington, DC 20037
TITLE: System Flow Chart, Phase I
Comprehensive Human Resources Data System
22 p.
1977, June 30
SPONSOR: Federal Energy Administration, Office of Data Services
KEYWORDS: SYSTEMS ANALYSIS; FLOW CHARTS; FORECASTING; INFORMATION SYSTEMS; DATA PROCESSING; ENERGY POLICY

<382> King, R.L.
National Academy of Sciences, National Research Council, Transportation Research Board, National Cooperative Highway Research Program
ADDRESS: 1001 Constitution Ave. NW, Washington, DC 20418
TITLE: Suburban Highways and Roads as Instruments of Land Use Change
Paper presented at the 54th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 565, 53-60
1976
KEYWORDS: LAND USE; HIGHWAYS; SUBURBAN AREAS; UTILIZATION; TRAFFIC CONTROL; GROWTH
AVAILABILITY: $6.00 for Transportation Research Record No. 565

<385> Hidas, R.M.; Barrett, B.J.; Koeing, D.R.
Los Alamos Scientific Laboratory
ADDRESS: Los Alamos, NM 87545
TITLE: Energy Flow Patterns for 1975
1977, June
SPONSOR: Energy Research and Development Administration, Federal Energy Administration
KEYWORDS: ENERGY POLICIES; ENERGY FLOW; ENERGY CONSUMPTION; INDUSTRIAL SECTOR; COMMERCIAL SECTOR; RESIDENTIAL SECTOR; SUMS (DATA); NUCLEAR ENERGY; NATURAL GAS; PRODUCTION; ELECTRIC POWER GENERATION; TRANSPORTATION; REGIONAL ANALYSIS; DIAGRAMS
AVAILABILITY: NTIS

<386> Kim, J.A.
Mathematical Policy Research Inc.
ADDRESS: 2101 L Street NW, Suite 416, Washington, DC 20037
1977, June 10
SPONSOR: Federal Energy Administration, Office of Data Services
KEYWORDS: ENERGY POLICIES; TABLES (DATA); GASOLINE; PRICES; THERMAL INSULATION; SOCIO-ECONOMIC FACTORS; ECONOMIC IMPACT; RESIDENTIAL SECTOR; ENERGY MODELS; FORECASTING

<353> Kline, J.L.; Tew, R.C., Jr.
National Aeronautics and Space Administration, Langley Research Center
ADDRESS: Langley Research Center, NASA 84435
TITLE: Analysis of Regenerated Single-Shaft Ceramic Gas-Turbine Engines and Reacting Fuel Economy in a Compact Car
1977, August
KEYWORDS: GAS TURBINE ENGINES; FUEL ECONOMY; CERAMIC ENGINES; HIGH TEMPERATURE; AUTOMOTIVE ENGINES; DESIGN; COMPUTER PROGRAMS; COMPARATIVE EVALUATIONS; GRAPH (DATA); AUTOMOBILES

<350> Kline, J.L.; Tew, R.C., Jr.
National Aeronautics and Space Administration, Langley Research Center
ADDRESS: Langley Research Center, NASA 84435
TITLE: Analysis of Regenerated Single-Shaft Ceramic Gas-Turbine Engines and Reacting Fuel Economy in a Compact Car
1977, August
KEYWORDS: GAS TURBINE ENGINES; FUEL ECONOMY; CERAMIC ENGINES; HIGH TEMPERATURE; AUTOMOTIVE ENGINES; DESIGN; COMPUTER PROGRAMS; COMPARATIVE EVALUATIONS; GRAPH (DATA); AUTOMOBILES

LaBelle, S. J. (ed.)
Argonne National Laboratory, Energy and Environmental Systems Division
Address: 9700 South Cass Avenue, Argonne, IL 60439
Title: Transportation Energy Conservation: Tools to Meet the National Objective
Report No. ANL-76-17, CONF-760224; summary of meeting held at Argonne National Laboratory, February 12, 1976, 63 p.
1976, March
Sponsor: Energy Research and Development Administration
Keywords: Energy Conservation; Urban Transportation; Government Policies; Energy Policy; Energy Consumption; Land Use; Transportation
Availability: NTS

Landgrebe, A. A.; Nelson, P. A.
Argonne National Laboratory, Chemical Engineering Division; Energy Research and Development Administration, Division of Conservation Research and Technology
Address: Argonne, IL 9700 South Cass Avenue, Argonne, IL 60439; ERDA, Washington, DC 20545
Title: Battery Research Sponsored by the U.S. Energy Research and Development Administration
1976
Sponsor: Energy Research and Development Administration
Keywords: Energy Conservation; Assistant Administrator for Conservation
Availability: NTS

Landman, A.
U.S. Dept. of Transportation, Transportation Systems Center
Address: Kendall Square, Cambridge, MA 02142
Title: Methanol as an Automotive Fuel with Special Emphasis on Methanol-Gasoline Blend
1977, April
Sponsor: U.S. Dept. of Transportation, Office of the Assistant Secretary for Systems Development and Technology, Office of Systems Engineering
Keywords: Methanol; Automotive Fuels; Gasoline; Testing; Production; Costs; Alternates Fuels
Availability: NTS

Leeg, S. L. (ed.)
National Academy of Sciences, National Research Council, Transportation Research Board
Address: 2101 Constitution Avenue NW, Washington, DC 20428
Title: Rail Transit
Transportation Research Record 627, 31 p.
1977
Keywords: Rail Transportation; Rapid Transit Systems; Land Use; Traffic Control; Transit Stations; Models; Maintenance
Availability: National Academy of Sciences, Transportation Research Board, 2101 Constitution Avenue NW, Washington, DC 20418 $2.20

Leopold, D. B.; Minton, M. G.; Weltzer, J.; Iora, T.
Aerospace Corp., Environmental Programs Group
Address: El Segundo, CA 90245
Title: Current Status of Alternative Automotive Power Systems and Fuels. Volume 1-4
Report No. EPA-440/3-76-013-a
1976, July
Sponsor: U.S. Environmental Protection Agency, Office of Air and Waste Management, Office of Mobile Source Air Pollution Control, Alternative Automotive Power Systems Division
Keywords: Alternative Fuels; Automobiles; Engines; Electric Vehicles; Research; Tables (Data); Diagrams; History; Automotive Fuels; Hybrid Electric-Powered Vehicles; Graphs (Charts)
Availability: NTS

Large, D. B.
Title: Hidden Waste
1976
Keywords: Energy Conservation; Electric Power Generation; Environmental Impact; Energy Flow; Residential Sector; Houses; Thermal Insulation; Retrofitting; Tables (Data); Heating Systems; Costs; Solar Space Heating; Air Conditioning; Energy Consumption; Appliances; Efficiency; Commercial Buildings; Fuel Cliffs; Materials; Manufacturing; Production; Waste Management; Refrigerators; Transportation; Petroleum; Cargo Transportation; Passenger Transportation; Food Industry; Industrial Sector
Availability: The Conservation Foundation, 1717 Massachusetts Ave NW, Washington, DC 20036

Laughlin, G. B. G.
National Governors' Association, Center for Policy Research
Address: 444 North Capitol Street, Washington, DC 20001
Title: Energy Conservation: The State of the States
1978, February
Sponsor: U.S. Dept. of Energy, Office of Intergovernmental Affairs
Keywords: Energy Conservation; State Analysis; Government Policies; State Government; Lighting Systems; Forecasting; Buildings; Standards; Tables (Data); Thermal Efficiency; Transportation; Residential Sector; Industrial Sector; Public Buildings; Building Codes
<366>
Lee, J.
Brown University, National Laboratory, Dept. of Applied Science, Energy Policy Analysis Group
ADDRESS: Boston, MA 02115
TITLE: Energy Supply and Demand in the Northeast United States - 1972
1975, September
SPONSOR: Energy Research and Development Administration
KEYWORDS: ENERGY SOURCES; ENERGY DEMAND; NORTH EASTERN STATES; REGIONAL ANALYSIS; NEW ENGLAND; NEW YORK; PENNSYLVANIA; NEW JERSEY; DELAWARE; MARYLAND; DISTRICT OF COLUMBIA; TALSIS (DATA); ENERGY CONSUMPTION; RESIDENTIAL SECTOR; COMMERCIAL SECTOR; INDUSTRIAL SECTOR; TRANSPORTATION; ELECTRIC POWER; MODELS; CONVERSION; FORECASTING; FUEL CONSUMPTION; PLANNING; STATE ANALYSIS
AVAILABILITY: NTIS

<367>
Lemann, L.B.
Kelsey Engineering Pty. Ltd.
ADDRESS: Sydney, Australia
TITLE: The Towable Electric City Transit System
Paper presented at the Fourth International Electric Vehicle Symposium, held in Dusseldorf, Germany, August 31 - September 2, 1976, 24 p.
1976, September
KEYWORDS: URBAN TRANSPORTATION; BUSES (VEHICLES); CONVERSION; ELECTRIC VEHICLES; PASSENGER TRANSPORTATION; PERFORMANCE; DIAGRAMS; BATTERIES; DESIGN; AUSTRALIA
AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016 $1.50

<368>
Lemen, R.R.
National Technical Information Service
ADDRESS: Springfield, VA 22161
TITLE: Natural Gas: Urban Transportation (A Bibliography with Abstracts)
Report No. NTIS/76-77/063 (supersedes NTIS/76-75/669 and NTIS/75-75/666), 82 p.
1977, July
KEYWORDS: BIBLIOGRAPHIES; NATURAL GAS; URBAN TRANSPORTATION; PETROLEUM; LIQUEFIED NATURAL GAS; MARINE TRANSPORTATION; PIPELINES; CRATRODYNAMICS; HAZARDS; PLANNING; FISHERIES; POLLUTION; ENVIRONMENTAL IMPACT; WATER SHIPS; ABSTRACTS
AVAILABILITY: NTIS

<369>
Leising, C.J.; Forchini, G.P.; Degrey, S.F.; Mingeso, J.D.
National Aeronautics and Space Administration, Jet Propulsion Laboratory
ADDRESS: California Institute of Technology, Pasadena, CA
Report No. SCOP/10174-02, 30 p.
1976, June
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: WASTE HEAT; FUEL ECONOMY; UTILIZATION; TRUCKS; DIESEL ENGINES; SPARK IGNITION ENGINES; GAS TURBINE ENGINES; STirling ENGINES; REACTOR CYCLE ENGINES; REGENERATOR
DRIVING CYCLE; ADIABATIC PROCESSORS; RECOVERY; TURBOCHARGING; TURBOCOMPRESSING; GRAPHS (CHARTS); TABLES; DATA; DIAGRAMS
AVAILABILITY: GPO, Stock No. 04-1-000-03151-5

<370>
Leonard, R.W., Wagner, R.D.
National Aeronautics and Space Administration, Langley Research Center
ADDRESS: Langley Station, VA
TITLE: Airframe Technology for Energy Efficient Transport Aircraft
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: TECHNOLOGY; AIRCRAFT; AERODYNAMICS; FUEL ECONOMY; EFFICIENT; DESIGN; LANDING FLOW; AIRFOILS; COMPOSITE MATERIALS; DIAGRAMS; GRAPHS (CHARTS); DESIGN; CONTROL EQUIPMENT; OPERATING COSTS
AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<371>
Lerman, S.R.
Massachusetts Institute of Technology, Dept. of Civil Engineering
ADDRESS: Cambridge, MA 02139
TITLE: Location, Housing, Auto Ownership and Mode to Work: A Joint Choice Model
1975, August
KEYWORDS: RESIDENTIAL SECTOR; TRANSPORTATION; SHOPPING TRIPS; MODELS; URBAN AREAS; BEHAVIOR; EMPLOYMENT; DECISIONS; SOCIO-ECONOMIC FACTORS; LAND USE; AUTOMOBILES; OWNERSHIP; HOUSING; DISTANCE; GRAPHS (CHARTS); ANALYSIS

<372>
Lerman, S.R.
Massachusetts Institute of Technology, Dept. of Civil Engineering
ADDRESS: Cambridge, MA 02139
TITLE: Application of Choice Theory to Residential Location and Related Household Decisions
1975, November
KEYWORDS: RESIDENTIAL SECTOR; URBAN TRANSPORTATION; MODELS; SHOPPING; URBAN AREAS; BEHAVIOR; EMPLOYMENT; DECISIONS; SOCIO-ECONOMIC FACTORS; AUTOMOBILES; OWNERSHIP; HOUSING; DISTANCE; GRAPHS (CHARTS); TABLES

<373>
Lehner, R.D.; Reiley, L.H.; Lehner, E.
Fuel Injection Development Corp.
ADDRESS: 110 Harding Avenue, Bellmawr, NJ 08030
1977, June 30
SPONSOR: Energy Research and Development Administration, San Francisco Operations Office; U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: FLYWHEELS; ENERGY STORAGE; DIAGRAMS; GRAPHS (CHARTS); ELECTRIC VEHICLES; TESTING; MODELS; MOTORS; SHAFTS; SHAFTS
AVAILABILITY: NTIS

<382> Lomcatoff, V.V.
Pacific Northwest Laboratories
ADDRESS: Richland, WA 99352
TITLE: Flywheel/Heat Engine Power for an Energy-Economic Personal Vehicle
1976, March
SPONSOR: Energy Research and Development Administration
KEYWORDS: FLYWHEELS; AUTOMOBILES; HEAT ENGINES; ENERGY CONSERVATION; TABLES (DATA); FUEL ECONOMY; DESIGN
AVAILABILITY: NTIS

<383> Lutth, J.N.
Princeton University, Dept. of Civil Engineering
ADDRESS: Princeton, NJ
TITLE: Energy Savings for Work Trips: Analysis of Alternative Commuting Patterns for New Jersey
Report presented at the 56th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 561, 39-48
1976
KEYWORDS: ENERGY CONSERVATION; COMPUTING; NEW JERSEY; ATPS; COMPARATIVE EVALUATIONS; ENERGY CONSERVATION; GOVERNMENT POLICIES; AUTOMOBILES; OCCUPANCY; MODELS; CARPOOLS
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $4.00 for Transportation Research Record 561

<384> Niel, D.J.: Yang, G.M.; Walter, W.
U.S. Dept. of Transportation, Transportation System Center
ADDRESS: Kendall Square, Cambridge, MA 02142
TITLE: Forecasting Models for Air Freight Demand and Protection of Cargo Activity at U.S. Air Hubs
1977, January
SPONSOR: U.S. Dept. of Transportation, Federal Aviation Administration, Office of Aviation Policy
KEYWORDS: FORECASTING; MODELS; CARGO TRANSPORTATION; AIR TRANSPORTATION; ECONOMIC MODELS; PASSENGER REVENUE; TARIFFS (DATA); PASSENGER TRAVEL; DEMAND (ECONOMIC)
AVAILABILITY: NTIS

<385> Mah, P.H.: Jones, P.S.
Georgia Institute of Technology
TITLE: Priority Analysis Procedure for Ranking Highway Improvement Projects
Report presented at the 56th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 585, 35-48
1976
KEYWORDS: HIGHWAYS; CONSTRUCTION; PLANNING; STATE GOVERNMENT; QUESTIONNAIRES
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $1.60 for Transportation Research Record 585

<386> Malliaris, A.C.: Hali, N.; Gould, H.B.
U.S. Dept. of Transportation
ADDRESS: Washington, DC
TITLE: Concise Description of Auto Fuel Economy and Performance in Recent Model Years
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ALGORITHMS; FUEL ECONOMY; VEHICLES; PERFORMANCES; ACCELERATION
AVAILABILITY: Society of Automotive Engineers Inc., 500 Commonwealth Drive, Warrendale, PA 15086 $2.75

<387> Handelker, D.H.: Steaper, F.A.
Washington, University of, School of Law
ADDRESS: Seattle, WA 98105
TITLE: New Frontiers for Land Development Controls
Paper presented at the 56th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 565, 6-11
1976
SPONSOR: National Academy of Sciences, Transportation Research Board
KEYWORDS: LAW DEVELOPMENT; POLLUTION REGULATIONS; TRANSPORTATION SYSTEMS; AIR POLLUTION; GOVERNMENT POLICIES
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $6.00 for Transportation Research Record No. 565

<388> Marcus, A.
Technical Technology Inc.
ADDRESS: 968 Albany-Shaker Road, Latham, NY
1977, November
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: TECHNOLOGY ASSESSMENT; EFFICIENCY; DESIGN; FABRICATION; ELECTRIC VEHICLES; MODELS; TABLES (DATA); TRANSPORTATION; GRAPHS
AVAILABILITY: NTIS

KEYWORDS: FUEL ECONOMY; AUTOMOBILES; TESTING; COMPARATIVE EVALUATIONS; ENVIRONMENTAL PROTECTION AGENCY; VS DON KELLOGG; OPERATION; DRIVING CYCLE; DATA ACQUISITION; MANUFACTURERS; CLASSIFICATIONS; GRAPHS (CHARTS)

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $3.50

<405> McNett, R.D.; Pirkey, D.; Bolle, R.
Federal Energy Administration
ADDRESS: Washington, DC
TITLE: Development of a System of Comparable Car Classes for Fuel Economy Labeling

SPONSOR: Society of Automotive Engineers
KEYWORDS: AUTOMOBILES; FUEL ECONOMY; COMPARATIVE EVALUATIONS; CLASSIFICATIONS; GRAPHS (CHARTS); ENVIRONMENTAL PROTECTION AGENCY; SIZE

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<406> Need, R.J.; Popeau, O.W.; Smith, B.S.
California, University of; Alaska, University of; Institute of Social, Economic and Governmental Research; B.S. Dept. of State
ADDRESS: CA, Santa Barbara, CA 93109; AD, College, AR 97901; DC, Washington, DC 20520
TITLE: Transporting Natural Gas from the Arctic: The Alternative Systems
111 p., 1977

SPONSOR: American Enterprise Institute for Public Policy Research
KEYWORDS: NATURAL GAS; ARCTIC; PRUDHOMNE BAY (ALASKA); ENVIRONMENTAL IMPACT; TABLES (DATA); CHARTS; ECONOMIC ANALYSIS; TRANSPORTATION; GOVERNMENT POLICIES; REGULATIONS; COSTS; CANADA; ALASKA; TRANSPORTATION SYSTEMS

AVAILABILITY: American Enterprise Institute for Public Policy Research, 1110 Seventeenth St. NW, Washington, DC 20036 $3.25

<407> Mechanical Technology Inc., R&D Division
TITLE: Characterization Study of an Electric Motor-Transmission System for Electric Vehicles

SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; PERFORMANCE; DESIGN; AUTOMOBILE TRANSMISSIONS; TABLES (DATA); GRAPHS (CHARTS)

AVAILABILITY: NTIS

<408> Neiman, R.S.
U.S. Dept. of Transportation, Transportation Systems Center
ADDRESS: Kendall Square, Cambridge, MA 02142
TITLE: Aggregate Into Travel Forecasting: State of the Art and Suggestions for Future Research

SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology
KEYWORDS: TRAVEL; FORECASTING; AUTOMOBILES; MODELS; VEHICLE MILES TRAVELED

AVAILABILITY: NTIS

<409> Neurick, L.; Blueberg, R.H.
Ford Motor Co., Engineering and Research Staff
ADDRESS: Dearborn, MI
TITLE: Simulation of Wide-Open Throttle Vehicle Performance

KEYWORDS: AUTOMOBILES; VELOCITY; PERFORMANCE; DESIGN; LOAD FACTOR: FUEL ECONOMY; AUTOMOTIVE CONTROL SYSTEMS; REGRESSION ANALYSIS; AUTOMOTIVE EMISSIONS; TABLES (DATA)

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $3.50

<410> Neurick, L.; Tobler, W.R.; Blueberg, R.H.
Ford Motor Co., Engineering and Research Staff
ADDRESS: Dearborn, MI
TITLE: Simulation of Wide-Open Throttle Vehicle Performance

KEYWORDS: MODELS; COMPUTERIZED SIMULATION; AUTOMOBILES; VELOCITY; MECHANICAL TRANSMISSIONS; THERMALS; FRICTION; AUTOMOTIVE ENGINES; PERFORMANCE; GRAPHS (CHARTS)

AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $3.50

<411> Mercedes-Benz of North America Inc., Advertising and Sales Promotion Dept.
ADDRESS: One Mercedes Drive, Montvale, NJ 07645
TITLE: Directory of Diesel Fuel Stations and Authorized Mercedes-Benz Dealers
112 p., 1977

KEYWORDS: RETAIL TRADE; DIRECTORIES; DIESEL FUELS; STATE ANALYSIS; CANADA; TIREs; AUTOMOBILES; GAS STATIONS; SALES
<121>
Hindle, B.L.; Knapeta, G.M.
General Motors Corp., Engineering Staff
ADDRESS: Detroit, MI
TITLE: Optimizing Engine and Car Design for Fuel Economy and Emissions

Paper No. 760955, published in SAE SP-411, 20-32
1976, August
Sponsor: Society of Automotive Engineers, Detroit Section
KEYWORDS: FUEL ECONOMY; AUTOMOBILE ENGINEERING; AUTOMOBILES; DESIGN; WEIGHT; AUTOMOBILE EMISSION CONTROL; FUEL CONSUMPTION; GRAPHS (CHARTS); PERFORMANCE
AVAILABILITY: Society of Automotive Engineers Inc., 450 Commonwealth Drive, Warrendale, PA 15096 (for SAE SP-411)

<122>
Kimball, J.A.; Cantwell, C.; Kessler, M.
Chilton Co.
ADDRESS: Radnor, PA 19086
TITLE: Automobile Characteristics Historical Data Base

Paper No. DOT-ES-057-77-12, 76 p.
1972, August
Sponsor: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology; U.S. Dept. of Transportation, Office of the Secretary
KEYWORDS: VEHICLE; AUTOMOBILE ENGINEERING; AUTOMOBILES; DESIGN; WEIGHT; AUTOMOBILE EMISSION CONTROL; FUEL ECONOMY; MANUFACTURER; COMPARATIVE EVALUATIONS; PERFORMANCE; OPERATION; WEIGHT
AVAILABILITY: NTH

<123>
Rimer, D.K.
Copper Development Association Inc.
ADDRESS: Richmond, VA
TITLE: Comparison of an Electric Versus a Gasoline Powered Utility Track in Two Years of a Service Test Program

1976, September

<124>
<125>
Highdoll, P.I.; Wahr, W.F.
Boeing Aircraft Co. Seattle, WA
TITLE: Preliminary Power Train Design for a State-of-the-Art Electric Vehicle

1976, April
Sponsor: G.S. Dept. of Energy, Division of Transportation Energy Conservation, Electric and Hybrid Vehicle Systems Program; National Aeronautics and Space Administration, Lewis Research Center
KEYWORDS: POWER TRAIN SYSTEMS; ELECTRIC VEHICLES; TECHNOLOGY ASSESSMENT; MOTORS; AUTOMOBILE TRANSMISSIONS; NURTLES; DESIGN; COMPUTERIZED SIMULATION; STANDARDS; TABLES (DATA)
AVAILABILITY: NTIS

<126>
Hittel, R.M.
Ohio State University, Dept. of Civil Engineering
ADDRESS: Columbus, OH
TITLE: Methodology of Comparing Modes in Urban Transport

1977, January
Sponsor: Ohio State University, Graduate School
KEYWORDS: URBAN TRANSPORTATION; COMPARATIVE EVALUATIONS; TRANSPORTATION STUDIES; RAIL TRANSPORTATION; RAPID TRANSIT; BUSES (Vehicles); COSTS; RAY AREA RAPID TRANSIT SYSTEM

<127>
Hittel, R.M.
Union College, Mechanical Engineering Dept.
ADDRESS: Schenectady, NY 12308
TITLE: Energy Intensity of Intercity Passenger Rail

1977, December
Sponsor: U.S. Dept. of Transportation, Office of University Research
KEYWORDS: RAIL TRANSPORTATION; ENERGY INTENSITY; PASSENGER TRANSPORTATION; LOAD FACTOR; INTERCITY TRANSPORTATION; EFFICIENCY; ENERGY CONSERVATION; RAILROAD CARS; DESIGN; CAPACITY; ELECTRIC RAIL SYSTEMS; AUTOMOBILES; BUSES (Vehicles); GRAPHS (CHARTS) TABLES (DATA)
AVAILABILITY: GPO

<128>
Hittel, R.M. (ed.)
Union College
ADDRESS: Schenectady, NY 12308
TITLE: Third National Conference on the Effects of Energy Constraints on Transportation Systems

Proceedings of a conference held at Union College, Schenectady, New York, August 2-4, 1976, 408 p.
1977, May
Sponsor: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: TRANSPORTATION SYSTEMS; ENERGY CONSERVATION; ENERGY CONSERVATION; URBAN TRANSPORTATION; RAY AREA RAPID TRANSIT SYSTEM; CABO TRANSPORTATION; RAIL TRANSPORTATION; PASSENGER TRANSPORTATION; RAILWAY TRANSPORTATION; PASSENGER TRANSPORTATION; PRODUCTIVITY; INTERCITY TRANSPORTATION; Rapid TRANSPORTATION; RAY AREA RAPID TRANSIT SYSTEM; COSTS; GRAPHS (CHARTS) TABLES (DATA); COORDINATION; COMPUTERIZED SIMULATION
AVAILABILITY: GPO, Stock No. 060-000-00073-5

<129>
Hittel, R.M.; Rose, A.
Union College, Mechanical Engineering Dept.
<410> CONT.
ADRESSES: Schenectady, NY 12308
TITLE: Track Data Characteristics for New York City - Buffalo Corridor
1977, October.
SPONSOR: N.Y. Dept. of Transportation, Office of University Research
KEYWORDS: RAILROAD TRACKS; DISTANCE; BUFFALO (NY)
      : TRAVEL TIME; ENERGY CONSUMPTION; EFFICIENCY; AUTOMOBILES; URBAN
      TRANSPORTATION; SPEED LIMITS; CHARACTERISTICS; TABLES (DATA); GRAPHS
      (CHARTS): COMPARATIVE EVALUATIONS

<410>

<423>
Vittal, K.R.; Santamaria, J.
Union College, Mechanical Engineering Dept.
ADRESSES: Schenectady, NY 12308
TITLE: State of the Art in Passenger Rail-Rolling Stock Equipment
1977, September.
SPONSOR: D.S. Dept. of Transportation, Office of University Research
KEYWORDS: RAILROADS; EQUIPMENT; PASSENGERS
      : TRANSPORTATION; PERFORMANCE; LOCOMOTIVES; RAILROAD CARS; PHYSICAL PROPERTIES;
      MECHANICAL PROPERTIES; FUEL CONSUMPTION; GRAPHS (CHARTS); TABLES (DATA);
      EFFICIENCY: ARTIK
AVAILABILITY: NTIS

<417>
Waldron, R.L. (compiler)
General Motors Corp. Research Laboratories,
Library, System on Automotive Safety Information
ADRESSES: Warren, MI 48090
TITLE: Bibliography on Electric Vehicles:
1967-1976
1977, April 15
KEYWORDS: ELECTRIC VEHICLES; BIBLIOGRAPHIES;
      HISTORY; CONFERENCES; ENVIRONMENTAL IMPACT; GOVERNMENT POLICIES;
      AUTOMOBILES; BUSES (VEHICLES); HYBRID ELECTRIC-POWERED VEHICLES;
      TRUCKS; BANS; BATTERIES

<422>
Rouleau, L.W.; Houser, T.W.; Pittrak, P.
Michigan State University, Dept. of Park and Recreation Resources
ADRESSES: East Lansing, MI
TITLE: The Influence of Gasoline Price and Availability Upon Recreation Travel Propensity
Communications, 3(5), 431-447
1977
KEYWORDS: UPPER GREAT LAKES REGIONAL COMMISSION
      GASOLINE: PRICES; RECREATIONAL TRAVEL; FUEL CONSUMPTION; TOWNE; GREAT LAKES;
      RECREATIONAL ANALYSIS; ECONOMY; AUTOMOBILES; ATTITUDES; PUBLIC OPINION

<423>
Nimand, L.D.
National Aeronautics and Space Administration,
Lyndon B. Johnson Space Center
ADRESSES: Houston, TX 77058
TITLE: Performance Characteristics of a Diesel Engine Using Low- and Medium-Energy Gases as a Fuel Supplement (Purification)
1976, October
SPONSOR: National Aeronautics and Space Administration
KEYWORDS: DIESEL ENGINES; SOLID WASTES: ALTERNATE FUELS: PURIFICATION; DIESEL FUELS; PERFORM.
      ENCE; SYNGENIC FUELS
AVAILABILITY: NTIS

<425>
Koon, A.E.
Stanford Research Institute
ADRESSES: Menlo Park, CA 94025
TITLE: Energy Study of Railroad Freight Transportation. Volume 1: Executive Summary
SBE Project TCU 5419, 37 p.
1977, August.
SPONSOR: Energy Research and Development Administration
KEYWORDS: RAIL TRANSPORTATION; CARGO TRANSPORTATION; ENERGY CONSUMPTION; ENERGY CONSERVATION; GOVERNMENT POLICIES;
      REGULATIONS; ECONOMICS; EQUIPMENT; EFFICIENCY: GRAPHS (CHARTS)

<425>
Koon, A.E.
Stanford Research Institute
ADRESSES: Menlo Park, CA 94025
SBE Project TCU 5419, 146 p.
1977, August.
SPONSOR: Energy Research and Development Administration
KEYWORDS: RAIL TRANSPORTATION; CARGO TRANSPORTATION; ENERGY CONSUMPTION; ENERGY CONSERVATION; GOVERNMENT POLICIES;
      REGULATIONS; ECONOMICS; EQUIPMENT; EFFICIENCY; HISTORY; CONSTRUCTION; RAILROADS;
      MODELS; COSTS; TRUCKS; REGULATIONS; TABLES (DATA); GRAPHS (CHARTS)

<426>
Koon, A.E.; Proctor, H.A.
Stanford Research Institute
ADRESSES: Menlo Park, CA 94025
SBE Project TCU 5419, 195 p.
1977, August.
SPONSOR: Energy Research and Development Administration
KEYWORDS: RAIL TRANSPORTATION; CARGO TRANSPORTATION; EFFICIENCY; FORECASTING;
      TECHNOLOGY; ENERGY CONSERVATION; MARKET; RESEARCH; BIBLIOGRAPHIES; COSTS; EQUIPMENT

<427>
Moore, R. (ed.)
National Academy of Sciences, National Research Council, Transportation Research Board
ADRESSES: 2101 Constitution Ave. NW, Washington,
National Aeronautics and Space Administration, Lewis Research Center
ADDRESS: Cleveland, OH
TITLE: "Waste State-of-the-Art Individual Electric and Hybrid Vehicle Test Reports. Volume 1"
Report No. NCEP/1011-03/1, 4 vols.
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
AVAILABILITY: NTIS

National Association State Directors of Pupil Transportation Services
ADDRESS: 12th and Pennsylvania Avenue DC
TITL: "1975-76 Statistics on Pupil Transportation Services"
3 p.
KEYWORDS: STATE ANALYSIS; EXPENDITURES; BUSES (VEHICLES); STATISTICS; OWNERSHIP; SCHOOLS; CHILDREN

National Petroleum Council
ADDRESS: 1221 Ave. of the Americas, New York, NY
204 p.
1975, August 6
SPONSOR: U.S. Dept. of Interior
KEYWORDS: AIR TRANSPORTATION; STATE ANALYSIS; FINANCIAL DATA; Taxis; BATTERIES; DRIVECARS; WINTER NEEDS; RESIDENTIAL SECTOR; ELECTRIC UTILITIES; TABLES (DATA); FORECASTING; USE PENTS; APPLIANCES; SOLAR ENERGY; APPLIANCES; FUEL CONSUMPTION; EMISSIONS; DESIGN; REGULATIONS; TECHNOLOGY

National Petroleum News
ADDRESS: 1221 Ave. of the Americas, New York, NY
TITL: "1976 National Petroleum News Factbook Issue"
National Petroleum News, 70 (64), 209 p.
1976, Mid-June
KEYWORDS: AIR TRANSPORTATION; STATE ANALYSIS; FINANCIAL DATA; Taxis; BATTERIES; DRIVECARS; WINTER NEEDS; RESIDENTIAL SECTOR; ELECTRIC UTILITIES; TABLES (DATA); FORECASTING; USE PENTS; APPLIANCES; SOLAR ENERGY; APPLIANCES; FUEL CONSUMPTION; EMISSIONS; DESIGN; REGULATIONS; TECHNOLOGY

Nicholas, R.W.
National Petroleum Council
ADDRESS: Washington, DC
TITL: "Balancing Requirements for World Oil and Energy"
Chemical Engineering Progress, 70 (10), 36-48
1974, October
KEYWORDS: ENERGY DEMAND; PRODUCTION; OUTLINES; SUPPLIES; IMPORTS; ENERGY RESOURCES; PRODUCTION; TABLES (DATA); GROWTH; INTERNATIONAL TRADE; FOSSIL FUELS; SYNTHETIC FUELS; COAL; GOVERNMENT POLICIES; FORECASTING; ENERGY CONSUMPTION
Biocleides, O.C.; Suresh, S.A.
General Motors Corp., Research Laboratories
ADDRESS: Warren, MI 48090
TITLE: Analysis of Preference for High-Mode Transit
Reprint from Traffic Quarterly. July 1977. 472-496; also available as Research Publication No. GRR-2255
1977, July
KEYWORDS: ATTITUDES; URBAN TRANSPORTATION; COMPUTING; MODELS; TABLES (DATA); GRAPHS (CHARTS); TRAVEL TIME; TRAVEL COSTS; HIGH-MODE TRANSIT
AVAILABILITY: General Motors Corp., Research Laboratories, Warren MI 48090 for GRR-2255

Neu, L.R. (ed.)
Marketing Handbooks Inc.
ADDRESS: 31 Wallack Lane, Stamford, CT 06902
Annual publication, 128 p.
1976
KEYWORDS: TRAVEL; MARKET; AUTOMOBILES; INTERNATIONAL ANALYSES; TOBACCO; ADVERTISING; FINANCE; TRANSPORTATION; TABLES; AIR TRANSPORTATION; RAIL TRANSPORTATION; PASSENGER TRANSPORTATION; BUSES (Vehicles); FEES; TABLES (DATA)
AVAILABILITY: $26.00

Norman, T.A.
U.S. Postal Service
ADDRESS: Washington, DC
TITLE: Electric-Flywheel Vehicle for Postal Service Applications
1978
KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; FLYWHEELS; AUTOMOTIVE FUELS; ENERGY CONSERVATION; UTILIZATION; POSTAL SERVICE
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096. $2.50

North Atlantic Treaty Organization, Committee on the Challenges of Modern Society
1978
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation
KEYWORDS: CONFERENCES; PROPULSION; AUTOMOBILES; DIESEL ENGINES; AUTOMOTIVE FUELS; FUELS; DIESEL ENGINES; STIRLING ENGINES; BATTERY CYCLE ENGINES; ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; STRATIFIED CHARGE ENGINES; Spark Ignition Engines; Automotive Propulsion; Power Train Systems
AVAILABILITY: NTIS (when available)

Northwestern University, Transportation Center
ADDRESS: Evanston, IL 60201
TITLE: Bibliography for Transportation Energy Conservation
Report No. ARL-76-IX-7, 64 p.
1976
SPONSOR: Aerospace National Laboratory
KEYWORDS: BIBLIOGRAPHIES; TRANSPORTATION; AUTOMOBILES; RAIL TRANSPORTATION; AIRCRAFT; TRUCKS; RAILROADS; BARGES; SHIPS; BARGES; RAIL TRANSPORTATION; AIR TRANSPORTATION; PIPELINE TRANSPORTATION; ENERGY CONSERVATION
AVAILABILITY: NTIS

Odum, P.C.
Tri-State Regional Planning Commission
ADDRESS: New York, NY
TITLE: Analysis of User Response to the 1975 New York City Transit-Fare Increase (abridgment)
Paper published in Transportation Research Record 625, 12-14
1977
SPONSOR: N.Y. Dept. of Transportation, Federal Highway Administration; U.S. Dept. of Transportation, Urban Mass Transportation Administration; U.S. Dept. of Housing and Urban Development
KEYWORDS: NEW YORK CITY; TRANSPORTATION SYSTEMS; PASSENGER TRANSPORTATION; COSTS; MOBILITY; SURVEYS; TABLES (DATA); ATTITUDES
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave., NW, Washington, DC 20418. $3.20 for Transportation Research Record 625

Odum, P.C.; Elvam, P.
Massachusetts Institute of Technology, Flight Transportation Laboratory
ADDRESS: Cambridge, MA 02139
TITLE: A Handbook for the Estimation of Airside Delays at Major Airports (Quick Approximation Method)
1976
SPONSOR: National Aeronautics and Space Administration, Langley Research Center
KEYWORDS: HARDWARES; AIRCRAFT DELAYS; COMPUTER PROGRAMS; GRAPHS (CHARTS); ESTIMATION; CAPACITY: PEAK-ROOM DEMAND; TRAFFIC CONTROL
AVAILABILITY: NTIS

Oden, R.P.; Bramlett, G.A.; Iken, A.; Chappin, R.; Thoman, J.C.; Shugart, R.H.
Georgia, University of, Institute of Community and Area Development
TITLE: Totality Indices for Evaluating Environmental Impacts of Highway Alternatives
1976
KEYWORDS: ENVIRONMENTAL IMPACT; HIGHWAYS; CONSTRUCTION; GEORGIA; PLANNING; STATE GOVERNMENT; GOVERNMENT POLICIES; PUBLIC OPINION

1976, September KEYWORDS: ELECTRIC BATTERIES; ELECTRIC VEHICLES; RESEARCH; PERFORMANCE; MODELS; COMPARATIVE EVALUATIONS; LEAD-ACID BATTERIES; GRAPHS (CHARTS) AVAILABILITY: Electric Vehicle Council, 90 Park Ave., New York, NY 10016 $1.50


1977, August KEYWORDS: PETROLEUM; FORECASTING; EXPLORATION; PRODUCTION; PIPELINES; NATURAL GAS; LIQUIDS; REFINING; POLYMER REFINING; PETROCHEMICALS; PROCESSING; PETROLEUM INDUSTRY; ALTERNATE FUELS; GRAPHS (CHARTS); HISTORY; LICENSING; NATURAL GAS; INTERNATIONAL RELATIONS AVAILABILITY: $9.00


1977, November SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation KEYWORDS: FUEL ECONOMY; GASOLINE; HYDROGEN; METHANOL; FUEL INJECTION SYSTEMS; STIRLING ENGINES; GAS ENGINES; AUTOMOBILES; COMPARATIVE EVALUATIONS; DRIVING CYCLE; HIGHWAY TRANSPORTATION; ENERGY STORAGE; VEHICLE TRIPS; TESTING; FUEL CONSUMPTION; VEHICLE MILES TRAVELED; PHOTOGRAPHS; AUTOMOBILE OCCUPANCY AVAILABILITY: NTIS


<9G10> Pipeline and Underground Utilities Construction ADDRESS: 3314 Mercier St., Houston, TX 77027 TITLE: Pipeline and Underground Utilities Construction: Annual Contractors Issue 1978 Pipeline and Underground Utilities Construction, 3(7), v.p. 1978, June 15 KEYWORDS: CONSTRUCTION; EQUIPMENT; COMPRESSORS; MANUFACTURERS; UTILITIES; ENERGY TRANSPORT; SERVICES; ENGINEERING; OIL; INTERNATIONAL ORGANIZATIONS; UNDERGROUND FACILITIES; WATER PIPELINES; PIPELINES; EXCAVATION


1977, Spring KEYWORDS: CARRIERS; RECREATION VEHICLES; MOTOR HOMES; TRUCKS; TRAVEL; EQUIPMENT; SIZE; PRICES AVAILABILITY: $1.50


1979, June SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation KEYWORDS: SIMPLE IGNITION ENGINES; VARIABLE DISPLACEMENT ENGINES; EXHAUST RECIRCULATION
Title: The Potential for Transit as an Energy Saving Option
1975, November
SPONSOR: Federal Energy Administration
KEYWORDS: URBAN TRANSPORTATION; ENERGY CONSERVATION; VEHICLE MILE TRAVELLED; AUTOMOBILES; REGIONAL ANALYSIS; PASSENGER TRANSPORTATION; GRAPHS (CHARTS); TABLES (DATA); MODELS; EFFICIENCY; BALTIMORE (MARYLAND); CHICAGO; SAN DIEGO; AUSTRALIA; SOCIO-ECONOMIC FACTORS; MASS TRANSPORTATION; GOVERNMENT POLICIES; BUSES (VEHICLES); RAIL TRANSPORTATION; STATE ANALYSIS

Title: Transportation Needs Summary
1976, September
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration; U.S. Dept. of Transportation, Federal Highway Administration
KEYWORDS: TRANSPORTATION; RESEARCH; ASSESSMENTS; TRANSPORTATION SYSTEMS; PARATRANSIT; HIGHWAYS; BUSES (VEHICLES); PLANNING; MASS TRANSPORTATION; AIR TRANSPORTATION; TRAFFIC CONTROL

Title: The Potential for Transit as an Energy Saving Option
1975, November
SPONSOR: Federal Energy Administration
KEYWORDS: URBAN TRANSPORTATION; ENERGY CONSERVATION; VEHICLE MILE TRAVELLED; AUTOMOBILES; REGIONAL ANALYSIS; PASSENGER TRANSPORTATION; GRAPHS (CHARTS); TABLES (DATA); MODELS; EFFICIENCY; BALTIMORE (MARYLAND); CHICAGO; SAN DIEGO; AUSTRALIA; SOCIO-ECONOMIC FACTORS; MASS TRANSPORTATION; GOVERNMENT POLICIES; BUSES (VEHICLES); RAIL TRANSPORTATION; STATE ANALYSIS
<566>
Packer, J.R.

American Institute of Technology, Dept. of Urban Studies and Planning
ADDRES: Cambridge, MA 02138.
TITLE: Projections of 1980 Freight Demands for Selected Midwestern Railroads

1977, September
SPONSOR: U.S. Dept. of Transportation, Office of University Research.
EXTRACT: FORECASTING; BAIL TRANSPORTATION; RAILROADS: MIDWESTERN STATES; CARGO TRAVEL; COSTS; TABLES: DATA; RATES; COMMODITIES; INPUT-OUTPUT ANALYSIS; REGIONAL ANALYSIS; HISTORY
AVAILABILITY: NTSIS

<567>

Purdue University, Institute for Interdisciplinary Engineering Studies
ADDRESS: West Lafayette, IN
TITLE: Opportunity and Risk Assessment of the Electric and Hybrid Vehicle Research, Development and Demonstration Act of 1976

1978, January
SPONSOR: U.S. Dept. of Energy: Division of Transportation Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC POWERED VEHICLES; COMMERCIALIZATION; ENERGY DEMAND; COSTS; PERFORMANCE; TABLES: DATA; ELECTRIC VEHICLES: RANGE; TRANSPORTATION; PETROLEUM; ENERGY CONSERVATION; TECHNOLOGY ASSESSMENT; INSTITUTIONAL FACTORS; SAFETY
AVAILABILITY: NTSIS

<568>

Pashkev, H.S.; Tapan, J.N.

Regional Plan Association
ADDRESS: 235 East 45 Street, New York, 10017
TITLE: Power for the 70s: An Examination of the Future Ridership, Service, and Electric Power Requirements for Metropolitan Transportation Authority Facilities

NPA Bulletin 126, 90 p.
1977, October
SPONSOR: New York State Power Authority
KEYWORDS: NEW YORK CITY; RAIL TRANSPORTATION; ELECTRIC CLIPPER POWER DEMAND; EMPLOYMENT; CONSUMERS; PUBLIC TRANSPORTATION; URBAN TRANSPORTATION; CONSTRUCTION; REGIONAL ANALYSIS; FUEL-FOSSIL DEMAND; ELECTRIC VEHICLES: GRAPHS (CHARTS); RAPID TRANSIT SYSTEMS; TABLES (DATA); PLANNING; EQUIPMENT; SURVEYS: AIR CONDITIONING; ELECTRICAL BRAKING; MASS TRANSPORTATION

<569>

Rabe, P.T.

Environmental Impact Center Inc.
ADDRESS: 55 Chapel Street, Newton, MA 02158
TITLE: Uncertainties in Estimates of Average Fuel Economy: A Statistical Evaluation

1977, June
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology; U.S. Dept. of Transportation, Transportation Systems Center

KEYWORDS: AUTOMOTIVE Fleets; FUEL ECONOMY; FUEL CONSUMPTION; TABLES (DATA); STRATIFICATION; ESTIMATES; STATISTICAL ANALYSIS; TESTING
AVAILABILITY: NTSIS

<570>

Rabe, P.T.

Environmental Impact Center Inc.
ADDRESS: 55 Chapel Street, Newton, MA 02158
TITLE: Study Design for a Method of Projecting Vehicle Miles of Travel

1977, August
SPONSOR: U.S. Dept. of Transportation, Transportation Systems Center; U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology, Office of System Engineering
KEYWORDS: VEHICLE MILES TRAVELED; FORECASTING; TRAVEL; AUTOMOBILES; MODELS; RESEARCH; DATA ACQUISITION; ESTIMATES; COSTS
AVAILABILITY: NTSIS

<571>

Rabe, P.T.

Environmental Impact Center Inc.
ADDRESS: 55 Chapel Street, Newton, MA 02158
TITLE: Dynamic Models of the U.S. Automobile Fleet

1977, August
SPONSOR: U.S. Dept. of Transportation, Transportation Systems Center; U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Systems Development and Technology, Office of System Engineering
KEYWORDS: MODELS; SALES; COMPUTERIZED SIMULATION; GASOLINE; PRICES; FORECASTING; DEMAND (ECONOMICS); TRANSPORTATION; AUTOMOBILES; PRICES; SIZES; OWNERS
AVAILABILITY: NTSIS

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Raschbichler, H.G.

Edition
ADDRESS: Box 5456, Santa Barbara, CA 93108
TITLE: Technical and Economical Considerations of the Use of Self-Supporting Plastic Sandwich Constructions in Electrical Vehicles

1975, December
SPONSOR: National Aeronautics and Space Administration
KEYWORDS: ELECTRIC VEHICLES; PLASTICS; ECONOMIC ANALYSIS; PRODUCTION; DESIGN
AVAILABILITY: NTSIS

<573>

Retchich, B.

TITLE: Transportation Policies and Energy Conservation

1976
KEYWORDS: TRANSPORTATION; ENERGY CONSERVATION; GOVERNMENT POLICIES; TRANSPORTATION MODE CHOICE; FUEL CONSUMPTION; REGULATIONS; HIGHWAY TRANSPORTATION; SERVICES; CARGO
<522>
Weichsel, S.: Stopher, P.R.
Andrew University: Cornell University
ADDRESS: Ithaca, NY
TITLE: Applications of Value of Travel Time to Travel Demand Estimation
Paper published in Transportation Research Record 587, 6-11
1976
SPONSOR: National Academy of Sciences, Transportation Research Board
KEYWORDS: TRAVEL TIME; URBAN TRANSPORTATION; MODELS; VEHICLE TRIPS; COSTS; INTERCITY TRANSPORTATION

<523>
Kelly, J.
Capital Electric Transportation Authority
ADDRESS: Albany, NY
TITLE: Transit Costs during Peak and Off-Peak Hours
Paper presented at the 1977 Annual Meeting of the Transportation Research Board, held in Washington, DC, January 1977
1977, January
KEYWORDS: COSTS; FACTS (COSTS); DEMAND (ECONOMICS); BASS TRANSPORTATION

<524>
Weil, J.J.; Wiswell, R.H.; Baide, C.H.
Brookhaven National Laboratory, Dept. of Applied Science
ADDRESS: Upton, NY 1973
1975, October
SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation
KEYWORDS: HYDROGEN; HYDROGEN STORAGE; HYDROGEN STORAGE, METAL HYDRIDES; METAL HYDRIDES, APPLICATION; STABILITY; COMPARATIVE EVALUATIONS; TABLES (DATA); DIAGRAMS; ALTERNATIVE FUELS
AVAILABILITY: NTIS

<525>
Heisler, D.H.
Institute for Energy Analysis
ADDRESS: Oak Ridge, TN 37830
TITLE: The Total Energy Cost of Freight Transport
1976, December
SPONSOR: Energy Research and Development Administration
KEYWORDS: ENERGY DEMAND; ENERGY SUPPLIES; ENERGY RESOURCES; Tables (DATA); Maps; Natural gas; Petroleum; Coal; Hydroelectric Power; Nuclear Power; Petroleum Products; Alabama; Arkansas; Florida; Georgia; Kentucky; Louisiana; Mississippi; North Carolina; Oklahoma; South Carolina; Tennessee; Texas; Virginia; West Virginia; Southern States; Regional Analysis; State Analysis
AVAILABILITY: NTIS

<527>
Rice, P.L.
Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section
ADDRESS: Oak Ridge, TN 37830
TITLE: Energy Conditions in the South
1976, December
SPONSOR: Energy Research and Development Administration
KEYWORDS: ENERGY DEMAND; ENERGY SUPPLIES; ENERGY RESOURCES; Tables (DATA); Maps; Natural gas; Petroleum; Coal; Energy Reserves; Energy Consumption; Regional Analysis; Hydroelectric Power; Residential Sector; Commercial Sector; Industrial Sector; Transportation; Electric Utilities; Production; Tables (DATA); Energy Demand; Electric Power Demand
AVAILABILITY: NTIS

<528>
Rice, P.L.
Oak Ridge National Laboratory, Energy Division, Economic Analysis Section
ADDRESS: Oak Ridge, TN 37830
TITLE: 1975 Energy Conditions in the South
1976, March
SPONSOR: U.S. Dept. of Energy
KEYWORDS: SOUTHERN STATES; STATE ANALYSIS; ENERGY SUPPLIES; NATURAL GAS; PETROLEUM; COAL; ENERGY RESERVES; ENERGY CONSUMPTION; REGIONAL ANALYSIS; HYDROELECTRIC POWER; RESIDENTIAL SECTOR; COMMERCIAL SECTOR; INDUSTRIAL SECTOR; TRANSPORTATION; ELECTRIC UTILITIES; PRODUCTION; TABLES (DATA); ENERGY DEMAND; ELECTRIC POWER DEMAND
AVAILABILITY: NTIS

<529>
Rice, R.G.
Toronto, University of, Dept. of Civil Engineering
ADDRESS: Toronto, Canada
TITLE: Evaluation of Road and Transit System Requirements for Alternative Urban Forms
Paper prepared for presentation at the Annual Meeting of the Transportation Research Board, 29 p.
1976, January
KEYWORDS: URBAN AREAS; LAND USE; MODELS; TRANSPORTATION; PLANNING; TRAVEL; VEHICLE TRIPS

<530>
Weichsel, P.B.; Oliver, R.C.; Weichselmaier, H.R.
Institute for Defense Analyses, Science and Technology Division
ADDRESS: 400 Army-Mary Drive, Arlington, VA 22202
TITLE: DoD Energy R & D. Part II: Military
<356>  
**TITLE**: Factors Influencing the Demand for Goods Movement  
**SPONSOR**: U.S. Dept. of Transportation, Office of University Research  
**KEYWORDS**: CARGO TRANSPORTATION; SHIPMENTS; DATA ACQUISITION; MODELS; SYSTEMS ANALYSIS; COMMODITIES

---

<357>  
**TITLE**: Developing Freight Origin-Destination Data for Use in Freight Planning  
**SPONSOR**: Federal Energy Administration, Division of Transportation Studies  
**KEYWORDS**: CARGO TRANSPORTATION; SHIPMENTS; DATA ACQUISITION; MODELS; DATA COMPILATION; COSTS; TABLES (DATA); TRANSPORTATION STUDIES; PLANNING; DEMAND (ECONOMICS); DISTANCE

---

<359>  
**TITLE**: Analysis of the Incremental Cost and Trade-offs Between Energy Efficiency and Physical Distribution Effectiveness in Intercity Freight Markets  
**CTS Report No. 76-16**, 178 p. 1976  
**SPONSOR**: Federal Energy Administration, Office of Transportation Policy Research  
**KEYWORDS**: CARGO TRANSPORTATION; COSTS; MODELS; FORECASTING; THERMODYNAMIC; RAIL TRANSPORTATION; TRAVEL TIME; DELAYS; TARIFFS; FUEL CONSUMPTION; WAREHOUSE TRANSPORTATION; SHIPMENTS; FUEL ECONOMY; TOUGHER; TABLES (DATA); COMMODITIES

---

<360>  
**TITLE**: Evaluation of Automatic Fuel Meters  
**U.S. Dept. of Commerce, National Bureau of Standards**, Institute of Basic Standards  
**ADDRESS**: Washington, DC 20234  
**TITLE**: Effect of Intercity Transportation: Mode/Energy Conservation. Volume II: Analysis  
**SPONSOR**: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for System Development and Technology  
**KEYWORDS**: AUTOMOBILES; FUEL ECONOMY; MEASURING INSTRUMENTS; FUEL CONSUMPTION; TESTING; DIAGRAMS  
**AVAILABILITY**: NTIS: also available from GPO, Stock No. 003-003-01799-0

---

<361>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**Report No. PB-250883**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<362>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume III  
**Report No. PB-250884**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<363>  
**TITLE**: Economic and Technical Feasibility Study for Energy Storage Flywheels  
**SPONSOR**: Energy Research and Development Administration, Division of Conservation Research and Technology  
**KEYWORDS**: FEASIBILITY; FLYWHEELS; ENERGY STORAGE; TABLES (DATA); TECHNOLOGY; FORECASTING; ECONOMICS; UTILIZATION; TRANSPORTATION; ELECTRIC UTILITIES; COMMERCIAL SECTOR; INDUSTRIAL SECTOR; RESEARCH; DESIGN; RESIDENTIAL SECTOR; HYDRAULIC POWERED VEHICLES; ELECTRIC VEHICLES; INSTITUTIONAL FACTORS; SAFETY; GRAPHS (CHARTS); DIAGRAMS

---

<364>  
**TITLE**: Evaluation of Automatic Fuel Meters  
**U.S. Dept. of Commerce, National Bureau of Standards**, Institute of Basic Standards  
**ADDRESS**: Washington, DC 20234  
**TITLE**: Effect of Intercity Transportation: Mode/Energy Conservation. Volume II: Analysis  
**SPONSOR**: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for System Development and Technology  
**KEYWORDS**: AUTOMOBILES; FUEL ECONOMY; MEASURING INSTRUMENTS; FUEL CONSUMPTION; TESTING; DIAGRAMS  
**AVAILABILITY**: NTIS: also available from GPO, Stock No. 003-003-01799-0

---

<365>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**Report No. PB-250883**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<366>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume III  
**Report No. PB-250884**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<367>  
**TITLE**: Economic and Technical Feasibility Study for Energy Storage Flywheels  
**SPONSOR**: Energy Research and Development Administration, Division of Conservation Research and Technology  
**KEYWORDS**: FEASIBILITY; FLYWHEELS; ENERGY STORAGE; TABLES (DATA); TECHNOLOGY; FORECASTING; ECONOMICS; UTILIZATION; TRANSPORTATION; ELECTRIC UTILITIES; COMMERCIAL SECTOR; INDUSTRIAL SECTOR; RESEARCH; DESIGN; RESIDENTIAL SECTOR; HYDRAULIC POWERED VEHICLES; ELECTRIC VEHICLES; INSTITUTIONAL FACTORS; SAFETY; GRAPHS (CHARTS); DIAGRAMS

---

<368>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**Report No. PB-250883**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume II: Executive Summary  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<369>  
**TITLE**: Intercity Passenger Transportation: Mode/Energy Conservation. Volume III  
**Report No. PB-250884**, NRC Research Corp.  
**ADDRESS**: Bethesda, MD 20014  
**SPONSOR**: Council on Environmental Quality, Federal Energy Administration  
**KEYWORDS**: ENERGY CONSUMPTION; PASSENGER TRANSPORTATION; INTERCITY TRANSPORTATION; MODELS; FORECASTING; SOCIO-ECONOMIC FACTORS; TRAVEL; NOISE (SOUND); AIR POLLUTION; ACCIDENTS; LAND USE; OPERATING COSTS; SPEED LIMITS; GASOLINE; TAXES  
**AVAILABILITY**: NTIS

---

<370>  
**TITLE**: Economic and Technical Feasibility Study for Energy Storage Flywheels  
**SPONSOR**: Energy Research and Development Administration, Division of Conservation Research and Technology  
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<5535>
Nucifito, D.; McCormick, J.; Gray, S. Mechanical Technology Inc.
ADDRESS: Latham, NY 12110
TITLE: Precious Metal Air Lubricated Compliant Surface Bearing for an Automotive Gas Turbine Engine. I - Journal Bearing Performance
Report No. CORR9427-1, NASA-CH-135366, 146 p. 1976, April
SPONSOR: U.S. Dept. of Energy, Division of Transportation Energy Conservation; National Aeronautics and Space Administration
KEYWORDS: TESTING; AUTOMOBILE ENGINES; GAS TURBINE ENGINES; BEARINGS; DESIGN;
PERFORMANCE; TEMPERATURE
AVAILABILITY: NTIS

<5526>
Bacco, J.F.; Jaffé, R.H. South Carolina, University of, Dept. of Government and International Studies; South Carolina, University of, Traffic and Transportation Center
ADDRESS: Columbia, SC 29208
TITLE: Impact of the Energy Shortage on Travel Patterns and Attitudes
Report presented at the 54th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 561, 1-17 1976
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration
KEYWORDS: ENERGY SHORTAGES; TRAVEL; ATTITUDES; AUTOMOBILES; SOUTH CAROLINA; PUBLIC TRANSPORTATION; GASOLINE; AVAILABILITY; SERVICES; ENERGY CONSERVATION; SURVEY; VELOCITY; BEHAVIOR; PRICES; TABLES (DATA);
ROUTES (VEHICLES); CARPOOLING
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $5.00 for Transportation Research Record 561

<5555>
Sasson, J.S. Advanced Vehicle Systems Ltd.
ADDRESS: United Kingdom
TITLE: U.K. Electric Vehicle Development Programmes
1978
KEYWORDS: UNITED KINGDOM; ELECTRIC VEHICLES; BATTERIES; DESIGN; VANS; LEAD-ACID BATTERIES;
ECONOMICS; PHOTOGRAPHY
AVAILABILITY: Society of Automotive Engineers Inc., 400 Commonwealth Drive, Warrendale, PA 15096 $2.50

<5546>
Sanders, D.S.; Nguyen, T.A.; Bhattach, R. de Leon, Gather and Co.; Urban Institute
ADDRESS: Washington, DC
1974, May
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration; U.S. Dept. of Transportation, Federal Highway Administration
KEYWORDS: URBAN TRANSPORTATION; PLANNING; RAIL TRANSPORTATION; BUSES (VEHICLES); RAPID TRANSIT SYSTEMS; HIGHWAY TRANSPORTATION;
VELOCITY; CAPACITY; OPERATING COSTS; ENERGY CONSUMPTION; EMISSIONS; ACCIDENTS; REGIONAL ANALYSIS; COMPARATIVE EVALUATIONS; GRAPHS (CHARTS); TABLES (DATA)

<5557>
Schlapfer, C.C.; Corradino, J.C.; Jarrin, J.J.; Unger, R.M.; Scott, R.W. Schlapfer-Corrado Associates; Georgia Institute of Technology; U.S. Dept. of Transportation
TITLE: Optimum Staging of Projects in a Highway Plan
Report presented at the 55th Annual Meeting of the Transportation Research Board, published in Transportation Research Record 585, 25-34 1976
KEYWORDS: HIGHWAYS; PLANNING; FORECASTING; TRAFFIC; MODELS; TABLES (DATA); SCHEDULING; CONSTRUCTION
AVAILABILITY: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418 $3.60 for Transportation Research Record 585

<5568>
Schlak, G.M.; Loeley, C.J. Barton ERA Inc.
ADDRESS: One University City, 4025 Chestnut St.,
<5588> Cost
Philadelphia, PA 19104
TITLE: An Analysis of the Automobile Market:
Modelling the Long-Run Determinants of the
Demand for Automobiles. Volume I: The
Wharton E.P.A. Automobile Demand Model

155 p.
1977, February
SPONSOR: U.S. Dept. of Transportation, Office of
the Secretary; U.S. Dept. of Transportation,
Transportation Systems Center
KEYWORDS: ECONOMETRIC MODELS; MARKET;
AUTOMOBILES; DEMAND (ECONOMIC); SIMULATION;
INCOME; TARIFFS; GOVERNMENT POLICIES; COSTS; STOCKS
AVAILABILITY: NTIS

<5592>
Schink, G.R.
Wharton E.P.A. Inc.
ADDRESS: One University City, 4025 Chestnut
Street, Philadelphia, PA 19104
TITLE: An Analysis of the Automobile Market:
Modelling the Long-Run Determinants of the
Demand for Automobiles. Volume II:
Simulation analysis Using the Wharton E.P.A.
Automobile Demand Model
1977, February
SPONSOR: U.S. Dept. of Transportation, Office of
the Secretary; U.S. Dept. of Transportation,
Transportation Systems Center
KEYWORDS: AUTOMOBILES; MARKET; DEMAND
(ECONOMIC); SIMULATION; ECONOMETRIC MODELS;
FORECASTING; GASOLINE; PRICES; TABLES (DATA);
INCOME; TARIFFS; GOVERNMENT POLICIES; OPTIC
AVAILABILITY: NTIS

<5603>
Schultz, G.R.; Losley, C.J.
Wharton E.P.A. Inc.
ADDRESS: One University City, 4025 Chestnut
Street, Philadelphia, PA 19104
TITLE: An analysis of the automobile market:
Modelling the Long-Run Determinants of the
Demand for Automobiles. Volume III:
Appendices to the Wharton E.P.A. Automobile
Demand Model
Volume III of 3 volumes, 261 p.
1977, February
SPONSOR: U.S. Dept. of Transportation, Office of
the Secretary; U.S. Dept. of Transportation,
Transportation Systems Center
KEYWORDS: AUTOMOBILES; MARKET; DEMAND
(ECONOMIC); SIMULATION; ECONOMETRIC MODELS;
FORECASTING; DEMAND (ECONOMIC); TABLES (DATA)
AVAILABILITY: NTIS

<5619>
Schmidt, F.W.; Waeger, C.E.
Chrysler Corp.
ADDRESS: Miami, OH
TITLE: Baseline Gas Turbine Development Program:
Eighteenth Quarterly Program Report
1977, April 30
SPONSOR: Energy Research and Development
Administration, Division of Transportation
Energy Conservation
KEYWORDS: TURBINE ENGINES; DESIGN;
EFFICIENCY; FUEL ECONOMY; GRAPHS (CHARTS);
TABLES (DATA); DIAGRAMS; VEHICLES;
PERFORMANCE; DEVELOPMENT
AVAILABILITY: NTIS

<562> Schwartz, R.J.
National Aeronautics and Space Administration,
Lewis Research Center
ADDRESS: Cleveland, OH
TITLE: The Computer Simulation of Automobile Use
Patterns for Defining Battery Requirements
for Electric Cars
Paper presented at the Fourth International
Electric Vehicle Symposium (sponsored by the
Electric Vehicle Council and the
International Union of Producers and
Distributors of Electrical Energy), held in
Dusseldorf, Germany, August 31 - September 2,
1976, 15 p.
1976, September
KEYWORDS: ELECTRIC VEHICLES; BEHAVIOR;
COMPUTERIZED SIMULATION; TRAVEL; AUTOMOBILES;
BATTERIES; UTILIZATION
AVAILABILITY: Electric Vehicle Council, 90 Park Ave.,
New York, NY 10016 $1.50

<564>
Schwartz, R.J.
National Aeronautics and Space Administration,
Lewis Research Center
ADDRESS: Cleveland, OH 44135
TITLE: The Requirements for Batteries for
Electric Vehicles
Report No. NASA/TM-1762, NASA TM X-7362,
Paper presented at the International Electric
Vehicle Exposition, held in Chicago,
1977
SPONSOR: Energy Research and Development
Administration, Division of Transportation
Energy Conservation
KEYWORDS: ELECTRIC VEHICLES; ELECTRIC VEHICLE
RANGE; COSTS; BATTERIES; PERFORMANCE;
COMPARATIVE EVALUATIONS
AVAILABILITY: NTIS

<565>
Schwartz, R.J.
Kiss University
ADDRESS: Miami, OH
TITLE: Marketing Approach Using Product Diffusion
Attitudes (Abridgment)
Paper published in Transportation Research Record
625, 4-6 1977
SPONSOR: National Academy of Sciences,
Transportation Research Board
KEYWORDS: PUBLIC TRANSPORTATION; MARKETING;
(579)  Spohn, D.B.; Loebi, A.S.; Patterson, P.D.; O'Connor, T.P.; Cole, V.C.; Rowe, A.B.; Greene, D.J.
Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section
Address: Oak Ridge, TN 37830
Title: Reevaluation of Ground Access to Airports
1977, October
Sponsored by Energy Research and Development Administration, Division of Transportation Energy Conservation
Keywords: Energy Conservation; Air Transportation; Rail Transportation; Pipeline Transportation; Statistics; Tables
Availability: NTIS

(580)  Spohn, S.R.; Chesnare, L.H.
U.S. Dept. of Transportation, Federal Highway Administration
Address: Washington, DC
Title: Reevaluation of Ground Access to Airports
1973
Sponsor: National Academy of Sciences, National Research Council, Highway Research Board
Keywords: Airports; Highways Transportation; Travel Time, Peak-Hour Demand; Velocity; Urban Transportation; Urban Areas; Distance; Graphs (Charts)
Availability: National Academy of Sciences, Transportation Research Board, 2101 Constitution Ave. NW, Washington, DC 20418

(581)  Spohn, D.B.; Loebi, A.S.; Patterson, P.D.; O'Connor, T.P.; Cole, V.C.; Rowe, A.B.; Greene, D.J.
Oak Ridge National Laboratory, Energy Division, Regional and Urban Studies Section
Address: Oak Ridge, TN 37830
Title: Reevaluation of Ground Access to Airports
Book: Edition 2
1977, October
Sponsored by Energy Research and Development Administration, Division of Transportation Energy Conservation
Keywords: Energy Conservation; Air Transportation; Rail Transportation; Pipeline Transportation; Statistics; Tables
Availability: NTIS
9EYWORDS: Report

TITLE: Transbua Public Testing and Evaluation Program

Sponsor: U.S. Dept. of Transportation, Urban Mass Transportation Administration

AVAILABILITY: NTIS

<585>

9EYWORDS: Society of Automotive Engineers Inc.
ADDRESS: 400 Commonwealth Dr., Warrendale, PA 15096

TITLE: Automotive Fuel Economy (Selected SAE Papers 1965 - 1975)


KEYWORDS: AUTOMOBILES; FUEL ECONOMY; TESTING; FUEL CONSUMPTION; UTILIZATION; OPERATION; DESIGN; LUBRICANTS; GASOLINE; BIBLIOGRAPHIES

<586>

<587>

<588>

<589>

<590>
<604> **Cost, Prices; Elasticity (Economics); Travel: Market**

**605**
Sweeney, J.P.; Kirkwood, T.F.

*Data Resources Inc.*

ADDRESS: 1700 Main Street, Santa Monica, CA 90406

TITLES: *The Economic Impact of Automobile Travel*

Cost Increases on Households


1977, July

SPONSOR: National Science Foundation; Federal Energy Administration

KEYWORDS: Energy Conservation; Energy Demand; Government Policies; Gasoline; Air Quality; Family Life; Costs; Socio-Economic Factors; Income; Vehicle Trip; Cost Estimates; Insurance; Tables (Data); Surveys; Emissions; Operating Costs; Elasticity (Economics); Occupancy; Graphs (Charts); Maintenance; Fuel Economy

**606**
Sato, H.; Kilpatrick, N.E., Jr.

*Marvin Systems Inc., Washington Operations*

ADDRESS: 1286 N Street NE, Washington, DC 20007

TITLES: *Statistical Report on Urban Energy Conservation*


1976, June

SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of Transportation Analysis Economic Analysis

KEYWORDS: Cargo Transportation; Energy Conservation; Government Policies; Urban Areas; Energy Resources; Prices; Petroleum; Oil; DOT; Statistics; Tabular (Data); Coal; Natural Gas; Electric Power; Residential Sector; Industrial Sector; Transportation

AVAILABILITY: NTIS

**607**
Sweeney, J.L.

*Stanford University, Dept. of Engineering-Economic Systems*

ADDRESS: Stanford, Ca 94305

TITLES: *U.S. Gasoline Demand: An Economic Analysis of the EPA New Car Efficiency Standard*

57 p.

1977, July

SPONSOR: Energy Research and Development Administration, Office of Conservation Planning Policy

KEYWORDS: Gasoline; Fuel Economy; Automobiles; Efficiency; Standards; Fuel Conservation; Government Policies; Economic Analysis; Elasticity (Economics); Graphs (Charts); Taxes; Consumers

**608**
Sweeney, J.L.

*Data Resources Inc., Energy Group*

ADDRESS: Lexington, MA

TITLES: *The Impact of the President's Proposed Gasoline Tax and Gas-Ozilizer Tax on Gasoline Consumption*

Data Resources Inc. Energy Bulletin, 6-11

1977, August

KEYWORDS: Gasoline; Taxes; Fuel Consumption
<612>
<617> CONT.
<613>
<614>
<615>
<616>
<619>

SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Air Transportation Policy Staff

KEYWORDS: EFFICIENCY; COSTS; TANKS (DATA); UNITED KINGDOM; STATISTICS; AIR TRANSPORTATION; REVENUE; COMPARISONS; EVALUATIONS; PASSENGER TRANSPORTATION; OPERATING COSTS; CAPITAL COSTS; CARGO TRANSPORTATION; U.S.A.; PRODUCTION; FINANCIAL DATA; EARNINGS; PROFITS

AVAILABILITY: NTIS

1977, Sept.

Teal, R. Wood, R., Jr.; Loudon, W.
Tufts University, Program in Urban, Social, and Environmental Policy
ADDRESS: Medford, MA 02155

TITLE: Tourist Traffic in Small Historic Cities: Analysis, Strategies, and Recommendations

1976, September

SPONSOR: U.S. Dept. of Transportation, Office of University Research

KEYWORDS: TOURISM; TRAFFIC; URBAN AREAS; URBAN TRANSPORTATION; HISTORY; LOCAL GOVERNMENT; TRAVEL; VEHICLE TRIPS; RECREATION; ECONOMIC IMPACT; ENVIRONMENTAL IMPACT; SOCIAL IMPACT; INSTITUTIONAL FACTORS; SALIS (MASSACHUSETTS); MEXICAN (TEXAS); ANNAPOLIS (MARYLAND); NEWPORT (RODE ISLAND); DALMOUTH (MASSACHUSETTS); MAPS

AVAILABILITY: NTIS

1977, September

Teel, R.; Jefferies, R.; Nao, D.
National Aeronautics and Space Administration, Lewis Research Center
ADDRESS: Cleveland, OH 44135

TITLE: A Stirling Engine Computer Model for Performance

1978, July

SPONSOR: U. S. Dept. of Energy, Division of Transportation Energy Conservation

KEYWORDS: STIRLING ENGINES; MODELS; PERFORMANCE; CHEMICAL PROPERTIES; SIMULATION; COMPUTER PROGRAMS

AVAILABILITY: GPO, Stock No. 757-139/1201

1976

Threew Electron Corp.
ADDRESS: 101 First Avenue, Waltham, MA 02154

TITLE: Feasibility Test on Compressing the Internal Combustion Engine for Automotive Vehicles, Task II. Final Report

1976

SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: INTERNAL COMBUSTION ENGINES; DIESEL ENGINE; DYNAMIC CYCLE ENGINES; PERFORMANCE; FUEL ECONOMY; CRANKS; DESIGN; GRAPHS (CHARTS); DIAGRAMS; AUTOMOTIVE EMISSIONS; FEASIBILITY; TESTING; WASTE HEAT; RECOVERY; UTILIZATION; DEMONSTRATION

AVAILABILITY: NTIS

1977, January

Thompson, D.L.; Barth, J.; Garthner, R.; Sours, S.
State University of New York, Center for Social Analysis
ADDRESS: Binghamton, NY 13901

TITLE: Analysis of State and Local Taxation of Railroads

1977, January

SPONSOR: National Science Foundation, Science and Technology Policy Office

KEYWORDS: RAILROADS; RAIL TRANSPORTATION; GOVERNMENT POLICIES; TAXES; ALLOCATIONS; PROPERTY VALUES; STATE GOVERNMENT; REGIONAL ANALYSIS; TABLES (DATA); LOCAL GOVERNMENT

AVAILABILITY: NTIS

1977, April 4

Thurillier, R.A.; Dubbert, L.F.; Duffey-Armstrong, R.; Sandys, R.C.
Stanford Research Institute
ADDRESS: Menlo Park, CA 94025

TITLE: A Methodology for Making a Quantitative Assessment of Passenger Transportation Alternatives

Final Report, 137 p.
1977, April 4

SPONSOR: U. S. Dept. of Defense, Naval Facilities Engineering Command, Office of Naval Research; Energy Research and Development Administration

KEYWORDS: PASSENGER TRANSPORTATION; TRANSPORTATION MODE CHOICE; LAND USE; ENERGY CONSERVATION; AIR QUALITY; TRAFFIC; ENERGY CONSERVATION; COMPUTERS; COSTS; HIGHWAYS; MODELS; STATISTICS; INPUT-OUTPUT ANALYSIS; COMPUTING

1976

Towle, R.L.; Grewe, J.E.; Chilenskas, R.A.; Pugh, J.O.
Argonne National Laboratory
ADDRESS: 9700 South Cass Ave., Argonne, IL 60439

TITLE: Cost Estimate for the Commercial Manufacture of Lithium-Iron Sulfide Cells for Lead-Lowering

Report No. ANL-76-12, 67 p.
1976

SPONSOR: Energy Research and Development Administration, Division of Transportation Energy Conservation

KEYWORDS: COSTS; LITHIUM/METAL SULFIDE BATTERIES; LITHIUM/ALUMINUM METAL SULFIDE BATTERIES; PRICES; ECONOMICS; GRAPHS

AVAILABILITY: NTIS
AVAILABILITY: House and Senate Document Room, Capital Building, Washington, DC

U.S. Congress
ADDRESS: Washington, DC
PUBLIC LAW 94-290, 94th Congress, H.R. 8235, 33 p.
1976, May 5
KEYWORDS: INTERSTATE TRANSPORTATION; HIGHWAYS; HIGHWAY TRANSPORTATION; CONSTRUCTION; GOVERNMENT POLICIES; APPROPRIATIONS; TRAFFIC CONTROL; SAFETY; RAIL TRANSPORTATION; VEHICLES
AVAILABILITY: House and Senate Document Room, Capital Building, Washington, DC

U.S. Congress, Joint Committee on Taxation
ADDRESS: Washington, DC
TITLE: Energy Policy & Energy Tax Proposals Relating to Transportation
CONGRESSIONAL COMMITTEE PRINT, 47 p.
1977, June 6
SPONSOR: U.S. House of Representatives, Committee on Ways and Means
KEYWORDS: TRANSPORTATION; LEGISLATION; TAXES; AUTOMOBILES; ECONOMICS; GASOLINE; FUEL CONSUMPTION; INDUSTRIES; REVENUE; ENERGY POLICY; ENERGY CONSERVATION; TABLES (DATA); TNCORE; FUEL ECONOMY

U.S. Congress, Office of Technology Assessment
ADDRESS: Washington, DC 20510
TITLE: Analysis of the Proposed National Energy Plan
REPORT NO. OTA-E-51, 248 p.
1977, August
SPONSOR: U.S. House of Representatives, Committee on Science and Technology; U.S. House of Representatives, Committee on Interior and Insular Affairs
KEYWORDS: ENERGY POLICY; PLANNING; LEGISLATION; ENERGY ECONOMICS; FACTORS; ENERGY SUPPLIES; ENERGY DEMAND; SOCIAL IMPACT; PRICES; FOSSIL FUELS; COAL; PETROLEUM; NATURAL GAS; NUCLEAR ENERGY; ENERGY CONSERVATION; TABLES (DATA); NATIONAL ENERGY PLAN
AVAILABILITY: GPO $9.00, Stock No. 052-003-00420-8

U.S. Congress, Office of Technology Assessment
ADDRESS: Washington, DC 20510
TITLE: Assessment of Community Planning for Mass Transit
VOLUME II: SUMMARY
REPORT NO. PB-253679, OTA-R-16, 82 p.
1976, February
KEYWORDS: MASS TRANSPORTATION; GOVERNMENT POLICIES; URBAN TRANSPORTATION; URBAN AREAS; PLANNING; TECHNOLOGY ASSESSMENT; FINANCING; POPULATION; TABLES (DATA); STATISTICAL ANALYSIS
AVAILABILITY: MIT

U.S. Dept. of Commerce, Bureau of Economic Analysis
ADDRESS: Washington, DC
BIBLIOGRAPHY: STATISTICS; INCOME; PRICES; FINANCIAL DATA; TRADE; CONSTRUCTION; EMPLOYMENT; INTERNATIONAL TRADE; TRANSPORTATION; ELECTRIC POWER; NATURAL GAS; PETROLEUM; COAL; TABLES (DATA); INDUSTRIES; EARNINGS
AVAILABILITY: GPO $5.10

U.S. Dept. of Commerce, Bureau of the Census
ADDRESS: Washington, DC
TITLE: 1967 Census of Transportation. Commodity Transportation Survey - Commodity Groups: Part 2, Selected Major TCC 3-Digit Classes
REPORT NO. TC67-C3-2, 373 p.
1970, June
KEYWORDS: TRUCKS; CARGO TRANSPORTATION; MANUFACTURERS; INDUSTRIES; COMMODITIES; DISTRIBUTION; TABLES (DATA); WEIGHT
AVAILABILITY: GPO $2.75

U.S. Dept. of Commerce, Bureau of the Census
ADDRESS: Washington, DC
TITLE: 1967 Census of Transportation. Commodity Transportation Survey - Traffic Patterns of Small Manufacturing Firms
REPORT NO. TC67-C3-4, 39 p.
1970
KEYWORDS: TRAFFIC; CENSUS; MANUFACTURING; INDUSTRIES; COMMODITIES; REGIONAL ANALYSIS; TABLES (DATA); CARGO TRANSPORTATION; TRUCKS
AVAILABILITY: GPO $0.50

U.S. Dept. of Commerce, Bureau of the Census
ADDRESS: Washington, DC
TITLE: Domestic and International Transportation of U.S. Foreign Trade: 1970
1972, September
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of Systems Analysis and Information; U.S. Dept. of Defense, Army Corps of Engineers, Institute for Water Resources
KEYWORDS: INTERNATIONAL TRAVEL; INTERNATIONAL TRADE; TRANSPORTATION; COMMODITIES; CARGO TRANSPORTATION; SURVEYS; TABLES (DATA); GRAINS (CHART); WEIGHT; WATER TRANSPORTATION; AIR TRANSPORTATION; MARINE TRANSPORTATION; MAPS; EXPORTS; IMPORTS; REGIONAL ANALYSIS; QUESTIONNAIRES; DISTANCE
AVAILABILITY: GPO

U.S. Dept. of Commerce, Bureau of the Census
ADDRESS: Washington, DC
TITLE: 1972 Census of Wholesale Trade. Subject Series: Petroleum bulk stations and terminals
IEMPLOYMENT

TITLE: Environmental Development Plant (EDP) a Program Announcement

KEYWORDS: CARGO TRANSPORTATION; PLANNING; DEMAND; Vehicle Alternative Fuels Utilization Program

U.S. Dept. of Energy, Division Report

KEYWORDS: INDUSTRY; SEMI-ANNUAL REPORT, Import

ADDS: Washington, DC

ADD: ENVIRONMENTAL PLANNING; MARCH 1978; Transportation Energy Conservation Program

AVAILABILITY: NTIS


e

U.S. Dept. of Energy, Assistant Secretary for Conservation and Solar Applications; U.S. Dept. of Energy, Assistant Secretary for Environment

ADDRESS: Washington, DC

TIT: Environmental Development Plan (EDP): Transportation Energy Conservation, FY 1977


1978, March

KEYWORDS: PLANNING; TECHNOLOGY; TRANSPORTATION; HIGHWAY TRANSPORTATION; ELECTRIC VEHICLES; PROFILES; HYBRID ELECTRIC-FUELED VEHICLES; ALTERNATE FUELS; SYTHETIC FUELS; EMISSIONS; HEATING; SAFETY; ENVIRONMENTAL IMPACT; DESIGN; STYLING; SIZING; GAS TURBINE ENGINES; PIPELINE TRANSPORTATION; STRATIFIED CHARGE ENGINES; DRIVING CYCLE; FUEL CONSUMPTION; COMPARATIVE EVALUATIONS

AVAILABILITY: NTIS


e

U.S. Dept. of Energy, Assistant Secretary for Conservation and Solar Applications, Office of Business Assistance Programs

ADDRESS: Washington, DC

TIT: Environmental Development Plan (EDP): Transportation Energy Conservation Program; Programs Report No. 6


1978, April

KEYWORDS: INDUSTRY; INDUSTRIAL SECTOR; ENERGY CONSUMPTION; ENERGY CONSERVATION; ENERGY CONSUMPTION; AVIATION; AUTOMOBILE INDUSTRY; AGRICULTURE; CONSTRUCTION (BUILD); ENERGY DEPENDENCE; AIR CONDITIONING; FUELS, GRAPHS (CHARTS)

AVAILABILITY: GPO, Stock No. 061-000-00052-6


e

U.S. Dept. of Energy, Assistant Secretary for Conservation and Solar Applications, Office of Business Assistance Programs

ADDRESS: Washington, DC

TIT: Proceedings of the Workshop on Urban Freight Consolidation


1976, June

SPO: U.S. Dept. of Transportation; Federal Energy Administration; Tennessee, University of

KEYWORDS: CARGO TRANSPORTATION; PLANNING; DEMAND (ECONOMICS); TRANSPORTATION: INTERNATIONAL TRADE; TRUCKS; TRAHE (1889); GRAPHS (CHARTS); WATER TRANSPORTATION; COMMODITIES; RATES (COSTS); SHIPMENTS; LAND USE; SOCIO-ECONOMIC FACTORS; ENVIRONMENTAL IMPACT; GOVERNMENT POLICIES; EMPLOYMENT


e

U.S. Dept. of Energy, Assistant Secretary for Energy Technology

ADDRESS: Washington, DC

TIT: Market-Oriented Program Planning Study (MOPPS): Volume II: Integrated Summary


1977, December

KEYWORDS: RESIDENTIAL SECTOR; COMMERCIAL SECTOR; TRANSPORTATION; INDUSTRIAL SECTOR; ENVIRONMENTAL IMPACT; SUPPLY (ECONOMICS); TABLES (DATA); TECHNOLOGY ASSESSMENT; FUEL SOURCES; COAL; SOLAR ENERGY; ENERGY CONSUMPTION; ENERGY SUPPLIES; DEMAND (ECONOMICS); PLANNING; ECONOMY; ENERGY CONSUMPTION; NATURAL GAS; PETROLEUM; ELECTRIC POWER GENERATION; HEALTH; SAFETY; COMPARATIVE EVALUATIONS; GRAPHS (CHARTS); RESEARCH; COMMERCIALIZATION; FORECASTING


e

U.S. Dept. of Energy, Assistant Secretary for Energy Technology

ADDRESS: Washington, DC

TIT: Environmental Development Plan (EDP): Summary and Status of Environmental Development Plans, FY 1976


1978, April

KEYWORDS: SOLAR ENERGY; GEOTHERMAL ENERGY; FOSSIL FUELS; COAL GLOSSIFICATION; ENERGY CONSERVATION; COAL LIQUEFACTION; TECHNOLOGY; NUCLEAR ENERGY: BIOMASS; UNCONVENTIONAL ENERGY SOURCES; PHOTOVOLTAIC CONVERSION; AIR POLLUTION; WATER POLLUTION; BUILDINGS; INDUSTRIAL SECTOR; TRANSPORTATION; HEALTH; SAFETY; SOCIO-ECONOMIC FACTORS; ENVIRONMENTAL IMPACT; ELECTRIC POWER; OCEAN THERMAL ENERGY CONVERSION

AVAILABILITY: NTIS


e

U.S. Dept. of Energy, Division of Transportation Energy Conservation

ADDRESS: Washington, DC


Report No. DOE/CS-0002/1, 78 p.

1977, December

KEYWORDS: ELECTRIC VEHICLES; RESEARCH PROGRAMS; RESEARCH: DEVELOPMENT: US DOE; GOVERNMENT POLICIES; DEMONSTRATION; INDUSTRIES

AVAILABILITY: GPO, Stock No. 061-000-00024-1


e

U.S. Dept. of Energy, Division of Transportation Energy Conservation

ADDRESS: Washington, DC

TIT: Program Planning Document: Highway Vehicle Alternative Fuels Utilization Program (APF)


1976, April

KEYWORDS: ALTERNATE FUELS; HIGHWAY TRANSPORTATION; UTILIZATION; ENERGY CONSUMPTION; SYMMETRIC FUELS; FUELS: RESEARCH; PETROLEUM; TECHNOLOGY ASSESSMENT;


e

U.S. Dept. of Energy, Assistant Secretary for Energy Technology

ADDRESS: Washington, DC

TIT: Market-Oriented Program Planning Study (MOPPS): Volume II: Integrated Summary


1977, December

KEYWORDS: RESIDENTIAL SECTOR; COMMERCIAL SECTOR; TRANSPORTATION; INDUSTRIAL SECTOR; ENVIRONMENTAL IMPACT; SUPPLY (ECONOMICS); TABLES (DATA); TECHNOLOGY ASSESSMENT; FUEL SOURCES; COAL; SOLAR ENERGY; ENERGY CONSUMPTION; ENERGY SUPPLIES; DEMAND (ECONOMICS); PLANNING; ECONOMY; ENERGY CONSUMPTION; NATURAL GAS; PETROLEUM; ELECTRIC POWER GENERATION; HEALTH; SAFETY; COMPARATIVE EVALUATIONS; GRAPHS (CHARTS); RESEARCH; COMMERCIALIZATION; FORECASTING


e

U.S. Dept. of Energy, Assistant Secretary for Energy Technology

ADDRESS: Washington, DC

TIT: Environmental Development Plan (EDP): Summary and Status of Environmental Development Plans, FY 1976


1978, April

KEYWORDS: SOLAR ENERGY; GEOTHERMAL ENERGY; FOSSIL FUELS; COAL GLOSSIFICATION; ENERGY CONSERVATION; COAL LIQUEFACTION; TECHNOLOGY; NUCLEAR ENERGY: BIOMASS; UNCONVENTIONAL ENERGY SOURCES; PHOTOVOLTAIC CONVERSION; AIR POLLUTION; WATER POLLUTION; BUILDINGS; INDUSTRIAL SECTOR; TRANSPORTATION; HEALTH; SAFETY; SOCIO-ECONOMIC FACTORS; ENVIRONMENTAL IMPACT; ELECTRIC POWER; OCEAN THERMAL ENERGY CONVERSION

AVAILABILITY: NTIS


e

U.S. Dept. of Energy, Division of Transportation Energy Conservation

ADDRESS: Washington, DC


Report No. DOE/CS-0002/1, 78 p.

1977, December

KEYWORDS: ELECTRIC VEHICLES; RESEARCH PROGRAMS; RESEARCH: DEVELOPMENT: US DOE; GOVERNMENT POLICIES; DEMONSTRATION; INDUSTRIES

AVAILABILITY: GPO, Stock No. 061-000-00024-1


e

U.S. Dept. of Energy, Division of Transportation Energy Conservation

ADDRESS: Washington, DC

TIT: Program Planning Document: Highway Vehicle Alternative Fuels Utilization Program (APF)


1976, April

KEYWORDS: ALTERNATE FUELS; HIGHWAY TRANSPORTATION; UTILIZATION; ENERGY CONSUMPTION; SYMMETRIC FUELS; FUELS: RESEARCH; PETROLEUM; TECHNOLOGY ASSESSMENT;
<653> CONT.  
GRAPHS (CHARTS)

<654>  
U.S. Dept. of Energy, Division of Transportation  
Energy Conservation  
ADDRESS: Washington, DC  
TITLE: Alternative Fuels Utilization Report  
Irregular Publication  
KEYWORDS: ALTERNATIVE FUELS; UTILIZATION: US DOE; INTERNATIONAL ANALYSIS; TRANSPORTATION; PLANNING

<655>  
U.S. Dept. of Energy, Division of Transportation  
Energy Conservation  
ADDRESS: Washington, DC  
TITLE: Electric and Hybrid Vehicle Demonstration: 1978  
1978  
KEYWORDS: ELECTRIC VEHICLES; HYBRID ELECTRIC-POWERED VEHICLES; US DOE; MARKET; DEMONSTRATION; UTILIZATION; ELECTRIC VEHICLE RANGE; RESEARCH  
AVAILABILITY: GPO, Stock No. 061-000-00171-9

<656>  
U.S. Dept. of Energy, Division of Transportation  
Energy Conservation, Office of Highway Vehicle Systems  
ADDRESS: Washington, DC  
TITLE: Highway Vehicle Systems Contractors Coordination Meeting  
1978, March  
KEYWORDS: CONFERENCE; AUTOMOTIVE ENGINES; US DOE; 4-CYL TURBO ENGINES; HEAT ENGINES; NASA; FUEL ECONOMY; PROPULSION TRANSPORTATION; HEAT EXCHANGERS; SPINNING ENGINES; DESIGN; ALTERNATIVE FUELS; TRANSPORTATION; ENERGY CONSERVATION; DIAGRAMS; PHOTOGRAPHS; GRAPHS (CHARTS);  
AVAILABILITY: NTIS

<657>  
U.S. Dept. of Energy, Economic Regulatory Administration  
ADDRESS: Washington, DC  
TITLE: Notice of Proposed Releasing and Public Hearing to Establish Contingency Gasoline Pacing Plan  
KEYWORDS: GASOLINE; GOVERNMENT POLICIES; MEASURES; VEHICLES; ALLOCATIONS; CONSUMERS; DIESEL FUELS; PURCHASING; AUTOMOBILES; ECONOMIC ANALYSIS; REGULATIONS; RATIONING; FLAPPING; SHORTAGES; STATE ANALYSIS; ENERGY EMERGENCY PLANNING; PUBLIC SERVICES; PRICES

<658>  
U.S. Dept. of Energy, Economic Regulatory Administration  
ADDRESS: Washington, DC  
TITLE: Preliminary Findings and Views Concerning the Exception of Aerojet Fuels from the Mandatory Petroleum Allocation and Price Regulations  
1978, January  
KEYWORDS: AIR TRANSPORTATION; ENERGY DEMAND; HISTORY; ENERGY SUPPLIES: COSTS; PETROLEUM; TABLES (DATA); AERATION FUELS; TURBINES; ECONOMIC IMPACT; IMPORTS; DISTRIBUTION; FORECASTING; REGULATIONS; MILITARY UTILIZATION; TRANSPORTATION; PRICES; PETROLEUM

<659>  
U.S. Dept. of Energy, Economic Regulatory Administration, Office of Regulations and Emergency Planning  
ADDRESS: Washington, DC  
1980, May  
KEYWORDS: ENVIRONMENTAL IMPACT; ALLOCATIONS; REGULATIONS: GASOLINE; GOVERNMENT POLICIES; PRICES; VEHICLES; ECONOMIC REGULATIONS; ENVIRONMENTAL IMPACT; ALLOCATIONS; WATER QUALITY: AIR QUALITY

<660>  
U.S. Dept. of Energy, Economic Regulatory Administration, Office of Regulations and Emergency Planning  
ADDRESS: Washington, DC  
TITLE: Environmental Assessment of the Exception of Motor Gasoline from the Mandatory Allocation and Price Regulations  
30 p.  
1978, May  
KEYWORDS: ENVIRONMENTAL IMPACT; ALLOCATIONS; REGULATIONS: GASOLINE; GOVERNMENT POLICIES; PRICES; VEHICLES; ECONOMIC REGULATIONS; ENVIRONMENTAL IMPACT; ALLOCATIONS; WATER QUALITY: AIR QUALITY

<661>  
U.S. Dept. of Energy, Economic Regulatory Administration, Office of Regulations and Emergency Planning, Major Emergency Programs Division  
ADDRESS: Washington, DC  
TITLE: Economic and Regulatory Analysis of the Proposed Standby Gasoline Nationalizing Plan  
1978, April 13  
KEYWORDS: INDUSTRIAL SECTOR: STATE ANALYSIS; COMPETITION; TABLES (DATA); US DOE; SALES; ECONOMIC IMPACT: REGIONAL ANALYSIS; FUEL CONSUMPTION: GASOLINE; ENERGY SHORTAGES; PRICES; REGULATIONS; PETROLEUM ALLOCATIONS; FORECASTING; ECONOMIC ANALYSIS: GROSS NATIONAL PRODUCT: IMPACT: INCOME; TRANSPORTATION

<662>  
U.S. Dept. of Energy, Energy Information
(706) U.S. Dept. of Transportation, Transportation Systems Center, Transportation Information Division
ADDRESS: Kendall Square, Cambridge, MA 02142
1976, March
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the Assistant Secretary for Policy, Plans, and International Affairs
KEYWORDS: TRANSPORTATION; SAFETY; ACCIDENTS; TRAFFIC; GRAPHIC (CHARTS); TABLES (DATA); REGULATIONS; SERVICES
AVAILABILITY: NTSB

(707) U.S. Dept. of Transportation, Transportation Systems Center, Transportation Information Division
ADDRESS: Kendall Square, Cambridge, MA 02142
7777
TITLE: Passenger Traffic for Top 100 U.S. Airports, August 5, 1976
1977, June 2
SPONSOR: U.S. Dept. of Transportation, Federal Aviation Administration, Office of Aviation Policy, Division of Automation Technology Development
KEYWORDS: AIR TRANSPORTATION; AIRCRAFT; TRAFFIC; GRAPHIC (CHARTS); TABLES (DATA); REGULATIONS; SERVICES
AVAILABILITY: GPO, Stock No. 050-014-00007-0/Catalog No. TD 7.5:UB413

(708) U.S. Dept. of Transportation, Urban Mass Transportation Administration
ADDRESS: Washington, DC 20590
131 p.
KEYWORDS: URBAN TRANSPORTATION; MASS TRANSPORTATION; LEGISLATION; GOVERNMENT POLICIES; REGULATIONS
AVAILABILITY: GPO, Stock No. 050-014-00007-0/Catalog No. TD 7.5:UB413

(709) U.S. Dept. of Transportation, Urban Mass Transportation Administration, Office of Technology Development and Deployment, Office of ART Application; U.S. Dept. of Transportation, Transportation Systems Center, Technology Sharing Program Office
ADDRESS: DOT/STA, Trans Point Building, 2102 2nd Street NW, Washington, DC 20590; DOT/SC, Kendall Square, Cambridge, MA 02142
TITLE: People Rower Profiles
15 p.
1977, May
KEYWORDS: PASSENGER TRANSPORTATION; URBAN AREAS; TECHNOLOGY; DEMAND; DEMONSTRATION; PERFORMANCE; AUTOMATED SUBWAY TRANSIT
AVAILABILITY: GPO

(710) U.S. Dept. of Transportation, Urban Mass Transportation Administration, Policy and Program Development, Office of Program Evaluation
ADDRESS: Washington, DC 20590
TITLE: The Data Rail Modernization Program. The Distribution of Capital Grant Funds for Rail Rehabilitation and Modernization, 1965-1977
1978, July
KEYWORDS: RAIL TRANSPORTATION; CAPITAL COSTS; ENERGY CONSUMPTION; RAPID TRANSIT SYSTEMS; GROWTH; GOVERNMENT POLICIES; REGIONAL ANALYSIS; CS DOT; MAINTENANCE; REFINEMENTS; MODERNIZATION; OPERATING COSTS; EMPLOYMENT; PASSENGER TRANSPORTATION; COMPARMS; TABLES (DATA); PENSIONS; FUNDING

(711) U.S. Environmental Protection Agency, Emission Control Technology Division, Standards Development and Support Branch
ADDRESS: Ann Arbor, MI 48105
Report No. PB-270721, HC 75-03, 13 p.
1975, August
KEYWORDS: MOTORCYCLES; Dynamometers; EMISSIONS; FUEL CONSUMPTION; TABLES (DATA); FUEL ECONOMY; TESTING; ROBOT OF INSERTIS; WEIGHT
AVAILABILITY: NTSI

(712) U.S. Environmental Protection Agency, Emission Control Technology Division, Standards Development and Support Branch
ADDRESS: Ann Arbor, MI 48105
TITLE: Motorcycle Usage. Technical Support Report for Regulatory Action
1976, January
KEYWORDS: CYCLES; UTILIZATION; MOTORCYCLES; SIZE; TRANSPORTATION; EMISSIONS; COMMUTING; VEHICLE TRIPS; VELOCITIES; TABLES (DATA); INFORMATION NEEDS
AVAILABILITY: NTSI

(713) U.S. Environmental Protection Agency, Office of Transportation and Land Use Policy
ADDRESS: Washington, DC 20540
TITLE: Bicycle Strategies to Reduce Air Pollution
1978, June
KEYWORDS: BICYCLES; AIR POLLUTION; ENVIRONMENTAL PROTECTION AGENCY; COMMUNITY DEVELOPMENT; EDUCATION; PLANNING; ROADS

(714) U.S. House of Representatives, Committee on Government Operations
ADDRESS: Washington, DC 20510
TITLE: Department of Energy Organization Act
Congressional Committee Print, 95th Congress, 1st Session, Hearing on H.R. 6263, held March 28, 29, April 5, 6, 18, and 19, 1977, 940 p. 1977
Francisco, California, August 9-12, 1976, 9 p. 1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ENGINES; POLLUTION CONTROL; FUEL ECONOMY; COMPARATIVE EVALUATIONS; SPARK IGNITION ENGINES; DIESEL ENGINES; MANUFACTURE ENGINES; DIESEL CYCLE ENGINES; STRATIFIED CHARGE ENGINES; GAS TURBINE ENGINES; POLLUTION REGULATIONS; GRAPHS (CHARTS); ELECTRIC VEHICLES; AUTOMOTIVE EMISSIONS
AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

Wolfe, A.C. Michigan University of, Highway Safety Research Institute
ADDRESS: Ann Arbor, MI 48109
TITLE: Annotated Bibliography on Highway Travel Exposure Research Methods
1976, January
SPONSOR: U.S. Dept. of Transportation, National Highway Traffic Safety Administration
AIVAILABILITY: NTIS

Wosch, J.P. Massachusetts Institute of Technology, Center for Transportation Studies
ADDRESS: 77 Massachusetts Ave., Cambridge, MA 02139
TITLE: Operational and5 and Insurance Pre-Arranged Ride Sharing
1976, September 30
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the University Research
KEYWORDS: CARPOOLS, VANPOOLS, BUSES (VEHICLES); REGULATIONS; PASSENGER TRANSPORTATION; PARATRANSIT; SURVEYS; SLIGHTEN TRANSPORTATION; INSURANCE; OWNERSHIP; STATE AVAILABILITY: NTIS

West, V. Petro-Electric Rotors Ltd.
TITLE: An Experimental ICE/Electric Hybrid with Low Emissions and Low Fuel Consumption Capability
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ELECTRIC VEHICLES; FUEL ECONOMY; ENERGY CONSERVATION; BATTERIES; PROPULSION; AUTOMOBILE ENGINES; HYBRID ELECTRIC-POWERED VEHICLES; GRAPHS (CHARTS); DRIVE TRAIN SYSTEMS; DIAGRAMS; TABLES (DATA); ENERGY STORAGE
AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096

<764>
CONT.
1977
SPONSOR: Energy Research and Development Administration
KEYWORDS: AIR TRANSPORTATION; EFFICIENCY; ENERGY CONSUMPTION; RCAS; AIRCRAFT; GRAPHS (CHARTS); FOR CONSUMPTION

<765>
Wilson, C.L.
Massachusetts Institute of Technology, Workshop on Alternative Energy Strategies (WASE)
ADDRESS: Cambridge, MA 02139
1977
SPONSOR: National Science Foundation
KEYWORDS: ENERGY SUPPLIES; ENERGY DEMAND; ENERGY CONSUMPTION: FORECASTING; GROWTH; PRICES; FUELS; ENERGY CONSERVATION; PETROLEUM RESERVES; OPEC; INTERNATIONAL TRADE; NATURAL GAS; PRODUCTION; COAL; NUCLEAR ENERGY; FOSSIL FUELS; UNCONVENTIONAL ENERGY SOURCES: TABLES (DATA); RECOVERY; DEVELOPING COUNTRIES; DISTRIBUTION, ECONOMIC; DEMAND (ECONOMICS): ECONOMIC; DEMAND (ECONOMICS); ECONOMIC EVALUATIONS; GAS TURBINE ENGINES; EFFICIENCY; AUTOMOBILE ENGINES; DIAGRAMS; ELECTRIC ENGINES; STRATIFIED CHARGE ENGINES; MANUFACTURING

<766>
Wilson, D.G.
TITLE: Alternative Automobile Engines
Scientific American, 239(1), 39-49
1976, July
KEYWORDS: ENGINES; DIAGRAMS; DIESEL ENGINES; SPARK IGNITION ENGINES; DIESEL CYCLE ENGINES; PETROL ENGINES; MANUFACTURING; ELECTRIC VEHICLES; EFFICIENCY; AUTOMOBILE ENGINES; COSTS; STRATIFIED CHARGE ENGINES; MANUFACTURING

<767>
Vincenty, B.; Howell, P.; Kent, P.
U.S. Dept. of Transportation, Federal Highway Administration, Office of Research and Development, Environmental Design and Control Division
ADDRESS: Washington, DC 20590
TITLE: Truck Traffic Volume and Weight Data for 1971 and Their Evaluation
1976, December
KEYWORDS: TRUCKS; HIGHWAY TRANSPORTATION; WEIGHT; CLASSIFICATIONS; TABLES (DATA); FUELS; TRAFFIC AVAILABILITY: NTIS

<768>
Welch, J.D., Jr.; Pracaczek, J.P.
Chrysler Corp.
ADDRESS: Detroit, MI
TITLE: Engines for Tomorrow's Passenger Cars
Paper No. 760610, presented at the Society of Automotive Engineers' West Coast Meeting, San Francisco, California, August 9-12, 1976, 9 p. 1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ENGINES; POLLUTION CONTROL; FUEL ECONOMY; COMPARATIVE EVALUATIONS; SPARK IGNITION ENGINES; DIESEL ENGINES; MANUFACTURE ENGINES; DIESEL CYCLE ENGINES; STRATIFIED CHARGE ENGINES; GAS TURBINE ENGINES; POLLUTION REGULATIONS; GRAPHS (CHARTS); ELECTRIC VEHICLES; AUTOMOTIVE EMISSIONS
AVAILABILITY: Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096

<769>
Wolfe, A.C.
Michigan University of, Highway Safety Research Institute
ADDRESS: Ann Arbor, MI 48109
TITLE: Annotated Bibliography on Highway Travel Exposure Research Methods
1976, January
SPONSOR: U.S. Dept. of Transportation, National Highway Traffic Safety Administration
AIVAILABILITY: NTIS

<770>
Wosch, J.P.
Massachusetts Institute of Technology, Center for Transportation Studies
ADDRESS: 77 Massachusetts Ave., Cambridge, MA 02139
TITLE: Operational and5 and Insurance Pre-Arranged Ride Sharing
1976, September 30
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the University Research
KEYWORDS: CARPOOLS, VANPOOLS, BUSES (VEHICLES); REGULATIONS; PASSENGER TRANSPORTATION; PARATRANSIT; SURVEYS; SLIGHTEN TRANSPORTATION; INSURANCE; OWNERSHIP; STATE AVAILABILITY: NTIS

<771>
West, V.
Petro-Electric Rotors Ltd.
TITLE: An Experimental ICE/Electric Hybrid with Low Emissions and Low Fuel Consumption Capability
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ELECTRIC VEHICLES; FUEL ECONOMY; ENERGY CONSERVATION; BATTERIES; PROPULSION; AUTOMOBILE ENGINES; HYBRID ELECTRIC-POWERED VEHICLES; GRAPHS (CHARTS); DRIVE TRAIN SYSTEMS; DIAGRAMS; TABLES (DATA); ENERGY STORAGE
AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096

<772>
Wosch, J.P.
Massachusetts Institute of Technology, Center for Transportation Studies
ADDRESS: 77 Massachusetts Ave., Cambridge, MA 02139
TITLE: Regulating and Insurance Pre-Arranged Ride Sharing
1976, September 30
SPONSOR: U.S. Dept. of Transportation, Office of the Secretary, Office of the University Research
KEYWORDS: CARPOOLS, VANPOOLS, BUSES (VEHICLES); REGULATIONS; PASSENGER TRANSPORTATION; PARATRANSIT; SURVEYS; SLIGHTEN TRANSPORTATION; INSURANCE; OWNERSHIP; STATE AVAILABILITY: NTIS

<773>
West, V.
Petro-Electric Rotors Ltd.
TITLE: An Experimental ICE/Electric Hybrid with Low Emissions and Low Fuel Consumption Capability
1976
SPONSOR: Society of Automotive Engineers
KEYWORDS: ELECTRIC VEHICLES; FUEL ECONOMY; ENERGY CONSERVATION; BATTERIES; PROPULSION; AUTOMOBILE ENGINES; HYBRID ELECTRIC-POWERED VEHICLES; GRAPHS (CHARTS); DRIVE TRAIN SYSTEMS; DIAGRAMS; TABLES (DATA); ENERGY STORAGE
AVAILABILITY: Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096

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(777a)
Fari, K. E.; Sinka, K. C.
Southeastern Wisconsin Regional Planning Commission; Purdue University, School of Engineering
ADDRESS: SWRPC, Racine, WI; PO, Lafayette, IN
TITLE: Energy Considerations in Urban Transportation Planning

Traffic Quarterly, 29, 571-592
1975, October

KEYWORDS: URBAN TRANSPORTATION; FUEL CONSUMPTION; PETROL; ENERGY SUPPLIES; ENERGY DEMAND; ENERGY SHORTAGE; VEHICLE MILE TRAVELLED; VEHICLES; EFFICIENCY; AUTOMOBILES; BUSES (VEHICLES); RAIL TRANSPORTATION; VEHICLE TRAFFIC (DATA); AUTOMOBILE OCCUPANCY; PLANNING; GRAPHS (CHARTS); MODELS

(777b)
Rabat, Y.
ADDRESS: 7300 Brockton Ct., Bethesda, MD 20034
TITLE: The Effects of Transportation Systems on the Spatial Distributions of Population and Jobs

1976, November

KEYWORDS: TRANSPORTATION SYSTEMS; DISTRIBUTION; POPULATION; RESEARCH (STATISTICS); EMPLOYMENT; URBAN AREAS; URBAN TRANSPORTATION; MODELS; GRAPHS (CHARTS)

(777c)
Haskel, J.; Allen, R. M.; Horlock, R. M.; Glenn, K.; Christiansen, T.; Warner, J.
Pennsylvania, University of, Dept. of Civil and Urban Engineering
ADDRESS: Philadelphia, PA 19174
TITLE: Transport of Bulk Commodities Via Freight Pipeline, Volumes I-V

1976, November

BROADER: U.S. Dept. of Transportation, Office of University Research

KEYWORDS: COMMODITIES; INERTIA TRANSPORTATION; COMPETITIVE EVALUATION; CARGO; TRANSPORTATION; PIPELINE TRANSPORTATION; RAIL TRANSPORTATION; HIGHWAY TRANSPORTATION; GRAPHS (CHARTS); TABLES (DATA); COSTS; MATHEMATICAL MODELS; ECONOMIC (ECONOMICS); FLUID PIPELINE; HYDRAULIC TRANSPORT; RESEARCH; ENVIRONMENTAL IMPACT; TRUCKS

AVAILABILITY: FREE

(777d)
Ziff-Davis Publishing Co.
ADDRESS: One Park Avenue, New York, NY 10016
TITLE: Car and Driver


MONTHLY

KEYWORDS: AUTOMOBILES; MANUFACTURERS; ROAD TESTS; FUEL ECONOMY; DESIGN; HIGHWAY TRANSPORTATION; ACCELERATION; AUTOMOTIVE ENGINE; PERFORMANCE; BRAKES; PRICES; AUTOMOTIVE TRANSPORTATION; AUTOMOBILE DRIVERS; TRIPS; PHOTOGRAPHS

(777e)
Soper, J.H.; Pushkarov, R.
Regional Plan Association
ADDRESS: New York, NY
TITLE: Where Express Busess Work

Paper published in Transportation Research Record No. 926, 35-38
1977
SPONSOR: U.S. Dept. of Transportation, Urban Mass Transportation Administration; Ford Foundation; Rockefeller Foundation

KEYWORDS: RESIDENTIAL SECTOR; URBAN AREAS; CONSUMERS; BUSES (VEHICLES); PARKING; PASSENGER TRANSPORTATION; COSTS

AVAILABILITY: National Academy of Sciences, Transportation Research Record, 2101 Constitution Ave. NW, Washington, DC 20418
$2.30 for Transportation Research Record 626

(777f)
Kearney, F.B. (ed.)
National Academy of Sciences, National Research Council, Transportation Research Board
ADDRESS: 2101 Constitution Avenue NW, Washington, DC 20418
TITLE: Transit Planning and Operations

Transportation Research Record 625, 66 p.
1977

KEYWORDS: PASSENGER TRANSPORTATION; SYSTEMS; PLANNING; NETWORK COSTS; TABLES (DATA); COSTS; AUTOMOBILES; MASS TRANSPORTATION MODELS; RAIL TRANSPORTATION; SUBWAYS; TABLES (DATA); BUSES; GRAPHS (CHARTS)

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