

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Measuring the Nation's Wealth

Volume Author/Editor: Wealth Inventory Planning Study

Volume Publisher: U.S. Government Printing Office

Volume ISBN: 0-870-14185-6

Volume URL: <http://www.nber.org/books/unkn64-3>

Publication Date: 1964

Chapter Title: Appendix II-L: Transportation

Chapter Author: David J. Hyams

Chapter URL: <http://www.nber.org/chapters/c5219>

Chapter pages in book: (p. 681 - 729)

---

---

APPENDIX II: PART L  
REPORT OF THE WORKING GROUP ON  
TRANSPORTATION WEALTH

Prepared by DAVID J. HYAMS

**MEMBERSHIP OF THE WORKING GROUP ON TRANSPORTATION WEALTH**

John E. Clayton (chairman), Transportation and Facilities Research Division, A.M.S., Department of Agriculture.

Donald E. Church, Transportation Division, Bureau of the Census.

P. L. Conway, Jr., Finance, Accounting, Taxation and Valuation Department, Association of American Railroads.

Warner H. Hord, Office of Carrier Accounts and Statistics, Civil Aeronautics Board (Miss Fredlyn Ramsey served as alternate to Mr. Hord).

David J. Hyams (secretary), Wealth Inventory Planning Study, The George Washington University.

Edward V. Kiley, Department of Research and Transportation Economics, American Trucking Associations.

Edward Margolin, Bureau of Transport Economics and Statistics, Interstate Commerce Commission (Mr. Margolin was represented at two meetings by Mr. William Kendall).

E. G. Plowman, Office of the Undersecretary for Transportation, Department of Commerce (Mr. Plowman was represented at one meeting by Mr. Edward Hassell).

Alvin Shapiro, American Merchant Marine Institute (Mr. Chester Szychliński served as alternate to Mr. Shapiro).

Frank A. Smith, Department of Research, Transportation Association of America (Mr. Smith was represented at one meeting by Mr. J. Philip Carlile).

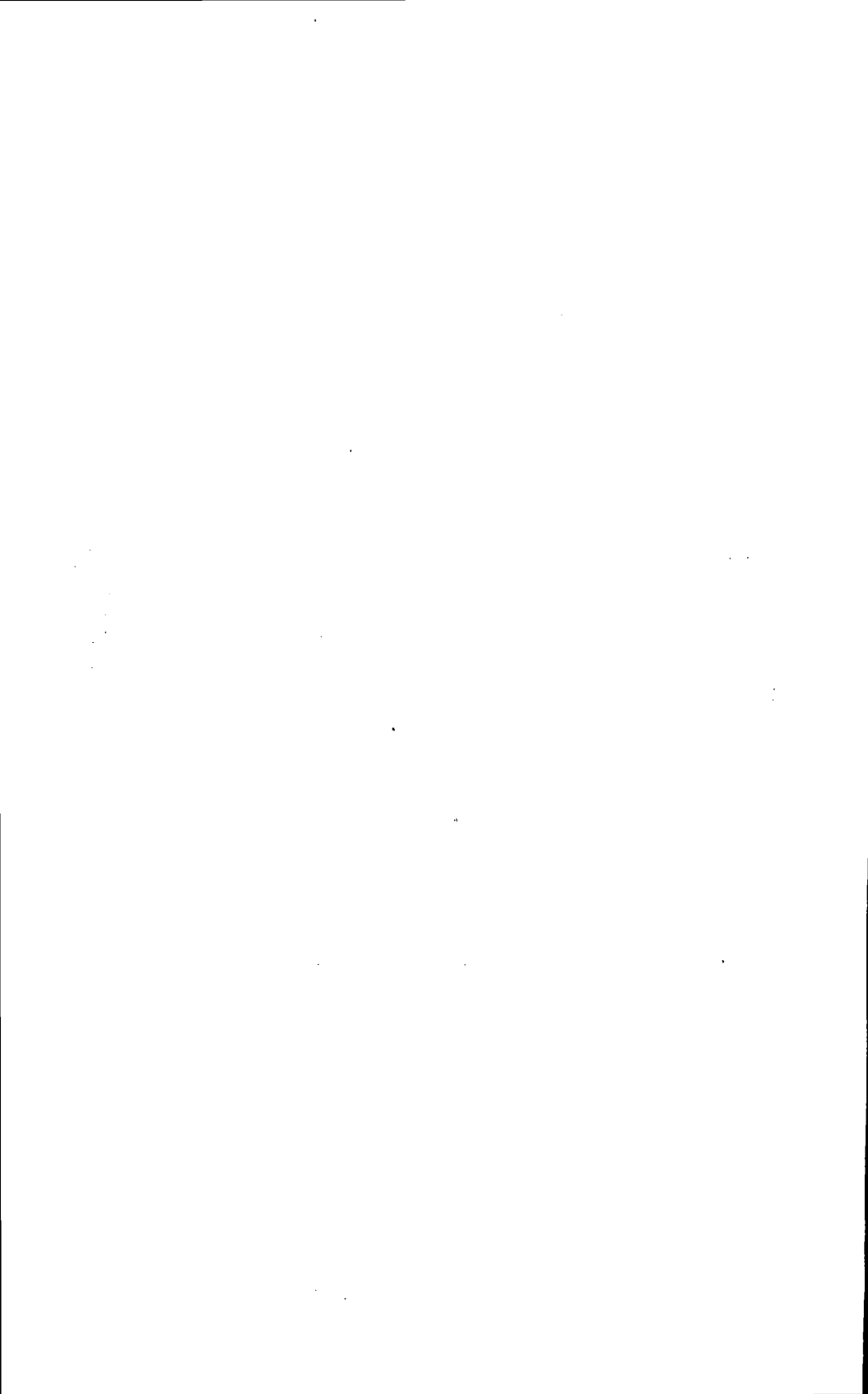
Ernest W. Williams, Jr., Graduate School of Business, Columbia University.

## PREFACE

This report is the product of three daylong meetings of the Working Group on Transportation. The writer of this report, the group secretary, takes this opportunity to acknowledge that fact and to thank members for their participation. Appreciation is also expressed to the following persons who attended one or more meetings and contributed to the discussions: B. H. Moore, John W. Kendrick, and Joseph R. Rose.

The final wording of the report is the responsibility of the secretary. Whereas he has attempted to reflect the consensus of the group, no member should be held responsible for all the views expressed. Individual members have been free to write supplementary statements clarifying their individual views if they so desired.

DAVID J. HYAMS.



# TRANSPORTATION

## I. WEALTH IN TRANSPORTATION

### INTRODUCTION

This report is about the measurement and classification of transport wealth, with particular emphasis on that part owned by private firms holding themselves out to perform transport services.

In the first chapter, transport wealth is defined and discussed in its several aspects. The second chapter contains the working group's recommendations for the classification of privately owned transport wealth. A large share of this is owned by business units which report to Federal agencies, usually as part of the regulatory process. It is possible to compare the data available through the typical regulatory report with the recommended data objectives and to point out general deficiencies in data availabilities. In the remaining chapters, the report moves from the generalities of chapter II through a detailed industry-by-industry review of data sources, availabilities, and gaps.

### TRANSPORTATION: FUNCTION AND INDUSTRY

Transportation can be viewed as both a function and an industry. The transport function—unlike most economic activities—is performed by all economic sectors. Transport wealth, functionally defined, includes all tangible assets that contribute immediately to the movement of persons or property between places. It includes transport vehicles, whether owned by a manufacturing company, a household, or a motor carrier. It includes such structures as airfields, oil, gas, and water pipelines, and highways and railways.

Transportation also can be viewed as an industry composed of privately owned economic units whose primary activities are related to the provision of transport and related services. The wealth of this industry is represented by the tangible assets on the books of account of the constituent business units. These assets consist not only of immediately identifiable transport-related properties like vehicles and ways but also the full range of assets which the firm has found it necessary to own in conducting its transport activity.

Measures are needed of transport wealth functionally defined and of the wealth of the transportation industries. We recommend the development of both types of measures.

### USES OF TRANSPORT WEALTH DATA

The identification of transport assets on both functional and industrial bases will serve the needs of a variety of users. The data requirements suggested in chapter 2 of the main report are met by classifying wealth on an industrial basis. This classification makes

possible the study of relationships between the transportation industries and the rest of the economy or among the transportation industries—for example, in the analysis of capital/output ratios.

Recognition of transport as a function also is useful—for example, it will result in the provision of data on the comparative investment in private and public carriage. The four-way distribution of wealth among that devoted to local and long-haul service and passenger and freight carriage that is recommended below adds further to the analytical usefulness of the data; for example, in linking transport facilities with traffic flow data.

#### GUIDELINES FOR IDENTIFYING TRANSPORT WEALTH

We discuss below the various kinds of economic units that own transport wealth—conceived both functionally and industrially.

The first group of economic units consists of firms holding themselves out as for-hire carriers. They are publicly owned like the Alaska Railroad or a municipal transit system; or, more typically, they are privately owned. They are the carriers described in the "Standard Industrial Classification Manual"—ignoring, for the present, the distinction there made between public and private ownership.

The second category of transport-wealth owners consists of the noncarriers providing the ancillary transport facilities described in the SIC—again ignoring the distinction between public and private ownership. Wealth owned by these economic units includes such facilities as Dulles Airport and the Port of New York Authority as well as their privately owned counterparts.

A third category of wealth holders includes agencies—almost always public—that own and operate public ways like the highways and improved waterway systems.

Wealth owned by each class of economic unit discussed above shares a common characteristic. It is available for public use. This is not true of the transport wealth owned by economic units engaged in private transportation as an adjunct to their primary activity. Included in this fourth category are the household automobile, the transport vehicles of governmental organizations—other than those already mentioned—and the fleets (automotive, shipping, etc.) of nontransportation business units.

The fifth and final category of transport wealth is owned by business units conventionally classified in industries other than transportation but which in a broad sense engage in transportation. These include the utility gas and water pipelines which are analogous to the pipeline transmission systems of for-hire oil pipeline companies.

Since wealth data are to be classified initially by economic sector of ownership, it is necessary to identify separately transport assets owned by economic units having a primary activity other than transportation. Distinguishing these transport assets may present some problem. Conceptually, the assets may not be clearly transport or they may be used jointly in transport and some other activity. Practically, it may not be feasible for reporting economic units to separate clearly all of their transport assets. At a minimum, vehicles (including pipelines) should be distinguished. To the extent practical, supporting structures and equipment also should be separated from other wealth. We want to

exclude from transport wealth in-plant transport assets (e.g., farm tractors, forklift trucks, conveyor belts, mine elevators), and storage facilities; also multifunction vehicles where the nontransport function is of equal or primary importance (e.g., military vehicles other than those with counterparts in the private sector, mobile homes, fire engines, dredges).

In the pages which follow, attention will be concentrated on the wealth of privately owned business units engaged in performing transportation and related services, since they are the primary assignment of the working group. However, much of the following is relevant also to the presentation of data on transport wealth owned by the public sector and by other private sectors, i.e., transport wealth functionally defined.

## II. DATA OBJECTIVES WITHIN THE TRANSPORTATION INDUSTRIES

In recommending data objectives for the transportation industries—as well as in making our earlier recommendations for the presentation of transport wealth used by economic units elsewhere classified—we have been mindful of the following. First, the availability of detail usually increases the usefulness of any data. Second, at some point the cost of collecting and preparing additional levels of detail begins to outweigh the importance of the uses to which the data will be put. Third, the statistics on the transportation industries are collectively but one of the many data blocks which together will measure the tangible wealth of the United States. We recognize the need for maintaining comparability with the general data objectives for other sectors.

In the following discussion of major data objectives, we will refer to the “typical regulatory report.” Many of the transportation industries are regulated by Federal agencies. These agencies usually require the filing of periodic reports containing asset data of interest to us. The formats of these reports are similar. Later we will identify these reports and discuss them in detail in terms of data objectives. For now, though, we want to be able to refer to a generalized regulatory report in the discussion of data objectives. Our treatment of each objective will end with recommendations for the collection of needed information not found in the typical regulatory report. This organizational technique will obviate the need for a series of repetitive comments and recommendations on the by then quite obvious data gaps observable after our detailed review of the actual reports filed by many segments of the transport industries.

We now set out our data objectives, noting the absence of data needed but not found in the typical regulatory report.

### INDUSTRY OF OWNERSHIP

The “Standard Industrial Classification Manual” recognizes 53 “minor” industries within the transportation sector. It is not desirable to present separate wealth data for each industry. Knowledge about the characteristics of the tangible assets of some industries would be of little interest because of their economic insignificance. In other instances, business units regularly engage in activities that cut across



the industrial divisions of the SIC. While these business units could be thrown into one industry or the other on the basis of their primary activity, we doubt the significance of the data as a measure of wealth for the industries.

We suggest that the 53 "minor" industries be aggregated into the 15 groups shown below. With the exception of warehousing—which we will recommend be separated from the transport industries—our groupings are consistent with the SIC. The groupings recognize the distinction between transport modes. To each grouping we have appended a summary—although not always exact—title. The four-digit minor industries composing each grouping are identified by the title and code number used in the SIC. In the interests of brevity, we have chosen not to repeat here the industry definitions found in the SIC manual.

<b>Railroad transportation :</b>	
Railroads, line haul operating.....	(4011)
Switching and terminal companies.....	(4013)
Sleeping car and other passenger car service.....	(4021)
Railway express service <sup>1</sup> .....	(4041)
<b>Local transit and highway passenger transportation :</b>	
Local and suburban transit.....	(4111)
Local passenger transportation, n.e.c.....	(4119)
Taxicabs.....	(4121)
Local passenger transportation charter service.....	(4141)
School buses.....	(4151)
Terminal and joint terminal maintenance facilities for motor vehicle passenger transportation.....	(4171)
Maintenance and service facilities for motor vehicle passenger transportation.....	(4172)
<b>Nonlocal highway passenger transportation :</b>	
Intercity buslines.....	(4131)
Intercity highway passenger transportation, n.e.c.....	(4132)
Passenger transportation charter service, except local.....	(4142)
<b>Local highway freight transportation :</b>	
Local trucking and draying, without storage.....	(4212)
Local trucking and storage, including household goods.....	(4214)
Terminal and joint terminal maintenance facilities for motor freight transportation.....	(4231)
<b>Nonlocal highway freight transportation :</b>	
Trucking, except local.....	(4213)
<b>Deep sea water transportation :</b>	
Deep sea foreign transportation.....	(4411)
Transportation to and between noncontiguous territories.....	(4421)
Coastwise transportation.....	(4422)
Intercoastal transportation.....	(4423)
<b>Nonlocal inland water transportation :</b>	
Great Lakes-St. Lawrence Seaway transportation.....	(4431)
Transportation on rivers and canals.....	(4441)
<b>Local water transportation and water transportation services :</b>	
Ferries.....	(4452)
Lighterage.....	(4453)
Towing and tugboat services.....	(4454)
Local water transportation, n.e.c.....	(4459)
Piers and docks.....	(4463)
Stevedoring.....	(4463)
Canal operation.....	(4464)
Water transportation services, n.e.c.....	(4469)
<b>Air transportation:</b>	
Air transportation, certificated carriers.....	(4511)
Air transportation, noncertificated carriers.....	(4521)

See footnote at end of table.

Air terminal facilities and services :	
Airports and flying fields.....	(4582)
Airport terminal services.....	(4583)
Pipeline transportation :	
Crude petroleum pipelines.....	(4612)
Refined petroleum pipelines.....	(4613)
Primary auxiliary services :	
Rental of railroad cars with care of lading.....	(4742)
Rental of railroad cars without care of lading.....	(4743)
Freight forwarding.....	(4712)
Arrangement of transportation.....	(4721)
Fixed facilities for handling motor vehicle transportation, n.e.c.....	(4784)
Services incidental to transportation, n.e.c.....	(4789)
Secondary auxiliary services :	
Stockyards.....	(4731)
Inspection and weighing services connected with transportation.....	(4782)
Packing and crating.....	(4783)
Public warehousing : <sup>2</sup>	
Farm product warehousing and storage.....	(4221)
Refrigerated warehousing, except food lockers.....	(4222)
Food lockers, with or without food preparation facilities.....	(4223)
Household goods warehousing and storage.....	(4224)
General warehousing and storage.....	(4225)
Special warehousing and storage, n.e.c.....	(4226)

<sup>1</sup> The only important firm in this industry is REA Express. While it is owned and controlled by a number of railroads, it operates over several transport modes. REA Express conducts substantial over-the-road motor trucking operations. It also uses air carriers in the provision of air express service. Accordingly, the industry might better be classified in SIC major group 47, "Transportation Services," than in major group 40, "Railroad Transportation."

<sup>2</sup> We recommend that data on the SIC industries included in this grouping be excluded from measures of transportation wealth. We make this recommendation because we have excluded warehousing facilities—other than the temporary in-transit storage facilities of business units within transportation—from transportation wealth functionally defined. Thus, since the storage facilities of manufacturing establishments are not transport assets, we do not want to include within the data on the transportation sector, the wealth of public warehousing firms.

The SIC, with a few exceptions, defines the primary business unit of these industries as companies. This contrasts with the establishment concept used in the manufacturing industries. In manufacturing, the primary unit is the establishment, an economic unit usually at one location and engaged in "one, or predominantly one, type of economic activity for which an industry code is applicable." Since data on assets owned by industries of establishments are usually inconsistent with data on assets owned by industries of companies, we recommend that the secondary-activity assets of transport companies be distributed on both ownership and use bases to the appropriate "other" industries. It is not necessary to collect such data at the establishment level since regulatory reporting requires a clean separation of transport and nontransport assets in the company report. However, to accommodate the analyst with interests in company data, procedures should be developed to facilitate the recombination of primary- and secondary-activity asset data into industries of companies.

In connection with the assembly of basic data, the first step in making wealth estimates by industrial group, certain generalizations can be made about regulatory reporting. The universe of business units subject to a particular chapter of Federal regulatory legislation often is not coterminous with the particular universe of business units falling within an SIC industry. This may occur because the regulated universe takes in business units belonging to more than one SIC industry—sometimes even nontransport SIC industries; or it may

occur because the regulated universe omits business units in which there is no Federal interest. When the regulated universe does not comprehend the SIC universe, we recommend the collection of required data.

## ASSET TYPE

Within each of the wealth groupings, the assets of the foregoing industrial groups should be distributed among the following asset types.

Land.

Structures:

Buildings.

Piers and docks.

Oil pipelines:

Gathering.

Trunk.

Structure below vehicle, e.g., track and road bed, landing field.

Other structures.

Transportation vehicles:

Railroad motive power.

Railroad cars.

Highway vehicles:

Trucks.

Truck-tractors.

Truck-trailers.

Buses.

Automobiles.

Vessels:

Self-propelled:

1,000 gross tons or more.

Non-self-propelled.

Airplanes:

Over 12,500 pounds gross takeoff weight.

Other vehicles, including work.

Equipment other than transport vehicles.

Materials, supplies, inventories.

These assets are used to provide freight and passenger service and in the local and nonlocal transportation of people and goods. We would like to see the wealth of each asset type distributed among the four possible use-combinations. It often will be possible to select the proper combination by reference to the asset type. For example, there usually is a sharp distinction between vehicles designed for property and passenger carriage. Most vehicles also are designed for either local or long-haul use. Where it is not immediately possible to determine use by reference to the asset type, the owner can allocate the asset among the various combinations on the basis of operating experience. For example, it is possible to divide railroad passenger cars between commuter and long-haul service on this basis. However, the inevitable conceptual problems exist in connection with the design of allocation formulas for jointly used assets, e.g., railroad way. The primary accounts of the typical regulatory report do not separate assets by use-combinations, i.e., passenger or freight service and local or nonlocal service. Some additional information undoubtedly will

have to be requested from business units in some industries to make possible this distribution.

The balance-sheet statement of the typical regulatory report distributes tangible assets among these three accounts:

Materials, supplies, inventories.

Transport properties.

Nontransport properties.

The latter two accounts are supported by schedules giving further detail. The dollar balance for transport properties is distributed among a number of primary accounts. Land is separated from the depreciable assets. Many of the primary accounts for depreciable assets are more detailed than the asset-type distribution we recommend. Some of primary accounts overlap two or more of our asset types. For example, all vehicles may be thrown into a single account; or the primary account may distinguish assets on the basis of function rather than physical type.

The schedule supporting nontransport properties identifies each property unit or operating entity not used for transportation purposes. These secondary-activity assets are to be counted with the wealth of the appropriate other industries. Since the assets of these other industries are to be classified by major type, it will be necessary for transport firms to distribute their nontransport properties accordingly.

#### LOCATION OF ASSETS

The typical regulatory report does not distribute balances in primary accounts by State of location. We recommend collection of data required to make such a distribution.

Presentation of wealth data on a State-by-State basis raises an immediate problem with respect to transport vehicles which serve across State lines and which do not regularly return to an operating base. While there are a variety of ways for making geographical allocation of these interstate vehicles, we suggest that interstate vehicles be aggregated only at the national level. The user of the data can allocate by State as he sees fit.

#### INDUSTRY OF USE

We recommend presentation of value data on the basis of industry of use, since the quantity of assets supporting a given industrial activity frequently is more relevant than the quantity of assets owned by the industry.

A statement of wealth used differs from a statement based on ownership because some assets are rented from and to other economic sectors. Adjusting the latter statement for the value of leased properties requires the collection of three items of data. Each lessee would provide a distribution of payments by type of asset rented, e.g., office space, office machinery, highway vehicles, etc. Each lessor would furnish a similar distribution of rental receipts and the book value of the respective asset classes. With these three data items from each industrial group in the economy, tangible assets could be reallocated from the owning to the using industrial group.

The income and expense statement and supporting schedules of the typical regulatory report show separately most rental payments and receipts. However, more information is required on the types of assets rented from and to others along with the respective receipts and payments.

#### VALUATION OF ASSETS<sup>1</sup>

Book values are not satisfactory measures of wealth since they incorporate prices paid for plant and equipment purchased over a span of time during which prices have changed. In order to have comparable wealth data, it is necessary to value tangible assets at the prices of a particular point in time. We recommend that wealth estimates reflect this adjustment. However, since we believe some uses would require comparing the two sets of figures, we also recommend presentation of book value data, although not at the level of detail of the adjusted values.

The adjusted data should show wealth on both gross and net (depreciated) basis. The gross value of a particular asset is its price new. Price indexes used to estimate current gross value reflect changes in factor prices and changes in the efficiency with which factors are combined. Price indexes should not reflect specification (quality) changes which have occurred between the time the model being priced was purchased and the present time and which were associated with the unit cost and corresponding price differences. (See ch. 6 of the main report.)

The depreciated or net value attached to a particular asset reflects the decline in value that has occurred because of physical wear and tear and technological and economic obsolescence. Under conditions of perfect competition (including knowledge) the depreciated value will equal market value—the present worth of a future income stream. Under less than perfectly competitive conditions, discrepancies can arise between computed depreciated values and market values. This occurs because net values mirror past depreciation experience. Past experience can be a satisfactory guide to the pattern of physical decline. It may be less than a satisfactory guide to the current rate of technological and economic (including locational) obsolescence. Not only can the rates vary with real changes in the arts or in demand, but they also may vary through the exercise of market power, or the use of regulatory authority, or, for Government facilities, from political considerations.

The discrepancy arising from a lack of correspondence between past experience and present experience can become most serious in industries with large quantities of long-lived assets. If assets are physically short lived there are more frequent opportunities to make major adjustments to technological innovation and shifts in consumer demand.

Making estimates of gross and net reproduction cost requires information on the original cost of assets by type and by year of acquisition. The typical regulatory report does not distribute book values by year of acquisition except to a limited degree. A few reports contain schedules which distribute the balance in the vehicle account by age.

<sup>1</sup> Portions of the following discussion are based on a memorandum by Prof. Ernest W. Williams. The memorandum is reproduced in annex A.

For purposes of a wealth inventory, a one-time survey is needed to provide an age distribution of book values by major classes of fixed assets. Also required are data with which to determine the appropriate depreciation rates. Price indexes also must be developed for certain asset classes in addition to those now available. The ICC has done much work in developing price indexes and depreciation rates for oil pipeline and railroad properties in consideration detail.

Of course, the age distribution of book values and the data on which depreciation rates are based must come from company books of account. We recommend a study to determine the relevant kinds of data actually available from company records. In addition, the study would consider possibilities of sampling procedures and recommend data collection techniques. The experience of the Internal Revenue Service in connection with its "Life of Depreciable Assets Study" is relevant (despite the fact this study did not develop State data).

#### PHYSICAL UNIT DETAIL

We recommend the presentation of physical-unit detail to supplement the value data. The asset types selected should be confined to those accounting for a significant portion of the industry's investment. This will require the enumeration at least of the number of vehicles by type, and miles of track and pipelines.

The usefulness of the physical data would be improved by introducing an additional level of detail showing capacity in cubic feet and pounds, by vehicle class. An age distribution of selected asset classes would add a third dimension to the physical unit data for the sector. Of course, the collection of sample data on the ages of assets within asset classes is a necessary step in estimating wealth net of depreciation. More specific recommendations for the presentation of supplementary physical detail are given in the following chapters.

#### TRANSPORT SECTOR DATA SOURCES

We now begin a review of current sources of data on each of the 53 transport industries. This review consists of seven chapters, each corresponding to one of the seven SIC major groups. Within each chapter we identify the industries falling within each major group and discuss relevant data sources, with reference to additional data requirements for wealth estimates. For most of the transportation industries, the principal data sources are the reports filed with regulatory agencies.

We believe that additional required data should be collected through existing statistical programs, since it is usually more efficient to expand a questionnaire than to inaugurate a new program. Where our industry review points up the absence of a reporting system, we will suggest various alternatives.

Throughout our data review, we assume that what is requested on a report form is in fact provided by the respondent, although some respondents either do not complete reportable items or do not complete them in a form consistent with the instructions.

Another problem arising in connection with regulatory reporting occurs because of changes in the scope of the report within a particular

transport mode. The change in scope occurs because less information is required of smaller business firms. However, some minimum amount of comparable data must be collected from all business units if they are to be represented in wealth totals and detail.

In a few instances, we have discussed particular accounts distinguished only by the insignificance of the dollar values therein recorded. However, in a survey such as this, it seemed wiser to review all accounts relevant to our objectives. Those charged with preparing wealth estimates can determine which accounts can be ignored safely.

### III. RAILROAD TRANSPORTATION

#### Group 40

Railroads, line-haul operating companies.....	(4011)
Switching and terminal companies.....	(4013)
Sleeping car and other passenger car service.....	(4021)
Railway express service.....	(4041)

#### RAILROADS

The undepreciated book value of tangible assets owned by railroads is equal to two-thirds of the total for all transportation industries. Within railroading, well over 90 percent of the assets are owned by railroads with operating revenues of \$3 million or more (class I). Our discussion of data availabilities in relation to objectives will revolve around class I roads, both line-haul and switching and terminal. These carriers report to the Interstate Commerce Commission on annual report form A.

Class II line-haul and switching and terminal railroads (operating revenues of less than \$3 million) report to the ICC on form C. Lessors of railroad properties report on form E. (These companies are treated as part of the real estate industry in the Standard Industrial Classification.) Electric railways, of which there are about two dozen, report annually to the ICC on form G. Some of them belong to major group 41, rather than major group 40, since they engage in local passenger operations. Finally, there are proprietary, circular, and unofficial roads. The first named are companies that have been practically absorbed by the parent operating company.

A small amount of investment data on proprietary companies appears in the reports of the operating class I or II roads. Circular roads include operating and nonoperating intrastate and private roads. There are fewer than 20 of these, operating less than 800 miles of track. No financial data are contained in their brief voluntary report to the ICC. Major circular roads include the Alaska Railroad, which owns 525 miles of road, and the State-owned (Georgia) Western & Atlantic Railroad operated by the L. & N. (134 miles). Unofficial roads are those from which no report (circular) was received by the ICC. In 1961 only two railroads, operating less than 40 miles of main track, were in this category.

Noted above is the fact that lessors of railroad properties are classified in the real estate industry. Because of our interest in these companies and the similarity of their reports to those of operating roads, we comment briefly on their report (form E) along with the report (form C) of the class II roads, and the report (form G) of electric

railroads. The three reports are abridged versions of the longer form A reviewed below. Our remarks on the need for information to supplement that contained in form A apply also to forms C, E, and G. Comparison of the latter reports with form A will indicate where data in addition to that collected from class I roads will be required.

We turn to the evaluation of form A as a data source. All companies reporting on this form are within the industry. (Complete coverage of the industry requires inclusion of roads reporting on form C and by "circular." At least two of the roads reporting on the latter form are owned by governments and their assets should be treated as government wealth. Private roads represent wealth of the sector of primary activity.

#### *Basic data on tangible assets*

Substantially all tangible assets owned by railroads are thrown into one of the following general balance sheet accounts (also identified by account number).

Materials and supplies.....	(712)
Road and equipment property.....	(731)
Improvements on leased property.....	(732)
Miscellaneous physical property.....	(737)

Other than total value, no detail on "Materials and supplies" (712) is found in form A.

Balances in "Miscellaneous physical property" (737) will be discussed in a later section.

The major portion of tangible railroad assets are recorded in "Road and equipment property." Of the \$33.4 billion of property shown in the above four accounts for class I roads in 1961, all but \$1.5 billion are in "Road and equipment property." (The \$1.5 billion are divided about equally among the remaining three accounts.) Road and equipment data are available in detail by more than 50 primary accounts (identified below). Balances in these accounts include both "Road and equipment property" (731) and "Improvements on leased property" (732). These primary accounts cannot be regrouped immediately into the recommended asset types for wealth estimates. "Engineering" (account 1) and "General expenditures" (71 to 77), and minor amounts in several other accounts have to be apportioned among the appropriate tangible-asset accounts. Additional information will have to be collected on "Miscellaneous equipment" to facilitate a distribution of value between freight and passenger carrying highway vehicles.

A further problem with the primary accounts is that they often distinguish assets on a functional rather than type-of-asset basis. For example, furniture and fixtures are included in the various "buildings" accounts. "Signals and interlockers" (27) includes buildings associated with train and traffic control. "Powerplants" (29) includes buildings and dams and canals related to power production by water.

We recommend study of the contents of these accounts to determine the relative importance of the functionally classified assets. This will serve to determine the extent to which the primary accounts will have to be adjusted as part of their regrouping into asset classes for wealth inventory purposes.



## ROAD AND EQUIPMENT PROPERTY ACCOUNTS FOR RAILROADS

- (1) Engineering.
- (2) Land for transportation purposes.
- (2½) Other right-of-way expenditures.
- (3) Grading.
- (5) Tunnels and subways.
- (6) Bridges, trestles, and culverts.
- (7) Elevated structures.
- (8) Ties.
- (9) Rails.
- (10) Other track material.
- (11) Ballast.
- (12) Track laying and surfacing.
- (13) Fences, snowsheds, and signs.
- (16) Station and office buildings.
- (17) Roadway buildings.
- (18) Water stations.
- (19) Fuel stations.
- (20) Shops and enginehouses.
- (21) Grain elevators.
- (22) Storage warehouses.
- (23) Wharves and docks.
- (24) Coal and ore wharves.
- (26) Communication systems.
- (27) Signals and interlockers.
- (29) Powerplants.
- (31) Power transmission systems.
- (35) Miscellaneous structures.
- (37) Roadway machines.
- (38) Roadway small tools.
- (39) Public improvements—construction.
- (40) Revenues and operating expenses during construction.
- (42) Reconstruction of road property acquired.
- (43) Other expenditures, road.
- (44) Shop machinery.
- (45) Powerplant machinery.
- (47) Unapplied construction material and supplies.
- (51) Steam locomotives.
- (52) Other locomotives.
- (53) Freight train cars.
- (54) Passenger train cars.
- (56) Floating equipment.
- (57) Work equipment.
- (58) Miscellaneous equipment.
- (59) Unapplied materials and supplies—equipment.
- (71) Organization expenses.
- (72) General officers and clerks.
- (73) Law.
- (74) Stationery and printing.
- (75) Taxes.
- (76) Interest during construction.
- (77) Other expenditures, general.
- (80) Other elements of investment.

*Location of assets*

Balance sheet data in form A are not distributed by State of location. Additional data should be collected to make possible the presentation of State-by-State data. We have noted elsewhere the problem of interstate vehicles.

*Assets rented to or from other sectors*

We deal here with properties used in the carriers' transportation operations. Miscellaneous properties, including their rental aspects, are taken up in the next section.

Form A contains a number of operating income and expense accounts related to rentals. Some accounts are supported by schedules. Most schedules describe the property, identify the lessor (lessee), and indicate the yearly rental payment (receipt). A description of the major accounts (and schedules) relating to rentals follows:

"Rents of buildings and other property" (142): Into this account are thrown rental receipts from those properties the operating expenses of which are not separable between the rented portion and the carrier-used portion. About \$20 million was recorded in this account in 1961. Form A contains no schedule to support this account.

"Miscellaneous rent income" (510): This account contains net rents of properties the expenses of which are separable and the value of which is included in road and equipment. The account is supported by schedule 372, showing the name and location of the property, the name of the lessee, and the amount of rent. The book value of the properties is not shown in the schedule. Net receipts in 1961 for class I railroads were \$43 million.

Rentals for rolling stock and joint facilities are thrown into one of the following accounts:

## Rent income:

- Hire of freight cars (503).
- Rent from locomotives (504).
- Rent from passenger train cars (505).
- Rent from floating equipment (506).
- Rent from work equipment (507).
- Joint facility rent income (508).

## Rents payable:

- Hire of freight cars (536).
- Rent for locomotives (537).
- Rent for passenger train cars (538).
- Rent for floating equipment (539).
- Rent for work equipment (540).
- Joint facility rents (541).

Schedules 376-78 support the first three classes of rental receipts shown above. Amounts received are separated between receipts from other carriers and receipts from noncarriers. Noncarriers are not identified. It is doubtful that any significant amount of rent is received from outside the railroad industry for these classes of equipment.

Turning now to rental payments for these same classes of equipment, the schedules noted above provide the same data on payments as for receipts. In 1961 all carriers considered as one system paid more than \$350 million in net rentals (rents payable less rental income) to noncarriers.

Class I railroads in 1961 paid out \$48 million on "Rent for leased roads and equipment" (542) and earned \$3 million in "Income from lease of road equipment" (509). Schedule 383 (371) supports this class of rental payment (receipt), and the schedule identifies the lessor (lessee), describes the property, and shows the amount of rent accrued. Properties leasing at less than \$50,000 per year are grouped. The book value of leased properties is not shown in the above schedules.

Accounts 536-41 (rental of equipment) and 542 (lease of road and equipment) do not contain all property rental payments. Various operating-expense accounts, e.g., "Outside agencies" (352), "General office supplies and expenses" (453), contain payments for rented offices and business machines. Form A has no supporting schedule for these accounts.

### *Miscellaneous physical properties*

Assets in this investment account (737) are defined as those tangible properties owned by a railroad but not operated in connection with its (or another carrier's) transportation service. Class I railroads carry about \$0.5 billion of these properties on their books.

Schedule 214 supports this investment account. Properties valued at \$1 million or more (or having a net profit or loss for the year of \$25,000 or more) are shown separately. The kind, location, and business use of each property are shown as well as the year of acquisition and book value.

"Miscellaneous physical properties" may be operated by the carrier or operated by others. Total revenues for operated properties (502) were \$44 million in 1961; net income from nonoperated properties (511) was \$32 million.

"Miscellaneous rents" payable (543) is supported by schedule 384 which identifies properties renting for \$50,000 or more by name and location. Properties shown in this schedule include some assets used in transportation as well as assets dedicated to nontransport purposes.

### *Physical unit detail*

A substantial portion of the investment of railroads is in structures below the railhead. One physical measure of this investment is miles of road, second and additional main track, yard track, and sidings, by State. Accordingly, we recommend presentation of supplementary physical detail on mileage. Schedule 412 of form A contains the following information by State.

- Road operated by respondent :
  - Line owned :
    - Main line.
    - Branch lines.
  - Line of proprietary companies.
  - Line operated under lease.
  - Line operated under contract.
  - Line operated under trackage right.
  - Total mileage operated.
- Line owned, not operated by respondent :
  - Main line.
  - Branch lines.

Rolling stock accounts for slightly more than 40 percent of railroad investment. We recommend the presentation of data on the number of units of this equipment by major types. Schedule 417 provides for each minor equipment type (shown in annex B) the following information:

- Units at close of year.
  - Owned and used.
  - Leased from others.
  - Total in service of respondent.
- Aggregative capacity of units reported (tractive effort or capacity).
- Leased to others.

Schedule 421 contains data on the number of vehicles owned or leased in revenue service and in nonrevenue service, by the following types:

- Trucks.
- Tractors.
- Trailers and semitrailers.
- Buses.
- Combination bus-trucks.

The number of leased vehicles is not shown separately.

#### *Revaluation of tangible assets*

The foregoing discussion has considered form A in the light of our requirements for book values and supplementary physical detail. It is obvious that considerable additional information will need to be collected if form A is to be the starting point for revaluation. Amounts in the various primary accounts would have to be distributed by age and State. In the absence of market prices for these assets, it would be necessary to construct price indexes for the various accounts. Survival curves also would have to be constructed since wealth should be measured on both gross and net bases.

There is an alternative to form A (as the point of departure for the revaluation of railroad assets) in the work of the ICC's Section of Valuation. The section prepares annual elements-of-value estimates of property owned or used by class I line-haul and switching and terminal railroads.

The following elements of value are prepared for each railroad.

1. Cost of reproduction new, except land and rights.
2. Cost of production new, less depreciation, except land and rights.
3. Original cost, except land and rights.
4. Present value of land and rights.
5. Working capital, including materials and supplies.

Before discussing the procedures followed in making reproduction cost estimates, we call attention to several facts about their scope. First, they currently cover class I roads only. Secondly, the section of valuation does not revalue those assets carried as miscellaneous physical properties. Finally, leased road and equipment are not separated from owned operating properties. Earlier, we noted that lessor companies are classified in the real estate industry.

Filling the gaps indicated by the first and second points would require collection of some additional information. Handling of the third problem could take one of two courses. In the final wealth

estimates, lessors of railroad properties can be shifted from real estate to railroad transportation. If this is not desirable, it will be necessary to develop a technique for isolating the values of leased road and equipment. Once valued, the property of lessors should be set out separately from the value of other industries within real estate.

Valuation estimates rest on three kinds of primary data. These are (1) the engineering report, (2) the annual reports submitted by carriers showing additions and retirements subsequent to the engineering report, and (3) a series of cost indexes.

The engineering report contains an enumeration, by detailed categories of physical units, of tangible assets owned or used by each carrier, by State and valuation section within each State, except equipment which is not allocated to any State. The physical inventories on which the engineering reports rest were completed between 1914 and 1922.

Regardless of the date when the inventory was completed, the physical units of roadway property of a given railroad were multiplied by prices appropriate to the particular railroad in the base period. The base-period unit prices reflected average costs during a 5- to 10-year period preceding June 30, 1914. In a few instances where roadway property records were adequate, original unit costs were used as multipliers. Equipment usually was priced at original cost. Most values in the overhead accounts were determined by applying fixed percentage rates to the dollar values in certain primary road accounts.

Two kinds of carrier reports are used in preparing current estimates of reproduction cost new. B.V. Form No. 588 is filed annually and records the units added or retired and their dollar values, resulting in a perpetual inventory. In the preparation of estimates by the short-form method discussed below, dollar value data on additions and retirements are taken from the carriers' annual reports (form A) to the ICC.

A variety of interrelated cost (price) indexes is used in revaluation. Underlying these indexes are price data collected from numerous sources, including reports by carriers and suppliers and trade publications. Prior to their use, these data are discussed by joint agency-industry price committees. Data adjustments resulting from the discussions of these price committees appear to be relatively few.

The indexes prepared by the Section of Valuation include the following:

1. Annual national indexes for each primary account, each weighted by the value (in base-period prices) of the components. Weights are shifted from time to time.

2. Annual regional indexes for each primary roadway account. The prices used are normally the same as those used in constructing the national indexes. However, prices are weighted by values appropriate to the particular region (of which there are eight).

3. Annual regional indexes for each primary equipment account. These are the same for each region. However, in constructing composite all-property and equipment indexes for a particular region the equipment accounts are weighted by values appropriate to the region.

4. A composite period index is constructed for each railroad, using an average of the three most recent annual regional indexes, and an

estimate of price levels during the present year and the year to come. The regional primary account indexes used in deriving the composite period indexes are weighted by values appropriate to the particular railroad.

Estimates of reproduction cost have been made using two methods. The long-form method was last applied to class I railroads during the period 1945-55. It has not been applied to class II roads since the 1930's.

Estimation of reproduction cost by this method involves adjusting the physical units remaining after the last application of the long-form method for subsequent additions and retirements. These new physical-unit balances are multiplied by the unit prices used in the engineering report. The resulting value of current inventory in base-period prices is revalued using the period indexes.

The short-form method currently is used for making revaluation estimates for class I only. The value estimates (in base-period prices) from the last long-form application are the starting point for a short-form estimate. All roadway property additions in a given year are deflated to the base-period price level using the appropriate regional index for all roadway property. Equipment additions in each primary account are deflated separately.

The age of retired roadway property and retired equipment in each primary equipment account is estimated using average life assumptions. When the average "vintages" of the dollar values retired in a given year have been determined, they are deflated.

Dollar balances of current inventory at base-period prices are revalued using the period indexes to obtain current dollar estimates.

#### *Summary*

Our review of the work of the Section of Valuation in those aspects which relate to wealth estimation leads to these conclusions:

The short-form method does not provide data at the State level nor at the level of the primary roadway account. The short form does not produce data as reliable as that from a long-form application. Over time, values gotten through the two techniques will diverge, particularly in the roadway property totals.

Long-form applications provide State data at the level of primary accounts. These applications, however, are expensive, and none is being made currently as part of any continuing program.

Given the foregoing facts, we recommend that resources be committed to the development of ways to overcome short-form data deficiencies. In addition, we recommend a further review of the 50 primary account indexes to determine their adequacy for purposes of wealth estimation.

#### OTHER INDUSTRIES WITHIN THE MAJOR GROUP

Elsewhere, we have recommended the grouping of data on the four industries making up railroad transportation. Line-haul railroads and switching and terminal companies were considered above. Discussed below are data availabilities for sleeping car and express companies.

Only a minimum quantity of data is filed with the Interstate Commerce Commission by the one sleeping car company. Book values for "Carrier property" (\$25 million in 1961) and "Materials and supplies" (\$11 million) were reported; the amounts were not further distributed by location or asset class. No amount was reported for "Other

physical property." "Interest rental on cars" and "Rental of cars to carriers" were reported as operating expenses or revenues. No other class of rentals is shown.

The total equipment in service at close of year distributed between owned and leased (from railroad carriers) is shown for these classes of equipment:

- Standard sleeping cars, lightweight.
- Standard sleeping cars, heavyweight.
- Tourist sleeping cars, other type.
- Other cars—slumbercoach.

An annual report is filed with the Interstate Commerce Commission by companies offering express service. Details about the report of the single large company in the industry will be discussed. (The report form filed by the one small express company shows only total investment in transport property.)

Real property and equipment investment is distributed among these accounts:

- Land.
- Buildings.
- Equipment:
  - Cars.
    - Automobiles.
    - Office furniture and equipment.
    - Office safes.
    - Trucks.
    - Garage equipment.
    - Line equipment.
    - Shop equipment.
    - Miscellaneous equipment.
    - Minor equipment.

Only rental payments for local office space are shown separately.

The number of pieces of owned equipment is available for the following classes:

- Cars.
- Automobiles.
- Office safes.
- Car safes.
- Trucks.

We recommend collection of additional information in line with our data objectives.

#### IV. LOCAL AND SUBURBAN TRANSIT AND INTERURBAN PASSENGER TRANSPORTATION

##### Group 41

Local and suburban transit.....	(4111)
Local passenger transportation, not elsewhere classified.....	(4119)
Taxicabs.....	(4121)
Intercity buslines.....	(4131)
Intercity highway passenger transportation, not elsewhere classified....	(4132)
Local passenger transportation charter service.....	(4141)
Passenger transportation charter service, except local.....	(4142)
Schoolbuses.....	(4151)
Terminal and joint terminal maintenance facilities for motor vehicle passenger transportation.....	(4171)
Maintenance and service facilities for motor vehicle passenger transportation.....	(4172)

There are two Federal reporting systems for carriers within this major group. With exceptions to be noted, each of the reporting systems covers a part of each four-digit industry. Under those circumstances, data availabilities will be discussed without reference to specific covered industries. There should be no problem in assigning reporting firms to one of the two industry groupings recommended in chapter II.

The Interstate Commerce Commission and the Census Bureau operate the above Federal reporting programs. Neither collects any information on taxicabs (4121), schoolbuses (4151), nor terminal and service facilities for motor vehicle passenger transportation (4171-4172). Accordingly, we recommend the collection of necessary data from business units within these industries.

#### *The bus carrier survey*<sup>1</sup>

Coverage of business units in the remaining industries within the major group is good but not 100 percent. The bus carrier survey was a part of the 1963 Census of Transportation and collected data from all for-hire operators participating in the social security program. This results in the omission of business units operated solely by the owner, i.e., having no employees. Furthermore, since census coverage is limited to bus operators, no information was collected on local street railways and subways. (In our discussion of railroads, we noted that some electric roads reporting to the ICC belong in major group 41.) We recommend collection of required data from street railway and subway operators in future surveys.

Since the bus carrier survey did not collect any balance sheet data, we also recommend the collection of the balance sheet data by asset types. Data should also be collected on leased assets.

The number of owned and leased buses, classified by seating capacity was reported on the 1963 questionnaire. We recommend the presentation of supplementary physical detail on the number and capacity of buses. A separation should be made between those owned and those leased.

The 1963 Census of Transportation collected a minimum of information from regulated bus carriers. These report annually to the ICC on form D or form E. The former report is used by class I carriers, defined as those having gross operating revenues of \$200,000 or more. Smaller carriers use one of two versions of form E. Those with operating revenues of less than \$50,000 report practically the same information called for in the 1963 census questionnaire. Accordingly, our comments and recommendations made in connection with the latter report apply also with respect to the version of form E filed by carriers with operating revenues totaling less than \$50,000.

Nonclass I firms with operating revenues of at least \$50,000 complete the balance sheet and income statements found in form E. Relevant balance sheet accounts include:

Materials and supplies.

Revenue equipment.

Other carrier property.

Noncarrier property.

Additional information is required as the basis for distributing the values in the latter three accounts among the recommended asset classes for wealth purposes.

<sup>1</sup> The full name of this Census program is the "Truck and Bus Carrier Survey."



The income statement does not show separately rental payments and receipts. The amount of rentals and the value of assets rented to other business units should be collected.

*Report form for large carriers*

Considerably more data is available about carriers reporting on form D. Balance sheet accounts include:

- Materials and supplies (1180).
- Carrier operating property (1200).
- Carrier operating property leased to others (1300).
- Noncarrier operating property (1400).
- Nonoperating property (1450).

Additional information is available in supporting schedules for each of these accounts except "Materials and supplies."

The following primary accounts exist for carrier operating property in schedule 1200:

- Land and land rights.
- Structures.
- Revenue equipment.
- Service cars and equipment.
- Shop and garage equipment.
- Furniture and office equipment.
- Miscellaneous equipment.
- Improvements to leasehold equipment.
- Undistributed property.
- Unfinished construction.

The "Revenue equipment" account is supported by schedule 1221. The following information is provided for each vehicle or group of identical vehicles:

- Make.
- Year.
- Number of units.
- Local or intercity use.
- Gasoline, diesel, or other engine.
- Passenger seating capacity of each vehicle.
- New or used.
- Cost.

The above accounts (supplemented by the equipment schedule) can be cast into the recommended asset classes for wealth purposes after the collection of a minimum of additional data for some accounts. "Service cars and equipment" includes automobiles as well as work or roadside assistance equipment, and these should be separated. Improvements to leasehold properties should be distributed among the remaining asset classes.

The name of the lessee and the book value of each carrier operating property leased to others are recorded in schedule 1300. The carrier is required to maintain (although he does not report) this investment account by the same accounts used for "Carrier operating property."

Rental receipts (payments) for leased operating properties are recorded in schedule 5500 (5400). The schedule identifies the lessee (lessor) and the amount of rent receivable (payable). Receipts and payments recorded in schedules 5500 and 5400 refer to rental of distinct operating units and include the use of an operating right or franchise. Since the latter is an intangible and outside our definition of wealth, the

rentals must be adjusted to exclude amounts associated with the use of franchises.

Rental receipts and payments for operating property other than those associated with the lease of franchises are recorded in schedule 5300. The following detail is available on rental receipts and payments:

- Equipment rents
- Other operating rents
- Joint facility rents

When both parties to a rental transaction are part of the same industry, it is unnecessary to develop payments data.

The "Noncarrier operating property" and "Nonoperating property" accounts are supported by schedules 1400 and 1450 respectively. In each schedule the book value of each property within the accounts is reported along with a summary description of the property and its use. Data are needed with which to distribute the values by asset types. Rental revenues from nonoperating properties are shown in schedule 6100.

The revenue equipment schedule mentioned in our review of value data by asset classes provides information needed to distribute vehicle units by capacity. We already have recommended that such a distribution be made for the vehicles of firms covered by the census of transportation.

The revenue equipment schedule also groups vehicles by maker and model year along with the associated book values, all necessary data for revaluation. A sample of aged book values is required for other asset classes along with appropriate price indexes and survival curves on which to base depreciated values. The alternative possibility of using market prices to arrive at net values for revenue equipment should not be overlooked.

Neither form D nor form E distributes asset values by State of location. We recommend collection of these data.

V. MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING

Group 42

Local trucking and draying, without storage.....	(4212)
Trucking, except local.....	(4213)
Local trucking and storage, including household goods.....	(4214)
Farm product warehousing and storage.....	(4221)
Refrigerated warehousing, except food lockers.....	(4222)
Food lockers, with or without food preparation facilities.....	(4223)
Household goods warehousing and storage.....	(4224)
General warehousing and storage.....	(4225)
Special warehousing and storage, not elsewhere classified.....	(4226)
Terminal and joint terminal maintenance facilities for motor freight transportation.....	(4231)

Three Federal statistical programs cover the greater part of this major group. The Interstate Commerce Commission receives reports from carriers within its jurisdiction. The truck carrier survey is part of the 1963 Census of Transportation.<sup>1</sup> Public warehousing is covered

<sup>1</sup> The full title of the program is the "Truck and Bus Carrier Survey." Another program within the census of transportation is the "Truck Inventory and Use Survey," based on a sample of 100,000 highway power units. The data from the latter program will supplement information from vehicle owners.

by the quinquennial census of business. (Since trucking companies in industry 4214 also engage in storage, there is some overlapping coverage by the three reporting systems.)

Before turning to an evaluation of the kinds of data collected for trucking and warehousing, we call attention to the absence of a reporting vehicle for one small industry "Terminal and joint terminal maintenance facilities for motor freight transportation" (4231).

#### *Public warehousing questionnaire*

The census questionnaire for public warehousing is sent to establishments with one or more employees. No data are collected from business units without employees. The form used in the 1963 Business Census does not request information on the value of tangible assets. We recommend the collection of this investment data by the asset classes recommended in chapter II. A sampling of the values reported by year of acquisition will be necessary for revaluation. Since a report for an establishment refers to activities in only one place, there should be no problem in determining the State in which tangible assets are located.

We recommend also the collection of data on rental payments, rental receipts, and the value of assets rented to other business units, by major asset classes.

The 1963 census questionnaire requests information on the amount of public storage space available for various classes of commodities, i.e., household goods, general merchandise, refrigerated goods, etc. We recommend presentation of this supplementary physical detail along with the wealth estimates.

#### *Truck carrier survey*

Coverage of the motor trucking industries by the truck carrier survey (a stratified random sample based on about 20 percent of the universe) is limited to those business units with employees. If wealth data were collected from this universe it would understate the value of tangible assets devoted to motortrucking, since sole-owner operators are common in this industry. However, the understatement probably would not be significant.

The data collected by the truck carrier survey are similar to those reported to the ICC by class III carriers with annual operating revenues of less than \$50,000. Neither set of data includes information on investment in tangible assets. Accordingly, we recommend the collection of data on rental payments, rental receipts, and the value of assets rented to other business units, by major asset classes.

Both the census questionnaire and the above ICC report (form C) request data on the number of owned vehicles, by type, i.e., trucks, truck tractors, semitrailers, and full trailers. We recommend presentation of this supplementary physical detail.

Those class III carriers with annual revenues of \$50,000 but less than \$200,000 (which is the upper limit for the class) report investment data in addition to the vehicle information noted above. The investment reported includes:

- Materials and supplies.
- Revenue equipment.
- Other carrier property.
- Noncarrier property.

Additional detail is required in order to distribute the amounts in the latter three accounts among the asset classes set out in chapter II. Information also is required on rental payments, rental receipts, and the value of assets associated with the rental receipts, by major asset class.

*Report form for medium-sized carriers*

Class II motor carriers, defined as those having annual operating revenues of \$200,000 but less than \$1 million, report to the ICC on annual report form B.

The book costs of the tangible assets of class II carriers are recorded in these three balance sheet accounts:

Material and supplies (118).

Carrier property (120).

Noncarrier property (140).

The latter two accounts are supported by schedules. The following detail is available in schedule 120 for "Carrier property":

Land and structures.

Revenue equipment.

Service cars and equipment.

Other carrier property.

Except for the "Revenue equipment" account, more detail is needed to distribute recorded values by the asset classes recommended in chapter II. Information on the location of these assets as well as a sample of aged values, also, are required.

The following data on "Revenue equipment" are available from schedule 122 (material cited is from the 1962 report):

**TRUCKS**

*Make*

Number:

Number by year of manufacture:

Prior to 1955.

1955 through 1960.

1961.

1962.

Number by type of engine:

Gasoline.

Diesel.

Other.

Number by type of body:

Rack and flat bed.

Refrigerator.

Tank.

Other.

Number by number of axles:

One axle.

Two axles.

Three axles.

Other.

Number used principally in—

Intercity service.

Local service.

Cost.

The same detail (where applicable) is available for truck tractors, semitrailers, and full trailers.

The data provide (1) value detail which can be cast immediately into the recommended asset classes; (2) the number of each make of vehicle type classified by a number of characteristics, information necessary for presentation of supplementary physical detail. For revaluation purposes, however, a sample of costs should be redistributed by year or period of manufacture.

"Noncarrier property" is supported by schedule 140. In addition to showing the book value, each property is described and its use is indicated. Data are required with which to distribute the value of each property by asset classes and by State of location. Values in each asset class should be sampled to determine asset age.

Rental receipts (and payments) for noncarrier properties are included within total revenues (expenses) associated with noncarrier operations (schedule 610). The rental receipts should be separated and the book value of the associated rented properties determined.

Carriers may lease portions of their operation to other carriers. This involves the use of the operating right or franchise (carried in one of the intangible property accounts) and carrier property (carried in account 120). Rentals receivable from the lessee (shown in schedule 550) include remuneration for use of the franchise. The book value of the leased carrier property is not shown separately.

Rental payments (and receipts) for carrier properties, other than distinct operating units, are recorded in a number of expense accounts, e.g., "Other maintenance expenses" (418), "Purchased transportation" (427), "Other transportation expenses" (418), "Other terminal expenses" (438), etc. Except for "Purchased transportation" the amount of rental payments (receipts) is not shown separately nor is the class of asset identified. Rental payments should be associated with particular asset types.

We call attention to the fact that many of the rental receipts and payments discussed above relate to assets both owned by and used by the motor carrier industries as we have defined them for wealth purposes. When this is found to be true, there is no need for developing data about rental payments and receipts or the value of rented properties. The rental of distinct operating units as well as vehicles rented with drivers (one class of "Purchased transportation") illustrates assets which are both owned and used within the industry.

#### *Report form for large carriers*

Annual report form A for class I carriers, defined as those with operating revenues of \$1 million or more, is an expanded version of the report used by class II carriers and discussed above.

Tangible assets are thrown into the following balance sheet accounts:

- Material and supplies (1180)
- Carrier operating property (1200)
- Carrier operating property leased to others (1300)
- Noncarrier property (1400)

(Some miscellaneous tangibles are also recorded in "Other current assets" (1190).) The latter three accounts are supported by schedules. Schedule 1200 provides value data distributed by these accounts:

- Land and land rights
- Structures
- Revenue equipment
- Service cars and equipment
- Shop and garage equipment
- Furniture and office equipment
- Miscellaneous equipment
- Improvements to leasehold property
- Undistributed property
- Unfinished construction

Additional information should be gathered about "Service cars and equipment" to separate automobiles from the work vehicles included in the subaccount. The book costs recorded in "Improvements to leasehold property" should be distributed among the other accounts.

Schedule 1300 supports "Carrier operating property leased to others." Along with the identity of the lessee, the schedule shows the book value of the tangible property associated with each distinct operating unit under lease. The amounts in this account should be distributed among the accounts used for operating property. While this distribution is not reported, carriers are required to maintain this detail in their accounting records.

Rental receipts from a distinct operating unit (which includes the use of a franchise and physical properties) are shown in schedule 5500. (Rental payments for the use of property constituting a distinct operating unit are recorded in schedule 5400.) We already have pointed out that these operating units are both owned and used within the trucking industries.

"Noncarrier properties" are identified in schedule 1400. The book value of each is shown along with the purposes for which used. Information is required with which to distribute these values by asset class. Rental receipts (and payments) arising in connection with non-carrier operations are recorded in schedule 6100. These rentals are not separated from the total revenues and expenses shown, nor associated with each distinct noncarrier operation. The allocation of assets to the sector of use will be made on the basis of rental receipts and payments. Accordingly rentals should be separated from total non-carrier revenues (and expenses) and associated with the relevant book values.

Net rentals involving assets used in carrier operation are shown separately in "Operating rents" subaccounts within each of the six major operating and maintenance expense accounts. Separate data on rental receipts (and the value of the rental properties) and rental payments (and the kind of property rented) are required as the basis for allocation of rental properties to the appropriate sector of use.

"Purchased transportation" which involves rented revenue equipment is supported by schedule 4270. Receipts and payments are separately shown. In addition, rentals of equipment without driver are separated from rentals of equipment with drivers. We already have noted that rentals of equipment with drivers should cancel out within the trucking industries since both lessor and lessee are classified with-

in the industries. However, some equipment rented without drivers is owned outside the trucking industries.

None of the investment data reviewed above provides information on the location of the asset nor on the age of the assets. We recommend the collection of such data.

In our review of form B (used by class II carriers), we noted the kind of physical-unit data available for revenue equipment. The same information is available for vehicles owned by class I carriers. We recommend the presentation of supplementary physical detail showing the number of vehicles by type.

## VI. WATER TRANSPORTATION

### *Group 44*

Deep sea foreign transportation.....	(4411)
Transportation to and between noncontiguous territories.....	(4421)
Coastwise transportation.....	(4422)
Intercoastal transportation.....	(4423)
Great Lakes-St. Lawrence Seaway transportation.....	(4431)
Transportation on rivers and canals.....	(4441)
Ferries.....	(4452)
Lighterage.....	(4453)
Towing and tugboat service.....	(4454)
Local water transportation, not elsewhere classified.....	(4459)
Piers and docks.....	(4462)
Stevedoring.....	(4463)
Canal operation.....	(4464)
Water transportation services, not elsewhere classified.....	(4469)

### DEEP SEA CARRIERS

We will first consider those companies engaged in deep sea foreign and domestic transportation. Three Federal agencies collect data from deep sea operators. Coverage of domestic deep sea operators is very good although not 100 percent. There is poor coverage of those engaged in foreign commerce. Accordingly, it will be necessary to establish new data collection arrangements.

The three agencies which receive information from a part of the industry are the Federal Maritime Commission, the Interstate Commerce Commission, and the Maritime Administration. Their reports are identified respectively as forms "FMC-64", "M", and "MA-172". Each form consists of a core of common schedules plus certain schedules required by only one or two of the agencies. In our review of currently collected data we shall treat the three reports as one. Before reviewing the report(s) we will note the gaps in coverage of the four deep sea industries.

Only about one-third of the 200 deep sea carriers report to one or more of the three agencies. The Maritime Administration receives reports from 15 subsidized carriers engaged in foreign commerce. These few carriers own nearly one-third of the privately owned merchant fleet. The remaining carriers engaged in foreign commerce do not report to any agency unless, as noted below, they also engage in domestic commerce. These companies include regular route (liner) and charter (tramp) operators as well as companies operating ships primarily for the transportation of their own products (industrial carriers). Of course, the assets of the latter belong to the industrial sector of primary activity.

About four dozen domestic carriers (some of which also engage in foreign commerce) report to the Federal Maritime Commission. (Perhaps one-third of these carriers operate non-self-propelled vessels, and accordingly they report on form FMC-63 rather than FMC-64.) The four dozen carriers include all *common* carriers operating between the mainland and noncontiguous territories (Industry 4421) and those coastwise carriers operating within Puerto Rico (part of Industry 4422).

About two dozen domestic carriers report to the ICC including a dozen or so that also report to FMC. Some of these carriers also engage in foreign commerce. They include all coastwise carriers except those operating within Puerto Rico (regulated by FMC), and Alaska and Hawaii (within the jurisdiction of the respective States). Also reporting to ICC are those carriers engaged in intercoastal transportation (Industry 4423).

There are three fleets of deep-sea vessels the assets of which are not part of the transportation industries. We already have mentioned the industrial carriers which are engaged in transporting their own products. The wealth of the Government-owned reserve fleet is treated in the Federal Government accounts. Finally, there are the 400 foreign-flag vessels owned by foreign subsidiaries of American companies. The tangible wealth of this flags-of-convenience fleet will enter into the sector account constructed for net foreign claims.

We now review the report(s) prepared by deep-sea shipping companies. The general balance sheet contains the following accounts relating to tangible assets:

- Inventories (170).
- Floating equipment—vessels (331).
- Other floating equipment (337).
- Terminal property and equipment (343).
- Other shipping property and equipment (349).
- Nonshipping property and equipment (353).
- Construction work in progress (359).
- Spare parts (362).

Schedules provide more detailed information about each account. Schedule 200, completed by MA and FMC respondents only, refers to "Inventories," and it separates them into the following subaccounts:

- Vessel stores, supplies, and equipment ashore.
- Other shipping inventories.
- Nonshipping inventories for sale.
- Nonshipping inventories for consumption.
- Miscellaneous inventories.
- Bar.
- Slop chest.

Location and description are given for each item valued at \$10,000 or more.

The book value of each vessel carried in account 331 is shown in schedule 2020.

The book value of each major item of property in the remaining balance sheet accounts (except "Spare parts") is shown in schedule 2022. Items are identified and grouped within each balance-sheet account. The location of the item also is given. The "Spare parts"



account is supported by schedule 2031, completed by MA and FMC respondents only. Each item valued at \$10,000 or more is identified, and its location and book value are given. The above schedules appear to provide necessary information on the location of assets. This leaves as the only major data gap a sampling of aged book costs for assets other than vessels.

Needed information for the revaluation of vessels is available in schedule 4010. The following data are given for each vessel:

- Year built.
- Year acquired.
- Type.
- Gross tonnage.
- Deadweight tonnage.
- Cubic capacity (feet):
  - Bale.
  - Bulk.
- Certificated passenger carrying capacity.
- Indicated horsepower of engines.
- Usual rate of speed (knots).
- Length overall.
- Beam overall.
- Maximum draft:
  - Light.
  - Fully loaded.
- Number of persons in crew.

In connection with the development of wealth estimates for deep sea shipping, we call attention to the technical resources of the Maritime Administration in the areas of ship construction costs and the used-vessel market.

#### INLAND CARRIERS

About 200 common and contract water carriers engaging in commerce on the Great Lakes and on inland waterways report to the Interstate Commerce Commission. This total does not include all carriers falling within industries 4431 and 4441. Among the exclusions are intrastate carriers as well as companies engaged in the exclusive operation of vessels carrying not more than three commodities in bulk. It will be necessary to establish a data collection arrangement. In connection with the task of identifying carriers not reporting to the ICC, we call attention to the Corps of Engineers "Transportation Lines" series. These annual publications identify all U.S. business units engaged in water transportation, including not only those operating on the Great Lakes and inland waterways but also many of those engaged in local water transportation as well as the deep sea carriers already discussed.

Companies with operating revenues exceeding \$100,000 and reporting to the ICC use annual report form K-A. (The same form—but identified as FMC-63—is used by tug and barge lines under the jurisdiction of the Federal Maritime Commission.)

ICC regulated carriers with revenues less than \$100,000 report on form K-C. The latter report does not distribute assets by type. The only separation made is between the book values of shipping and non-

shipping property and equipment. The following information is provided for each piece of floating equipment:

- Character of title (owned or leased).
- Year acquired.
- Rated horsepower of engine.
- Cargo carrying capacity tons.
- Passenger carrying capacity (number).

Form K-A contains the following balance sheet accounts relating to tangible assets:

- Material and supplies (115).
- Transportation property (140).
- Improvements on leased property (158).
- Noncarrier physical property (160).

The latter three accounts are supported by schedules 222 and 287. The former provides the following distribution of balances in "Transportation property" and "Improvements to leased property" accounts:

- Floating equipment:
  - Line equipment.
  - Harbor equipment.
  - Miscellaneous floating equipment.
- Terminal property and equipment:
  - Buildings and other structures.
  - Office and other terminal equipment.
  - Motor and other highway equipment.
- Land and land rights:
  - Land.
  - Public improvements.
  - Construction work in progress.

The physical characteristics of each piece of floating equipment (or groups of like vessels) are presented in schedule 413. The detail includes:

- Year built.
- Year acquired.
- Character of title.
- Service for which adapted.
- Cargo deadweight carrying capacity.
- Cubic capacity (feet):
  - Bale.
  - Bulk.
- Certificated passenger carrying capacity.
- Rated horsepower of engines.
- Usual rate of speed.
- Length overall.
- Beam overall.
- Maximum draft:
  - Light.
  - Fully loaded.
- Equipped with radio apparatus.
- Number of persons in crew.

Schedule 287 is used to record investments in noncarrier properties. The identity, location, date of acquisition, and book cost are shown for each property valued at \$5,000 or more. If the property items so described are not too gross, i.e., composed of extremely hetero-

geneous asset types, sufficient data are available to provide a basis for revaluation and the geographic allocation of the resulting estimates.

Rental receipts and payments for the charter of vessels are thrown into accounts 341, 481 respectively (schedules 310, 320). The book value of vessels chartered is not shown.

Accounts 342 and 483 are used to record rental received and paid for transportation properties leased for a period of 1 year or more. Schedules 371 and 381 identify properties rented for a year or more, their location, and the amount of rent accrued.

Rental receipts and payments in connection with noncarrier physical properties are thrown into "Income from noncarrier operations" (account 502). The annual report contains no further information on these rentals. It will be necessary to relate rental receipts and payments to specific asset types. Further, rental receipts must be matched with the value of properties described in schedule 287, which supports noncarrier investment.

#### LOCAL WATER TRANSPORTATION

Business units engaged in local water transportation do not file reports with the ICC unless they happen also to perform transportation in interstate or foreign commerce. Elsewhere, we have noted the annual Corps of Engineers "Transportation Lines" series which should be useful in identifying most local water units. Lists of employers prepared in connection with the social security program may also be helpful in identifying these local units. We recommend collection of required data.

#### SERVICES INCIDENTAL TO WATER TRANSPORTATION

Data of the type required for wealth-measurement purposes are not collected from business units within this group of industries by any Federal agency. We note the interest of two Federal agencies and two private organizations in some or all of the industries within the group. The Corps of Engineers and Maritime Administration jointly prepare publications describing in detail port facilities on the Great Lakes and the several coasts. The "Lake Series" and "Port Series" contain port surveys made on a rotating basis over a number of years.

The port of New York periodically collects data on capital expenditures for deep sea terminal facilities made in principal ports of the United States. In 1963 the American Association of Port Authorities completed a survey of member-owned facilities. Estimates were made of the cost of the facilities as well as gross and net replacement values. The assets of these public authorities, of course, are a part of the wealth of State and local governments. We call attention to the efforts of this association and the other named agencies since we believe each could contribute to the development of plans for the collection of data from privately and publicly owned units engaged in operating piers and other water services. We recommend the collection of needed data from economic units within these industries.

## VII. TRANSPORTATION BY AIR

*Group 45*

Air transportation, certificated carriers <sup>1</sup> -----	(4511)
Air transportation, noncertificated carriers <sup>1</sup> -----	(4521)
Airports and flying fields-----	(4582)
Airport terminal services-----	(4583)

<sup>1</sup> When revisions in the SIC occur, the title of industry 4511 should be amended to read "certificated route carriers"; the title for industry 4521 should read "certificated supplemental and noncertificated carriers." The suggested titles reflect changes in CAB certification practices.

Industry 4511 consists of carriers holding certificates of public convenience and necessity pursuant to section 401(d) (1) or (2) of the Federal Aviation Act of 1958, as amended, authorizing them to engage in air transportation over a route, or routes, designated by the Civil Aeronautics Board.

Each carrier files report form 41 with the CAB. This is basically a quarterly report, although some of its schedules are filed monthly and others are completed annually. The form is reviewed below in the light of data objectives.

*Value data by asset class*

The values of operating property and equipment are thrown into the following accounts:

## Flight equipment:

- Airframes.
- Aircraft engines.
- Aircraft propellers.
- Aircraft communication and navigational equipment.
- Miscellaneous flight equipment.
- Improvements to leased flight equipment.
- Flight equipment rotatable parts and assemblies.

## Ground property and equipment:

- Passenger service equipment.
- Hotel, restaurant, and food service equipment.
- Ramp equipment.
- Communication and meteorological equipment.
- Maintenance and engineering equipment.
- Surface transport vehicles and equipment.
- Furniture, fixtures, and office equipment.
- Storage and distribution equipment.
- Miscellaneous ground equipment.
- Maintenance buildings and improvements.
- Other buildings and improvements.

## Land.

## Construction work in progress.

Rearrangement of these accounts into the recommended wealth groupings will require some additional information from the carriers. For example, surface transportation vehicles need to be distributed among the various established classes.

The flight equipment accounts contain some aircraft components not currently installed on aircraft, e.g., aircraft engines and communication and navigational equipment. The assets making up "Flight equipment rotatable parts and assemblies" are defined to exclude

installed components. In constructing a value for the wealth grouping "airplanes," we suggest omitting rotatable parts and assemblies, treating them as "other equipment." Whether or not to attempt separation of uninstalled components from the installed components in the other accounts will depend on the significance of the distortion introduced by inclusions of the uninstalled components in the total for "aircraft."

Besides "Operating property and equipment," the detail of which is shown above, three other balance sheet items reflect data on tangible assets. These are "Flight equipment expendable parts," "Miscellaneous materials and supplies," and "Nonoperating property and equipment."

#### *Rental data*

Rental payments for property used in transportation service are totaled separately within the several major operating expense accounts. Rental receipts for transportation properties are shown separately in account 4611. Rental payments for nonoperating properties identified with nontransport ventures, and rental receipts from nonoperating properties are included within "Income from nontransport ventures" (8186). Rental payments for nonoperating properties not identified with nontransport ventures are included within "Miscellaneous nonoperating debits" (8189). Additional information will have to be collected to identify the kind of property rented, the associated rentals, and the book value of property leased to others.

#### *State data*

The report of the carriers to the CAB does not distribute asset values by State. We have noted elsewhere the difficulty of making a meaningful allocation of aircraft among States. However, it is desirable to show assets other than aircraft on a State basis.

#### *Other air carriers*

Industry 4521 consists of supplemental carriers holding certificates of public convenience and necessity issued under section 401(d)(3) of the Federal Aviation Act of 1958, as amended, or a special operating authorization issued under section 417 of the Federal Aviation Act, or operating authority issued pursuant to section 7 or 9 of Public Law 87-528. Industry 4521 also includes noncertificated commercial operators and for-hire commercial flying within general aviation.

Commercial operators consist of contract carriers and intrastate common carriers. Neither is regulated by the CAB. Both hold commercial operator certificates from the Federal Aviation Agency as evidence of their fitness from a safety standpoint to operate for-hire aircraft of more than 12,500 pounds. For-hire operators of aircraft weighing 12,500 pounds or less are classified by the FAA in general aviation, a category which includes all civil flying except the above-mentioned CAB regulated carriers and the commercial operators.

Neither of the aviation agencies has a list of operators within general aviation. Those who participate in the social security program could be identified from the records of the Bureau of Old Age and Survivors Insurance. A partial listing of air taxi and scheduled intrastate operators of aircraft weighing 12,500 pounds or less is shown in the "Official Airline Guide." The National Air Taxi Conference

(Washington, D.C.) may be able to assist in the identification of additional operators. The total assets of these carriers are small and perhaps insignificant in relation to total air transportation.

A list of commercial operators is maintained by FAA and published quarterly in "The U.S. Civil Air Carrier Fleet." In late 1962, there were 41 operators.

Required information from commercial operators and for-hire businesses within Federal aviation (once the latter are identified) might be collected by the FAA (the Agency does not now collect financial data but does license pilots and aircraft); or the CAB, which is experienced in collecting financial data, but has no regulatory responsibilities in this area; or the Census Bureau.

Supplemental carriers file an abbreviated form 41 with the CAB. The following balance sheet items are reported by supplemental carriers:

- Flight equipment expendable parts.
- Miscellaneous materials and supplies.
- Flight equipment.
- Ground property and equipment.
- Land.
- Construction work in progress.
- Nonoperating property and equipment.

The shortened form 41 does not contain a schedule supporting the balances recorded for "Flight equipment" and "Ground property and equipment." Since the balance sheet cannot be immediately reclassified into the recommended asset classes, additional detail will need to be collected from supplemental carriers. (See the earlier discussion of value data by asset class relative to certificated route carriers.)

Only rentals paid for operating properties are reported by supplemental carriers. Rental receipts from operating properties and rentals in connection with nonoperating properties are not separately reported. The properties are not identified.

The reports filed by the supplemental carriers do not distribute asset values by State of location. It will be necessary to collect this information for assets other than aircraft.

Our discussion of data availabilities in the light of objectives has treated, first, the certificated route carriers; next, the noncertificated carriers; and lastly, the certificated supplemental carriers. Now we will discuss these carriers as a group in connection with physical unit detail.

Since flight equipment accounts for most of the tangibles owned by carriers, we recommend the presentation of supplementary physical detail showing number of aircraft, distributed between turbine- and piston-driven planes, further divided by number of engines. It would also be useful to indicate maximum seating capacity for each class of aircraft. It is desirable to cross-classify each class of aircraft by year of manufacture.

There is available considerable information on aircraft and their characteristics. All aircraft are registered with the FAA. Information of the sort in which we are interested (make, model, etc.) is available from the registration and related records and is being published currently in the Agency's annual "Statistical Study of U.S. Civil Aircraft" and "The U.S. Civil Air Carrier Fleet," a quarterly release.

Certificated route and supplemental carriers additionally report the following selected data to CAB (schedule B-43) :

#### INVENTORY OF AIRFRAMES AND AIRCRAFT ENGINES

Date acquired.  
 Maximum seating configuration.  
 Manufacturer.  
 Number of aircraft engines (by type).  
 Type, model, and cabin design.  
 Maximum continuous horsepower per aircraft engine.  
 Cost.  
 Reserve for depreciation.  
 Estimated residual value.  
 Estimated depreciated life (months).

#### AIRPORT AND TERMINAL SERVICE INDUSTRIES

Industry 4582 consists of airport operators and business units engaged in servicing, repairing, and storing aircraft at airports. All fields open to the public and some private fields are either inspected annually by the FAA or information about them is submitted by the owners to the FAA. Information about inspected fields is recorded on the "Airport Facilities Record," form 29-A. Form 29-A.1 is used by self-reporting owners. The two reports describe in some detail the landing area and the field's terminal facilities. No financial data are collected.

The reports can be used in two ways. They provide a possible vehicle for the collection of required additional information from airport operators, although we note that FAA does not have a primary interest in financial data. Alternatively, a list of airports filing the report provides a frame for the collection of data by another agency. The frame is good although not perfect. It includes publicly owned airports, the value of which is assigned on sector basis to one of the Government sectors. It also includes some private fields operated by other industries.

Industry 4582 includes not only airport operators but business units servicing aircraft. The airport reports filed with FAA do not identify these units; however, since the reports now ask for the number of fixed-base operators (which includes these units) it would be possible to ask for the names of these firms as a part of the airport report.

Industry 4583 consists of business units furnishing airport terminal services, e.g., airfreight handling, hangar rentals, etc. There is no reporting program at the Federal level for companies in this industry. We recommend the collection of required data from firms in this industry. A list might be developed through the airport report.

#### VIII. PIPELINE TRANSPORTATION

##### Group 46

Crude oil pipelines.....	(4612)
Refined petroleum pipelines.....	(4613)

We believe these industries should include pipeline *departments* as well as pipeline companies. Whether department or company, the industries should be restricted to common carriers. Pipeline assets

dedicated to the exclusive use of a producing or refining company belong in the appropriate mining or manufacturing industry.

Common carriers by pipeline report to the Interstate Commerce Commission on annual report form P. Coverage of the industry by ICC is substantial but not 100 percent. Excluded are a few intrastate common carriers. The Bureau of Mines, which collects pipeline mileage and related data, maintains a list of companies owning pipelines, and identification of the intrastate common carriers should present no problem. Collection of required data from these companies might be made by the Bureau of Mines, which has established contacts with the carriers but does not now collect financial data; the ICC which collects financial data from the bulk of the industry but presently has no statutory authority to collect data from nonregulated companies, or the Bureau of the Census. Annual report form P now will be evaluated as a data source in the light of objectives.

With some exceptions, the primary investment accounts (shown below) can be rearranged into the recommended asset classes.

Gathering lines:

- Land.
- Rights-of-way.
- Line pipe.
- Line pipe fittings
- Pipeline fittings.
- Pipeline construction.
- Buildings.
- Boilers.
- Pumping equipment.
- Machine tools and machinery.
- Other station equipment.
- Oil tanks.
- Delivery facilities.
- Communications systems.
- Office furniture and equipment
- Vehicles and other work equipment.
- Other property.

Trunk lines: Same as above.

General:

- Land.
- Buildings.
- Machine tools and machinery.
- Communications systems.
- Office furniture and equipment.
- Vehicles and other work equipment.
- Other property.
- Construction work in progress.
- Unadjusted investments.
- Acquisition adjustment.

No primary account exists for wharves and docks, these assets being grouped with items in "Delivery facilities." Vehicles and other work equipment are entered in a single account. Rights-of-way in this industry should be treated the same as owned land, since the former typically are leased in perpetuity or vested in the pipeline company by virtue of a property easement.



Balance sheet accounts exist for "Operating oil supply" and "Materials and supplies," and "Miscellaneous physical property." The first two accounts are not supported by schedules.

A separate schedule is used to describe miscellaneous physical properties valued at \$25,000 or more. These properties are divided in turn between operated and nonoperating (business units leased to others) properties. Revenues are shown from each separate rental property.

Rental payments for property used in transportation service are itemized separately if the payment equals or exceeds \$5,000. The location and description of the property are given.

The annual report does not contain any separation of values by State of location. One of the "elements of value" (discussed below) prepared by the ICC's Section of Valuation is original cost. Original cost which is closely related to book value is available by primary account within each State. Similar detail is available for land.

For each reporting company, physical data on pipelines owned and operated by respondent (also, owned in undivided interest and operated by respondent, and owned by others and operated by respondent) are available in the following detail by State:

Miles and size of gathering line.

Miles and size of crude oil trunklines.

Miles and size of refined oil trunklines.

#### *Asset revaluation*

In connection with the restatement of book values in current dollars, we call attention to the estimates prepared for pipelines by the Section of Valuation, ICC. Their work will be described and limited comments made. Limitations on time and technical resources have precluded the sort of study that could lead to a definite conclusion concerning the usefulness of their estimates for wealth purposes. We do recommend that the Section's techniques and estimates be fully evaluated as the next step in developing wealth estimates in this area. Selected comments are made at the end of this section.

Each year the Section of Valuation prepares for each carrier the elements of value of property owned or used in common carrier service. Elements of value include (1) cost of reproduction (except land and rights) new; (2) less depreciation; (3) original cost (except land and rights); (4) present value of land; and (5) original cost of rights-of-way. After consideration of these values and other facts, the Interstate Commerce Commission finds a final value of properties for ratemaking purposes. The methods used in determining these elements of value are described in *Ajax Pipe Line Corporation* (50 Val. Rep. 1). This report is the main source for the following summary.

Pipeline companies prepared a physical inventory of their properties as of December 31, 1947. Units and quantities were grouped by primary accounts within valuation sections, the latter being geographic divisions within a State. These quantities were multiplied by "normal" unit prices for 1947.

The normal unit prices for 1947 used to value the original inventory were not the prices prevailing during that year. Rather, they

were averages of prices obtained during a 5- to 10-year period ending in 1947. Average prices were used to compensate for " \* \* \* the usual transitory nature of inflated prices occurring because of \* \* \* shortages during the war or postwar period." (50 Val. Rep. 30.)

The original inventory is adjusted each year for additions and retirements reported by the carriers. Units added, for example, are multiplied by the appropriate 1947 normal price and the product is added to the inventory. Following this step, each asset class, valued now in the 1947 "normal" prices, is multiplied by a period index appropriate to the class, producing an estimate of cost of reproduction new in current dollars.

The period indexes for a given year are based on averages of annual indexes for the 3 most recent years, an estimate of the current year's price level, and a forecast of the price level in the succeeding year. The annual indexes are prepared from construction cost information received from the carriers, and data provided by the Oil Pipeline Advisory Committee on Valuation, trade publications, and manufacturers and suppliers.

As already noted, the Section prepares estimates of cost of reproduction new, less depreciation. The amount to be allowed for depreciation is based on the age of the asset and estimated remaining future service life. Service lives are estimated by reference to past experience. Past experience reflects both physical and functional depreciation. The former includes deterioration due to "wear, tear, rot, rust, decay, and the action of the elements." The latter "results chiefly from obsolescence, inadequacy, inefficiency, supersession, depletion, and the decline and exhaustion of the traffic which the property was designed to transport." (50 Val. Rep. 28.)

As already noted, the Section makes a yearly estimate of the present value of each carrier's land. In preparing the 1947 inventory of pipeline properties, substantially all land was the subject of a field appraisal to determine market values. The amount of field appraisal work performed by the Section since the late 1940's has declined. Due to lack of personnel, the Section currently performs no field appraisals.

In preparing estimates of current market values, the Section adjusts the 1947 (or later) appraised value using a variety of data, e.g., Census Bureau information on changes in land values.

#### *Concluding comments*

The period indexes used to adjust the inventory valued in 1947 normal prices produce data reflecting a 5-year average price. Wealth estimates for a particular year should be based on price data specific to that year. However, as noted above, the Section does prepare annual indexes

Techniques used in the construction of the 34 annual primary account indexes require review to determine their suitability for purposes of preparing wealth estimates. A similar review should be made of the methods used to estimate present land values.

The Section does not attempt to revalue these balance sheet items: "Operating oil supply," "Materials and supplies," and "Miscellaneous physical property."

## IX. TRANSPORTATION SERVICES

*Group 47*

Freight forwarding.....	(4712)
Arrangement of transportation.....	(4721)
Stockyards.....	(4731)
Rental of railroad cars with care of lading.....	(4742)
Rental of railroad cars without care of lading.....	(4743)
Inspection and weighing services connected with transportation.....	(4782)
Packing and crating.....	(4783)
Fixed facilities for handling motor vehicle transportation, not elsewhere classified.....	(4784)
Services incidental to transportation, not elsewhere classified.....	(4789)

## FREIGHT FORWARDERS

All forwarders are licensed by at least one of three Federal regulatory agencies. Forwarders using railroad, motor carrier, or domestic water transportation facilities report to the Interstate Commerce Commission. Domestic and international airfreight forwarders by water are regulated by the Federal Maritime Commission. At present, the latter do not submit periodic reports to FMC, although these may be required in the future. In any event, we recommend that required data from ocean forwarders be collected by FMC.

Air forwarders report financial data semiannually on CAB form 244. Schedule B provides these balance sheet accounts relating to tangible assets:

- Materials and supplies.
- Automotive equipment.
- Terminal equipment.
- Other property (net).

More detailed information on the latter three accounts should be collected to provide a basis for the distribution of assets among the classes recommended in chapter II.

The profit and loss statement (schedule P) provides no information on rental payments or receipts. Such data, distributed by major asset types, should be collected.

No information is collected on the number and types of owned automotive equipment. We recommend the collection of these data.

Forwarders under the jurisdiction of the ICC and with annual revenues of less than \$100,000 report on form F-b. No data on tangible assets are reported. We recommend the collection of required data by the ICC.

Form F-a is submitted annually by forwarders with revenues of \$100,000 or more. The following balance sheet accounts are used for tangible assets:

- Materials and supplies (108).
- Transportation property (140).
- Nontransportation property (160).

Investment in transportation property is supported by schedule 17 which contains these property accounts.

- Furniture and office equipment.
- Motor and other highway vehicles.
- Land and public improvements.
- Terminal and platform equipment.
- Other property account charges.

To distribute the investment in transportation property among the asset classes set out under data objectives, balances in "Other property account charges" should be distributed among the recommended asset classes. Schedule 29 provides value (and physical) detail for the balance in "Motor and other highway vehicles." Available data include the value (and number) of vehicles, classified by make and kind.

Nontransportation property is supported by schedule 18 which identifies each property and shows its book cost.

Rental payments and receipts in connection with forwarder operations are shown separately in schedules 25 and 26 which support the income statement. Rentals related to nontransportation property are not shown separately. We require information on the amounts of these rentals, the book value of the assets rented out, and the type of asset rented to or from other firms.

#### RENTAL OF RAILROAD CARS

Business units renting railroad cars to or on behalf of any railroad are subject to the jurisdiction of the ICC. Refrigerator car lines owned or controlled by railroad companies file annual report form B-1. Car lines owning 10 or more cars—other than the companies above mentioned—file annual report form B-2.

Physical assets of the railroad-owned or -controlled companies are recorded in these balance sheet accounts:

Material and supplies (712).

Cars or protective service property (731).

Miscellaneous physical property (737).

Schedule 211 supports "Cars or protective service property" and provides this detail:

Land.

Public improvements.

Rolling stock.

Miscellaneous equipment.

Tracks.

Carshop buildings and machinery.

Work equipment.

Ice manufacturing plants.

Natural ice plants.

Ice storage plants.

Precooling plants.

Iceing platforms.

Transmission systems.

Testing apparatus.

Miscellaneous structures.

Mechanical protective service units.

Mechanical protective service facilities.

Organization expenses.

It is necessary to separate the book cost of structures and equipment, combined in many accounts, and to distinguish between motor vehicles and other equipment.

Schedule 214 partially supports the "Miscellaneous physical property" account. Only those properties operated by the respondent are

recorded in this schedule. Each operating property is identified and its book cost shown. Net income from nonoperating (leased) "Miscellaneous physical properties" is recorded in income account 511.

Rents payable in connection with the primary activities of these carlines are recorded in a number of accounts. Schedule 321, "Operating expense," contains six rent accounts, each relating to a particular service, e.g., "icing platform service," "heater service," etc. Rents payable for cars are recorded in income account 533 and supported by schedule 383, which identifies the property of each lessor and shows the accrued rent. Information on the kind and number of units of rolling stock leased from others is shown in schedule 418. Rental payments which cannot be thrown into one of the foregoing accounts are recorded in account 543 "Miscellaneous rents."

The major activity of these carlines is the rental of rolling stock to railroads. Receipts from car rentals are shown in schedule 310 "Operating revenues." These cars typically are rented by the railroads on an "as needed" basis, payment for them being a per diem and/or mileage charge; it follows that at a particular point in time only a part of the refrigerator fleet may be in railroad service. It is necessary to determine the average number of rental cars in railroad service during the year in order that these assets can be allocated to the railroads on a use basis. Besides equipment rented by the railroads on a day-to-day basis, a number of cars are on term leases. The number leased at the close of the year is shown in schedule 419.

Rental receipts for the use of protective service properties other than cars are recorded in account 510 "Miscellaneous rent income."

Schedule 417 distributes owned rolling stock between refrigerator cars and various types of other cars.

Form B-2 is not required from business units owning less than 10 cars. We recommend the collection of required data from firms in this size-class providing they are primarily engaged in renting cars. The identity of all private-car owners can be learned from the "Railway Equipment Register."

These firms plus those reporting to the ICC on form B-2 sum to a total greater than the number belonging to the industry. This occurs because a carline as defined in the Interstate Commerce Act includes any business unit that tenders a private car to a railroad for movement from one station to another. Many of the firms reporting to ICC use their cars primarily or exclusively for the movement of their own products. These assets should be treated as owned by the appropriate other economic sectors. The remaining reporting units consist of firms or departments falling within the industry, i.e., economic units primarily engaged in renting railroad cars.

For purposes of developing a wealth statement based on industry of use, it will be necessary to determine the average number of cars rented to railroads by carlines and by businesses in other economic sectors.

Form B-2 contains no general balance sheet. The only investment data collected cover the end-of-year gross book values of cars, by type of car. The number of cars, by type, also is shown. We recommend collection of data on other tangible assets by the classes recommended in chapter II.

The total number of cars leased (as contrasted with short-term rentals) to and from others at close of year is shown by type of car and by two classes of lessees/lessors, viz, railroad and express companies or "all others."

#### ARRANGEMENT OF TRANSPORTATION

This industry includes travel agents, transportation brokers, custom-house brokers, transportation rate bureaus, operators of conducted tours, and others furnishing information about transportation and/or acting as agents in arranging transportation. With exceptions to be noted, Federal agencies neither license nor receive reports from business units within this industry.

The Bureau of Customs licenses all customhouse brokers, but it does not require periodic reports from them.

Rate organizations operating under agreements between carriers and freight forwarders subject to the Interstate Commerce Act report to the ICC annually on form RBO. The balance sheet does not show separately investment in tangible assets. Rental payments are shown but the asset rented is not identified.

The Federal Maritime Commission passes on agreements submitted by steamship conferences but does not require a periodic financial report.

Brokers of motor vehicle transportation subject to the Interstate Commerce Act are licensed by the ICC. No periodic reports are required by that agency. Neither FMC nor CAB regulates brokers.

We recommend the collection of necessary data from the business units within this industry. Data from the classes of firms discussed above might be collected by the regulatory agency. Alternatively, data from these as well as the many classes of business not subject to Federal regulation could be collected by the Census Bureau.

#### STOCKYARDS

Operators of yards handling livestock in interstate commerce report annually to the Department of Agriculture (Packers and Stockyards Division, AMS). Operators of yards who buy and sell livestock file form PS-130. Operators who do not buy and sell—providing facilities only—file form PS-129. (We note here a reporting overlap between some of those companies and some railroad terminal companies engaged in stockyard operation.) The universe of companies reporting to the Agriculture Department excludes operators in intrastate commerce. These are believed to be relatively unimportant.

Form PS-129 provides the following balance sheet accounts for tangible assets:

- Inventories.
- Livestock.
- Feed.
- Material.
- Land.
- Building and structures.
- Equipment.

Feed inventories, by type, are detailed on pages 11-12 of the form. The book values (and acres) of land owned and used for stockyard purposes, used for other than stockyard purposes, and land not in use are given on page 7. Buildings and structures are identified on page 8 along with the associated book values. On the same page the following equipment detail is shown:

Furniture and fixtures.

Tools and movables.

Yard equipment.

Horses.

Wagons.

Other.

Rental receipts classified by type of asset rented are shown on page 13. Leasehold payments and a total for other rents are given on page 14.

Form PS-130 is similar although less detailed than form PS-129.

#### OTHER TRANSPORTATION SERVICES

We know of no data currently being collected by Federal agencies from the four remaining industries within the major group. Once business units belonging to the industries are identified (probably from the list of employers under the social security program), required data should be collected by the Census Bureau if asset data on the transportation industries are to be complete.

#### ANNEX A

##### THE VALUATION PROBLEM WITH RESPECT TO TRANSPORTATION ENTERPRISES

(By Ernest W. Williams, Jr.)

It seems clear that an attempt to compile aggregates of the "wealth" devoted to the transport function will present difficulties, perhaps of a major order. It would seem desirable that data compiled in current dollars for transport plant and equipment be capable of addition to data for other industries, as well as capable of comparison with aggregates for those industries without an undue distortion. Similarly the valuation placed upon the rail system ought to be capable of comparison in a meaningful sense with that placed upon every other form of transport.

The market system, although with a number of imperfections, places values upon the largest part of assets which change hands with some frequency, whether for the same or for other uses to which they may be adapted. It reflects in price current demand and supply conditions as well as appraisals of future usefulness or earning power of these assets. Much transportation equipment as well as many items common to the transport and other industries have a market value. Such items are not, however, always segregated in the accounts from other items which the market has no occasion to appraise directly. Where items are currently in production, the price of new equipment bears some relationship to the cost of production as well as a relationship to old and used equipment.

Current market value presumably affords the best measure for purposes of wealth computations because it tends to reflect all the conditions which affect the usefulness of assets under the conditions and expectations at the time of valuation. Such values can, of course, be affected by cyclical phenomena as well as by technological change and other factors over a period of time. Hence, values found for particular assets at a given time may grow or decline out of proportion to changes in the physical condition of the assets. Extrapolation of values is, therefore, dangerous, but wherever available, market value ought to be employed as the preferred measure of present wealth.

Unfortunately pipelines, railroads, and some other types of transport are not customarily sold as going concerns, nor are there regular market trans-

actions in most of the basic facilities employed in transport, whether publicly or privately owned. Moreover, the current value of fixed transport plant is heavily affected by (1) location of the works or structures; (2) degree of the utilization of total transport capacity in the area served and the prospects thereof; and (3) degree of utilization of a particular type of transport plant in relation to competitive forms and the prospects of improvement or decline. Locational as well as technological obsolescence is embraced in portions of the transport plant. The former is almost never recognized in recorded depreciation; the latter only partly so. In these and other circumstances replacement cost, less depreciation, may depart widely from any figure that would be assigned for value in use. It is questionable whether, for some portions of the rail and highway plants, terminal facilities of all kinds, and certain navigation works, it would afford a basis most nearly comparable to a current market value if such a value existed.

To value certain navigation works, for example, at replacement cost would impart an inflated element. Channels or works which have never developed substantial traffic may have a value less than their original cost, despite the relatively permanent character of some such works, simply because they were built in contemplation of a traffic which never developed, either because of initial miscalculation or failure to apply economic tests or because of changes in circumstances affecting the flow of traffic.

In the case of such a navigation work, neither a market value nor a capitalization of earning power can be ascertained in any direct way. It may be that a net revenue could be estimated for the value of traffic being carried and reasonably to be expected and a value computed therefrom. Such a method would, however, be impossible to apply to many elements of transport plant. It seems clear that no single standard can be applied throughout and that, depending upon the resources available for the task, judgment will need to be applied to the various segregable elements of plant in order to arrive at the best approximation of market value in the hypothetical event that the sale of the assets for continued service in transport were contemplated. Thus, under circumstances where growth has been occurring and is in prospect and where capacity is reasonably well utilized, replacement cost, less depreciation, would appear to be a reasonable approximation. Care should be taken, however, to review depreciation policies reflected in the reserves since, for particular classes of plant, they may well fail adequately to reflect technological obsolescence. In instances of declining trend of business which may be expected to continue, and of less than optimum utilization of capacity, it would appear that when some assets reach the end of their physical lives they will not be replaced. Indeed, plant ought to be undergoing continual shrinkage in such instances.

Portions, at least, of the rail industry fall in this category and the use of replacement cost as a measure of value would appear peculiarly inappropriate. Yet the absence of earning power for a rail carrier taken as a whole does not indicate the absence of "wealth" embodied in portions of its plant and equipment. Unprofitable systems will have profitable segments. Systems will embrace some lines which can easily be dispensed with and others which remain of substantial importance to the transport network. The use of the earning power of the railroads as a whole, or of regional groups, or of individual carriers, would result in a value seriously short of the mark. In effect, deficit segments would be given a negative value which would offset a portion of the value found for segments which contribute materially to the performance of the transport function. Although the continued operation of underutilized and obsolescent facilities may well constitute a drag upon the economy, it is difficult to accept a negative value for the facility in use when it ordinarily has a positive value as scrap. It would appear to be impossible to classify rail permanent way and structures in a way to admit of application of scrap values in some instances and of value reflecting earning power in others. This results not only from the magnitude of the task but also from the fact that much required information is not available. The value of the railroad plant on the basis of capitalization of recent earnings at 10 percent is perhaps of the order of 2 percent of the book values shown by the carriers. Replacement cost less depreciation would presumably exceed book value by a considerable margin. I do not at present see a basis for evaluation of this industry which is compatible with my understanding of the general objective.



In respect of the highway plant, expenditures at all levels of government are available. However, portions of the highway network are overdeveloped while other portions are inadequate in capacity, design standards, physical condition, or all three. Past expenditures give an insufficient guide to the present value. However, substantial portions, especially of the rural road system, have been constructed or improved in response to political pressures rather than to economic need commensurate with the cost of the facility. The increasing dominance of Federal and State expenditures has moderated but not eliminated this condition.

It would appear that replacement cost should be a quite reasonable method for application to pipelines, to the bulk of the highway system, and to most elements of transport equipment, where present market value of the asset is not available. Portions of the highway system, of waterway improvements, and of the rail industry seem to present the possibility of overvaluation by this method.

---

ANNEX B

RAILROAD FORM A: INVENTORY OF EQUIPMENT

(from Schedule 417)

LOCOMOTIVES

Steam—Freight.  
 Steam—Passenger.  
 Steam—Freight or passenger.  
 Steam—Switching.  
 Electric—Freight.  
 Electric—Passenger.  
 Electric—Freight or passenger.  
 Electric—Switching.  
 Diesel—Freight: A units.  
 Diesel—Freight: B units.  
 Diesel—Passenger: A units.  
 Diesel—Passenger: B units.  
 Diesel—Multiple purpose: A units.  
 Diesel—Multiple purpose: B units.  
 Diesel—Switching: A units.  
 Diesel—Switching: B units.

OTHER

Freight train cars:  
 Boxcars—General service.  
 Boxcars—Special service.  
 Flatcars.  
 Stock cars.  
 Gondola cars.  
 Hopper cars—Open top.  
 Hopper cars—Covered.  
 Refrigerated cars.  
 Rack cars.  
 Tank cars.  
 Other freight train cars.  
 Caboose cars.  
 Passenger train cars (non-self-propelled):  
 Coaches.  
 Combination coach cars.  
 Parlor cars.  
 Sleeping cars.  
 Club, lounge and observation cars.  
 Other passenger carrying cars.  
 Postal cars.  
 Combination mail and baggage, or mail and express cars.  
 Baggage, express, and other non-passenger-carrying cars.

**Passenger train cars (self-propelled) :**

Coaches.

Combination coach cars.

Other self-propelled.

**Company service equipment :**

Business cars.

Ballast and dump cars.

Derrick cars.

Boarding outfit cars.

Wrecking cars (regularly assigned).

Snow removing cars.

Other company service equipment cars.

**Floating equipment (self-propelled vessels) :**

Tugboats.

Car ferries and other self-propelled vessels.

**Floating equipment (non-self-propelled vessels) :**

Car floats.

Lighters, barges and other non-self-propelled vessels.

