

Capital Cost in APT

Concept and Methodology

Presentation to Amtrak

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Capital Charge “Overview”

Presentation Covers Three Areas

1. The Basic Logic of the Capital Charge for APT
2. How the Capital Charge Is Computed in APT
3. How the Capital Charge Is Allocated to Trains

What and Why, but Not Where/How to Use It

Bonus: Some Discussion of How APT Works



Amtrak Performance Tracking (APT) Major Features

- Estimates “Full” Costs of Operating a Train or Route
- ResCen Family-Based Rules
- Coverage of All Amtrak Business Lines
- Allocation of Overhead Costs to All Business Lines
- **Distinguishes Capital Costs from GAAP Charges and Cash Flows**
- Direct Estimation of Avoidable Costs at Detailed Level
- Non-Mainframe/Accessible/Maintainable



APT Documentation

- APT Methodology Is Documented in a Three Volume FRA Report to Congress
- “Methodology for Determining the Avoidable and Fully Allocated Costs of Amtrak Routes” (August 2009)
- Capital Charge Descriptions in Report:
 - P. 31
 - Pp. 38-39
 - Section 7.7.1 – pp. 132-135
 - Sec. 8.7 – pp. 194-197
 - Appendix E (Vol. III)



Terminology Side Note

- **Expenses** Refer to Actual Transactions
- Expenditures = Expenses
- Expenses Are Recorded in Financial Databases
–Think Checking Account – Includes Capital Asset Purchases
- **Costs** Are an Estimate of the Value of Resources Consumed in the Production of Goods and Services – for a Reporting Period
- Costs Are Derived from Expense Data



Definition of Fully Allocated Costs

- The Portion of Total Costs Recorded on Amtrak's Income Statement that Best Represents an Equitable Share for a Single Amtrak Train or Route – Note: Fully Allocated **Costs**, Not Expenses
- Answers the Question: How Much Revenue Would Amtrak Have to Receive for Each of Its Trains (and Other Products) for All Its Expenses To Be Covered?



Fully Allocated Costs

- Includes Direct Costs, Portion of Shared Costs, Portion of G&A Costs, Portion of Capital Costs
- Concept Applies to both Core Passenger Rail Business and Non-core Business Lines
- Sum of Fully Allocated Costs for All Routes and Other Business Lines Equals Total Corporate-wide Costs
- G&A Costs Allocated to all Business Lines to Avoid Inflating Costs of Routes
- Continue to Assign Costs with Train Numbers Directly to Trains



How Do Capital Costs Differ from Other Operating Costs?

- Operating Costs Occur (Accrue) in the Analysis Period
- Examples: Cost of Fuel Purchased or Wages Paid
- Analysis Period: APT Reports Monthly; Amtrak Reports Corporate Accounting Results (at Least) Annually
- Capital Costs Involve Items that Are Acquired in One Period but Used for Many Periods – “Long-Lived Assets”
- Such “Long-Lived Assets” Referred to as “Capital Assets”
- Charging All of an Asset’s Acquisition Expense in the Acquisition Period Would Give a Distorted Measure of Financial Performance



Amtrak Capital Assets

- Land
- Track System (Ballast, Ties, Rail, Bridges)
- Electric Power and Control Systems
- Buildings (Shops, Stations, Garages, Offices)
- Rolling Stock – Equipment
- Highway Vehicles
- Computer Systems and Office Equipment
- Working Capital



Capital Costs Under Generally Accepted Accounting Principles (GAAP)

- GAAP Rules Set by Independent Financial Accounting Standards Board (FASB)
- Audit: Public Accountants Certify that an Enterprise's Financial Statements Conform to GAAP
- GAAP Has a Set of Rules for Expenses Associated with Long-Lived Assets
- Asset Expenses Are Treated As Operating Costs and Spread Over Many Periods



GAAP Approach to Calculating Capital Costs

- Depreciation Is the GAAP Term for Period Operating Costs Associated with a Capital Asset
- Depreciation a “Return of Capital”
- Depreciation Requires an Estimate of the Asset’s Expected Service Life
- Depreciation Requires Knowing What Was Paid to Acquire the Capital Asset
- GAAP Has Several Alternatives for Computing Depreciation – Accountants Choose Based on Specifics of Case and Corporate Policy



Depreciation Logic in GAAP

Depreciation

- Is an Estimate of Resource Consumption
- Is Spread over Many Accounting Periods
- Is a Cost Recovery Mechanism
- Is Based on Historical Expenses
- Is Not Intended to Provide for Future Replacement of the Asset



Depreciation Is Not Used in APT

- Depreciation Used in Amtrak's Audited Financial Statements – GAAP Compliant
- Depreciation Not Based on Original Asset Acquisition Cost Where Sale-Leaseback Occurs
- Depreciation Is Expense-Based Measure
- APT Focus Is Cost (of All Resources Used)
- Amtrak Financing of Assets Acquisition a Further Complication for APT



Asset Financing Is an Operating Expense

- Interest Paid Is an Operating Expense
- Interest Is a “Return **on** Capital”
- Some Amtrak Assets Not Financed (Grants)
- Some Amtrak Borrowing Not Linked to Specific Assets
- Sale-Leaseback Transactions Result in Additional Accounting Adjustments
- Financing Costs Need to Be Allocated to Trains

“It’s Complicated”



Capital Charge in APT

- APT **Does Not** Allocate Depreciation or Interest to Trains
- APT **Does** Estimate a Synthetic Capital Charge
- “Synthetic” Reflects both Depreciation and Financing Cost (Interest) – A Synthesis - and Total Dollar Costs Are Similar
- Synthetic Capital Charge Provides a More Equitable Allocation of Costs to Trains
 - Capital Charge Is Computed for Each Asset
 - Asset Usage Is Linked to Trains



Computation of Capital Charge

- Synthetic Capital Charge Needs to Reflect both the Return of Capital (Depreciation) and the Return on Capital (Financing Cost)
- Land and Working Capital Only Uses Return on Capital
- A Capital Recovery Factor (CRF) Is Used
- CRF Is an Annualized Estimate Based on Asset's Useful Life and an Appropriate Rate of Return
- $CC = \text{Acquisition Expense} * CRF$



Capital Charge Details

- CRF Uses Three Inputs in the Common Amortization Formula (Loans, Mortgages, etc.)
 - “Acquisition Expense” Is Original (Gross) Value in Asset Ledgers
 - Useful Service Life Is Based on Amtrak’s Group Depreciation Rates by Asset Type
 - Rate of Return Is U.S. Rate on 20 Year Treasury Notes
- Formula Is in Methodology Report



Capital Charge Computed for Each Asset

- Amtrak Finance Dept. Maintains Three Asset Ledger Databases –
 - Track
 - Other Fixed Assets
 - Vehicles (Equipment)
- Key Inputs from Ledgers Are Service Life and Initial Acquisition Cost
- Expected Service Life Regularly Updated



Fixed Assets Linked to Trains

- APT Uses Operating Statistics to Allocate Shared Expenses – Train Miles, Frequency, etc.
- Train Operating Stats Include Location Data
- APT Uses Location “Stat Qualifiers”
- Stat Qualifier Examples Are Specific Track Segments and Stations
- Ledgers Include Location Data for Fixed Assets
- Stat Qualifiers Assigned to Each Asset Based on Location Data



Equipment Assets Linked to Trains

- APT Allocates Equipment (Maintenance) Expenses to Trains Based on Operating Statistics by Equipment Type
- Allocation Statistic Is Unit Used
- Each Train Has Units Used Statistics by Equipment Type
- Amtrak Equipment Ledger Identifies Equipment Type



Summary of Capital Charge Allocation

- An Asset's Capital Charge Is Based on Data from Asset Ledgers
- Assets Are Linked to Trains via Stat Qualifiers
- Train Operating Statistics and Stat Qualifiers Used to Allocated Shared Costs
- Capital Charge Is Allocated Like Other Shared Costs in APT



Capital Charge Summary

- Capital Charge Is Part of APT Fully Allocated Cost
- Capital Charge Can Be Separately Reported
- Capital Charge Reflects the Period Cost of Using All Amtrak Long-Lived Resources
- Synthetic Capital Charge Used Instead of Depreciation and Interest to Better Reflect Resources Used in Operating Trains (Full Cost Recovery) and Provide Valid Link to Trains
- Like Other Expenses, Capital Charge Allocated in APT to Trains and Other Services (Business Lines)

