

# Amtrak Performance Tracking (APT) System

## Methodology Summary

**September 2017**

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U.S. Department of Transportation  
John A. Volpe National Transportation Systems Center

**Volpe**

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13. ABSTRACT (Maximum 200 words) The Volpe Center collaborated with Amtrak and the Federal Railroad Administration (FRA) to develop a cost accounting system named Amtrak Performance Tracking (APT) used by Amtrak to manage, allocate, and report its costs. APT's initial development was detailed in a 2009 FRA Report to Congress and again in a 2016 update. This report is a summary of the APT methodology and implementation providing an introduction to new stakeholders. The report describes APT's purpose, input data, allocation methodology, uses, and stakeholders. For a full discussion of APT, see the April 2016 <u>Update on the Methodology for Amtrak Cost Accounting Amtrak Performance Tracking (APT)</u> .				
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# SI\* (MODERN METRIC) CONVERSION FACTORS

## APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	645.2	square millimeters	mm <sup>2</sup>
ft <sup>2</sup>	square feet	0.093	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yard	0.836	square meters	m <sup>2</sup>
ac	acres	0.405	hectares	ha
mi <sup>2</sup>	square miles	2.59	square kilometers	km <sup>2</sup>
<b>VOLUME</b>				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft <sup>3</sup>	cubic feet	0.028	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.765	cubic meters	m <sup>3</sup>
NOTE: volumes greater than 1000 L shall be shown in m <sup>3</sup>				
<b>MASS</b>				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
oz	ounces	28.35	grams	g
<b>TEMPERATURE (exact degrees)</b>				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
<b>ILLUMINATION</b>				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m <sup>2</sup>	cd/m <sup>2</sup>
<b>FORCE and PRESSURE or STRESS</b>				
lbf	poundforce	4.45	newtons	N
lbf/in <sup>2</sup>	poundforce per square inch	6.89	kilopascals	kPa

## APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
<b>AREA</b>				
mm <sup>2</sup>	square millimeters	0.0016	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	10.764	square feet	ft <sup>2</sup>
m <sup>2</sup>	square meters	1.195	square yards	yd <sup>2</sup>
ha	hectares	2.47	acres	ac
km <sup>2</sup>	square kilometers	0.386	square miles	mi <sup>2</sup>
<b>VOLUME</b>				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m <sup>3</sup>	cubic meters	35.314	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.307	cubic yards	yd <sup>3</sup>
mL	milliliters	0.034	fluid ounces	fl oz
<b>MASS</b>				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
g	grams	0.035	ounces	oz
<b>TEMPERATURE (exact degrees)</b>				
°C	Celsius	1.8C+32	Fahrenheit	°F
<b>ILLUMINATION</b>				
lx	lux	0.0929	foot-candles	fc
cd/m <sup>2</sup>	candela/m <sup>2</sup>	0.2919	foot-Lamberts	fl
<b>FORCE and PRESSURE or STRESS</b>				
N	newtons	0.225	poundforce	lbf
kPa	Kilopascals	0.145	poundforce per square inch	lbf/in <sup>2</sup>

\*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

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# List of Abbreviations

Abbreviation	Term
AC	Account
ANC	Ancillary
APT	Amtrak Performance Tracking
AUA	Asset Usage Allocation
BPC	Business Planning and Consolidation
CC	Cost Center
CETC	Consolidated Electrification Traffic Control
ELH	Enginemen Labor Hours
ERP	Enterprise Resource Planning
FRA	Federal Railroad Administration
FY	Fiscal Year
G&A	General and Administrative
GAAP	Generally Accepted Accounting Principles
IG	Inspector General
IO	Internal Order
LMS	Labor Management System
MARC	Maryland Area Regional Commuter
MPR	Monthly Performance Report
NTS	National Train Service
OPEB	Other Post-Employee Benefits
PC	Profit Center
PRIIA	Passenger Rail Investment and Improvement Act of 2008
PRJ	Project Related Costs Paid with Capital Funding
RPR	Route Profitability Report
RPS	Route Profitability System
RRDW	Ridership and Revenue Data Warehouse (System)
SAIPRC	State-Amtrak Intercity Passenger Rail Committee
SAP	Systems, Applications, and Products in Data Processing
SQ	Statistic (Stat) Qualifier
Stat	Statistic
TBD	Total Boards and Deboards
TG	Train Group
TUS	Train Unit Statistic (System)
Volpe	John A. Volpe National Transportation Systems Center
WBS	Work Breakdown Structure
WBSE	Work Breakdown Structure Elements
XSP	Excluding Special Trains

# I. Introduction

The purpose of this report is to describe in plain language the Amtrak Performance Tracking (APT) system. APT is a large, complex system and this report provides users a high-level understanding of APT to facilitate the proper interpretation and use of its results, especially train costs and revenue results. Other documents are available that provide more detailed explanations of APT's background, methods, and terminology.<sup>1</sup>

## *APT Users and Uses*

- *Internal management by Amtrak staff*
- *Federal oversight*
- *Service agreements with State partners*

While the primary users of APT are Amtrak employees for internal management purposes, other parties use APT results and have an interest in understanding its background and procedures. The main audiences for this report are the end users of APT's results, such as the Federal Railroad Administration (FRA), U.S. Congress, and Amtrak's State partners. FRA and Congress use APT results in their role as Amtrak overseers, including monitoring financial performance, creating

budgets, and other initiatives involving Amtrak. Also, APT results are a key input into the service agreements Amtrak enters into with its State partners who use APT results to validate their bills and evaluate their services. See Section 5 of this report for more discussion of APT's users, uses, and outputs.

## I.1 What Is APT? What Does APT Do?

APT is an Amtrak financial reporting system that allocates revenues and costs to Amtrak trains, routes, and other business lines.

*APT reports costs and revenues for Amtrak trains and other businesses*

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<sup>1</sup> Update on the Methodology for Amtrak Cost Accounting, Amtrak Performance Tracking (APT): Volume 1, U.S. Department of Transportation, Federal Railroad Administration, April 22, 2016 (hereafter referred to as APT Update Report). Volume 2 contains Appendices A – F. Volumes 1 and 2 are accessible online at: <http://www.fra.dot.gov/Elib/Document/15780> and <https://www.fra.dot.gov/Elib/Document/15771>.

Congress mandated its development in 2004 and APT went into effect in Fiscal Year 2010. Listed below are APT's notable features.

- APT provides allocated results of the **total** operating costs for all of Amtrak's train services, or *fully allocated costs*.
- Fully allocated costs include expenses associated with a single train, such as the wages of an engineer or conductor.
- Fully allocated costs also include a portion of the expense for employees, materials, and other items that support the operation of multiple trains. Examples of these shared expenses are management staff and station operating costs. APT allocates these shared costs to the relevant trains they support.
- APT allocates the cost to Amtrak's other business lines<sup>2</sup> in the same way it allocates the cost of trains. These other business lines include the following: infrastructure access by other commuter and freight railroads to its network on a fee basis; operating commuter railroads; repairing or maintaining rail equipment and track for other railroads; and commercial real estate activities such as selling, leasing, or operating its stations and other properties.
- APT's results use Amtrak's audited financial data.
- The methods for APT's allocation of Amtrak revenue follow the same general approach as its cost allocation.
- APT allocations are made at the train level, but most public uses of APT results involve aggregating these to the route level. One simple example is that the Silver Star route between New York and Miami has two trains daily, one in each direction.

## 1.2 Overview of the APT Methodology

The fully allocated cost and revenue results from APT are its final output and are based on input data from several other Amtrak financial and information systems. Figure 1-1 depicts the overall process used in producing APT results and may be a useful reference to the reader serving as a roadmap of the

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<sup>2</sup> In its documentation and programs, APT uses the term "business lines" in reference to Amtrak's trains and other business activity for customers. In response to the Fixing America's Surface Transportation (FAST) Act (Pub.L. 114-94, enacted December 4, 2015), FRA developed an accounting structure that uses the term "service lines" for this purpose (see Section 5.2.2). Although closely related, the two terms are distinct.

systems and data needed to operate and produce APT allocated results. The upper and left-hand areas depict the two primary data sources used by APT. The upper area shows a transaction entering Amtrak's

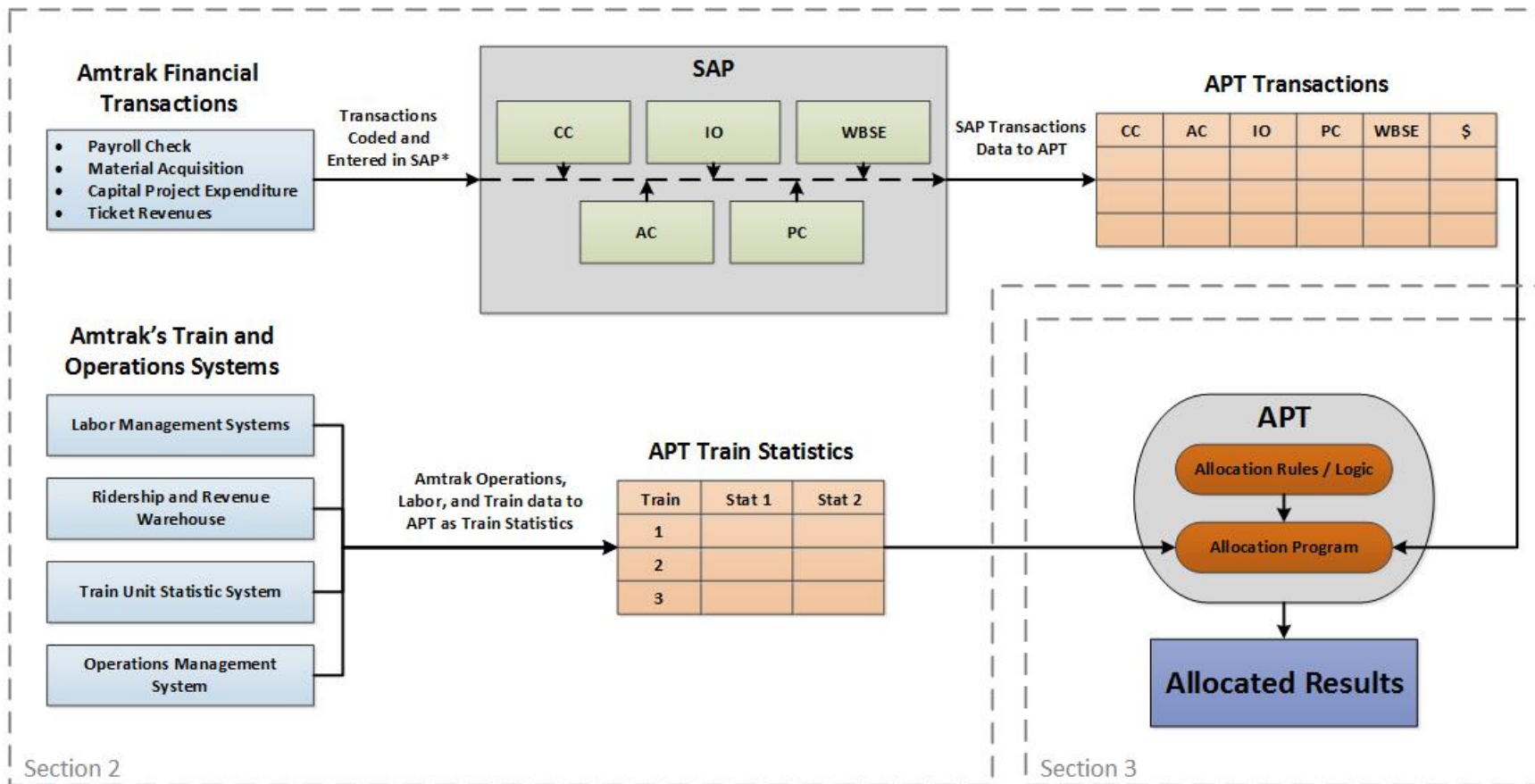
- *APT uses SAP financial data*
- *APT uses train operating data from other systems*
- *APT has allocation rules /logic*
- *The APT program uses data and rules to produce allocated results*

SAP<sup>3</sup> financial system and being coded for use by APT while the lower left-hand area shows Amtrak's train and operations data entering APT as train statistics for allocation. Section 2 of this report explains this process, including a description of Amtrak's financial codes shown in the SAP box. The lower right-hand area in Figure 1-1 depicts how APT uses the

financial data, in combination with train statistics, to allocate costs and revenues. Section 3 of this report explains the allocation methodology depicted in the lower area of the figure.

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<sup>3</sup> SAP (Systems, Applications and Products in Data Processing) is the general reference for SAP AG, a German-based software corporation best known for its enterprise management and reporting software products. SAP's primary product is SAP ERP (Enterprise Resource Planning) and is used by corporations worldwide, including Amtrak. The term "SAP" may refer to the corporation or the SAP ERP product, depending on the context.



\*Transactions in SAP have many more codes. The five shown here are the ones used in the APT allocation methodology.

Figure 1-1. Overview of APT Allocation Methodology and Data Flows

## 2. Building APT Input Data

### 2.1 Introduction

APT's basic purpose is to interpret Amtrak financial transactions and allocate<sup>4</sup> them to trains and other parts of its business. This process has three basic elements:

- What is being processed—cost and revenue financial transactions
- The business lines—trains and other businesses, such as contracts for commuter railroad operations and repairs, to which the costs and revenues are allocated
- A method—logic, rules, or formulas that do the allocation

This section explains the upper and left areas of Figure 1-1, beginning with a description of the financial codes used and how they form the building blocks for APT's allocation process. An example will be used in this report to illustrate how a specific expense item, management's wages at the San Antonio, TX station, is handled in SAP. Section 2 also discusses different types of financial transactions and other data used in the APT allocation process, including Amtrak's train and operations data, which become APT's train statistics. With this foundation, Section 3 then describes the APT methods depicted in the lower right-hand area of Figure 1-1: how APT interprets the financial codes and uses them in allocating costs to trains. The San Antonio expense transaction example will continue into Section 3 to illustrate the allocation process. In both sections, the San Antonio case is an example of one type of expense and allocation rule and is not representative of other station wages or all expenses at that location. It is a simplified example to demonstrate one potential path for a real-world expense through the SAP and APT systems resulting in a route cost.

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<sup>4</sup> In this report, the term "allocate" is used broadly for fully allocated costs, covering all APT processes for attributing costs to trains, both direct and allocated. This usage is consistent with APT's goal of reporting fully allocated route costs, as further explained in the Section 3 discussion of APT allocation process.

## 2.2 Expense Transaction Data Records and Their Codes

Amtrak uses software from SAP as its general ledger and financial accounting system for reporting and management. This report follows the common convention of referring to both the company and this software as “SAP.” Among its many functions, the SAP system creates the data records for all Amtrak financial transactions<sup>5</sup> both external (cash flows such as expenses and revenues) and internal (transfers and credits).

*Every Amtrak revenue and expense transaction becomes a SAP data record*

Each expense transaction becomes a data record in the SAP system that contains its dollar value and several codes that give information about the type of transaction—what was bought, when, by whom, for what purpose, etc.

When a transaction is entered into SAP, the relevant codes are assigned to the data record. For example, when a material purchase is made, the location of the maintenance facility and the type of material purchased are used to assign codes reflecting this information to the transaction data record. In the San Antonio station example, a payroll expense record is created with codes that indicate a manager’s assignment, function, and wage.

Each month, SAP transfers to APT all expense and revenue transactions, including both the dollar value and the set of codes APT uses to allocate costs to trains and other businesses. There are five financial transaction codes (together called the “Code Block”) that are the key building blocks used in the APT allocation process.

*“Code Block”: The five transaction codes for each expense that APT uses to allocate costs*

Table 2-1 gives the Code Block data for the San Antonio station management wages example. The following subsections describe the structure and content of these five transaction codes and their specific application to the San Antonio station example.

---

<sup>5</sup> All financial transactions in SAP are transferred as an input to APT, but APT does not allocate all transactions to routes and business lines. See Section 4 for a description of these unallocated transaction types and how APT treats them.

**Table 2-1. Example of SAP-APT Transaction Codes Used for Cost Allocation**

Code and Description	Cost Center	Account	Internal Order	Profit Center	WBSE
Code	CC_2814	AC_500010	IO_1241	PC_18250	W_NO_W
Description	Station Services, San Antonio, Texas	Wages	Station Services – Management and Supervision	Long-Distance General Management Support	No WBSE Qualifiers

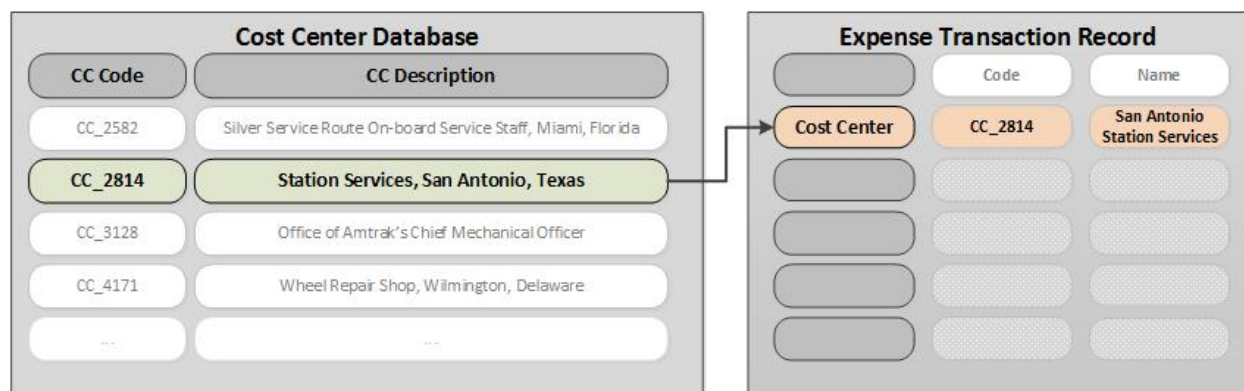
The Code Block for all transactions has Cost Center, Account, Internal Order, Profit Center, and Work Breakdown Structure Elements codes. Each unique combination of Code Block elements is typically used for multiple expense transactions processed by APT. In this example, there are several employees involved in operating this station over the 12-month fiscal year.

## 2.2.1 Cost Center

SAP includes and maintains a database of Cost Centers (CC). Most Cost Centers are hierarchical organizational units with a supervisor and staff where work takes place. Each Cost Center is identified by a four-character code and an associated name. The performance of a defined set of activities or functions, such as ticketing at a station or passenger car repairs at a maintenance facility, results in Cost Center expenses. Many, but not all, Cost Centers are focused on the operation of Amtrak's core passenger train business. Amtrak uses other Cost Centers for Amtrak's non-train ancillary businesses, and as virtual Cost Centers to manage overheads and other accounting special cases, such as certain special projects and fuel purchases. Amtrak has approximately 1,600 active Cost Centers.

In the San Antonio station example, there is a specific San Antonio Station Services Cost Center. When a payroll transaction is created, such as a manager's bi-weekly paycheck, that Cost Center code is added to the expense transaction record.

Figure 2-1 gives examples of several APT Cost Centers and illustrates the insertion of the Station Services, San Antonio, Texas Cost Center code into a transaction data record.



**Figure 2-1. Example of Cost Centers and the Link to an Expense Transaction Record**

## 2.2.2 Account

SAP includes and maintains a database of Accounts (ACs) that identify various types of expenses, revenue sources, and balance sheet items. Each Account is identified by a unique six-digit number and an associated name. Amtrak's accounting systems use approximately 500 Accounts.

When a San Antonio station manager is paid wages, "AC\_500010—Wages" is included on the payroll transaction. If the manager had been on paid vacation that period, "AC\_500011—Vacation" would have been used instead. Figure 2-2 gives examples of APT Accounts and illustrates the insertion of the Wages Account code into the transaction data record for the San Antonio station example.

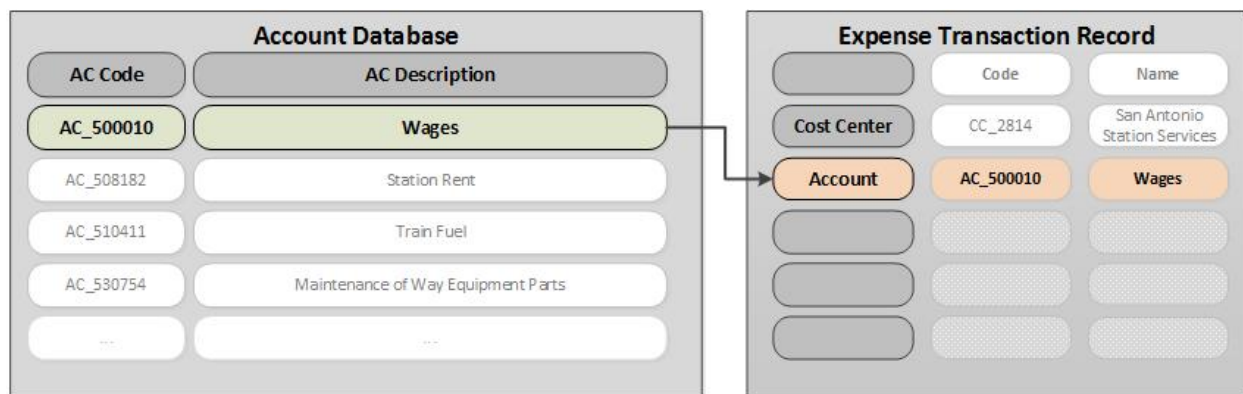


Figure 2-2. Example of Accounts and the Link to an Expense Transaction Record

## 2.2.3 Internal Order

SAP includes and maintains a database of Internal Orders (IOs). Internal Orders categorize expenses by purpose and identify the task, type, or nature of work performed. Internal Orders are identified by a four-digit number and an associated name. Amtrak's accounting systems use approximately 150 Internal Orders.

Station operations include several types of labor activity, each with a unique Internal Order, including Ticketing, Operations, and Red Caps and Porters. In the San Antonio station example, the IO\_1241—Station Services—Management and Supervision is used. This Internal Order is associated with a manager's payroll record and added to the SAP transaction record. Figure 2-3 gives examples of APT Internal Orders and illustrates the insertion of the Station Services Management and Supervision Internal Order code into a transaction data record for the San Antonio example.

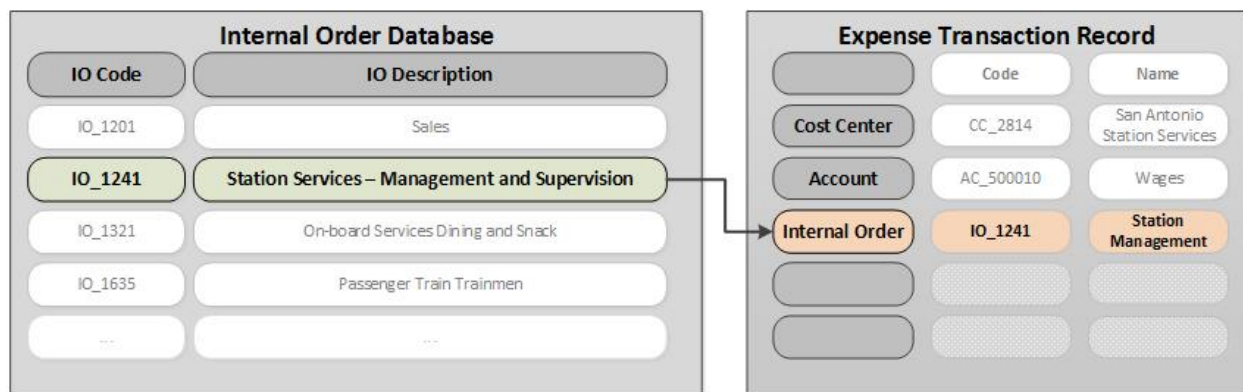


Figure 2-3. Example Internal Orders and the Link to an Expense Transaction Record

## 2.2.4 Profit Center

SAP includes and maintains a database of approximately 100 Profit Centers (PCs) to record revenues<sup>6</sup> and expenses within Amtrak’s business lines (see Section 2.4 for a discussion of Amtrak’s business lines). Profit Centers are identified by a four-digit number and an associated name. In APT, the Profit Center code is used to identify the relevant service in developing an allocation rule in cases where the other Code Block data does not provide enough information about an expense’s type, purpose, or linkage to a train or other business lines.

As the San Antonio station serves only long-distance routes, all its expenses are associated with Amtrak’s Long-Distance Route General Management Support Profit Center, and that code is entered for each transaction at that station. Figure 2-4 gives other examples of APT Profit Centers and illustrates the insertion of the Long-Distance Route General Management Support Profit Center code into the same transaction data record for the San Antonio station example.

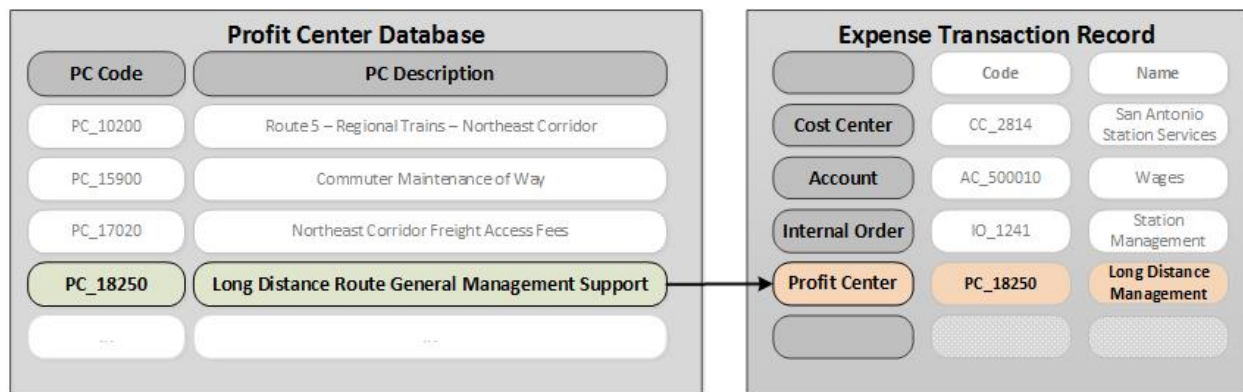


Figure 2-4. Example of Profit Centers and the Link to an Expense Transaction Record

<sup>6</sup> Expenses are coded with both a Profit and Cost Center, while revenues are coded in SAP with only a Profit Center.

## 2.2.5 Work Breakdown Structure Element

SAP includes and maintains a database of approximately 65,000 Work Breakdown Structure Elements (WBSEs) to track a project's expenses. WBSEs have a multi-level coding structure. Lower-level fields provide more detail about a project's expenses (for example: location, train segment, or specific equipment units) and are connected by the WBSE hierarchal coding structure as part of a single over-arching project.<sup>7</sup>

Under the "WBSE Database" in Figure 2-5, two Boston South Station entries illustrate the hierarchical structure. The higher-level L\_1252 is used for general management and oversight expenses for projects at South Station, and the lower-level, more specific WBSE code L\_1252\_900475 is used for expenses involving a specific electrification project.

In the selected example transaction of a San Antonio station manager's wages from the payroll, the WBSE code "W\_NO\_W" is used for general station operations when the manager is not assigned to a particular project.<sup>8</sup> Figure 2-5 gives examples of APT WBSEs and illustrates the insertion of the "no project" WBSE code into the same transaction data record, now containing the full Code Block needed by APT for cost allocation.

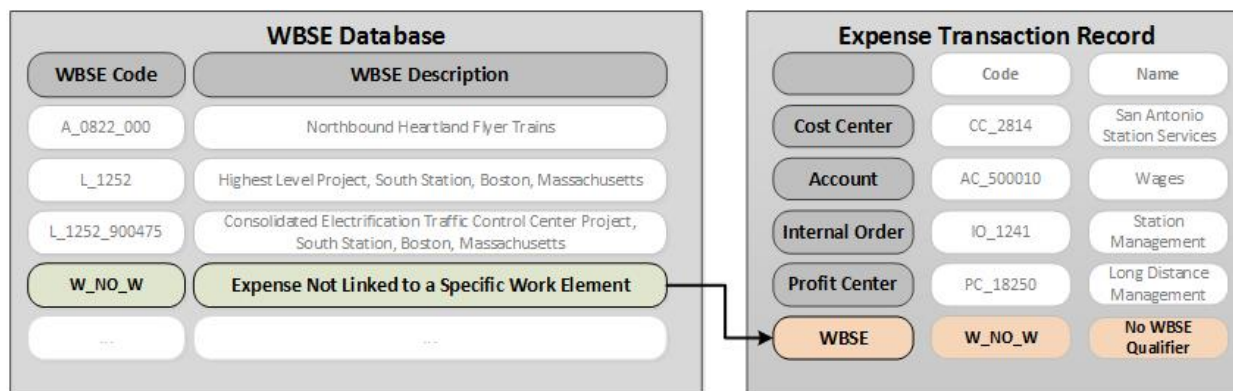


Figure 2-5. Example of WBSEs and the Link to an Expense Transaction Record

<sup>7</sup> However, the WBS structure is not directly additive within the hierarchy. The WBSE code for a specific expense is entered only at one WBS level, and thus higher-level WBSE codes are not sums of lower-level entries. Figure 2-5 describes two Boston South Station entries in the WBSE database. The higher-level project L\_1252 does not include the other's costs, even though both projects are physically located at the same location and they share the same prefix.

<sup>8</sup> This example is not an exhaustive treatment of the San Antonio station or wage transactions. Other transactions for the same manager (including other wage or related transactions) could have specific WBSE project codes.

## 2.3 Revenue Transaction Data

APT obtains monthly revenue transaction data from SAP as part of the same process it uses to obtain expense data. Each revenue transaction is processed in SAP and APT in the same manner as the expense transactions, using Accounts, WBSEs, and Profit Centers to allocate revenue transactions to trains and other businesses. Account codes are the key identifying feature and describe the type and source of revenue. Table 2-2 gives examples of APT revenue account codes.

**Table 2-2. Example of APT Revenue Accounts**

Account Code	Account Name
400102	Passenger Ticket Revenue
400104	Sleeping Car Revenue
400112	First Class Revenue
400110	Food and Beverage Revenue
410017	State-supported Service Revenues
459008	Merchandise Sales

Profit Center codes identify the Amtrak route. Examples of routes include the Northeast Corridor or Heartland Flyer. Profit Center also identifies the ancillary lines of business, such as Amtrak-operated commuter railroads, or reimbursable repair of other railroads' equipment. WBSE codes identify the specific trains or ancillary business customers that generated the revenue.

## 2.4 Amtrak's Business Lines: Trains, Routes, and Other Businesses<sup>9</sup>

APT allocates costs and revenues to Amtrak's "business lines." The APT business lines include Amtrak's trains and routes—the National Train Service (NTS), but also Amtrak's non-NTS business lines. The inclusion of these other non-NTS business lines in APT facilitates the allocation of a portion of various common overhead costs to them, and not just to Amtrak's passenger trains.<sup>10</sup> The following subsections

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<sup>9</sup> Amtrak's Business Lines are related but distinct from the FAST Act Section 11201 Service Lines discussed in Section 5.2.2

<sup>10</sup> In APT, even the non-NTS business line to which costs are allocated are treated as "trains," albeit with names

describe APT's four categories of business lines; namely:

- Amtrak's National Train Service, or NTS<sup>11</sup>
- Infrastructure
- Amtrak's other ancillary businesses
- Unallocated<sup>12</sup>

*APT "Business Lines" are Amtrak's National Train Service (NTS), the primary APT business line, and Amtrak's other businesses*

## 2.4.1 Amtrak's NTS Business Line – Intercity Trains and Routes

Amtrak's primary business line in terms of size, interest, and general public awareness, is its intercity NTS, specifically its passenger train service.

*APT allocates costs to individual passenger trains and aggregates to routes*

APT uses trains as the basic unit of analysis for its passenger service business. The definition of a train follows common usage, namely one or more locomotives and passenger cars linked together and traveling a specific route between two end points, usually with intermediate stops. APT allocates revenues and costs to the many Acela, Northeast Regional, State-supported and long-distance passenger trains that Amtrak operates.

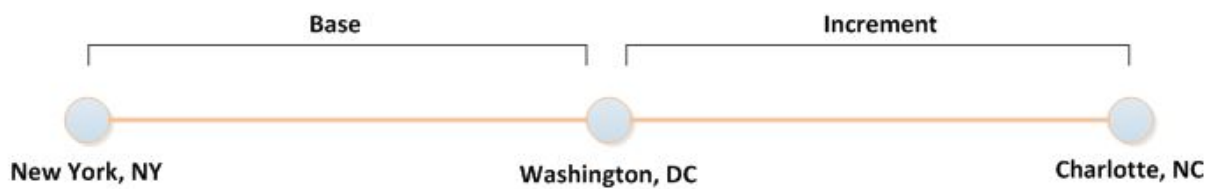
The simple definition of a train does not convey the complexities of actual operations. An example is when a train is split on occasion at an intermediate point and the two parts now continue on different paths to different end points as two separate trains. In another case, a State, under a contractual agreement with Amtrak, will support some (or appropriate costs as defined by the 209 Cost Methodology Policy) costs in excess of revenues for a given route. The State-supported portion of the route is treated as a separate train in APT, despite being a single physical train. Amtrak uses the term "Base/Increment" for these cases where "Base" refers to the Amtrak-supported portion of the route, and "Increment" refers to the State-supported portion(s) of the route(s). An example of this is the Carolinian, a train from New York City to Charlotte, North Carolina. Figure 2-6 shows the case of the Carolinian; the portion of the route from New York to Washington, DC is the Base while the State-supported Increment is from Washington to Charlotte.

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that reflect their actual nature. This is a necessary expedience for allocating costs to these other business lines.

<sup>11</sup> Amtrak's NTS includes 3 services: the Northeast Corridor (NEC), State-Supported, and Long-Distance Services.

<sup>12</sup> Unallocated is not a business line that performs services, but is a virtual business line for allocation of certain special-case transactions, separate and distinct from Amtrak's other business lines.



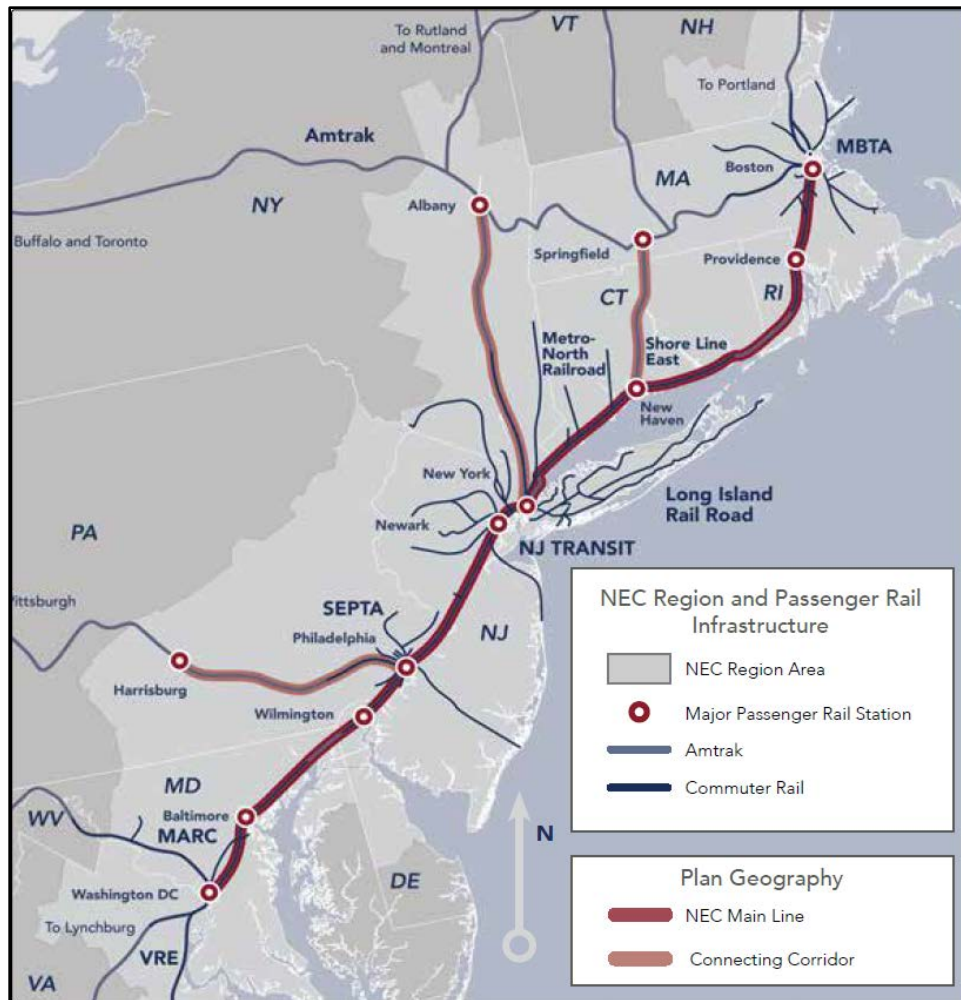
**Figure 2-6. Carolinian Base/Increment Route**

There are also special cases of trains operated once or only a few times a year, such as tourist trains and extra trains at holiday times. Amtrak uses a system of distinct train numbers to manage such complexities, and APT uses Amtrak's train numbering system in allocating costs. Amtrak operates about 500 numbered trains per day. For example, train number 821 travels from Oklahoma City, OK, to Fort Worth, TX, while train number 822 travels the same route in the reverse direction.

Although APT's cost allocation and Amtrak's operational management focuses at the train level, Amtrak's business management, stakeholder interest, and most reporting focus on the route and service level. Routes are groups of trains that operate and serve, at least in part, common stations or city pairs.

*Routes are geographical groupings of trains*

The simplest definition of a route would be two or more trains that regularly operate between the same end-point cities in both directions. For example, route number 29 is the Heartland Flyer and has two trains (821 and 822 noted above), one in each direction between Oklahoma City, OK, and Fort Worth, TX. Other routes have some trains that do not operate over the entire end-to-end route or involve more complex networks with a core "stem" line plus "connecting corridor" branches or spokes. A prime example is the Northeast Corridor route, with its core Washington, DC, to Boston, MA "spine" and multiple connecting corridors serving Harrisburg, PA, Hartford, CT and other points. Figure 2-7 illustrates this spine-and-branch route structure of the Northeast Corridor.



**Figure 2-7. Northeast Corridor Route Structure**

Source: NEC Commission<sup>13</sup>

Amtrak has an identification system for routes that uses both numbers and names. Each specific train number is associated with just one route. Table 2-3 provides a list of Amtrak's current 48 train routes by name and number.<sup>14</sup> APT route-level reporting includes all trains that are members of that route and is the sum for all daily trips in the reporting time period, which is typically a month, year-to-date, or year.

<sup>13</sup> Source is NEC Commission (*Northeast Corridor Capital Investment Plan: FY2017-2021, April 2016, available at: <http://www.nec-commission.com/cip-fy17-21/report/Northeast%20Corridor%20Five-Year%20Capital%20Plan.pdf>, pg. 9).*

<sup>14</sup>In Appendix B of the April 2016 *APT Update Report*, Table B-8 provides a full listing of Amtrak's current 47 train routes, including their NTS Service Line and the key markets they serve.

**Table 2-3. Amtrak Routes**

Route Number	Route Name	Route Type	Route Number	Route Name	Route Type
1	Acela Express	NEC Spine	33	Sunset Limited	Long Distance
3	Ethan Allen Express	State-Supported	34	Coast Starlight	Long Distance
4	Vermont	State-Supported	35	Pacific Surfliner	State-Supported
5	Northeast Regional	NEC Spine	36	Cascades	State-Supported
7	Albany-Niagara Falls-Toronto	State-Supported	37	Capitol Corridor	State-Supported
9	Downeaster	State-Supported	39	San Joaquin	State-Supported
12	New Haven-Springfield	State-Supported	40	Adirondack	State-Supported
14	Keystone	State-Supported	41	Blue Water	State-Supported
15	Empire Service	State-Supported	45	Lake Shore Limited	Long Distance
16	Silver Star	Long Distance	46	Washington-Lynchburg	State-Supported
18	Cardinal	Long Distance	47	Washington-Newport News	State-Supported
19	Silver Meteor	Long Distance	48	Palmetto	Long Distance
20	Chicago-St. Louis	State-Supported	50	Washington-Norfolk	State-Supported
21	Hiawatha	State-Supported	51	Washington-Richmond	State-Supported
22	Wolverine	State-Supported	52	Crescent	Long Distance
23	Illinois	State-Supported	54	Hoosier State	State-Supported
24	Illinois Zephyr	State-Supported	56	Kansas City-St. Louis	State-Supported
25	Empire Builder	Long Distance	57	Pennsylvanian	State-Supported
26	Capitol Limited	Long Distance	63	Auto Train	Long Distance
27	California Zephyr	Long Distance	65	Pere Marquette	State-Supported
28	Southwest Chief	Long Distance	66	Carolinian	State-Supported
29	Heartland Flyer	State-Supported	67	Piedmont	State-Supported
30	City of New Orleans	Long Distance	96	Special Trains	State-Supported
32	Texas Eagle	Long Distance	99	Special Trains	NEC Spine

## 2.4.2 Infrastructure Business Line

The costs of operating and maintaining Amtrak-owned or controlled fixed assets such as track, communication and electrical traction systems, bridges, tunnels and other physical assets Amtrak uses in its train operations, are allocated to the Infrastructure business line. The Infrastructure business line consists of two components:

- Commuter Infrastructure Access: Contracts for access to Amtrak's track and other facilities by independently operated commuter railroad agencies

- Freight Infrastructure Access: Contracts for access to Amtrak's track and other facilities by freight railroads

Each railroad that pays for access to Amtrak's facilities in the Infrastructure business line is its own "train" in APT.

### 2.4.3 Amtrak's Other Ancillary Businesses

In APT, each of Amtrak's other Ancillary businesses are treated as another "train" with costs and revenues like Amtrak's NTS operating trains. APT's other business lines include:

- Commuter Operations: Operation of commuter service by Amtrak on behalf of outside commuter railroad agencies
- Reimbursable: Maintenance of infrastructure and equipment performed by Amtrak for outside enterprises, mostly commuter and freight railroads, on a reimbursable cost basis
- Commercial: Management of Amtrak's property and assets, other than for the provision of intercity passenger train service (e.g., retail space at stations, parking garages, air rights, etc.).

Each of these other business categories is treated like a route in APT and can have multiple individual "customers" whose treatment in APT parallels that of trains. For example, each commuter and freight railroad making use of Amtrak trackage and other infrastructure is treated as a separate customer and Profit Center with allocated costs and revenues.

*APT allocates costs to individual customers and treats them as additional "trains" in the system*

The treatment of these other businesses, including Infrastructure, as trains alongside Amtrak's NTS trains allows APT to allocate to them a share of corporate overhead expenses, also

commonly known and referred to as general and administrative (G&A) expenses. A portion of the various corporate overhead activities and expenses incurred at Amtrak is directed to managing and supporting the other businesses and are essential to their existence. APT's allocation method properly allocates a share of those costs to these businesses.

### 2.4.4 Unallocated Business Line

APT uses a virtual business line named "Unallocated" in its treatment of certain special-case expense transactions that are not allocated to the operating costs of its trains and other businesses. Because these expense transactions are entered into SAP and are part of the APT input data, the APT method uses Unallocated to set these expenses aside and exclude them from APT's regular reporting of allocated operating costs and revenues. Most of these are depreciation and interest operating expenses related to capital consumption not allocated to the NTS trains and other businesses. Other minor expenses, such as the Amtrak Office of Inspector General (OIG), are also put in Unallocated and not allocated to trains.

Section 4 explains the Unallocated business line in more detail, including its purpose, a fuller description of these expenses, their background at Amtrak, APT's treatment of these unallocated transactions, and a depiction of the process in context with other Amtrak allocated expenses.

*APT uses the “Unallocated” category for “allocating” expenses that are not train costs*

## 2.5 Allocation Statistics

In addition to the financial transactions transferred from SAP to APT, APT receives Amtrak's operational and train data. These data come from several systems within Amtrak, including:

- Labor Management System for train crew assignments and hours
- Ridership and Revenue Warehouse for train passenger counts and ticket revenues
- Train Unit Statistic System for rolling stock equipment assignments
- Operations Management System for train movement and location data

Together, the systems provide a series of quantitative measures of each train, referred to collectively as “allocation statistics” as depicted in the lower left-hand area of Figure 1-1.

*Allocation statistics are “cost driver” measures of train activity*

APT uses allocation statistics to calculate the portions of expenses allocated to each train or business line. Allocation statistics are measures that reflect the level of train activity or inputs to train operations. They are commonly referred to as “cost drivers” because activity levels and costs tend to move in parallel. In 2015, APT used 75 statistics for allocation and reporting; this number could change in the future as the business evolves and APT is updated. APT allocation statistics fall into the following general categories:

- Train operation statistics, such as Total Operated Train Miles and Diesel Unit<sup>15</sup> Miles
- Passenger statistics, such as Total Boards and Deboards (at a station) and First-Class Riders
- Labor Statistics, such as Engineer Labor Hours and Sleeping Car Attendant Labor Hours
- Account-based statistics, such as Passenger Related Transportation Revenue and Food Expenses

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<sup>15</sup> A “Unit” is a single piece of rail equipment, usually a locomotive or passenger rail car.

- APT generated dollar-denominated statistics, such as Total Activity Cost and Maintenance-of-Way Direct Cost
- Manual or system-generated statistics, such as Gallons (of diesel fuel) and Travel Agent Sales

In the April 2016 [APT Update Report](#), Appendix D lists and describes the allocation and reporting statistics used in Fiscal Year 2015.

## 3. APT's Allocation Process

### 3.1 Introduction

APT directly assigns or allocates costs and revenues to Amtrak trains and other parts of its business using a process or methodology that follows straightforward and widely accepted accounting principles. The allocation process for costs and revenues are identical; only the transaction coding is different. APT's allocation processes for capital expenses, capital consumption costs, and non-train expenses share many features with the general methodology, but also includes special treatments explained in Section 4.

In this report, the term “allocate” is used broadly for fully allocated costs, covering all APT processes for attributing costs to trains. This includes both allocation of shared expenses and assignment, the many cases in which 100 percent of an expense is directly assigned to a train. This usage is consistent with APT's statutory requirement to report the fully allocated cost of each route: the sum of direct and allocated costs. Currently, about 55 percent of Amtrak's total expenses are directly assigned, a share that has increased over time.



Figure 3-1. Components of Fully Allocated Costs

This section describes APT's general allocation process using only train operating costs as the example. With this as a basis, the methodology variations are explained for allocating revenues, non-train costs, and capital expenses and costs.

*The objective of APT is to fully allocate expenses to the train (or trains) that generates or benefits from the expense*

Fundamentally, APT's train operating cost allocation method identifies a train<sup>16</sup> that generates or benefits from an expense, and allocates the cost to that train. Sections 3.2 and 3.3 explain how the allocation process works. Specifically:

- How a given expense transaction is linked to the affected train(s), and
- How a portion of an expense transaction is allocated to a train when more than one train generates or benefits from a shared expense.

Then, in Section 3.4, a more detailed discussion follows about the data and methodology.

This description of APT's methodology purposely omits the technical details of the actual APT operating systems. The focus of this report is to provide its audience an understanding of the logical process that guided the development of the APT computer programs. A complete description of these systems and technical details is contained in the [APT Update Report](#).

## 3.2 Allocating Train Operating Costs

APT's process for allocating costs uses two key elements:

- A predetermined set of allocation rules
- A core allocation formula

Allocation Rules. APT's allocation rules were created during APT development and continue to be updated and maintained based on changes to the business. APT selects and applies one of these predetermined allocation rules for each expense transaction. Typically, a single rule is used to allocate many similar expense transactions.

Allocation Formula. The other major feature of APT's allocation process is its allocation formula. If an expense is associated with only a single train, then the formula functions as a simple assignment of cost. If an expense is generated by or benefits multiple trains, it is referred to as a "shared" expense, and the formula uses statistics to apportion the appropriate expense to each of the relevant trains. APT uses a proportional allocation formula that allocates costs based on a measure of one train's share relative to the total of all trains benefiting from the expense.

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<sup>16</sup> In this context, the term "train" can also mean one of Amtrak's other non-train businesses. Refer to Section 2.4.4 for an explanation of Amtrak's treatment of such special-case expense transactions that are not allocated to the operating costs of its trains and other businesses.

Amtrak's current period train operating costs are of prime interest to its managers and external stakeholders. While capital consumption costs are technically a current operating cost, at Amtrak these costs are treated separately from other current operating costs, as they do not involve current period cash flows. Given Amtrak's unique history and relationships with Federal and State governments, APT reports these capital consumption costs separately. This section describes the basic allocation methodology for train operating costs, and the capital consumption cost allocation method is covered in Section 4.

### 3.3 Overview: The 5-Step Allocation Process

This subsection gives an overview of APT's allocation methodology as a 5-step process. Section 3.4 will explain in more detail the components of an APT rule, APT's core allocation formula, and the processes for creating and using the allocation rules. The example from Section 2 of the San Antonio station management expenses is continued as part of this methodology discussion.

The APT allocation system involves a mostly automated process of: (a) assembling large amounts of data, (b) using the assembled data to calculate the allocated costs, (c) storing the results in a database system, and (d) creating various reports. It is useful to repeat Figure 1-1 from Section 1.2 here because it provides an overview of APT's allocation process under discussion.

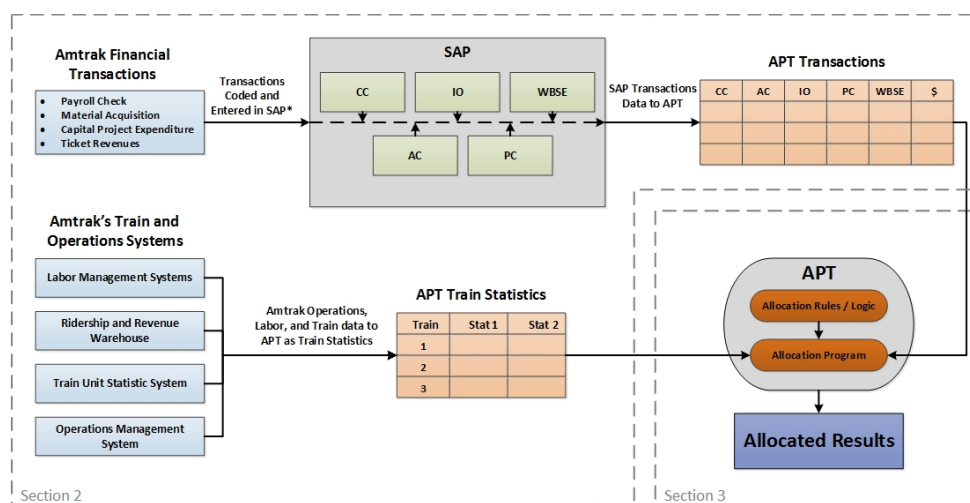


Figure 3-2. Overview of APT Allocation Methodology and Data Flows<sup>17</sup>

<sup>17</sup> This is a simplified view of the overall process and is not intended to represent a full system architecture of either SAP or APT. Both systems contain multiple components and processes to manage a wide array of data. APT contains numerous data tables to process the various types within. The remaining figures in this section similarly represent a simplified view of APT in order to understand the basic logic of allocation without detailing the precise organization within the system. For a full-page view of this overview graphic, see Figure 1-1.

APT users' primary interest is the basic logic embedded in this allocation process. Although APT uses large amounts of data, and its overall processing system is extensive and complex, its core logic can be summarized as a series of five relatively simple steps. These steps make use of transaction and statistical data, the contents of the allocation rules, and an allocation formula. The five steps are:

1. Downloading expense transaction and train statistics from other Amtrak information systems.
2. Matching each expense transaction record to a predetermined allocation rule.
3. Retrieving data items specified in the allocation rule from APT databases.
4. Calculating cost allocations using the transaction and allocation data.
5. Storing cost allocation results in an accessible database.

### 3.3.1 Step 1: Obtain Input Data from Amtrak Information Systems

The first step is the largely automated process of accessing, downloading, and assembling data from other Amtrak systems so the data can be used to calculate APT's cost allocations. Each month, APT downloads about seven million expense and other financial transactions data from SAP (depicted in the upper part of Figure 3-1) and train statistics from other Amtrak information systems (depicted in the lower left and center of the figure). Figure 3-3 gives an overview of these data types and sources.

*APT processes about 7 million data records each month*

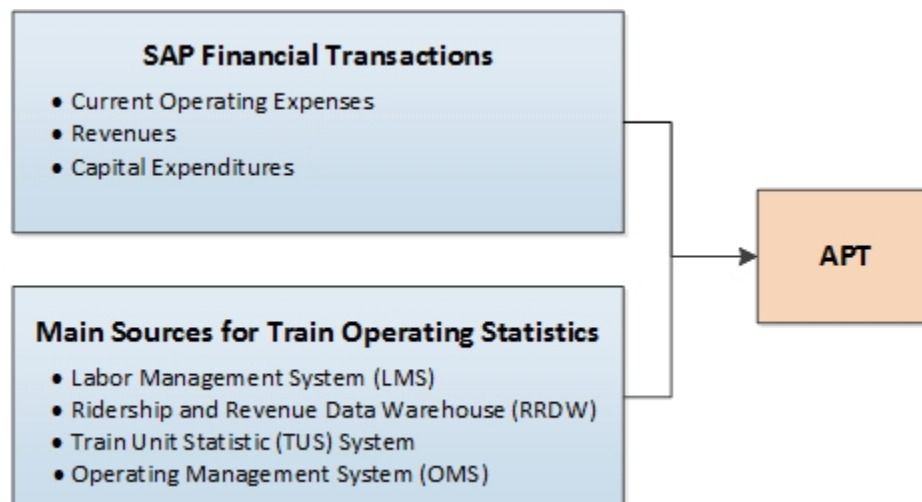


Figure 3-3. Step 1 - Obtain Input Data from Amtrak Information Systems

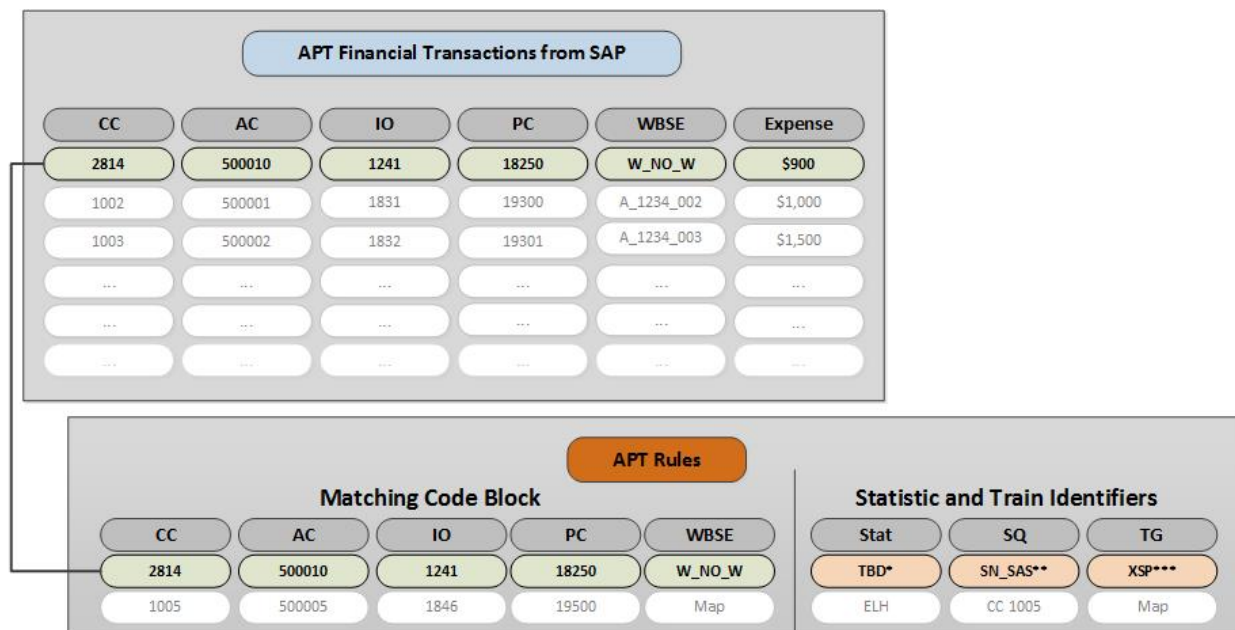
Expenses directly assigned to a train are indicated by the input data codes from SAP. Upon input to APT, these transactions are automatically assigned to the appropriate train. For all other expenses, the next allocation steps are followed.

### 3.3.2 Step 2: Match Each Expense Transaction to an Allocation Rule

APT handles one expense transaction at a time and applies Steps 2 through 5. In Step 2, APT matches the financial Code Block data for an expense transaction to the corresponding Code Block data in one of the predetermined allocation rules. APT must have a rule for every unique expense transaction Code Block combination to allocate costs. Figure 3-3 illustrates the matching or linking of transactions to rules using Code Block data in the two boxes. The truncated figure masks the large numbers of transactions and rules, and that many transactions have identical Code Blocks and are allocated by the same rule—a many-to-one matching result.

As shown in the lower part of Figure 3-4, the predetermined APT rules have two basic components:

- A Code Block component identifying a set of transaction code values
- A Statistic and Train Identifier component used in identifying the trains to which costs are allocated and the statistic used in calculating the allocated cost



#### Acronyms & Special Notations:

##### Code Block

CC = Cost Center; AC = Account; IO = Internal Order; PC = Profit Center; WBSE = Work Breakdown

##### Statistic and Train Identifiers

Stat = Statistic; SQ = Statistical Qualifier; TG = Train Group

##### Structure Elements

\*TBD: Statistic for passenger Total Boards and Deboards

\*\*SN\_SAS: Statistic Qualifier (SQ) for the San Antonio Station (SAS)

\*\*\*XSP: Specifies a predefined APT Train Group containing all regularly scheduled Amtrak trains and excluding special trains

Figure 3-4. Step 2: Matching Each Expense Transaction to an Allocation Rule

The result of the matching process is a linking of an allocation rule's Statistic (Stat), Statistic Qualifier (SQ), and Train Group (TG) information to each expense transaction record. APT uses this information in Step 3 to designate the train(s) to which costs are to be allocated.

***APT matches each expense to an allocation rule***

Referring to Figure 2-5 for the San Antonio station example, the completed Code Block of the manager's wage expense transaction has five codes. Those same codes are presented in Figure 3-4, with a connecting line illustrating the matching

of the financial Code Block data from the expense transaction of the San Antonio station manager Cost Center (CC) to the financial Code Block data portion of an allocation rule.<sup>18</sup> This rule identifies the statistic and train identifiers needed to allocate the expense to the proper set of trains. In this case, the rule identifies the statistic and identifiers as Total Boards and Deboards (TBD), associated with the San Antonio Station (SN\_SAS) that includes regularly scheduled Amtrak trains (XSP).<sup>19</sup> The logic of the rule is to allocate the cost of the station manager's time to a train in proportion to the number of the train's passengers using the station.

Other expenses, depending on their nature, may be allocated by either the Total Boards and Deboards or some other statistic. For example, equipment maintenance expenses are allocated by a statistic that measures a given train's usage of that equipment type. Section 3.4.3 describes how allocation statistics are designated by APT's allocation rules.

***Rule example: Station manager expenses are allocated to trains based on the number of each train's passengers using the station***

### **3.3.3 Step 3: Obtain Allocation Data for Each Expense Transaction**

Next, APT uses the rule's statistic and train identifiers to identify the train or list of trains that are to be allocated costs from this expense transaction. It then retrieves the values of the designated allocation train statistic for each identified train from its Train Statistics Database. Figure 3-5 illustrates this process for the San Antonio station example. The Total Boards and Deboards statistic is used in conjunction with the San Antonio Station Statistic Qualifier (SN\_SAS in Figure 3-5). A Statistic Qualifier (SQ) identifies all trains that have a non-zero value for the Statistic. In this case, it identifies all trains that have passenger boards and/or deboards at this station. The result is a list of four trains that stopped at San Antonio and the count of their respective passengers that boarded or alighted in San Antonio.<sup>20</sup>

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<sup>18</sup> In this example, an actual APT rule is used, but the dollar value and values for the allocation statistics in Figure 3-5 and Figure 3-6 have been adjusted slightly to simplify the mathematical calculations illustrated.

<sup>19</sup> San Antonio has four regularly scheduled trains per day: one train in each direction for both the Texas Eagle and Sunset Limited routes.

<sup>20</sup> In other cases, Train Group (TG) is used instead of Statistical Qualifier to identify the list of trains. Both cases are explained in Section 3.4.2.

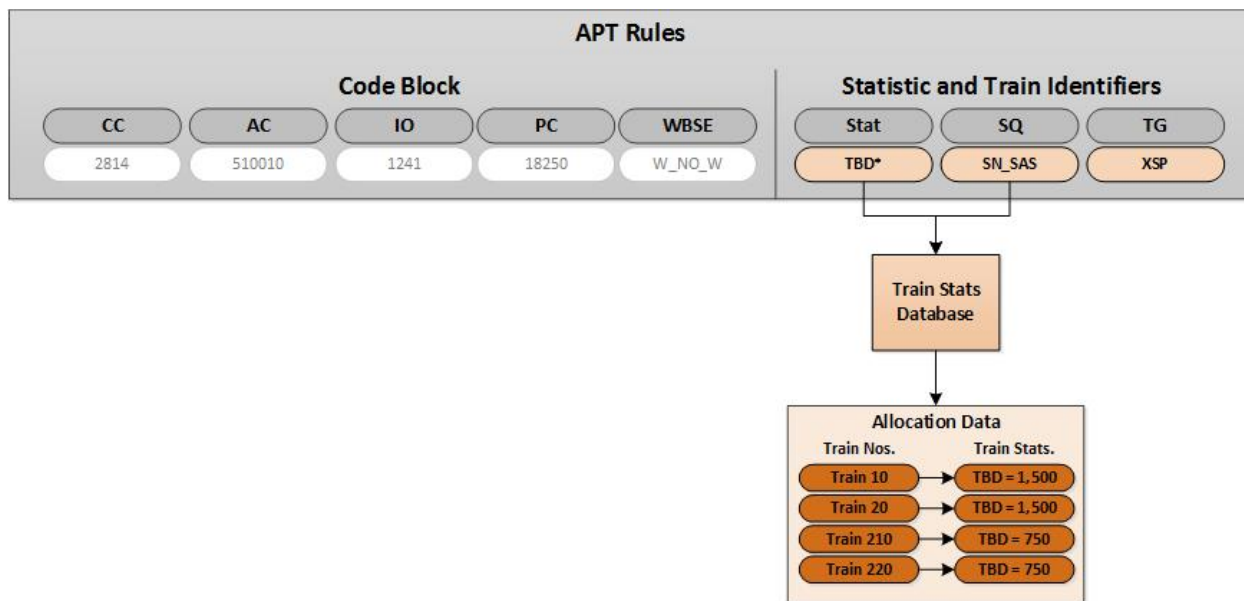


Figure 3-5. Step 3: Obtaining Allocation Data for Each Expense Transaction

### 3.3.4 Step 4: Allocate Costs to Designated Trains

The basic APT allocation formula is used to calculate allocated cost for each designated train. All that is required to calculate each train's allocation is the dollar expense and the value of the allocation statistic for each train. The basic process is the same for expenses allocated to a single train as for shared expenses allocated to multiple trains. The application of the rule identified in Step 2 dictates whether costs are allocated to one or several trains. Figure 3-6 illustrates the calculation of cost allocations to the four operating trains using data for the San Antonio station example shown in Figure 3-5. Trains 1 and 2 each receive allocations of 33.3 percent of the \$900 shared expense, or \$300, based on their shares of passengers boarding and deboarding (i.e., the TBD statistic). Likewise, Trains 21 and 22 each receive allocations of 16.7 percent of the \$900 shared expense.

*APT cost allocations need the dollar expense and each train's allocation statistic*

Expense to be Allocated = \$900			
Train	TBD	Calculation	Allocated
1	1,500	= \$900 x (1,500/4,500)	\$300
2	1,500	= \$900 x (1,500/4,500)	\$300
21	750	= \$900 x (750/4,500)	\$150
22	750	= \$900 x (750/4,500)	\$150
Totals	4,500	1	\$900

Figure 3-6. Step 4: Allocating Costs to Designated Trains

### 3.3.5 Step 5: Storing Cost Allocations into an Accessible Database

The last step in the cost allocation process is putting the APT allocation results into a database that can be accessed to create train and route performance reports. Each train's dollar allocation is a data record that includes the train number, the financial Code Block, and other information such as the transaction date. Figure 3-7 shows the key data entries in the APT database for the four trains from the San Antonio station example.

APT Results							
Train	CC	AC	IO	PC	WBSE	Time Period	Allocated Cost
1	2814	500010	1241	18250	W_NO_W	Dec-2016	\$300
2	2814	500010	1241	18250	W_NO_W	Dec-2016	\$300
21	2814	500010	1241	18250	W_NO_W	Dec-2016	\$150
22	2814	500010	1241	18250	W_NO_W	Dec-2016	\$150

Figure 3-7. Step 5: Storing Cost Allocations into an Accessible Database

## 3.4 Data and Methods Used in the 5-Step Allocation Process

This section provides additional technical details about the rule content, how trains are identified, and the allocation formula used in the 5-step allocation process.

As noted in the overview of the 5-step allocation process, an APT allocation rule has two broad

components, both with several underlying elements:

- The financial Code Block component specifying a unique combination of transaction codes
- The Statistic and Train Identifier component defining how to allocate any expense that matches the Financial Code Block component.

Table 3-1 uses the San Antonio station example to define the various elements within its rule element components.

**Table 3-1. APT Rule for the San Antonio Station Example**

Rule Component	Rule Element	Explanation
Code Block	CC_2814	Cost Center (CC) code for Station Services, San Antonio, Texas
Code Block	AC_500010	Account (AC) code for employee wages
Code Block	IO_1241	Internal Order (IO) code for Station Services – Management and Supervision
Code Block	PC_18250	Profit Center (PC) code for Long-Distance General Management Support
Code Block	WBSE_W_NO_W	Work Breakdown Structure Element (WBSE) code for general expenses not associated with a special project
Statistic and Train Identifiers	ST_TBD	Statistic (ST) “Total Boards and Deboards” (TBD) is used for cost allocations under this rule
Statistic and Train Identifiers	SQ_SN_SAS	Station (SN) Statistic Qualifier (SQ) for the San Antonio Station (SAS) limits the use of this rule to trains with non-zero values for the specified statistic at this station, in this case, the passengers (TBD) at the San Antonio station
Statistic and Train Identifiers	TG_XSP	XSP is an APT Train Group (TG) containing all regularly scheduled Amtrak trains, excluding special trains

### 3.4.1 Financial Codes—Determining What Transactions Use an Allocation Rule

To allocate a specific expense transaction, APT needs to select or link one of APT’s allocation rules to the transaction. The selection of a rule (Step 2) is done by matching the financial Code Block data in the transaction record to the corresponding financial Code Block data in a rule.

For the example in Table 3-1, this rule would be used for all wages (AC\_500010) at Cost Center 2814 that have the codes IO 1241 (Station Services–Management and Supervision), Profit Center 18250 (Long-Distance General Management Support), and WBSE W\_NO\_W. If any of the codes differed, e.g., the expense was the ticketing agent’s wages rather than the station manager’s, a different IO code would have been used and the expense would not be allocated by this rule but another one using that IO instead.

The set of allocation rules need to account for every unique combination of financial code values that are used in any Amtrak expense transaction data record. It often happens that among the millions of expense transactions, there will be many with a particular Code Block combination. APT will find and use a single matching rule for each unique Code Block combination. There is an allocation rule for each expense, and each rule can apply to many expense transactions.

If a new transaction Code Block combination occurs that does not match an existing rule, a new rule is

created. This is expected as the Amtrak business evolves. New rules are created as needed following the same original procedures to create APT, and usually these are minor variations from existing rules.

### 3.4.2 Identification of Trains Receiving Cost Allocation

A critical function of APT is to properly identify the train to which an expense is allocated. Depending on the nature of an expense, APT might allocate costs to a single train or multiple trains. An APT rule designates the train(s) that receives a cost allocation in two ways:<sup>21</sup>

- Specifying a pre-defined Train Group (TG)
- Specifying a Statistic Qualifier (SQ)

The Statistic and Train Identifier part of the rule defines the allocation methodology for all transactions that match the financial Code Block component of the rule. In the San Antonio example, costs are allocated to all trains with passenger boardings and/or deboardings (Statistic: TBD) at the San Antonio station (Statistic Qualifier: SN\_SAS) except Special Trains (Train Group: XSP).

The simplest and most straightforward way trains are identified is for the rule to explicitly specify a Train Group consisting of a predefined list of individual trains. Table 3-2 provides a list of such examples. Any of these Train Groups could appear in allocation rules. If a rule includes a specific Train Group, the APT system allocates costs only to trains that are a member of the designated Train Group and operated during the time period.

#### *Each rule identifies:*

- *The trains getting cost allocations*
- *The statistic used to allocate*

*A Train Group (TG) is a predefined list of individual trains*

**Table 3-2. Example of APT Train Groups**

Train Group Codes	Train Group Name	Explanation
APT_RT_09	Downeaster	All trains operating as the Downeaster service in New England
ALBTS	Albany Turnaround Servicing	All trains receiving turnaround servicing at Albany, NY
APT_RT_CMMAR	MARC Commuter Operating	All Maryland Area Regional Commuter (MARC) commuter trains operating under contract by Amtrak
STRATPART_CEN	State Supported - Central Routes	All State-supported trains operating in Amtrak's Central Division
WRG	Western Region	All trains operating in Amtrak's Western Region

<sup>21</sup> Either or both can be used.

The other way the APT rule identifies which train(s) receives a cost allocation is to specify a criterion, referred to as a Statistical Qualifier (SQ) that must be met. Statistical Qualifiers can be geographic track segments, stations, and equipment types. Any train that meets the criterion receives a cost allocation. The example in Table 3-1 uses a station SQ to identify trains using the San Antonio station (SAS) and allocates costs to all such trains with passenger boardings and deboardings. Geographic Statistical Qualifiers limit cost allocation of track maintenance expenses to trains operating on a specific route segment and are therefore an important part of the APT methodology in allocating geographically-specific expenses only to trains benefiting from the expense.

*Statistic Qualifiers in a rule are one way for designating which trains will be allocated costs*

### 3.4.3 Designation of the Allocation Statistic in an APT Rule

Each APT rule specifies the statistic to be used when that rule is selected for a cost allocation. Although most statistics are used in allocating shared expenses among multiple trains and/or businesses, the APT system also requires that each allocation rule has a statistic even in cases when the “allocation” is to a single train or other business. The statistics “Non” and “No\_Stat” are used in such cases for an expense entirely allocated to a single train or business.

*Special Statistic codes are used when only one train is allocated a cost*

- *Non*
- *No\_Stat*

For the majority of APT rules, the designated statistic will be used in the APT allocation formula to apportion shared costs among multiple trains. The primary consideration in selecting an allocation statistic is that it is logically related to the activity generating the expense. Its value should vary with the size or

level of activity of the trains to which costs will be allocated, i.e., it is a “cost driver” of the expense. The result is that more of the cost is allocated to a train that had the largest effect on the level of the expense. An expense related to servicing passengers will be allocated by statistics that are related to the number of passengers. Dispatching of trains expenses will be allocated by a statistic such as train frequency that reflects the number of trains being managed.

*A rule’s allocation statistic is selected because it is a “cost driver” for the expense*

Operating a passenger railroad involves many disparate activities and inputs—including track and equipment maintenance; fuel and electric power; train crews; computer systems; ticketing and other passenger convenience, safety and security services; and the many business administrative and management functions required for a large corporation such as Amtrak.

As a result, APT uses about 45 statistics to properly allocate the expenses associated with these widely

*Because Amtrak has many activities and types of expenses, APT uses 45 different allocation statistics*

varied activities and inputs. The statistics are obtained in several ways. Most are from Amtrak's various automated information systems and databases. A few statistics are created manually by staff from other records, such as commuter timetables. Finally, for the purpose of allocating higher-level general management, support, and administrative expenses, APT uses five internally generated cost-based statistics that measure the relative sizes of trains and businesses by using lower-level direct and allocated costs.

### 3.4.4 APT's Allocation Formula

APT's cost allocations are calculated using a straightforward proportionality formula. Each train receives a share of the dollar expense based on its relative share of the allocation statistic specified in the allocation rule. The ratio or proportion is calculated as the value of the statistic for a single train divided by the sum of the values of that statistic for all trains receiving a portion of the expense. The result for each train is a decimal value between zero and 1.0, and the sum of the decimal values for all trains is 1.0 (i.e., equivalent to 100 percent). The allocated cost for each train is simply the product of its decimal value and the shared expense.

*APT uses a proportional allocation formula*

This equation presents the allocated cost calculation for one of the trains, Train 1, from the San Antonio station example in Figure 3-6:

$$\text{Train 1 Cost} = \text{Shared Expense} \times \frac{\text{Train 1 TBD Statistic Value at Station}}{\text{Sum of TBD Statistic Values for All Trains at Station}}$$

$$\text{Train 1 Allocated Cost} = \$300 = \$900 \times \frac{1,500}{4,500}$$

The shared station management expense is allocated to trains based on the number of passengers boarding and/or deboarding a train at that station as measured by the TBD statistic. Train 1 has 1,500 passengers or 33.3 percent of 4,500 total passengers. Its allocated cost is 33.3 percent of the total \$900 expense, or \$300.

A train with twice as many passengers as another train will be allocated twice the costs, while two trains with the same number of passengers will be allocated the same cost. Different types of expenses can have different rules that specify different allocation statistics, and the allocated costs to the same set of trains can have different proportions depending on the statistic used.

When an expense is entirely allocated to a single train, as indicated by the designated statistic "Non" or "No\_Stat," the formula applies a ratio of 1.0 and the full expense is allocated to that train.

## 3.5 Creating APT's Rules and Family Structure

A systematic process was used to create all the APT allocation rules and provide a reasonable degree of consistency so that similar expenses are allocated in a similar way. This consistency was achieved by grouping similar Cost Centers into APT “Families” and “Subfamilies” when creating the allocation rules.<sup>22</sup> Since all the Cost Centers in a Subfamily perform the same or very similar functions and activities, their expenses are of the same type and should be allocated in the same ways. For example, a rule for allocating a red cap expense at a Cost Center at a station in Pennsylvania would be similar to the rule for the same red cap expense at a Cost Center in California.

In such cases, the rules for allocating essentially the same type of expense at multiple Cost Centers would have the same Account, Internal Order, and, most importantly, allocation Statistic. They would only differ in the set of trains to which costs were allocated. A number of other expenses at station Cost Centers tend to vary with number of passengers and station size. For consistency, APT would also apply the same allocation Statistics, Train Groups, and Statistical Qualifiers as the rule for red cap expenses.

### *Similar expenses at different locations use similar allocation rules*

- *They use the same allocation statistic*
- *They differ in which trains are allocated costs*

## 3.6 Allocation Rounds

APT computes fully allocated costs using a multi-step iterative process consisting of direct assignment and four<sup>23</sup> rounds of allocation. Direct assignment is automatic, as APT assigns these costs to identified trains upon first obtaining the SAP financial transactions. Round 1 consists of the allocation of shared expenses that are closely related to readily identifiable cost drivers.

The allocation process described in the case of the San Antonio station manager is part of the Round 1 allocation. The Total Boards and Deboards statistic is closely related to the nature of the expense and the train's available allocation statistics. Another Round 1 allocation example is allocating dispatching costs by train frequency, as that reflects the number of trains being managed by dispatchers.

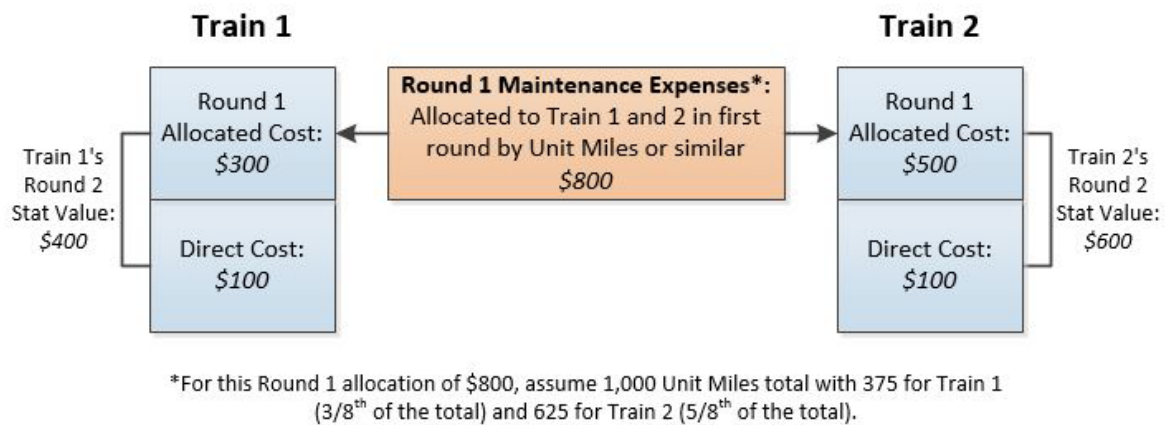
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<sup>22</sup> APT uses 42 Subfamilies and 10 Families.

<sup>23</sup> Although the rounds are sequential and later rounds depend on the results of prior rounds of allocation, APT reports label all allocations after Round 1 as Round 2 costs.

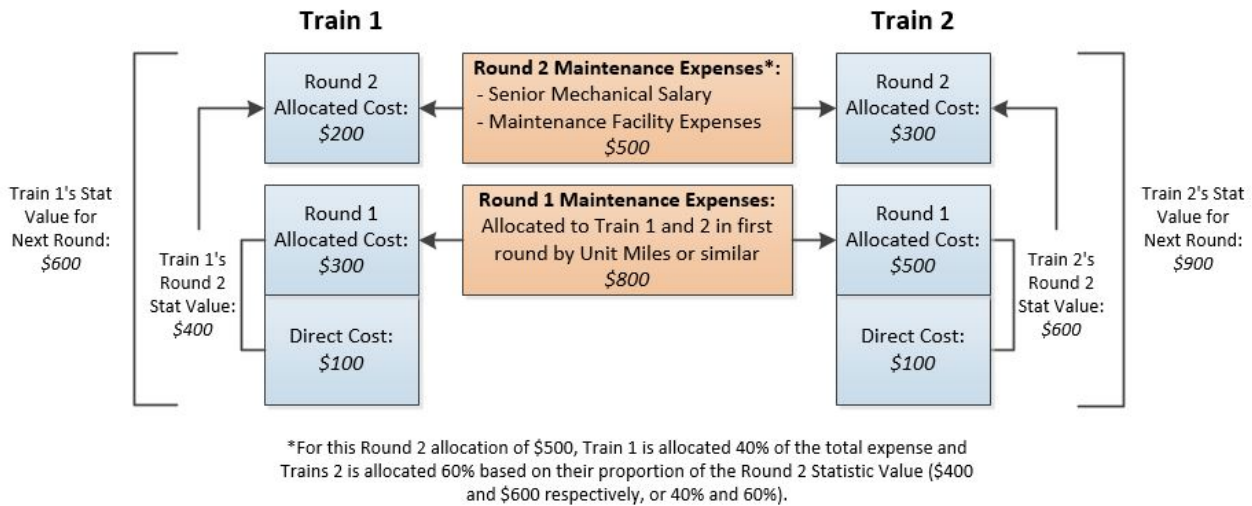
*High-level costs without a clearly identifiable cost driver are allocated by cost-based statistics created from lower-level direct and allocated costs*

Some shared expenses are not closely related to train operations and support activities and have no readily identifiable cost driver by which to allocate costs. Examples are higher-level, indirect management and overhead expenses. In these cases, APT uses the Round 1 results to create new dollar-denominated statistics for a second round of allocations. APT refers to these as “Round 2” allocations because APT must first perform all the directly assigned costs and Round 1 allocations based on externally obtained allocation statistics. Then, the total dollar value of the direct costs and Round 1 allocations for each train become the internally-generated allocation statistics used for Round 2 allocations.



**Figure 3-8. Round 1 Allocation**

For example, as depicted in Figure 3-8, a train's Round 1 maintenance costs are the allocated wages of maintenance workers and materials for the type of passenger car it uses, and the allocation statistic is a measure of the time or distance a train uses the equipment. The expenses of higher-level engineering staff that plan and manage the equipment maintenance program or the maintenance facility where the Round 1 activity takes place are Round 2 expenses. The Round 1 total cost for each train's directly assigned and allocated equipment maintenance costs is calculated and becomes the Round 2 allocation statistic. The Round 2 rule uses this internally-generated Round 2 statistic for allocating these higher overhead equipment maintenance expenses. Next, these Round 2 allocations are added to the Round 1 costs to create the internally-generated allocation statistics for subsequent allocations of even higher administrative or general expenses in Round 3. The process is repeated one more time for Round 4, where the highest-level general and administrative expenses are allocated. Figure 3-9 illustrates this iterative process for Round 2.



**Figure 3-9. Using Round 1 Results to Allocate Round 2 Expenses**

## 3.7 Allocating Revenues

APT's process for allocating revenues to trains and other businesses closely parallels the process used for cost allocation. Specifically, the revenue transactions and expense transactions use the same Code Block items. Revenues are allocated according to a set of rules with the same structure as cost allocation rules, the same allocation formula, and the same 5-step process used in allocating costs to trains and other businesses. Thus, the basic cost allocation logic and process are followed for allocating revenues to trains.

***APT uses virtual Cost Centers for allocating revenues to trains***

While the revenue allocations process is exactly the same as for cost allocation, there are a few notable distinctions in applying the methodology to revenues.

First, all of the revenue "Cost Centers" are virtual constructs in APT that have no corresponding existence in the Amtrak organizational hierarchy and no staff or expenses. These revenue Cost Centers are a useful and necessary mechanism for managing data and allowing the APT computer programs to function properly.

The other notable distinction is that, in contrast to costs, the vast majority of revenues, about 90 percent, are directly assigned to either a single train or other business. This occurs because most revenue transactions are recorded with a WBSE code that identifies a specific train number or a specific business customer, or with a specific Profit Center code. A clear example is passenger ticket revenue, since most tickets are either purchased for or on a specific train. The exceptions for revenues not linked to a specific train are categories such as revenues for State-supported routes, merchandise sales, and commercial rents at stations.

***About 90 percent of revenues are directly assigned to a train***

## 4. APT's Treatment of Capital-Related Expenses

APT allocates costs and revenues monthly, with results available for month, quarter, or annual totals. Most of the costs are operating items, such as employee wages, salaries, fuel, electric power, materials, and services, which are bought and paid for in the monthly or annual time period being reported. APT's standard reports of fully allocated costs consist of these current period operating expenses.

Under standard accounting practice, three other sizable capital-related expense items are included in a company's financial reports that are treated differently from the typical operating expenses. They are:

- Depreciation
- Interest
- Capital acquisition expenses<sup>24</sup>

The following subsections describe these special cases, the differences in how they are treated in APT relative to typical reporting period operating expenses, and APT's method for calculating and reporting a train's capital cost.

### 4.1 Description of Capital-Related Expenses

#### 4.1.1 Depreciation Expenses

As a capital-intensive entity, Amtrak uses long-lived assets such as locomotives, passenger vehicles, and track in its operations. Capital assets are produced or acquired within one time period but are used over the many years of an asset's lifespan. Depreciation is a cost estimate for the portion of the full cost of assets consumed and allocated to a single reporting time period. Amtrak follows "Generally Accepted Accounting Principles" (GAAP)<sup>25</sup> in the computation of depreciation as a measure of capital consumption and includes depreciation as an expense on its income statement. Depreciation is among the SAP transaction

*Depreciation distributes an asset's cost across the many time periods in which it is used*

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<sup>24</sup> Commonly referred to as "capital expenses."

<sup>25</sup> Generally Accepted Accounting Principles (GAAP) are an accounting standard used in the United States and overseen by the Financial Accounting Standards Board (FASB). See [www.fasb.org](http://www.fasb.org) for more information.

data that is obtained and processed by APT.

### 4.1.2 Interest Expense

Interest expenses are payments made within a reporting time period for borrowed funds (debt) and are closely related to depreciation, since most debt is incurred as financing for the acquisition of long-lived assets. Interest, like depreciation, is treated as an expense on the income statement and is among the SAP transaction data obtained and processed by APT.

*According to GAAP, depreciation and interest are operating costs in the multiple time periods of an asset's service life*

Together, depreciation and interest are the current reporting period's cost of capital consumption that are typically allocated to the current period operating results of a business and reported following GAAP procedures.

### 4.1.3 Capital Acquisition Expenses

Among the many expense transactions APT obtains from SAP are current period expenditures for the acquisition, creation, and installation of long-lived assets needed for Amtrak's continuing operations. These are commonly referred to as capital expenses and are different from the depreciation and interest capital *consumption* costs described in the previous sections. The capital acquisition cost of an asset occurs within a single time period, whereas the depreciation and interest spread these acquisition costs over multiple time periods in which the asset is used.

The treatment of capital acquisition expenses in financial reporting systems varies depending on the purpose of the report. Under GAAP, operating cost estimates for a given time period exclude these capital expenditures. Instead, they become assets on a firm's balance sheet. APT follows this convention of excluding capital acquisition transactions from reporting period operating costs, but does allocate them to trains. Also, they are included in the FAST Act account structure as cash flows.

*Accounting rules exclude capital expenses from operating costs. Instead, under APT and FAST Act, these expenses become:*

- *Assets on a firm's balance sheet*
- *Part of cash flows*

## 4.2 Allocating Capital-Related Costs in APT

The underlying purpose and primary focus of APT is to monitor the financial performance and provide a management tool for Amtrak's intercity passenger train business using a consistent methodology that

follows accepted accounting practice.

Although Amtrak is a public corporation that follows generally accepted financial reporting norms, it is also unique for historically receiving considerable funding support from both Federal and State governments, especially for the acquisition of capital assets. APT's design and reporting reflects Amtrak's unique financial history and status as a government-assisted business. In particular, the APT methodology separates its depreciation, interest, and capital expenditures from Amtrak's other train operating costs. Instead, APT uses an alternative method for estimating these capital consumption costs that better reflects Amtrak's capital funding history and processes. The following subsections describe how this approach is implemented in APT.

*APT reports of a train's operating costs do not include depreciation, interest, or capital expenses*

#### **4.2.1 Accounting for Capital Consumption Costs in APT**

Under standard accounting practice, capital consumption is an operating cost. Given Amtrak's mixed history of capital funding, APT does not allocate the standard measures for capital consumption, depreciation, and interest; however, APT does account for capital consumption.

APT bases its estimate of the capital consumption cost of train operations on the original acquisition cost of assets recorded in Amtrak's asset database. Because only a portion of the asset is consumed in any time period, the acquisition cost is spread over the expected life of the asset. Using asset values from Amtrak's Asset Ledger, APT calculates the portion consumed in the reporting time period using a standard financial amortization formula and labels it "Asset Usage Allocation" (AUA).<sup>26</sup>

*APT uses an amortization formula to compute capital consumption costs and refers to it as "Asset Usage Allocation," or AUA*

The calculated AUA is allocated to trains and other business lines in the same manner as other expenses. Allocation rules are created based on other information about the asset in

the Code Block. The AUAs of rail locomotives and passenger cars are allocated to the trains that utilize the specific type of equipment using train-based allocation statistics such as car-miles. The AUAs for fixed assets, such as stations or track, are allocated to the trains that utilize or benefit from the asset.

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<sup>26</sup> The formula and additional details of how AUA is calculated are described in Section 4.2.2 of the [APT Update Report](#) (pp. 37-39).

The cost allocation for fixed assets uses location Statistic Qualifiers and Train Groups and the same allocation statistics used for allocating other operating expenses associated with the asset.

In APT, the AUA estimated measure of capital cost is usually not included in Amtrak's monthly publication of basic train operating costs. APT's monthly Route Performance Report (RPR) includes a table that reconciles Amtrak's train operating results with depreciation, interest, and ancillary business financial results. (Refer to Appendix A for an example RPR.) See Figure 4-1 for a depiction of how current-period capital expenditures become capitalized as part of the asset base, which in turn is the basis for the AUA allocated to Amtrak's trains and other business lines.

*APT-published reports of train costs show how these operating and capital-related costs are connected to other Amtrak financial reports*

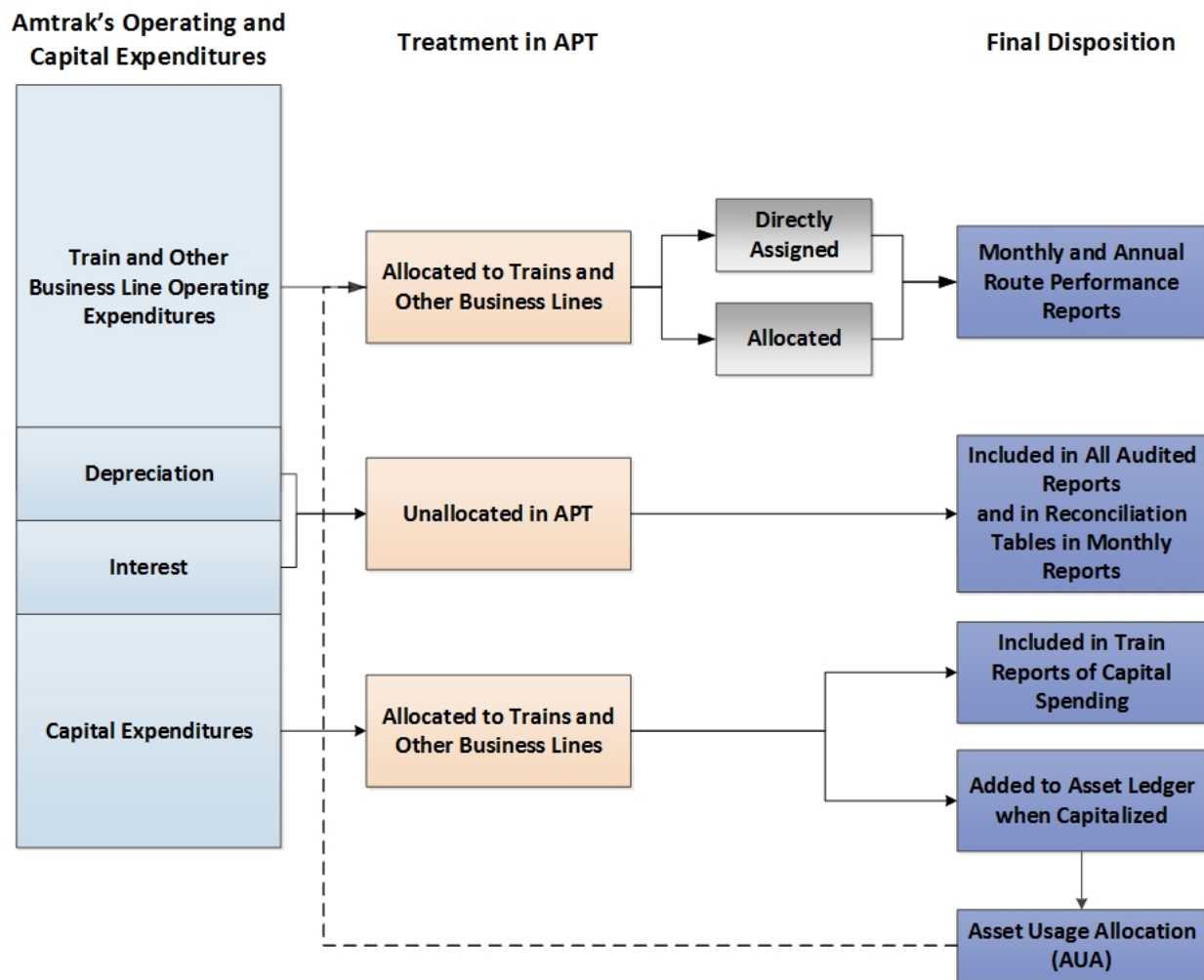


Figure 4-1. APT's Treatment of Various Operating and Capital Expenditures

## 4.2.2 APT's Treatment of Depreciation and Interest

The expense transaction data APT receives from SAP includes depreciation and interest as the GAAP estimate of capital consumption cost. These SAP expenses are identified by their financial transaction Code Block codes. By using an alternative measure, AUA, for capital consumption, APT avoids double counting of capital consumption costs by setting them aside and placing them into a special non-train business line category that is appropriately labelled "Unallocated." Figure 4-1 in Section 4.2.1 provides an overview of APT's treatment of depreciation and interest.

*Since APT uses its Asset Usage Allocation measure, instead of depreciation and interest, there is no double-counting of capital consumption or usage costs*

## 4.2.3 APT's Treatment of Capital Expenditure

The SAP expense transaction data includes expenditures for the acquisition, creation, and installation of capital assets. Under standard accounting practice, expenditures for these long-lived assets are not operating costs and instead are entered as assets on a corporation's balance sheet. Amtrak's financial group follows this practice.

The APT methodology also follows this practice by properly excluding capital expenditures from its operating allocations and reports of fully allocated train operating costs. APT does, however, also allocate capital expenditures to trains using essentially the same methodology used for allocating operating expenses. A train's allocated capital expenses are kept separate from operating costs and have their own APT Profit Center. While excluded from APT's standard reports of route operating costs, they are included in a reconciliation table in each month's Route Performance Report (refer to Section 5.1.2 for more details about this report). Figure 4-1 in Section 4.2.1 provides an overview of APT's treatment of capital expenditures.

## 5. APT Reports and Uses

APT is both a method for allocating Amtrak's financial transactions from SAP to its trains and business lines, and the mechanism for storing and accessing its results. While Sections 2 and 3 discussed the source data and allocation methodology, this section summarizes APT's reporting capabilities, its regularly published reports, and the primary users and uses of the information contained in APT reports.

### 5.1 APT Reporting

Upon completion of the allocation process, APT's allocated data is saved and made available to Amtrak users. Amtrak's finance department staff developed and operates an information system for maintaining a data archive and reporting APT results. This data warehouse and reporting system operates on SAP's software platform, Business Planning and Consolidation (BPC). While APT's data processing and allocation are performed in a series of database procedures, it is only through BPC that users can view APT's data.<sup>27</sup>

#### 5.1.1 Business Planning and Consolidation Software

APT allocation results are saved in a series of relational database tables that contain the characteristics of the original financial transaction and the statistical data used in the allocation process. BPC is the tool for accessing this APT data by creating regular standardized reports and by allowing users to exercise its customized querying capability. BPC generates reports as spreadsheet files usable for analysis and for constructing other computer files and tables for published reports.

Examples of BPC queries of APT results are useful in understanding published financial results based on APT data and seeing how APT data can be used to provide more detailed information about the financial performance of Amtrak trains, routes, and operations. It is useful to repeat the Figure 3-7 example of allocating wages for the San Antonio station manager from Section 3.3.5 here because it shows some of the variables in the APT result records that can be used in a BPC query.

*BPC is the software tool used to create APT cost reports*

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<sup>27</sup> BPC has other capabilities not discussed in this report, but knowing about them is not necessary for the users of APT results, i.e., the intended audience for this report.

APT Results							
Train	CC	AC	IO	PC	WBSE	Time Period	Allocated Cost
1	2814	500010	1241	18250	W_NO_W	Dec-2016	\$300
2	2814	500010	1241	18250	W_NO_W	Dec-2016	\$300
21	2814	500010	1241	18250	W_NO_W	Dec-2016	\$150
22	2814	500010	1241	18250	W_NO_W	Dec-2016	\$150

**Figure 5-1. Store Cost Allocations into an Accessible Database**

For example, APT can be used to query all monthly or annual operating costs of the Station Services, San Antonio, Texas Cost Center (CC\_2814), or for all cost centers servicing Texas Eagle Route. Table 5-1 gives the structure and results<sup>28</sup> of such a query about costs at the San Antonio station, presenting the annual totals by Account for the two routes that stop in San Antonio.

**Table 5-1. Fiscal Year 2016 Total Operating Costs for Station Services, San Antonio, TX, Cost Center**

Account Description	Route 32 - Texas Eagle	Route 33 - Sunset Limited	CC 2818 - San Antonio Station Services
Wages and Overtime	\$191,250	\$115,000	\$306,250
Employee Benefits Expenses	\$89,250	\$55,000	\$144,250
Employee Related	\$4,250	\$2,500	\$6,750
Train Operations	\$4,250	\$2,500	\$6,750
Fuel, Power, and Utilities	\$21,250	\$12,500	\$33,750
Materials	\$4,250	\$2,500	\$6,750
Facility, Communication, and Office	\$106,250	\$57,500	\$163,750
Other Expenses	\$4,250	\$2,500	\$6,750
Total Costs	\$425,000	\$250,000	\$675,000

Similarly, APT results can be queried for all operating costs for the Texas Eagle route, broken down into major cost category Families (refer to Section 3.5 for explanation on the organization of individual Cost Centers into APT cost Families). Table 5-2 gives the results of such a query. As evident from Table 5-2, a route's fully allocated operating costs include costs from the wide range of activities involved in running a passenger railroad.

<sup>28</sup> Due to reasons of confidentiality, Table 5-1 and Table 5-2 present cost results that are hypothetical dollar values and are rough approximations orders of magnitude.

**Table 5-2. Total Operating Costs for the Texas Eagle Route for Fiscal Year 2016**

APT Family Descriptions	Route 32 -Texas Eagle
Maintenance of Way	\$573,027
Maintenance of Equipment	\$8,595,407
Operations-Transportation	\$34,954,657
Sales and Marketing	\$3,438,163
General and Administrative	\$8,595,407
Utilities	\$57
Police, Environmental and Safety	\$1,145,997
Total All APT Families	\$57,302,716

Table 5-1 and Table 5-2 show the varying levels of detail available to APT users to identify expenses and display results. Table 5-1 describes the detailed Account expenses for all routes that use a single Cost Center. Table 5-2 shows the full operating cost for a single route across all Cost Centers (including the San Antonio Station Cost Center, in the Stations Subfamily, embedded in the Operations-Transportation row). While Table 5-2 is presented at a Family summary level, Amtrak staff uses the BPC query capability to extract detailed data on costs and revenues at the train, project, and organizational unit levels.

### 5.1.2 APT's Core Required Reports

The public law that mandated the creation of APT also required that Amtrak use APT to report to Congress annually the fully allocated costs of each route. Amtrak publishes on a monthly and annual basis APT results for all its routes as part of its Monthly Performance Report (MPR) and makes it available on its website.<sup>29</sup> The APT route results appear as Section C, Route Performance Report (RPR) in the Monthly Performance Report and include both costs and revenues. Refer to Appendix A of this report for an example of Section C of the December 2016 RPR.

*Amtrak is required by law to report to Congress annually the full costs of trains*

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<sup>29</sup> The Monthly Performance Report for December 2016, Amtrak, January 31, 2017.

## 5.2 APT's Primary Users and Uses

APT has multiple users and uses. Amtrak employees use APT results for external reporting and internal management purposes. FRA and Congress use APT results in their role as Amtrak overseers, including monitoring financial performance, creating budgets, and other initiatives involving Amtrak. Also, APT results deliver key inputs to establish service agreements Amtrak enters into with its State partners, who then use APT results to validate their bills and evaluate their services.

*APT train costs are used in external reporting, Federal oversight, and establishing and managing State-supported train services and agreements*

### 5.2.1 Amtrak's Use of APT

Amtrak has two primary uses of APT results:

- External Reporting
- Internal Management

External Reporting: The first broad use of APT is to satisfy Amtrak's statutory reporting requirements as described in 5.1.2. Additionally, Amtrak staff uses APT to meet other legislative and executive branch oversight requirements that rely on Amtrak's financial data.

Internal Management: The second primary use of APT is for Amtrak's internal management, including business line management, budgeting, and service planning. Amtrak managers at all levels use cost data from APT to create budgets and monitor performance of their organizational units against those budgets. Amtrak managers estimate future expenses and input them along with simulated statistics data into the BPC system to create a projected budget dataset. The dataset is then allocated by APT and can be queried in the same way as APT historical results. Higher-level managers, responsible for the operations and financial performance of routes and other business lines, utilize APT cost and revenue data to analyze projected budget results and measure contribution to overall corporate financial objectives.

APT supports two other key internal management activities. As Amtrak services evolve over time, a critical input to the general service planning process is the projected revenue and cost data based on APT historical results. The service planning staff queries APT to obtain the cost data they use to create needed cost factors. Another key related area of service planning in recent years is for shorter distance rail services supported by States, as defined by Section 209 of the Passenger Rail Investment and

Improvement Act of 2008 (PRIIA).<sup>30</sup> Amtrak staff involved in planning, negotiating, and pricing these State-supported services make extensive use of APT data in this context.

## 5.2.2 Federal Government's Use of APT

While Amtrak was required by Congress to develop APT and use it in submitting its annual report to Congress, FRA is the primary federal user of APT data in its oversight role of Amtrak. Each month, FRA reviews APT results, which are included in an internal FRA “dashboard” to monitor the financial and operational performance of Amtrak routes. Amtrak financial data from APT is also used in FRA’s budget requests and FRA’s outreach efforts to help explain to other parties (such as Congress, the U.S. Secretary of Transportation, or other Federal agencies) Amtrak’s financial performance. Additionally, FRA reviews and uses APT results in its role supporting the USDOT Amtrak board member.

In addition to standard oversight, FRA uses APT data to respond to legislative or administrative initiatives. For example, Section 11201 of the FAST Act required FRA and Amtrak to develop an accounting structure to “promote Amtrak’s effective use and stewardship of revenues, appropriations, grants, and other funding sources, and to enhance transparency of assignment of revenues and costs among business lines.”<sup>31</sup> The account structure developed to meet this FAST Act mandate uses APT data as its key input and separates Amtrak into NEC, National Network,<sup>32</sup> Infrastructure, and other service lines—a related but distinct term to the Amtrak business lines discussed in Section 2. APT data is used to populate the operating sources and uses in the account structure; Amtrak created a separate rule set for capital uses allocation.

FRA is also a member of the State-Amtrak Intercity Passenger Rail Committee (SAIPRC) to support the PRIIA 209 State-supported service cost methodology and to promote cooperation and planning between Amtrak and States. In its role as a member of SAIPRC, FRA analyzes APT data used in Amtrak’s route and third party cost estimation process. Section 5.2.3 continues with a fuller discussion of State-supported services.

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<sup>30</sup> Pub. L. 110-432.

<sup>31</sup> For a full discussion of the FAST ACT 11201 account structure and its service lines, see [Account Structure Definition and Accounting Methodology Improvements to Address Section 11201 of the FAST Act of 2015](#). Federal Railroad Administration. May 2016.

<sup>32</sup> The National Network includes the NTS Long-Distance and State-Supported Services.

### 5.2.3 State Use of APT

Section 209 of PRIIA required Amtrak, with the States and the Secretary of Transportation, to develop a “single, nationwide standardized methodology for establishing and allocating the operating and capital costs among the States and Amtrak” for any Amtrak routes under 750 miles in length and wholly off the Washington-Boston Northeast Corridor Spine. These State-supported services represent nearly 50 percent of Amtrak ridership, and currently 29 of Amtrak’s 48 routes are operated with contributions from 18 States. The PRIIA Section 209 Cost Methodology Policy was finalized in March 2012.<sup>33</sup> In July 2015, the States, Amtrak, and FRA created the State-Amtrak Intercity Passenger Rail Committee (SAIPRC) to “promote mutual cooperation and planning related to Amtrak’s rail operations and related activities on state-supported routes,” including reviewing and developing adjustments to the cost agreement structure.<sup>34</sup>

*PRIIA required a standard method for cost sharing between Amtrak and its State partners. The “State-supported services” are operated by Amtrak with State subsidies*

The APT results provide the cost basis of the PRIIA Section 209 Cost Methodology. While States may contract for different levels of service, the PRIIA 209 Cost Methodology uses the consistent approach of APT across regions to treat cost areas similarly across States. The methodology also allows that in some cases, Amtrak and states may agree to use supplemental financial data to adjust the results of APT. Certain APT costs are grouped into Third Party Costs and Route Costs, and other APT costs are replaced with Support Fees that are often based on Route Costs. The PRIIA 209 Cost Methodology uses the APT results as an input and in some cases adds a filter to screen out certain elements.

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<sup>33</sup> For a full discussion of the PRIIA 209 costing background, see PRIIA Section 209 Cost Methodology Policy, August 31, 2011; Amtrak’s Petition for Determination of PRIIA Section 209 Cost Methodology, filed with the Surface Transportation Board (STB) on November 21, 2011; and the subsequent Surface Transportation Board Decision on March 15, 2012, Docket No. FD 35571. The latest cost categories are contained in *Appendix E: Definition of Cost Categories Used to Determine State Operating and Capital Cost Pricing*, adopted October 10, 2016. Information about PRIIA 209 in this document is provided for the convenience of the reader, but is not intended to be guidance or precedent in the preparation of PRIIA 209 financial information such as forecasts or invoices.

<sup>34</sup> The FAST Act (PL 114-94), Section 11204 required the Secretary of Transportation to establish the State-Supported Route Committee. The Secretary recognized SAIPRC as satisfaction of this requirement.

*The PRIIA 209 cost methodology uses APT costs as a basis for State-supported agreements*

SAIPRC has established a series of working groups that also use or review APT. The APT Working Group investigates changes to the APT allocation methodology and is discussed in greater detail in Section 6.3. The Reports Working Group is charged with improving all reporting from Amtrak

to the States, including cost reporting that uses APT results. The Reports Working Group has developed a series of APT PRIIA 209 Cost Validation Reports that Amtrak distributes each month along with State invoices. These reports are not the same as the fully allocated costs reported by Amtrak. The Cost Validation Reports break down the cost category totals into a more granular view, including dollars by train or Cost Center and Allocation Statistics. States use the reports to help validate their invoices and to better understand and manage the cost drivers of their services.

## 6. APT Administrative and Background Information

APT was required by Congress, developed jointly with FRA, and is operated by Amtrak in consultation and cooperation with FRA and its State partners.

### 6.1 Development History of APT

APT, as described in this report, is the culmination of efforts that began in 2005 by Amtrak, FRA, and the John A. Volpe National Transportation Systems Center (Volpe Center or Volpe) to develop an improved and transparent methodology for calculating and reporting fully allocated costs and revenues for Amtrak routes and other businesses.<sup>35</sup> APT is an information technology system that the Route Systems and Assessment Department within Amtrak's Finance organization implements and manages.

APT was developed through the synthesis of two parallel efforts to improve Amtrak's cost information. FRA tasked Volpe to help the agency meet its legislative mandate of developing a methodology for determining the fully allocated costs of each Amtrak route. At about the same time, Amtrak separately recognized the need to develop a more robust information system that would provide Amtrak management with more accurate and timely financial information to use in analysis, reporting, and decision-making. Amtrak initiated an effort to improve its route performance reporting and re-host it in a client-server environment. Recognizing this opportunity, FRA, Amtrak, and Volpe decided to pursue these parallel initiatives as an integrated effort. The result of this collaboration is the APT system.

FRA, Amtrak, and Volpe worked together on many levels to develop APT. FRA provided general oversight and a policy perspective of multiple stakeholders. Amtrak provided detailed knowledge of

its passenger rail and other businesses necessary in such an effort, and also was responsible for the system design, programming, and implementation. Volpe provided the Congressionally-mandated outside technical expertise in financial analysis, resource costing, and accounting needed for developing the allocation methodology, and was responsible for documentation.

*APT was developed as a result of merging FRA and Amtrak's efforts to improve Amtrak's financial reporting*

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<sup>35</sup> Pub. L. 108-447, Division H, Title I, Department of Transportation, directed that a new Amtrak cost accounting methodology be created.

This collaborative approach extended to deciding as a team which new features and functionalities APT would include, and how the system's cost methodology would be structured and configured. Because APT integrates with existing financial and reporting systems, it was essential that Amtrak assumed primary responsibility for information system development and implementation. Volpe and Amtrak jointly developed and achieved consensus on the methodology used to calculate the fully allocated costs of Amtrak routes.

APT was initially implemented in Amtrak's Fiscal Year 2009 and operated in parallel for a year with Amtrak's legacy reporting Route Profitability System (RPS). In Fiscal Year 2010, Amtrak shut down RPS and APT became Amtrak's financial route reporting system of record. This initial version of APT was documented in a 2009 methodology report.<sup>36</sup>

After its initial deployment and the publishing of the original methodology report in 2009, Amtrak introduced SAP as Amtrak's general ledger system. The new financial system required a new data transfer process be established between SAP and APT because APT had been designed to use transaction data from Amtrak's previous general ledger system. The modifications required by the conversion to SAP and other changes to Amtrak's use of APT were documented in an update to the 2009 Report to Congress, and FRA published this in April 2016. The APT Update Report describes the cost accounting methodology and implementing rules for determining Amtrak's fully allocated costs and revenue.

## 6.2 Amtrak's Operation of APT

Upon completion of the methodology development, Amtrak implemented APT and today uses it as an internal cost and revenue reporting system. Each month, Amtrak's Route Systems and Assessment Department of the Financial Planning and Analysis group imports the data from SAP into APT as described in Section 2. Amtrak operates APT and makes APT cost and revenue results available for the various reporting needs as described in Section 5.

### 6.2.1 Monthly Testing and Maintenance

As a standard step in APT's process, each month Amtrak's Financial Planning and Analysis staff reviews the results to determine whether any changes to the APT allocation rules are needed. APT may require modification of the allocation rules for two routine reasons:

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<sup>36</sup> Methodology for Determining the Avoidable and Fully Allocated Costs of Amtrak Routes: Volume I, Main Report, U.S. Department of Transportation, Federal Railroad Administration, December 15, 2009 (hereafter referred to as APT Methodology Report or 2009 Report to Congress). Volumes II and III contain appendices.

- New transaction codes from SAP
- Operational changes such as new routes or organizational units

Amtrak administers these maintenance-driven rule changes in APT due to new Code Blocks coming from SAP or operational and organizational hierarchy changes. Examples can include new accounting codes or changes in Amtrak organizations, such as Cost Centers moving between families. Other types of changes are changes to a Cost Center's territorial responsibility, modification to a route's station stops, or the creation of new train statistics. Such changes can impact either the underlying transactions or the train identifiers contained in the allocation rules shown in Section 3 and explained in Section 3.4.2.

Often, these changes result in a new transaction posted in SAP not having a corresponding allocation rule for its combination of Code Block elements. In cases where a transaction's coding is not covered by an existing rule, Amtrak staff investigates further to create a new rule to properly allocate the cost. These monthly changes are made consistent with the APT allocation principles and methodology as described in the [APT Methodology Report](#).

Refer to Section 6.3 for a discussion of changes that impact State-supported services.

### 6.2.2 Maintaining APT's Long-Term Utility

Each year, Amtrak is required to submit to FRA a plan on how Amtrak will maintain APT over time. As APT is the source of Congressionally-mandated fully allocated cost reports, it must be able to produce such reports until it is replaced for that purpose or no longer required. Amtrak's annual report identifies potential improvements to the methodology such as increased direct assignment of costs. The annual maintenance plan also covers potential software or hardware upgrades that may impact APT's operation.

*Amtrak is required by FRA to maintain and update APT*

## 6.3 Cooperation for Future Changes

While Amtrak maintains and operates APT, its importance in the PRIIA 209 cost methodology make changes to the APT methodology important to the States as well as to FRA. Given the importance of potential changes, Amtrak, FRA, and the States cooperatively propose and review changes to APT's methodology. Then Amtrak is responsible for implementing the approved changes.

A working group under the State-Amtrak Intercity Passenger Rail Committee (SAIPRC), called the Amtrak Performance Tracking (APT) Working Group, has been charged to lead efforts to identify, describe, disseminate, record, and track actual, planned, or unplanned changes to and issues affecting APT. This can result in material financial impacts to or material changes in the nature of one or more state-supported intercity passenger rail service routes.

The working group has developed categories for changes to APT methodology along, with a scale to assess the impact on State-supported routes. Categories include maintenance revisions (as discussed in Section 6.2.1), strategic revisions that consider new allocation methods or changes, and global changes that could significantly change APT methodology. Additionally, a severity index categorizes the financial impact to State-supported routes from a proposed APT change.

Amtrak has wide leeway in maintenance revisions reviewed by the working group, but as the financial impact of a potential change increases in significance, the group works together with Amtrak field staff as necessary to develop consensus on the change. If either Amtrak or the States were to propose any significant methodology changes, the full SAIPRC executive committee would be notified.

# Appendix A

## Monthly Route Performance Report – Fully Allocated Summary YTD Route Results

### December 2015 and December 2016

(Source: Monthly Performance Report for December 2016, C-1, Amtrak, January 31, 2017)

#### National Railroad Passenger Corporation (Amtrak)

Financial Performance of Routes - Fully allocated overhead, excluding Depreciation and Interest (see notes below)<sup>(1)</sup>

#### December 2016 YTD

Route Performance Results Exclude Depreciation and Interest.

All numbers are in \$ millions except Passenger Mile and Seat Mile Calculations.

Northeast Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT01	Acela	\$158.4	\$74.4	\$84.1	\$0.4	\$84.5	(\$1.6)	\$82.9	50.3	31.6
RT05	Northeast Regional	\$177.2	\$109.0	\$68.2	\$0.7	\$69.0	(\$2.4)	\$66.6	19.4	10.5
RT99	NEC Special Trains	\$0.9	\$1.4	(\$0.4)	\$0.0	(\$0.4)	(\$0.4)	(\$0.4)	(34.0)	(20.0)
Total		\$336.6	\$184.7	\$151.9	\$1.2	\$153.1	(\$4.0)	\$149.0	29.3	16.6

State Supported and Other Short Distance Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT03	Ethan Allen Express	\$1.6	\$1.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	2.8	1.1
RT04	Vermont	\$2.7	\$2.0	\$0.8	\$0.0	\$0.8	(\$0.0)	\$0.8	12.9	6.3
RT07	Maple Leaf	\$7.3	\$7.3	\$0.0	\$0.1	\$0.1	\$0.0	\$0.1	0.5	0.2
RT09	The Downeaster	\$3.0	\$3.9	(\$0.9)	\$0.0	(\$0.9)	(\$0.1)	(\$1.0)	(11.8)	(3.6)
RT12	New Haven - Springfield	\$7.5	\$7.6	(\$0.1)	\$0.1	\$0.0	\$0.0	\$0.0	0.5	0.2
RT14	Keystone Service	\$14.6	\$13.0	\$1.6	\$0.1	\$1.7	(\$0.0)	\$1.7	4.7	2.2
RT15	Empire Service	\$12.7	\$13.6	(\$0.9)	(\$0.8)	(\$1.7)	\$0.2	(\$1.5)	(4.0)	(1.6)
RT20	Chicago-St Louis	\$4.4	\$8.1	(\$3.7)	\$0.0	(\$3.7)	\$0.0	(\$3.7)	(13.8)	(6.0)
RT21	Hiawathas	\$6.0	\$5.8	\$0.3	\$0.0	\$0.3	\$0.0	\$0.3	2.0	0.8
RT22	Wolverines	\$7.9	\$7.8	\$0.1	\$0.1	\$0.2	\$0.0	\$0.2	0.9	0.5
RT23	Illini	\$2.2	\$4.8	(\$2.6)	\$0.0	(\$2.6)	\$0.0	(\$2.5)	(20.3)	(8.2)
RT24	Illinois Zephyr	\$1.8	\$4.1	(\$2.4)	\$0.0	(\$2.3)	\$0.0	(\$2.3)	(25.8)	(10.5)
RT29	Heartland Flyer	\$1.6	\$2.0	(\$0.4)	\$0.0	(\$0.4)	\$0.0	(\$0.4)	(11.4)	(5.4)
RT35	Pacific Surfliner	\$25.7	\$29.7	(\$4.1)	\$0.2	(\$3.9)	\$0.4	(\$3.5)	(5.6)	(1.8)
RT36	Cascades	\$16.7	\$17.4	(\$0.7)	\$0.1	(\$0.6)	\$0.2	(\$0.4)	(1.2)	(0.6)
RT37	Capitol	\$14.7	\$17.4	(\$2.8)	\$0.1	(\$2.7)	\$0.3	(\$2.4)	(8.8)	(2.5)
RT39	San Joaquins	\$20.3	\$24.4	(\$4.1)	\$0.1	(\$3.9)	\$0.4	(\$3.6)	(8.7)	(2.8)
RT40	Adirondack	\$3.2	\$3.4	(\$0.2)	\$0.0	(\$0.2)	(\$0.0)	(\$0.2)	(2.2)	(1.6)
RT41	Blue Water	\$3.0	\$3.4	(\$0.3)	\$0.0	(\$0.3)	(\$0.0)	(\$0.3)	(3.5)	(1.5)
RT46	Washington-Lynchburg	\$3.4	\$2.1	\$1.3	\$0.0	\$1.3	(\$0.0)	\$1.2	11.4	8.0
RT47	Washington-Newport News	\$6.2	\$4.6	\$1.6	\$0.0	\$1.6	(\$0.0)	\$1.6	8.2	5.5
RT50	Washington - Norfolk	\$2.9	\$2.3	\$0.6	\$0.0	\$0.6	(\$0.0)	\$0.6	8.3	3.4
RT51	Washington - Richmond	\$3.0	\$2.3	\$0.8	\$0.0	\$0.8	(\$0.0)	\$0.7	10.7	4.4
RT54	Hoosier State	\$0.9	\$0.9	\$0.1	\$0.0	\$0.1	\$0.0	\$0.1	6.4	2.3
RT56	Kansas City-St.Louis	\$3.6	\$3.4	\$0.2	\$0.0	\$0.2	\$0.0	\$0.2	2.4	1.2
RT57	Pennsylvanian	\$3.7	\$4.1	(\$0.4)	\$0.0	(\$0.4)	(\$0.0)	(\$0.4)	(2.8)	(1.8)
RT65	Pere Marquette	\$1.7	\$1.9	(\$0.2)	\$0.0	(\$0.2)	(\$0.0)	(\$0.2)	(5.9)	(2.9)
RT66	Carollian	\$5.5	\$4.7	\$0.8	\$0.0	\$0.8	\$0.0	\$0.8	4.3	2.9
RT67	Piedmont	\$1.7	\$1.7	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	1.0	0.5
RT96	Non NEC Special Trains	\$1.1	\$1.1	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(8.4)	(0.4)
Total		\$190.8	\$206.3	(\$15.6)	\$0.4	(\$15.2)	\$1.6	(\$13.6)	(2.8)	(1.2)

Long Distance Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT16	Silver Star	\$7.9	\$16.0	(\$8.1)	\$0.1	(\$8.0)	(\$0.0)	(\$8.0)	(18.8)	(10.6)
RT18	Cardinal	\$2.4	\$6.2	(\$3.7)	\$0.0	(\$3.7)	(\$0.0)	(\$3.7)	(33.8)	(16.7)
RT19	Silver Meteor	\$9.8	\$17.8	(\$8.0)	\$0.1	(\$7.9)	(\$0.0)	(\$8.0)	(16.7)	(9.8)
RT25	Empire Builder	\$12.8	\$29.1	(\$16.3)	\$0.2	(\$16.1)	\$0.3	(\$15.9)	(22.5)	(10.0)
RT26	Capitol Limited	\$5.4	\$12.1	(\$6.6)	\$0.1	(\$6.6)	\$0.0	(\$6.5)	(26.5)	(15.7)
RT27	California Zephyr	\$14.1	\$28.7	(\$14.6)	\$0.2	(\$14.4)	\$0.2	(\$14.2)	(20.1)	(10.9)
RT28	Southwest Chief	\$11.6	\$24.7	(\$13.1)	\$0.1	(\$13.0)	\$0.2	(\$12.8)	(17.7)	(10.2)
RT30	City of New Orleans	\$5.1	\$9.9	(\$4.7)	\$0.1	(\$4.7)	\$0.1	(\$4.6)	(17.6)	(10.5)
RT32	Texas Eagle	\$6.9	\$14.3	(\$7.4)	\$0.1	(\$7.3)	\$0.1	(\$7.2)	(17.1)	(10.9)
RT33	Sunset Limited	\$3.2	\$11.5	(\$8.3)	\$0.1	(\$8.2)	\$0.0	(\$8.2)	(43.2)	(19.8)
RT34	Coast Starlight	\$11.7	\$23.5	(\$11.8)	\$0.1	(\$11.7)	\$0.2	(\$11.5)	(21.8)	(11.7)
RT45	Lake Shore Limited	\$8.2	\$15.0	(\$6.8)	(\$0.1)	(\$7.0)	\$0.1	(\$6.9)	(16.7)	(9.2)
RT48	Palmetto	\$7.5	\$7.6	(\$0.1)	\$0.0	(\$0.1)	(\$0.1)	(\$0.2)	(0.8)	(0.4)
RT52	Crescent	\$8.8	\$18.1	(\$9.3)	\$0.1	(\$9.2)	(\$0.2)	(\$9.4)	(26.8)	(12.1)
RT63	Auto Train	\$16.8	\$19.1	(\$2.3)	\$0.1	(\$2.2)	\$0.4	(\$1.8)	(4.3)	(2.4)
Total		\$132.2	\$253.6	(\$121.3)	\$1.3	(\$120.0)	\$1.2	(\$118.9)	(19.1)	(10.2)

Total National Train System		\$659.6	\$644.6	\$15.0	\$2.9	\$17.8	(\$1.3)	\$16.5	1.0	0.5
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<sup>(1)</sup> APT Asset Allocation is currently under development and review.

<sup>(2)</sup> Ancillary includes Commercial, Commuter, and Reimbursable operations. Ancillary is reported as the net of Ancillary revenue minus Ancillary costs.

<sup>(3)</sup> OPEB's, PRJ & IG is reported as the net of revenue minus costs.

Reconciling Items between National Train System and Consolidated Statement of Operations

	Revenue	Expense	Net
Total National Train System	\$662.5	\$646.0	\$16.5
Ancillary Customers	\$86.9	\$91.0	(\$4.0)
Freight and Other Customers	\$46.2	\$74.9	(\$28.7)
Depreciation, net	\$0.0	\$194.3	(\$194.3)
Operating Results	\$795.7	\$1,006.2	(\$210.5)
Interest Expense, net	\$0.0	\$29.8	(\$29.8)
State Capital Payments	\$17.0	\$0.0	\$17.0
Net Results	\$812.7	\$1,036.0	(\$223.3)

Notes:

- This report is being produced using the Amtrak Performance Tracking system, which allocates costs to all customers, including freight and commuter railroads. This report reflects the information as it existed in the general ledger at the time it was produced. Future changes to the general ledger data may affect the placement of data within this report. Project (PRJ) related costs are excluded from this fully allocated report because they are paid for with Capital funding. An APT Asset Allocation is under development and will be allocated to routes and included in this report when available.

## National Railroad Passenger Corporation (Amtrak)

### Financial Performance of Routes - Fully allocated overhead, excluding Depreciation and Interest (see notes below)<sup>(1)</sup>

December 2015 YTD

Route Performance Results Exclude Depreciation and Interest.

All numbers are in \$ millions except Passenger Mile and Seat Mile Calculations.

Northeast Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT01	Acela	\$161.0	\$72.7	\$88.3	\$0.5	\$88.8	(\$0.5)	\$88.3	51.9	33.0
RT05	Northeast Regional	\$173.3	\$110.4	\$63.0	\$0.5	\$63.5	(\$0.4)	\$63.1	18.8	9.8
RT99	NEC Special Trains	\$0.5	\$1.1	(\$0.5)	\$0.0	(\$0.5)	(\$0.0)	(\$0.6)	(45.0)	(43.6)
Total		\$334.8	\$184.1	\$150.8	\$0.9	\$151.7	(\$0.9)	\$150.8	29.8	16.5

State Supported and Other Short Distance Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT03	Ethan Allen Express	\$1.7	\$1.6	\$0.0	\$0.0	\$0.1	\$0.0	\$0.1	2.3	0.9
RT04	Vermont	\$3.1	\$2.5	\$0.5	\$0.0	\$0.5	(\$0.0)	\$0.5	9.3	4.4
RT07	Maple Leaf	\$7.7	\$7.2	\$0.5	\$0.8	\$1.3	(\$0.0)	\$1.3	4.7	2.2
RT09	The Downeaster	\$3.1	\$3.8	(\$0.7)	\$0.0	(\$0.6)	(\$0.1)	(\$0.8)	(7.9)	(2.3)
RT12	New Haven - Springfield	\$4.3	\$6.6	(\$2.2)	\$2.7	\$0.5	(\$0.9)	(\$0.4)	(7.2)	(3.6)
RT14	Keystone Service	\$12.7	\$12.9	(\$0.2)	\$0.2	\$0.0	(\$0.1)	(\$0.0)	(0.1)	(0.1)
RT15	Empire Service	\$12.1	\$13.3	(\$1.2)	\$0.1	(\$1.1)	\$0.1	(\$1.0)	(2.8)	(1.1)
RT20	Chicago-St.Louis	\$3.6	\$7.7	(\$4.1)	\$0.1	(\$3.9)	(\$0.1)	(\$4.1)	(19.7)	(8.1)
RT21	Hiawathas	\$5.6	\$5.9	(\$0.3)	\$0.0	(\$0.3)	(\$0.1)	(\$0.4)	(2.2)	(0.8)
RT22	Wolverines	\$8.2	\$8.3	(\$0.2)	\$0.8	\$0.6	(\$0.1)	\$0.5	1.8	0.9
RT23	Illini	\$2.4	\$5.0	(\$2.6)	\$0.0	(\$2.6)	(\$0.1)	(\$2.7)	(20.4)	(9.7)
RT24	Illinois Zephyr	\$1.7	\$4.2	(\$2.4)	\$0.0	(\$2.4)	(\$0.1)	(\$2.5)	(26.9)	(11.1)
RT29	Heartland Flyer	\$1.7	\$1.8	(\$0.2)	\$0.0	(\$0.2)	(\$0.0)	(\$0.2)	(5.9)	(2.9)
RT35	Pacific Surfliner	\$26.2	\$28.1	(\$1.9)	\$0.0	(\$1.9)	\$0.2	(\$1.7)	(2.8)	(0.9)
RT36	Cascades	\$14.9	\$15.8	(\$0.9)	\$0.1	(\$0.8)	\$0.0	(\$0.8)	(3.0)	(1.4)
RT37	Capitol	\$15.2	\$17.7	(\$2.5)	(\$0.0)	(\$2.5)	\$0.1	(\$2.4)	(9.2)	(2.4)
RT39	San Joaquins	\$20.9	\$23.0	(\$2.2)	(\$0.0)	(\$2.2)	\$0.2	(\$2.0)	(4.8)	(1.7)
RT40	Adirondack	\$3.1	\$3.1	(\$0.0)	\$0.0	\$0.0	(\$0.1)	(\$0.1)	(0.6)	(0.4)
RT41	Blue Water	\$2.7	\$3.3	(\$0.6)	\$0.0	(\$0.6)	(\$0.1)	(\$0.6)	(7.5)	(3.1)
RT46	Washington-Lynchburg	\$3.0	\$2.2	\$0.8	\$0.0	\$0.8	(\$0.1)	\$0.8	7.0	4.8
RT47	Washington-Newport News	\$6.3	\$4.5	\$1.8	\$0.0	\$1.8	(\$0.1)	\$1.7	8.7	5.6
RT50	Washington - Norfolk	\$2.5	\$2.1	\$0.4	\$0.0	\$0.4	(\$0.0)	\$0.4	4.9	2.1
RT51	Washington - Richmond	\$2.7	\$2.3	\$0.4	\$0.0	\$0.4	(\$0.0)	\$0.4	5.3	2.3
RT54	Hoosier State	\$0.9	\$0.8	\$0.2	\$0.0	\$0.2	\$0.0	\$0.2	13.8	4.7
RT56	Kansas City-St.Louis	\$3.6	\$3.7	(\$0.1)	\$0.0	(\$0.0)	(\$0.0)	(\$0.1)	(0.9)	(0.4)
RT57	Pennsylvanian	\$3.8	\$4.0	(\$0.1)	\$0.0	(\$0.1)	(\$0.0)	(\$0.1)	(1.0)	(0.7)
RT65	Pere Marquette	\$1.6	\$1.8	(\$0.3)	\$0.0	(\$0.2)	(\$0.0)	(\$0.3)	(9.0)	(4.3)
RT66	Carollian	\$5.2	\$4.8	\$0.4	\$0.0	\$0.5	(\$0.0)	\$0.4	2.1	1.4
RT67	Piedmont	\$1.8	\$1.8	(\$0.0)	\$0.0	(\$0.0)	\$0.0	\$0.0	0.2	0.1
RT96	Non NEC Special Trains	\$0.9	\$0.9	(\$0.1)	\$0.0	(\$0.1)	(\$0.0)	(\$0.1)	(5.3)	(2.1)
Total		\$183.0	\$200.8	(\$17.8)	\$5.3	(\$12.5)	(\$1.5)	(\$14.0)	(2.9)	(1.2)

Long Distance Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary <sup>(2)</sup>	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG <sup>(3)</sup>	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT16	Silver Star	\$8.4	\$15.8	(\$7.4)	\$0.1	(\$7.3)	(\$0.0)	(\$7.3)	(16.8)	(10.0)
RT18	Cardinal	\$2.3	\$6.2	(\$3.9)	\$0.0	(\$3.9)	(\$0.1)	(\$4.0)	(37.1)	(19.0)
RT19	Silver Meteor	\$9.8	\$17.4	(\$7.5)	\$0.1	(\$7.4)	(\$0.1)	(\$7.5)	(15.0)	(9.0)
RT25	Empire Builder	\$12.7	\$26.5	(\$13.8)	\$0.2	(\$13.6)	(\$0.1)	(\$13.7)	(18.5)	(8.3)
RT26	Capitol Limited	\$5.3	\$11.6	(\$6.3)	\$0.1	(\$6.2)	(\$0.1)	(\$6.4)	(25.9)	(14.8)
RT27	California Zephyr	\$13.5	\$28.0	(\$14.5)	\$0.2	(\$14.3)	(\$0.2)	(\$14.5)	(19.9)	(10.6)
RT28	Southwest Chief	\$11.8	\$24.7	(\$12.9)	\$0.1	(\$12.8)	(\$0.2)	(\$13.0)	(17.6)	(9.7)
RT30	City of New Orleans	\$5.1	\$10.3	(\$5.2)	\$0.1	(\$5.2)	(\$0.1)	(\$5.2)	(19.8)	(11.8)
RT32	Texas Eagle	\$6.3	\$14.0	(\$7.7)	\$0.1	(\$7.6)	(\$0.1)	(\$7.7)	(20.5)	(12.0)
RT33	Sunset Limited	\$3.2	\$11.1	(\$7.8)	\$0.1	(\$7.8)	(\$0.1)	(\$7.8)	(40.2)	(19.0)
RT34	Coast Starlight	\$11.6	\$22.8	(\$11.2)	\$0.1	(\$11.0)	(\$0.3)	(\$11.4)	(21.2)	(12.1)
RT45	Lake Shore Limited	\$7.8	\$15.7	(\$8.0)	\$0.1	(\$7.9)	(\$0.2)	(\$8.1)	(21.0)	(11.1)
RT48	Palmetto	\$6.5	\$7.7	(\$1.2)	\$0.1	(\$1.2)	(\$0.1)	(\$1.2)	(5.2)	(2.4)
RT52	Crescent	\$8.6	\$18.2	(\$9.6)	\$0.1	(\$9.5)	(\$0.2)	(\$9.7)	(26.6)	(12.4)
RT63	Auto Train	\$18.2	\$18.4	(\$0.2)	\$0.1	(\$0.1)	\$0.0	(\$0.1)	(0.1)	(0.1)
Total		\$131.1	\$248.3	(\$117.2)	\$1.6	(\$115.6)	(\$1.9)	(\$117.6)	(18.5)	(10.0)

Total National Train System	\$649.0	\$633.2	\$15.8	\$7.8	\$23.6	(\$4.3)	\$19.2	1.2	0.6
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<sup>(1)</sup> APT Asset Allocation is currently under development and review.

<sup>(2)</sup> Ancillary includes Commercial, Commuter, and Reimbursable operations. Ancillary is reported as the net of Ancillary revenue minus Ancillary costs.

<sup>(3)</sup> OPEB's, PRJ & IG is reported as the net of revenue minus costs.

#### Reconciling Items between National Train System and Consolidated Statement of Operations

	Revenue	Expense	Net
Total National Train System	\$674.9	\$655.6	\$19.2
Ancillary Customers	\$71.3	\$75.6	(\$4.3)
Freight and Other Customers	\$39.6	\$83.2	(\$43.6)
Depreciation, net	\$0.0	\$189.6	(\$189.6)
Operating Results	\$785.8	\$1,004.0	(\$218.2)
Interest Expense, net	\$0.0	\$13.9	(\$13.9)
State Capital Payments	\$14.8	\$0.0	\$14.8
Net Results	\$800.6	\$1,017.9	(\$217.3)

Notes:

- This report is being produced using the Amtrak Performance Tracking system, which allocates costs to all customers, including freight and commuter railroads. This report reflects the information as it existed in the general ledger at the time it was produced. Future changes to the general ledger data may affect the placement of data within this report. Project (PRJ) related costs are excluded from this fully allocated report because they are paid for with Capital funding. An APT Asset Allocation is under development and will be allocated to routes and included in this report when available.

# National Railroad Passenger Corporation (Amtrak)

## Financial Performance of Routes - Fully allocated overhead, excluding Depreciation and Interest

### December 2016 YTD vs. December 2015 YTD Variances

Route Performance Results Exclude Depreciation and Interest.

All numbers are in \$ millions except Passenger Mile and Seat Mile Calculations.

Northeast Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT01	Acela	(\$2.5)	(\$1.7)	(\$4.3)	(\$0.0)	(\$4.3)	(\$1.1)	(\$5.4)	(1.6)	(1.4)
RT05	Northeast Regional	\$3.9	\$1.4	\$5.2	\$0.3	\$5.5	(\$2.0)	\$3.5	0.6	0.7
RT99	NEC Special Trains	\$0.4	(\$0.3)	\$0.1	(\$0.0)	\$0.1	(\$0.0)	\$0.1	11.0	23.6
Total		\$1.8	(\$0.6)	\$1.1	\$0.2	\$1.4	(\$3.2)	(\$1.8)	(0.5)	0.1

State Supported and Other Short Distance Corridor Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT03	Ethan Allen Express	(\$0.1)	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	0.5	0.2
RT04	Vermont	(\$0.3)	\$0.6	\$0.3	(\$0.0)	\$0.3	\$0.0	\$0.3	3.5	1.9
RT07	Maple Leaf	(\$0.4)	(\$0.1)	(\$0.5)	(\$0.7)	(\$1.2)	\$0.0	(\$1.2)	(4.2)	(2.0)
RT09	The Downeaster	(\$0.1)	(\$0.1)	(\$0.3)	(\$0.0)	(\$0.3)	\$0.1	(\$0.2)	(3.9)	(1.3)
RT12	New Haven - Springfield	\$3.1	(\$1.0)	\$2.1	(\$2.6)	(\$0.5)	\$0.9	\$0.5	7.7	3.8
RT14	Keystone Service	\$1.9	(\$0.1)	\$1.8	(\$0.1)	\$1.7	\$0.0	\$1.7	4.9	2.3
RT15	Empire Service	\$0.6	(\$0.3)	\$0.3	(\$1.0)	(\$0.7)	\$0.2	(\$0.5)	(1.2)	(0.5)
RT20	Chicago-St.Louis	\$0.8	(\$0.5)	\$0.3	(\$0.1)	\$0.2	\$0.2	\$0.4	5.9	2.1
RT21	Hiawathas	\$0.5	\$0.1	\$0.6	(\$0.0)	\$0.6	\$0.1	\$0.7	4.2	1.6
RT22	Wolverines	(\$0.2)	\$0.5	\$0.3	(\$0.7)	(\$0.4)	\$0.2	(\$0.2)	(0.9)	(0.5)
RT23	Illini	(\$0.2)	\$0.2	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.1	0.1	1.5
RT24	Illinois Zephyr	\$0.0	\$0.1	\$0.1	(\$0.0)	\$0.1	\$0.1	\$0.2	1.1	0.5
RT29	Heartland Flyer	(\$0.1)	(\$0.1)	(\$0.2)	\$0.0	(\$0.2)	\$0.0	(\$0.2)	(5.5)	(2.5)
RT35	Pacific Surfliner	(\$0.5)	(\$1.6)	(\$2.1)	\$0.1	(\$2.0)	\$0.2	(\$1.8)	(2.8)	(0.9)
RT36	Cascades	\$1.8	(\$1.6)	\$0.2	(\$0.0)	\$0.2	\$0.2	\$0.4	1.8	0.8
RT37	Capitol	(\$0.6)	\$0.3	(\$0.3)	\$0.1	(\$0.2)	\$0.2	\$0.0	0.4	(0.1)
RT39	San Joaquins	(\$0.5)	(\$1.3)	(\$1.9)	\$0.2	(\$1.7)	\$0.2	(\$1.5)	(3.8)	(1.0)
RT40	Adirondack	\$0.1	(\$0.3)	(\$0.2)	(\$0.0)	(\$0.2)	\$0.1	(\$0.1)	(1.7)	(1.2)
RT41	Blue Water	\$0.4	(\$0.1)	\$0.3	(\$0.0)	\$0.3	\$0.0	\$0.3	4.0	1.6
RT46	Washington-Lynchburg	\$0.4	\$0.1	\$0.5	(\$0.0)	\$0.5	\$0.0	\$0.5	4.4	3.1
RT47	Washington-Newport News	(\$0.0)	(\$0.2)	(\$0.2)	(\$0.0)	(\$0.2)	\$0.0	(\$0.2)	(0.6)	(0.1)
RT50	Washington - Norfolk	\$0.4	(\$0.1)	\$0.2	(\$0.0)	\$0.2	\$0.0	\$0.2	3.4	1.3
RT51	Washington - Richmond	\$0.4	(\$0.0)	\$0.4	(\$0.0)	\$0.4	(\$0.0)	\$0.4	5.4	2.1
RT54	Hoosier State	\$0.0	(\$0.1)	(\$0.1)	\$0.0	(\$0.1)	\$0.0	(\$0.1)	(7.4)	(2.5)
RT56	Kansas City-St.Louis	(\$0.0)	\$0.3	\$0.2	(\$0.0)	\$0.2	\$0.0	\$0.3	3.3	1.6
RT57	Pennsylvanian	(\$0.1)	(\$0.2)	(\$0.3)	(\$0.0)	(\$0.3)	\$0.0	(\$0.2)	(1.8)	(1.1)
RT65	Pere Marquette	\$0.1	(\$0.0)	\$0.1	\$0.0	\$0.1	\$0.0	\$0.1	3.1	1.3
RT66	Carollian	\$0.3	\$0.0	\$0.4	(\$0.0)	\$0.4	\$0.0	\$0.4	2.3	1.5
RT67	Piedmont	(\$0.1)	\$0.1	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	0.8	0.5
RT96	Non NEC Special Trains	\$0.2	(\$0.1)	\$0.1	(\$0.0)	\$0.1	(\$0.0)	\$0.1	(3.2)	1.7
Total		\$7.7	(\$5.5)	\$2.2	(\$4.9)	(\$2.7)	\$3.1	\$0.4	0.1	0.0

Long Distance Trains										
Route Number	Train Name	Core Revenue	Core Costs excl. OPEB's, PRJ, and IG Costs	Core Contribution / (Loss) excl. OPEB's, ANC, PRJ, and IG	Ancillary	Contribution / (Loss) excl. OPEB's, PRJ, and IG	OPEB's, PRJ & IG	Fully Allocated Contribution / (Loss)	Fully Allocated Contribution / (Loss) per Pass Mile (cents)	Fully Allocated Contribution / (Loss) per Seat Mile (cents)
RT16	Silver Star	(\$0.5)	(\$0.2)	(\$0.7)	(\$0.0)	(\$0.7)	\$0.0	(\$0.7)	(2.1)	(0.7)
RT18	Cardinal	\$0.2	\$0.0	\$0.2	(\$0.0)	\$0.2	\$0.1	\$0.3	3.3	2.3
RT19	Silver Meteor	(\$0.0)	(\$0.5)	(\$0.5)	(\$0.0)	(\$0.5)	\$0.0	(\$0.5)	(1.6)	(0.8)
RT25	Empire Builder	\$0.1	(\$2.6)	(\$2.5)	(\$0.0)	(\$2.5)	\$0.4	(\$2.2)	(3.9)	(1.7)
RT26	Capitol Limited	\$0.2	(\$0.5)	(\$0.3)	(\$0.0)	(\$0.3)	\$0.1	(\$0.2)	(0.6)	(0.9)
RT27	California Zephyr	\$0.6	(\$0.7)	(\$0.1)	(\$0.0)	(\$0.1)	\$0.4	\$0.3	(0.2)	(0.3)
RT28	Southwest Chief	(\$0.2)	(\$0.0)	(\$0.2)	(\$0.0)	(\$0.2)	\$0.4	\$0.2	(0.1)	(0.5)
RT30	City of New Orleans	\$0.0	\$0.5	\$0.5	(\$0.0)	\$0.5	\$0.1	\$0.6	2.2	1.3
RT32	Texas Eagle	\$0.6	(\$0.3)	\$0.3	(\$0.0)	\$0.3	\$0.2	\$0.5	3.4	1.1
RT33	Sunset Limited	(\$0.1)	(\$0.4)	(\$0.5)	\$0.0	(\$0.5)	\$0.1	(\$0.4)	(2.9)	(0.8)
RT34	Coast Starlight	\$0.1	(\$0.7)	(\$0.6)	\$0.0	(\$0.6)	\$0.5	(\$0.1)	(0.6)	0.4
RT45	Lake Shore Limited	\$0.4	\$0.7	\$1.1	(\$0.2)	\$0.9	\$0.3	\$1.3	4.3	1.9
RT48	Palmetto	\$1.0	\$0.1	\$1.1	(\$0.0)	\$1.1	(\$0.1)	\$1.1	4.4	2.1
RT52	Crescent	\$0.2	\$0.1	\$0.3	(\$0.0)	\$0.2	\$0.0	\$0.3	(0.2)	0.3
RT63	Auto Train	(\$1.5)	(\$0.7)	(\$2.1)	(\$0.0)	(\$2.2)	\$0.4	(\$1.8)	(4.2)	(2.3)
Total		\$1.1	(\$5.2)	(\$4.1)	(\$0.3)	(\$4.4)	\$3.1	(\$1.3)	(0.6)	(0.3)

Total National Train System		\$10.6	(\$11.4)	(\$0.8)	(\$4.9)	(\$5.7)	\$3.0	(\$2.7)	(0.2)	(0.1)
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