Modeling Passenger Operations
Part I

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Introduction

Most modelers enjoy the sight of a passenger train snaking through the garden. In fact, that scene is so compelling that even the staunchest of freight modelers will go to some lengths to include a passenger train on their railroad. The dream of passenger service is the impetus for this article – the modeling of various facets of passenger services in large scale.

Since it is likely that more than 99% of passenger travel miles were made over standard gauge carriers, that focus will preoccupy our attention. Narrow gauge is very popular with garden railroad enthusiasts but in terms of passenger services, the narrow gauge is more or less a footnote in history. The representation of standard gauge today in the garden is most usually done in 1:29 scale. So that sets the scope of our work – modeling standard gauge passenger services in 1:29 scale.

To develop the ideas presented here, I was able to draw on the many discussions from the Forums of MLS. I also had the assistance of many very fine modelers and photographers who graciously have shared their talent with us. I would like to offer my thanks and appreciation to a number of MLS contributors: Robert "Rocky" Allguire, Charles Bednarik, Stan Cedarleaf, Marty Cozad, Ric Golding, Raymond Manley, Paul Norton and Bob Whipple. I would also express my thanks to railfans Gerry Gaugl and Walter Pfefferlie who have shared their photos. Lastly, I would thank Dwight Ennis for his encouragement to me to write this article and also for his assistance in editing it.

More specifically, in our modelling, I would suggest a few basic things which you should consider. First is era. Pre 1948, Pullman owned and operated the vast majority of sleepers (and some others cars too) -that means that night trains cannot be made up solely of home road cars and various schemes musy be found to compensate. Post 1948 till about the mid 60s, sleeping cars were very much in evidence but were now owned by the operating railroad. Some of these cars were interchanged with other railroads to provide through service. After the mid 60s sleeping car services declined to just the few long haul routes Amtrak and ViaRail run today.

Railroads also operated either on their own or via REA, a very extensive express service. Additionally the railroads operated many special services for the Post Office. In general, railroads collectively ran more head end cars than all other passenger cars put together though you would not know that from looking at typical model passenger fleets.

What makes the passenger service different from freight services is that much of the passenger switching related to sleepers, express and mail services. Most of this ran on "lines" or specified routes as opposed to the random approach we desire for freight and which AutoBuild gives us. Nonetheless, a careful useage of Interchange tracks and destination series coupled with judicious use of kernels will see us through most of the situations. Typical passenger trains from RailOP could contain a kernel or two of fixed

cars always on the train, some Autobuilt cars that are random plus a number of cars running specified routes.

References

To build this article, I started with the content of the forums of MLS. But in addition, I have access to a large library of reference material. Most of this may be of interest only to the more serious student of passenger travel, but even those with a casual interest may wish to delve deeper into certain aspects. Accordingly, I will present here a set of references from my own library. These references are for example only; the reader should keep in mind that specific material on a favorite train, builder or railroad is likely out there somewhere.:

References to Equipment

White, John H; *The American Railroad Passenger Car*, John Hopkins Press, Baltimore 1978 (a 2 volume edition - the definitive reference on construction details and history of passenger cars)

References to Name Trains

Beebe, Lucius & Clegg, Charles; *The Trains We Rode*, Howell North, Berkely California 1966 (2 volume set with a personable and charming rendition of the great name trains)

Dubin, Arthur; *Some Classic Trains* and *More Classic Trains*, Interurban Press, Glendale California, 1990 (a 2 volume edition in its 5th printing - the classic work in the field on the great name trains)

References to Modeling

Sperandeo, A; *The Model Railroader's Guide to Passenger Equipment & Operation*, Kalmbach, Milwaukee, WI, 2006

Examples of more specific references - the interested reader should be able to locate material concerning his favorite topic as these are for example only:

To a railroad:

Wilson, Dale; *A National Passenger Chronicle*, Nickel Belt Publishing, Sudbury Ontario, 1998 (the definitive history of passenger service on the Canadian National - most railroads have had their story told, an interested observer need only seek out the written work)

To a Car Builder:

Rafuse, Ted; *Wooden Cars on Steel Rails*, Steampower Publishing, Port Hope, Ontario 2004 (the story of Crossen Car, a small local builder - this is an example of one of the many books available on the builders of the passenger cars of the past)

To Pullman services:

Maiken, Peter T.; *Night Trains: The Pullman Systems in the Golden Years of American Rail Travel* , Lakme Press, Chicago, 1989 (the definitive work on Pullman operations)

To a specific train:

Smith, Douglas; *The Ocean Limited: A Centennial Tribute*, Trackside Canada, Ottawa Ontario, 2004 (the detailed story of a single name train covering the first 100 years of its operation)

On the web: There are a vast number of websites from individual sites dealing with specific trains or railroads to forums and special interest groups for passenger trains. As an example http://finance.groups.yahoo.com/group/Canadian-Passenger-Rail/ is the newsgroup for Canadian rail passenger travel enthusiasts. Another fascinating site especially for modelers is http://www.trainweb.org/passengercars/ This site contains an index of passenger car photos - virtually any specific car a modeler may wish to model may be found here.

Eras of Passenger Travel

Based on a view of the appearance of the passenger equipment in use, I have divided the history of passenger travel into 7 eras. These eras are purely my way of thinking about the subject and are not necessarily in common usage anywhere else. To delve further into a subject like this, it does need to be broken into manageable chunks, so with an apology for my biases, I have divided it as:

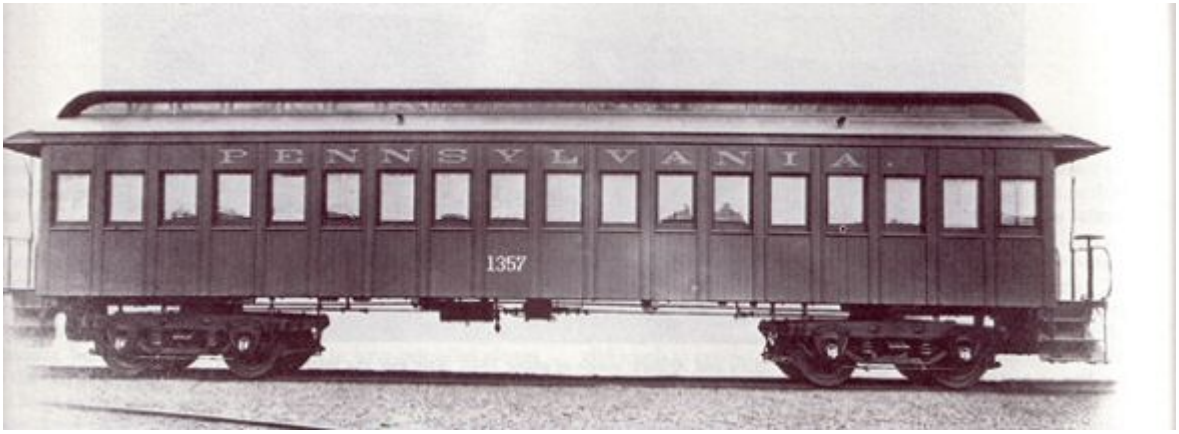
- Era 1: pre US Civil War: Crude Beginning
- Era 2: post Civil War – 1890: Maturing
- Era 3: 1890 – 1910: Great Wooden Cars
- Era 4: 1910 – 1935: The Heavyweights
- Era 5: 1935 – 1960: The Streamliners
- Era 6: 1960 – 1980: The Lost Generation
- Era 7: 1980 – present: Modern

Crude Beginnings

Initially there were short (40 foot) wood cars, mainly board and batten, strange roof lines, and open platforms. It was an era of experimentation which lasted up to the 1860s or so. Here is an 1855 view of a typical coach.

Maturing

The second era, running to about 1890, featured longer cars (up to about 50-55 feet) with wood sheathed sides, clerestory roofs and open platforms, and the beginnings of sleeper, parlor car and other first class services. Most railroads specified their own plans to a host of local small builders (such as Jackson and Sharpe) while at the same time, a few larger builders (such as Pullman) were beginning to emerge. Here is a typical coach of the period:



The Great Wooden Cars

The third era running to about 1910, saw longer (up to about 70 feet) wood cars, full vestibules, gas lighting, and the modern floor plans for sleepers and other first class cars. It was the glory days for wood cars as they reached their zenith and also an era of great experimentation on the mechanical systems which made the cars livable. This era saw intensive work on heating and ventilation, for example. This view shows the observation car Yahk in Soo Line service in a 1923 photo on CPR tracks at Field, British Columbia.

The Heavyweights

The fourth era, lasting till the 1930s, was the great steel heavyweight era. Steel cars of standard design and floor plan up to 85 feet in length were introduced in all the variations we have come to know.

Mechanically, the ventilation problem was finally resolved when air conditioning was introduced in the 30s and previous cars were retrofitted.

In terms of builders, the switch to steel caused a huge consolidation in the industry as small local builders had trouble competing. The leading builder of the day was Pullman but American Car & Foundry had its supporters as did a few smaller builders. In the USA, most railroads were content to let Pullman supply the cars and operate sleeper and sometimes other first class services as well. This drove standardization everywhere. Pullman was never a factor in Canada and the railroads bought (or often built) and operated their own cars. Here is the Pullman parlor car Lincoln Memorial built in 1930.

The Streamliners

The 5th era is the streamliners and it lasted to about 1960 in terms of new construction. .

Beginning in the 30s, serious efforts were made to remove the deadweight of the massive heavyweights for reasons of both initial and operating economy. The new streamliners were built of steel (by Pullman-Standard and American Car & Foundry) or aluminum and stainless steel (Budd) and often came in fancy color schemes.

It was an era that ushered in dome cars and other new variants of first class travel. Pullman was forced to divest in antitrust action so ownership and operation of cars passed to the railroads in 1948 and Pullman became solely a builder. After World war II and especially after the railroads took over the sleeping car services from Pullman, the heavyweights were repainted in bright colors replacing the standard Pullman green of an earlier era

The demise of intercity passenger travel in the 60s killed the further development of new passenger cars for 2 decades. With that in mind, the streamlined cars which began in the mid 30s continued to be the most modern available until the 1980s.

Pictured here is a streamlined sleeper lounge car, ex CN Cape Tourmentine but later in Florida Gulf Coast colors.

The Modern Era

After the creation of Amtrak and ViaRail, new investment was necessary to replace the very old and worn out cars still in service. These cars had been essentially designed as far back as the 1930s so some fresh thinking was required to make up for the lost 20 years or more of development. The result was the bilevel Superliner cars for long distance travel across most of the USA along with Amfleet cars for travel in the east where clearances were tight.

In Canada, ViaRail ordered new LRC equipment from Bombardier and later, Renaissance cars for use in the Windsor - Quebec City corridor. They also refurbished the stainless

steel Budd built Canadian Pacific cars for use on the tourist oriented distance trains The Canadian and The Ocean.

Both ViaRail and Amtrak operate as deficit running nationalized carriers. Neither is particularly favored by the governments of their respective countries and both make do with very limited funding. At this point, the future of rail passenger travel is cloudy - a high speed intercity network may emerge or just as easily, the current system could shrink to only the corridor services in future.

Here is an example of a Modern Amfleet car

Some Thoughts on Modeling

Choice of Era

The modeler, unless he wishes to make a life's work of scratchbuilding, will be guided in part by the availability of commercial models. This will be examined in detail in Part II, but in general, a smattering of models exist for eras from the Heavyweights up to the Modern. Although 1:29 scale cannot be said to be well endowed, enough models exist to make a credible showing for passenger trains across this timeframe.

Operations With RailOP

Much of the passenger switching is related to sleepers, express and mail services operating on specified routes as opposed to the random approach we desire for freight and which the AutoBuild feature in RailOP provides. Nonetheless, a careful useage of Interchange tracks and destination series coupled with judicious use of kernels in RailOP will see us through most of the situations. Typical passenger trains from RailOP could contain a kernel or two of fixed cars always on the train, some Autobuilt cars that are random, plus a number of cars running specified routes.

Choice of Subject

In large scale, most modelers do not go much beyond the obvious choice of modeling equipment. In other words, they focus on the cars and locomotives that are or were used in passenger service. This is a very satisfying activity in itself – who can deny the sense of pride a modeler feels as his long train of streamliners rounds his oval of track behind gleaming Alco PAs. It makes for an impressive sight for all who watch.

But this is not the only possibility for modeling which is available in 1:29 scale today. There are at least two other broad categories of modeling popular with modelers everywhere which deserve consideration. One of these involves modeling scenes, specific trains or prototype locales as well as freelanced locales as a railfan might see it. The other is the modeling of the actual passenger operations; in other words, the simulation of the movements and services that prototype railroads make.

In this article, separate sections are devoted to these three modeling subjects – the equipment, the scene, and the operation. These will come online in the following weeks.

Part II

Modeling any aspect of passenger services must necessarily start with models of the equipment itself, and for many modelers, this is a sufficiently satisfying activity that they are perfectly content with doing little more than watching their favorite models roll. The modeling of passenger equipment is naturally enhanced by some knowledge of prototype practices. Even for freelancing, it is helpful to understand typical practice and how it changed over time.

In this section, the various kinds of prototype cars and locos will be discussed along with the commercially available models. Given that these commercially available models in 1:29 scale really commence with the Heavyweight Era, the discussion will focus on equipment from roughly the First World War up to the present day, leaving untouched the equipment from the earlier eras.

Car Types

By the beginning of the Heavyweight Era, the various types of service had been developed and the floor plans to support the services had been created. Each car type has existed and continues to exist through each era since the Heavyweight Era. Roughly speaking, these cars could be divided into the following categories: head end, coaches, dining cars, sleepers, and observation cars.

In the following sections, each car type is examined with some examples given, and then the potential models in each era are shown.

For modeling passenger cars across these eras, the manufacturers have presented us with a smattering of offerings. The available models are inadequate to easily model complete name trains or very specific passenger cars but they can give a representative feeling of passenger service.

In the Heavyweight Era, Aristo offers a number of selectively compressed cars suitable for the small curves that many modelers have. They chose the CNJ Blue Comet as the prototype and it used unique 72 foot cars. This helped Aristo build some reasonably accurate "shortie" models at the expense of being not very representative of the vast heavyweight fleet which was mostly 80 footers. The 72 foot 10 section sleeper in this offering is pure fantasy as the Blue Comet carried no sleepers, nor were heavyweight sleepers built to this length and configuration..

In the Streamline Era, Aristo offers selectively compressed cars which are quite short in comparison to the 85 foot standard length of prototype cars of the Era. USA Trains cars are more accurately scaled in length. USAT however, used the same basic car bodies to represent both smooth sided (built by American Car and Foundry or Pullman Standard) and stainless fluted cars (built by Budd) with a Santa Fe prototype as the basis. The end result is a representative set of full length cars, but again, specific trains cannot be modeled accurately.

In 1:32 scale, MTH has made a number of cars to accompany their SP Northern in Daylight colors. Accucraft has also made, in limited run brass, a set of accurately modeled Southern Pacific Daylight cars. In addition, in terms of custom builders, David Leech http://www.user.dccnet.com/d.leech/ has offered most any streamlined car a modeler might desire, but he has recently decided to stop taking orders for new cars. A new builder, just recently on the scene, is Kern Valley http://www.kernvalleyrailway.com/ This builder has announced new offerings of accurately modeled streamlined and heavyweight cars in both 1:29 and 1:32 scales. As I write this, another new builder, Alan Wright of Wrightway Rolling Stock, http://www.wrightwayrollingstock.com/ has introduced a limited run of brass models of the CPR Grove cars. These lightweight cars are intended as a companion set to the new Accucraft CPR Royal Hudson.

Also as I write this, LGB has begun the introduction of Amtrak Amfleet cars. The reviews are not yet in but the first glimpses suggest accurate and well detailed models for those who wish to model the Modern Era.

Head End Equipment

Up until the end of the Streamline Era, many trains, especially locals but even some famous long distance trains, relied on head end traffic for a major portion of the revenue and all trains carried the baggage of revenue passengers. Accordingly, different types of head end cars were developed including baggage cars, RPOs, express reefers and boxcars, as well as combinations of baggage cars with coaches or open section sleepers.

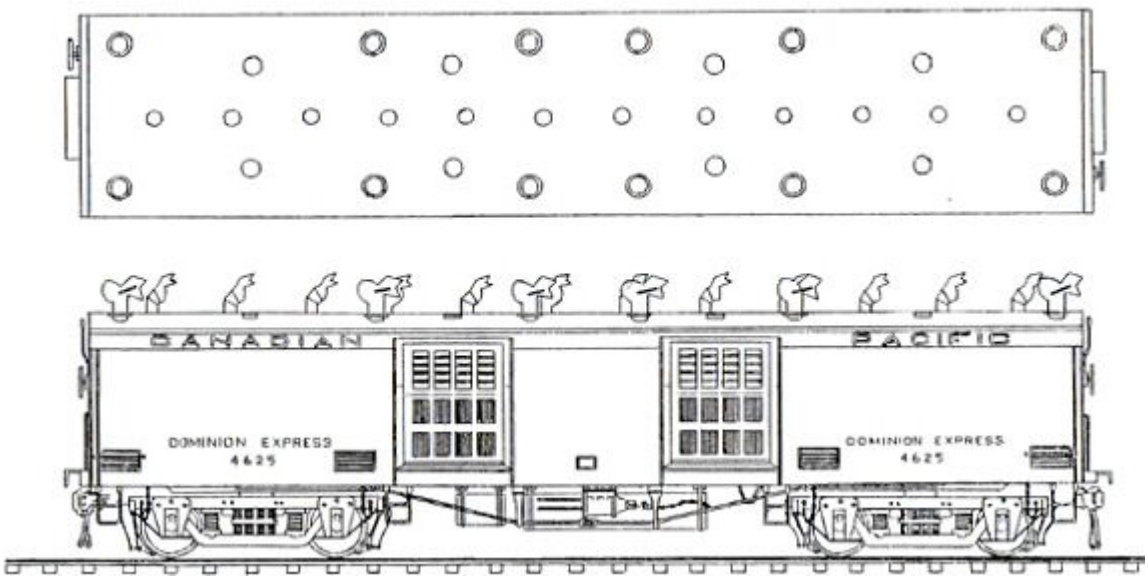
In the USA, emigrant cars were normally thought of as head end cars. These cars were usually little more than hard benches which were used to move vast numbers of newcomers west (usually at government expense which is the reason for spartan accommodation). In Canada, the cars were referred to as Colonist cars, had a somewhat more comfortable accommodation though still below First Class, and they were thought of the same as coaches. They also lasted in Canada into the Streamline Era as Tourist cars.

There were, over time, a variety of head end cars used. They ran the gamut from standard boxcars or reefers on up to full length 80 foot emigrant cars, but they had a few features in common. All were designed with high speed passenger trucks and after steam was universally used for heat, all were designed with a steam train line. In the Modern Era, the steam line has been replaced by a pass-through of the head end power (HEP) for electricity in all the cars.

Since railways were supposed to, for safety reasons, run wooden framed cars behind the steel framed ones, head end cars were among the first to be rebuilt with steel under frames or replaced. However, this rule was often more honored in the breach than in the reality and some wooden under framed cars had a remarkably long life.

Express Reefers

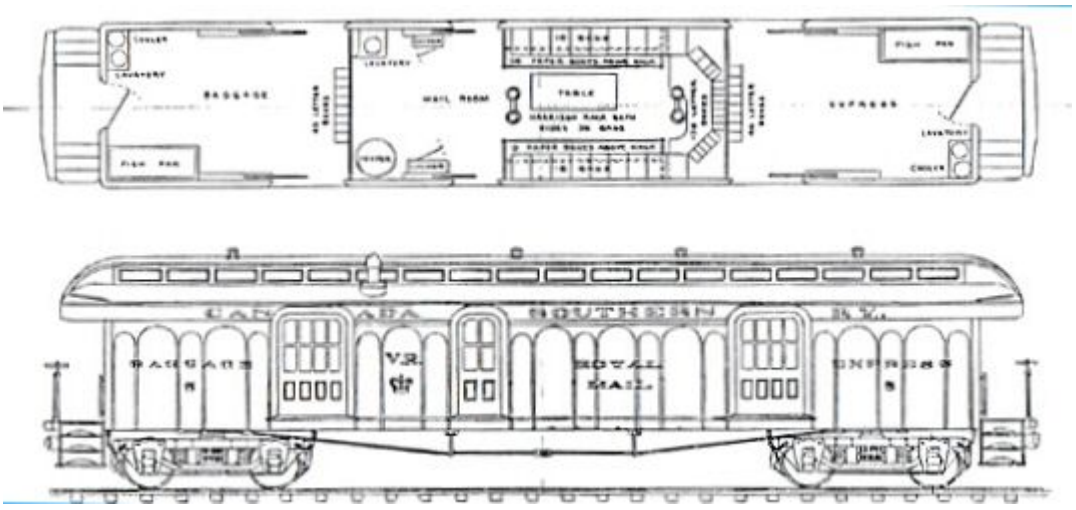
Head end boxcars or reefers were most commonly provided by the carrying railroad and were often built specifically for this purpose, carrying passenger colors. However, there were special cars from the Railway Express Agency bearing there own markings that were also widely seen. In addition, some shipments of special perishables were shipped via interline services and these cars could also be seen away from their home roads. Here is an early express reefer built for the CPR for hauling fruit from the Niagara Peninsula to market.



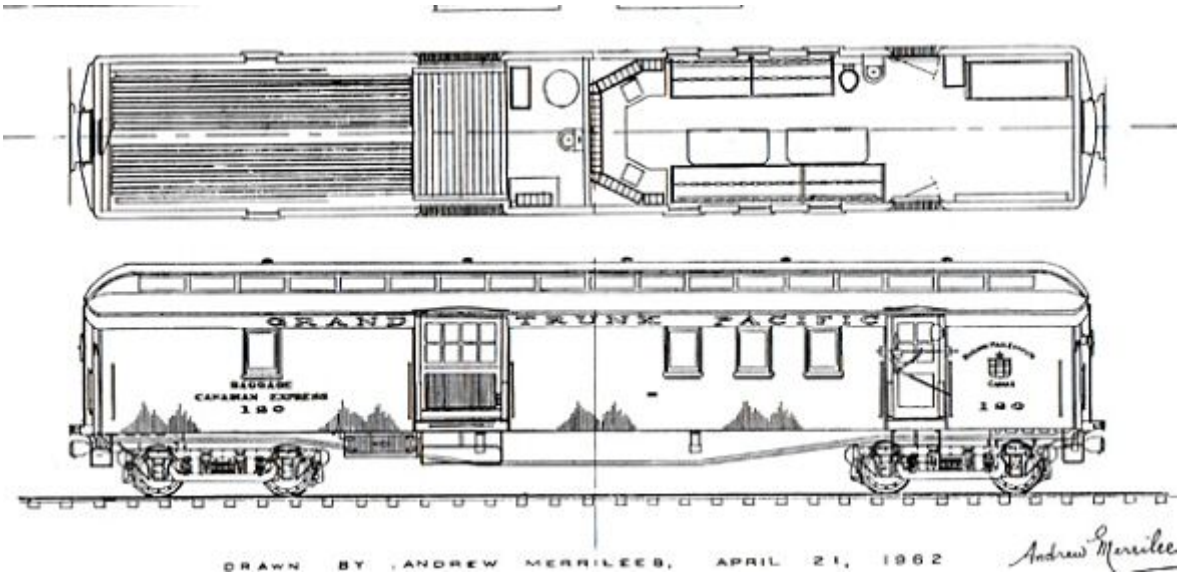
Railway Post Office

Railway Post Office's (RPO) were first introduced in the latter part of the 19th century, and in the end, most railroads had contracts for mail which were a significant portion of the bottom line. These cars were required by federal law in both Canada and the USA to be secure which meant a bulkhead fixed in place between the postal compartment and the balance of the car. Since trainmen were not permitted to walk through the postal area, RPOs normally ran as the first car behind the loco. The last RPO run in the USA was in 1977. In Canada, it was on April 24, 1971.

Here is an early combine from the 1870s as built for the Canada Southern – note the board and batten siding and the truss rod wooden construction.

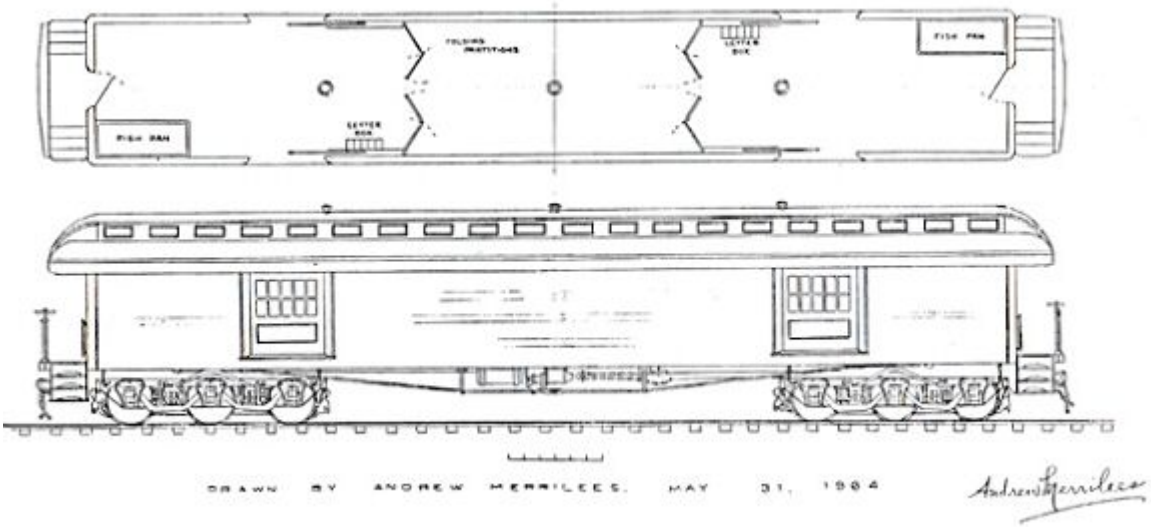


A second example – this time a composite car with wood sheathed siding and a steel under frame built for the Grand Trunk Pacific in 1913 by Osgood-Bradley.



Baggage Cars

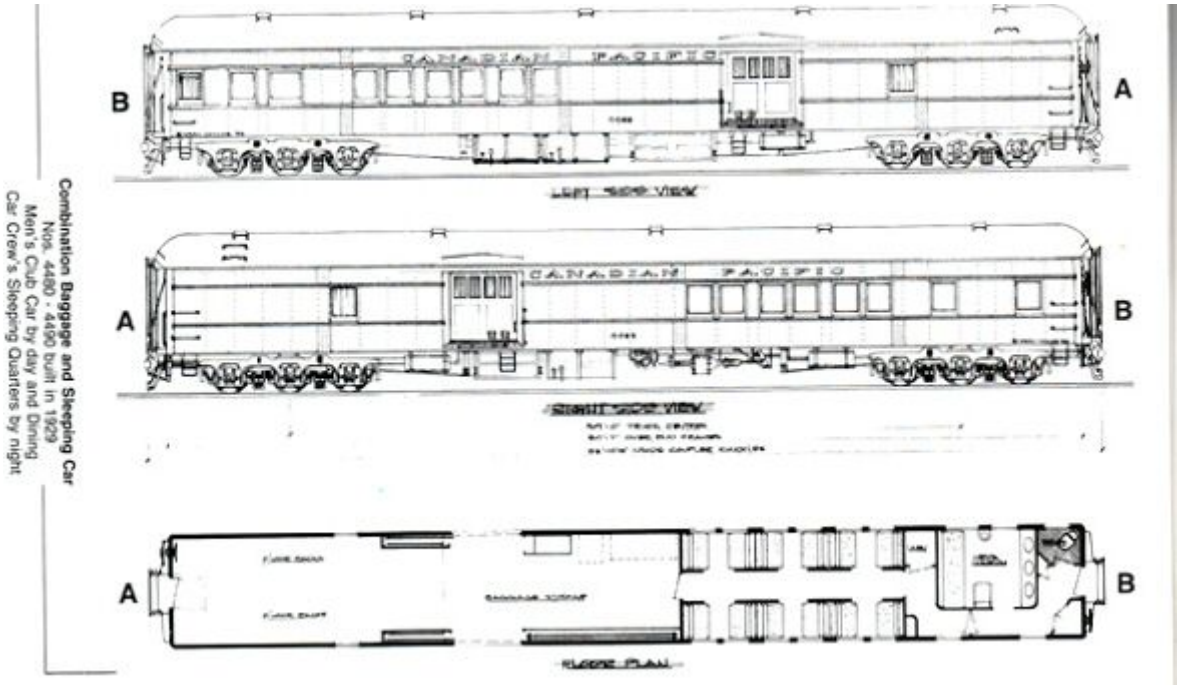
Baggage cars were generally longer than boxcars but tended to be somewhat shorter than passenger carrying cars. Heavyweights often ran on 4 wheel trucks but at times 6 wheel trucks were used as the weights increased. Here is a drawing of an open platform baggage car built for the Michigan Central in 1900.



Combines

Combines were used whenever there was no need for a full baggage compartment and other services could be fitted. The most common was a baggage/coach combine but

various other types existed. For example, crew dorms for the dining car staff were frequently used on some famous trains. Here is the crew dorm on the CPR's 1929 Trans-Canada Limited – a 6 section sleeper along with a half baggage.



Available Models

There are many opportunities to model head end equipment - some models are readily available commercially while others - like express reefers - could be added by replacing freight trucks with passenger trucks.

More specifically:

	Express Reefer/Boxcar	**RPO**	**Baggage**	**Combine**
Heavyweight	*	Aristo	****	Aristo
Streamline	*	USAT	USAT, Aristo	USAT
Lost Gen	**	**	**	**
Modern				

* any steel under-framed reefer or boxcar could be used as long as the trucks are passenger trucks; no exact model exists for the traditional approximately 50 foot long express reefer run by most Class I railroads.

** lost generation equipment tended to be the aging streamlined equipment, some heavyweight head end cars were still in service but they were at the end of their service life

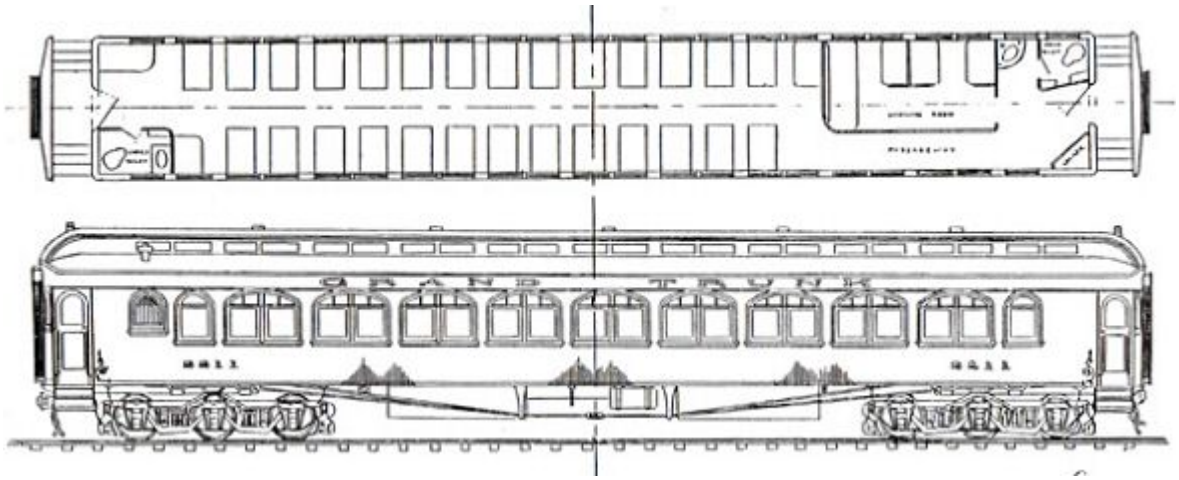
*** as this is written, LGB is just introducing some fine models of the Amfleet cars but so far, no head end equipment; sadly, no models of the characteristic Superliner bi levels have not become available as yet

**** as this is written, Aristo has announced a heavyweight baggage car

Coaches

The coach is perhaps the oldest and most common of all cars. While it was, in its earliest incarnations, nothing more than a row of benches, the coach over time came to be well outfitted with relatively spacious seats that were at least somewhat comfortable. To prevent the need for "turning" the cars at the ends of a run, the seats were built to the end of the heavyweight era with flip over chair backs to permit passengers to always be facing forward.

Here is an example of a 56 seat first class coach built by the Grand Trunk in their company shops. It was built in 1910, among the last wooden cars acquired by Grand Trunk, and is notable for its elegant elliptical window tops and its spacious smoking compartment.



The typical service life of a coach in first class name train service was about 10 years. At that point, they were generally refurbished and usually assigned to secondary trains. After about 30 years, a coach would be scrapped, assigned to work train service, or possibly downgraded to commuter service or some branch line services. Thus, composite wooden coaches persisted in some services until the Lost Generation Era and certainly some heavyweight coaches lasted at least that long. Streamlined cars are still in use in some commuter services even today though the sun is setting on these 50 plus year old cars.

The parlor cars were developed as well heeled daytime rail travelers demanded a more spacious and comfortable accommodation and were willing to pay for it. Usually, the rows of coach seats two abreast were replaced with single chairs akin to the furniture you would find in the parlor of a home.

During the Streamline Era, parlor cars became known as club cars or lounges and a variant of this first class coach service is still available today in the Modern Era. Here is a photo of an Amtrak Superliner lounge car.

Unfortunately, no models of parlor or club cars currently exist but models of coaches have been made by a number of suppliers.

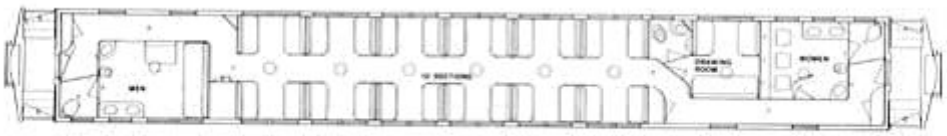
Era	Supplier
Heavyweight	Aristo
Streamline	Aristo, USAT
Lost Generation	*
Modern	LGB

* any streamlined coach could be used, air conditioned heavyweight coaches had been relegated mainly to commuter or secondary services by the 1960s

Sleepers

The term Pullman became adopted across the US to mean any sleeping car but in Canada the term was not used the same way, as Pullman did not operate cars there excepting on cross-border runs.

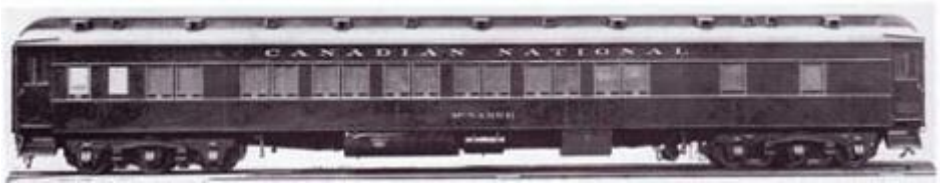
When the word Pullman is used to denote a sleeper, most often the car in question is a 12-1 - a sleeping car with 12 sections and a drawing room.



12-1 Pullman Scale 1/8" = 1'

These cars made up the bulk of the heavyweight Pullman fleet in the golden age of railroad travel. In fact, about 4000 12-1s formed the backbone of the Pullman fleet during the 1920s and 30s, more than all other Pullman owned car types put together.

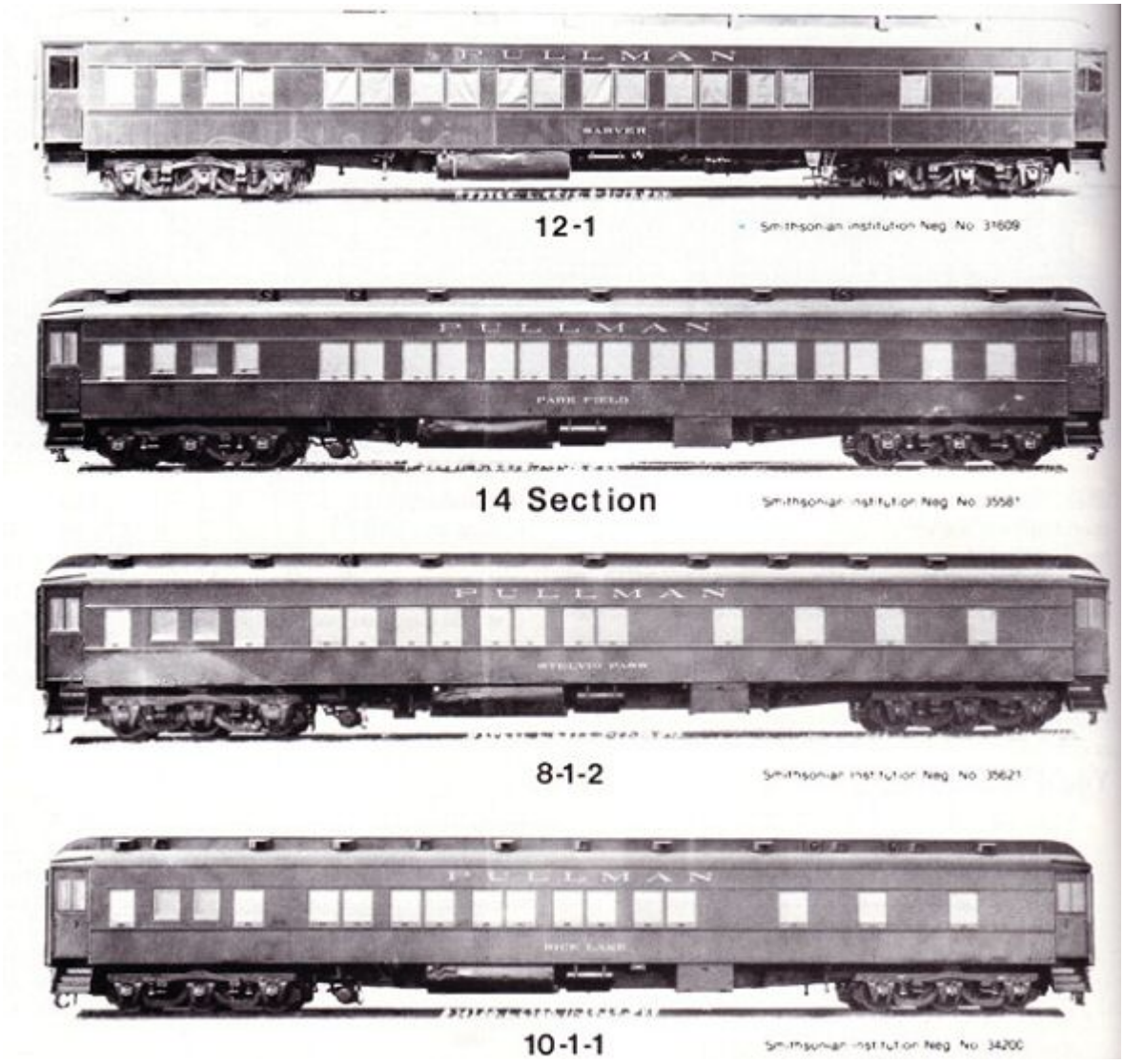
Here is a 12-1, a car owned by Pullman but leased to Canadian National during 1927. The car was returned to the Pullman fleet and was eventually sold to the New York Central in 1948.



The distinguishing feature of Pullman sleepers is the paired windows - one pair for each section on each side. In this car, the 6 pairs of windows correspond to the 6 sections per side in the floor plan.

The ubiquitous 12-1 was assigned to Pullman "lines" (car routes operated by Pullman) everywhere from the fanciest name trains to the lowliest overnight locals. The same solid Pullman accommodation was available to every traveler

The 12-1's were the most numerous of Pullmans as they made up about 60% of the fleet during the heyday of the heavyweights. Most of the rest of the Pullman owned and operated sleepers were 14 section tourist cars, 10-1-1 (10 sections, a drawing room and a compartment) or 8-1-2 (8 sections, 1 drawing room, 2 compartments). There were also a number of 12-2 sleepers (12 sections and 2 drawing rooms) made by only having one vestibuled end and using the space at the other end to enlarge the interior. All of these different sleeping car configurations are easily identified by the characteristic window spacing.

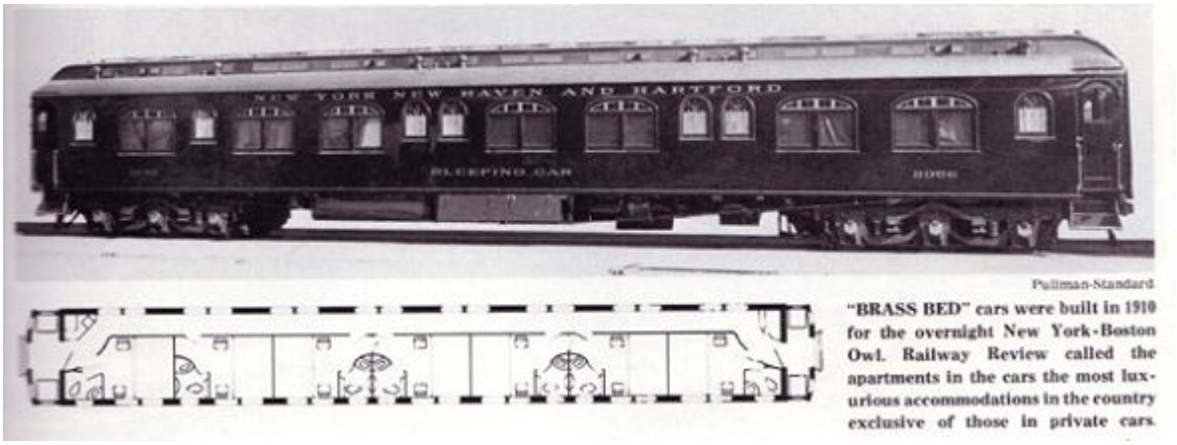


As the wooden cars became extended in length and more space became available, Pullman expanded their usage of the open sections to the plans shown here. At the same time, the traveling public slowly moved to demand greater room type accommodations. The greater privacy and comfort of a room drove a disdain for the open sections. The response from Pullman was slow – after all in the USA they had almost a monopoly on sleeping car operations. Eventually, however, all room cars were built in quantity in all manner of configurations.

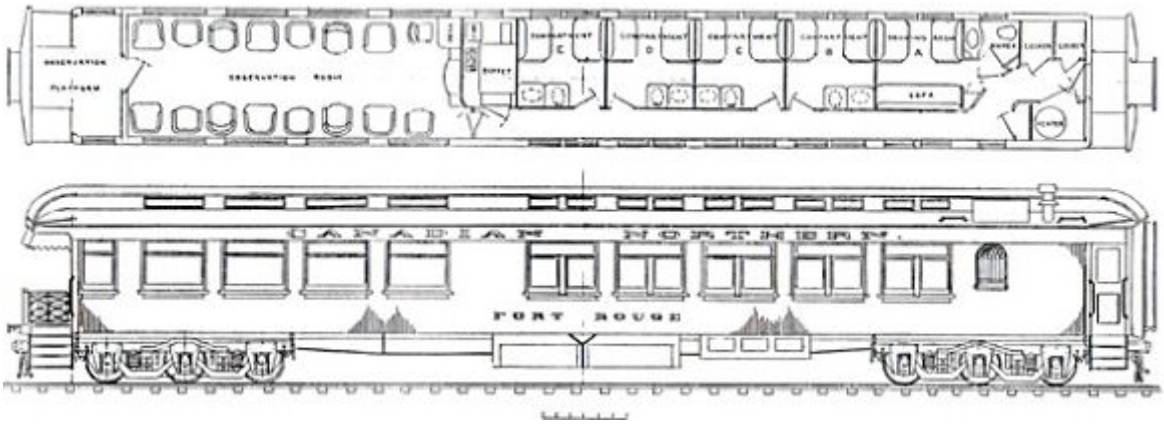
Essentially, there were 4 types of sleeping accommodation. Two of them, the open section and the drawing room, have been shown in the cars so far. The others – roomettes and compartments - came later in time. A roomette was first developed during the lightweight era and became the modern version of the open section. While Pullman crammed in 12 open sections and a drawing room to accommodate 27 revenue passengers, all roomette cars that offered 22 somewhat higher priced individual rooms came to be the modern standard.

Compartments were the old fashioned double room accommodation and offered much more space in the heavyweight cars than the roomette was to offer in the streamliners. These room types were often intermixed in cars to provide a range of accommodation to suit every traveler's need and pocketbook.

Here is a Pullman built 7 drawing room sleeper



Here is a drawing of the Canadian Northern 4-1 (4 compartments, 1 drawing room) lounge observation car Fort Rouge built in 1916 by the Canadian Car and Foundry.



During the late Streamline Era and especially the Lost Generation, the usage of air travel for most overnight trips reduced greatly the need for sleeping accommodation. Railways responded by eliminating the standard overnight trains. In the Modern Era, many Amtrak long distance runs offer sleeping car services in all room Superliner cars. In Canada, ViaRail continues to offer traditional sleeper service on its long distance overnight trains in the newly refurbished Budd built streamline cars.

Heavyweight	Aristo
Streamline	Aristo, USAT

Lost Generation	
Modern	

* Sleepers had been eliminated from most trains during the Lost Generation era but if one were still in use, it would be a streamliner

* The heavyweight sleepers offered by Aristo are at best a caricature. Many modelers have sharp curves so Aristo has chosen to selectively compress their sleeper from the 80 foot standard Pullman length to about a scale 72 feet. This was done by eliminating a section and the characteristic paired windows. Unfortunately, a 72 foot, 10 section sleeper was never built by Pullman and as this is the only sleeper available, it will have to stand in for all the 12-1s everywhere. Those modelers desiring any of the other normal sleeping car window arrangements will have to scratch build or kitbash.

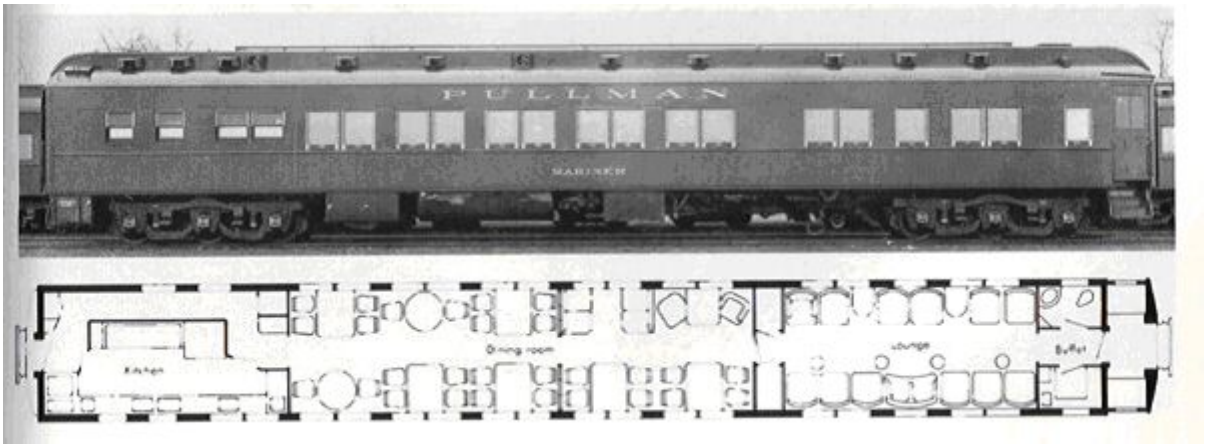
* The streamline cars offered by Aristo have also been selectively compressed but the USA Trains cars are full length. They are based on Santa Fe prototypes with the same basic cars being used to represent both stainless fluted bodies (built by Budd) as well as smoothsided cars (built by American car & Foundry or Pullman Standard). Two different sleepers are offered but in no way do these begin to cover the vast array of sleeping car possibilities used by prototype railroads.

Diners

Dining cars were introduced in the latter part of the 19th century though many railroads preferred to stop at stations that offered meal service. The Harvey House restaurants on the Santa Fe were among the most famous of these. But as speeds increased the railways could provide faster schedules by adding diners and though they were never profit makers, some memorable cuisine was offered.

Most diners were built to accommodate from 30 to 48 patrons with the fewer number in a more spacious setting being on the most exclusive trains. As diners grew in length in the Heavyweight Era above 80 feet, the seating settled on 42 to 48 depending on whether there was two tables of 4 or a table of 4 and a table of 2 across. Here is a Spanish styled diner built by Pullman for the Rock Island's Golden State.

Another example, this time from the Pere Marquette. During the Depression, some railroads economized on their money losing dining car activities by contracting with Pullman. Pullman rebuilt heavyweights in 1932 to provide diner lounge services for the Pere Marquette in cars that looked like this.



Dining car services remained unchanged throughout the Streamline Era but patronage was falling. Railways sought ways to reduce or eliminate unprofitable services and the Lost Generation saw the demise of most of the famous remaining dining services. The advent of Amtrak in the USA and ViaRail in Canada spelled the end for traditional dining cars. Only ViaRail's The Canadian and Ocean include a traditional diner (a Budd built streamlined car) among trains running today. Food services or cafe Superliner/Amfleet cars on Amtrak or airline style meals served at passenger seats have replaced the elegant diner from the past..

Heavyweight	Aristo
Streamline	Aristo, USAT
Lost Generation	
Modern	

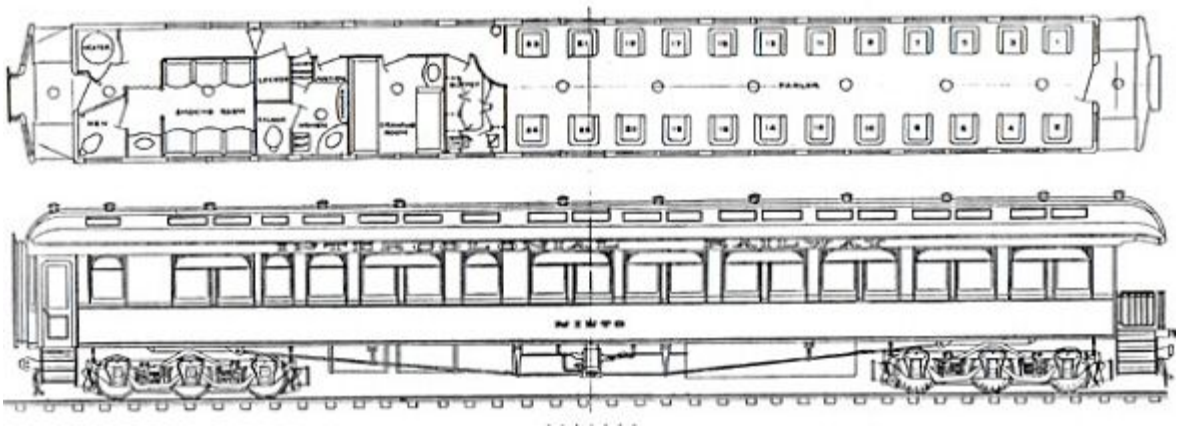
* diners had been eliminated from most trains during the Lost generation era but if one were still in use, it would be a streamliner

* LGB makes an Amfleet cafe car for the Modern Era "diner"

Observation Cars

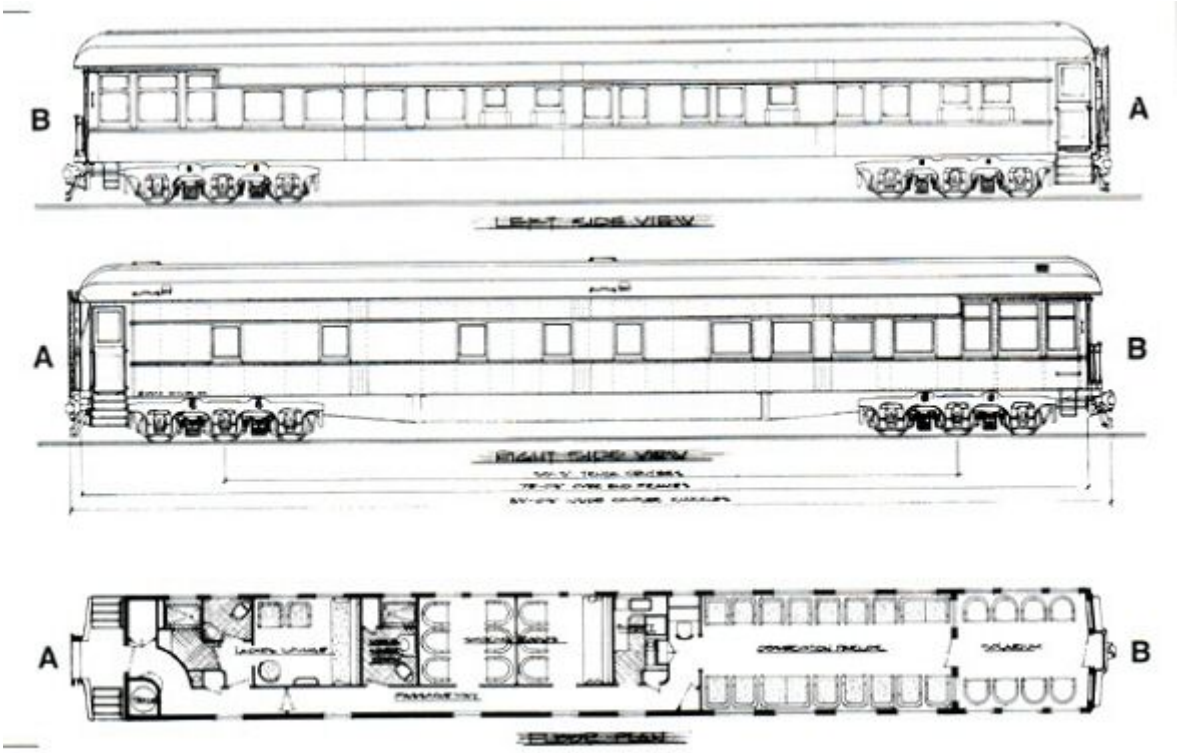
The solarium lounge observation car, though usually combined with some "all room" (no sections) sleeping accommodation, provided non revenue space for first class passengers. Below, is the lounge solarium on the Western Pacific #652 used on the Scenic Limited.

Parlor cars often were used to bring up the markers on day trains when they may be the only first class car in the consist. In those cases, observation cars fitted as parlor cars were used. Below is an example from the Intercolonial Railway built in wood by Crossen Car in 1908.



When the observation car trailed an overnight train, frequently some high priced revenue accommodation was provided as well as space for non revenue relaxation of other first class passengers. The sleeping rooms were normally arranged as 4-1 or 3-2 (3 compartments, 2 drawing rooms) and an example is shown in the sleeping car section of this article.

Observation cars on the exclusive trains carried no revenue space and were provided for the entertainment of first class passengers. Such a car is shown in the following example from the CPR Trans Canada Limited of 1929. By the mid 20s, increasing train speed and increased ventilation in the cars made open observation platforms much less desirable. They were replaced by the solarium lounge in the observation car and the CPR car has that feature.



During the Streamline Era, after the Second World War, the passengers came to demand better views of scenery than that provided by a solarium. The response was the dome car. Dome cars replaced observation cars on many name trains and since a dome car need not be located at the end of a train, they also found their way into other areas.

Unfortunately, the dome itself is non revenue space. Try as they might, the railroads found that efficient usage of space under the dome was always problematic. As passenger loadings declined to the point of almost vanishing during the Lost Generation Era, the domes slowly slipped from use. Only the famous Park cars and the Skyline domes on ViaRail are left in regular service today from the proud fleet which once operated. In the Modern Era, Amtrak's Superliner cars offered a new opportunity for the dome and solarium concept. Just as airline dinners at the passenger's seat have reduced non revenue space, the Superliners have turned the dome concept into greater revenue space.

Heavyweight	Aristo
Streamline	Aristo, USAT
Lost Generation	
Modern	

* observation and dome cars were eliminated from most trains during the Lost Generation era but if one were still in use, it would be a streamliner

Passenger Locomotives

The prototype railroads have always used specific locomotives in passenger service. These locos had to be faster than their freight hauling counterparts even if their tractive effort (for steam locos) or horsepower (for diesels) was less. They also had to provide steam for heat and other appliances until the electric only passenger cars came into service during the Modern Era. These passenger locomotives were visible to the traveling public and as such, were often decorated in stylish sheet metal streamlining or carried fancy paint schemes.

All modelers love their locomotives and passenger locomotives are most loved due to their stylish appearance. In 1:29 scale, the manufacturers have found ways to offer a reasonably good selection of Streamline Era diesels making the modeling of passenger trains from the 1940s through to the end of The Lost Generation in 1980 relatively easy. There are also a few steam engines to choose from for the Heavyweight Era and one very nice Genesis model exists representing the Modern Era.

Passenger Locomotives of the Heavyweight Era

Steam locomotives were king of passenger services until after World War II with only a very few exceptions. Electric locos in and around New York City and the early introduction of a very small number of early diesels plus a few interurban cars were the only dents in the steamers' hold.

The quintessential passenger steam locomotives of the Heavyweight Era was the Pacific. Thousands of Pacifics were built for all railroads starting about 1900 and most lasted till the end of steam.

In the steam era, the Chief Mechanical Officer of a Class I railroad was an important position. These gentlemen essentially specified their locomotives and in some cases, railroads would build them in their own back shops. Hence, every class of steam locos tended to have some unique features. This is a long way of saying that commercial models of steam locos in large scale are somewhat awkward as there is not a large base of common locos that cross all railroads to give a model the mass appeal needed for a commercial offering.

During World War I, the United States Railroad Association (USRA) was formed to essentially manage the railroads. This led to the introduction of some standard designs including USRA light and heavy Pacifics. This is as close to standard models as things got in the steam engine world.

The only commercially available low priced Pacific is made by Aristo. It is a reasonable model of a B&O Pacific and is not too distant from the USRA Light Pacifics. As such, it is a good stand-in for Pacifics everywhere making it an excellent choice for heavyweight passenger trains.

Paul Norton captured this image of an Aristo Pacific owned by Stu Moxley running on Fred Mills' Ironwood Peter's Pond & Western RR.

In live steam, Aster has made a model of a Pennsylvania RR K4 Pacific in 1:32 scale, a beautiful locomotive but one which is uniquely Pennsy. In the photo, Charles Bednarik shot his Aster K4 on the rails of the Pennsylvania Live Steamers.

For heavier passenger trains, the prototype roads began ordering Mountains (4-8-2s) before the First War. These locos were able to easily handle 8-10 heavyweights even in winter when most Pacifics required double heading. So far, no commercial models of Mountains have been made.

For some modelers, the fact that no manufacturer has seen fit to build their favorite passenger locomotive does not stand in their way. Robert "Rocky" Alguire built and photographed his award winning Great Northern 4-8-2. Rocky described the construction in
http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=36707&whichpage=10&SearchTerms=Mountain

Toward the end of the heavyweight era, superpower steam was introduced. The story behind "superpower" is too long to go into here but suffice it to say that much larger fireboxes and much higher horsepower were a good part of the picture. These locos had 4 wheel trailing trucks to support the larger fireboxes. While Hudsons were favored on a few railroads - the NYC and CPR in particular - Northerns were the more typical superpower passenger locomotive. Only a few Northerns were built during the Heavyweight Era as they were initially introduced in 1927 just ahead of the Great Depression.

In the model world, from the Heavyweight Era, USAT makes a NYC Hudson. In live steam, Accucraft has announced a CPR Hudson.

During the 1920s, the automobile made its first inroads into rail passenger travel. Some lightly traveled branch lines began to show red ink on the accountants' books operating with regular steam trains, leading the railroads to search for less expensive solutions. The gas electric motor coach was the eventual result, and these railcars or doodlebugs played a key role in providing transportation services. McKeen and GE were two early makers of such cars.

In the model world, everyone loves a railcar it seems. While the wood sheathed cars by Hartland and Aristo are narrow gauge, their small freelanced style allows them to blend in well in standard gauge operations. The Aristo doodlebug in 1:29 is a full fledged

model of one of these cars. Ric Golding photographed his Aristo doodlebug crossing the Highline Bridge on Marty Cozad's North Table Creek Garden RR.

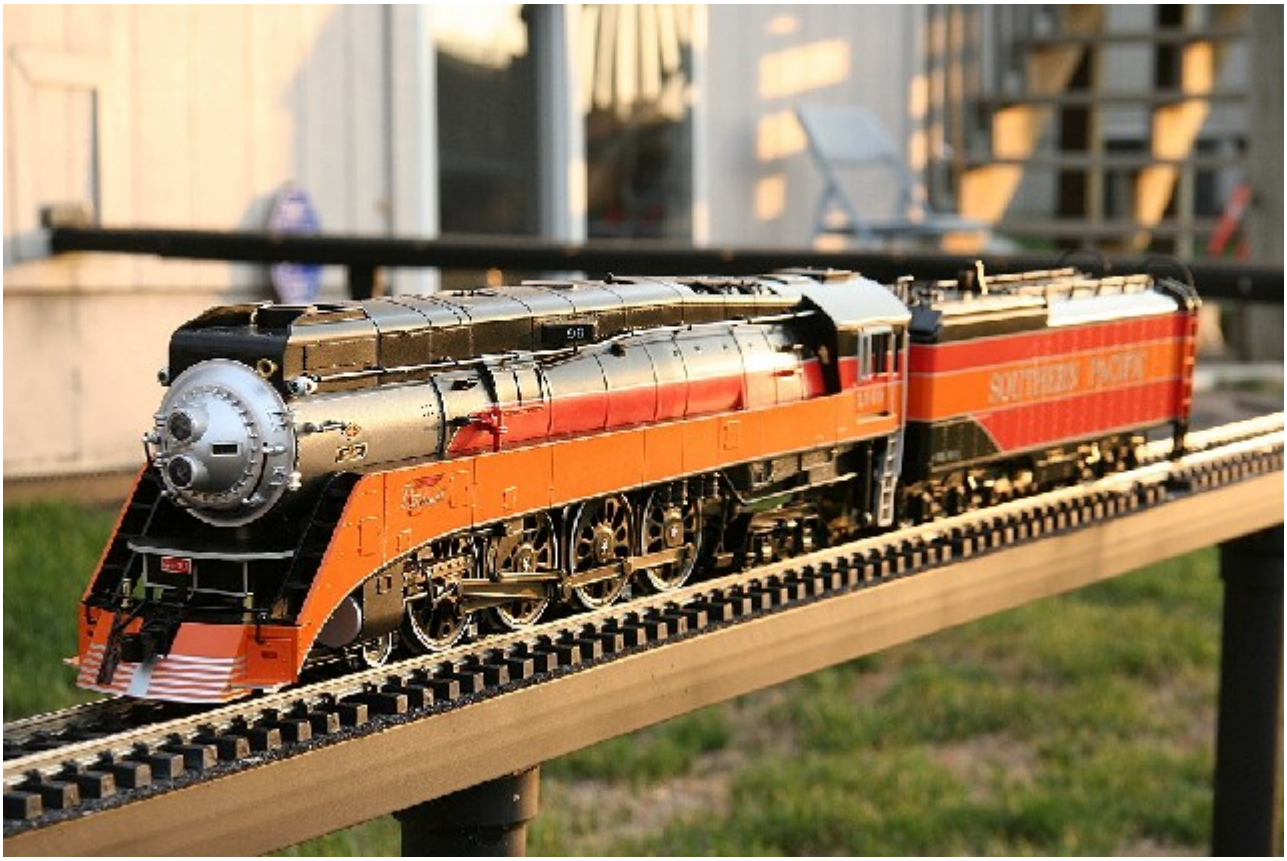
Passenger Locomotives of the Streamline Era

The advent of the Streamline Era in the mid 30s coincided with the advent of Art Deco streamlining, the railroads' craze for superpower Northerns and the first diesels. By the time the Streamline Era ended, steam power was gone, Art Deco was a fashion footnote and passenger service dying.

As the Great Depression continued seemingly endlessly, railroads which had deferred locomotive purchases were finally forced to replace aging stock. The start of World War II in 1939 also vastly increased traffic providing some needed cash to make the investment. Most railroads turned to new superpower steam for frontline passenger service and the Northern was the choice. Art Deco streamlining was the order of the day and many new Northerns were ordered in at least semi streamlined sheet metal. As well, many Pacifics were back shopped and streamlining added.

In the model world, the famous Southern Pacific GS class Northerns have been made in electric by MTH and in live steam by both Aster and Accucraft. In a photo taken by Charles Bednarik, his Accucraft GS4 is on the draw bar of a SP Daylight train. The trackage is that of Jim Stapleton.

The MTH electric Daylight GS4 is equally showy as evidenced in this model owned and photographed by Raymond Manley



No other versions of Northerns have become available commercially including no models of the more than 200 Northerns running on Canadian National - the largest single fleet of Northerns on the continent.

Also, no commercial models have been made of the large group of streamlined Pacifics ranging from Pennsy K4s to Katy Flyers.

New York City had banned steam locomotives from Grand Central Station since 1908 and as a result, electric locos had been in use for many years. During the early Streamline Era, the Pennsylvania RR introduced its famous GG-1 and these well designed machines remained in service in the northeast corridor for 50 years. USA Trains among others has made a model of the GG-1.

The first passenger diesels began to appear in the mid 30s. As railroads ordered new streamlined cars, a few of them also ordered new passenger diesels to go with them. This practice was by no means as common as we tend to think today - for example both NYC and the Pennsylvania ordered new streamlined equipment for the 20th Century Limited and the Broadway Limited respectively but each railroad streamlined existing loco designs. The Pennsy streamlined a K4 Pacific while NYC streamlined a J class Hudson.

The initial thinking behind passenger diesels was to use 3 axle trucks with two armatures on each, high speed gearing and a steam generator built in. This gave a passenger unit with the high speed needed, the ability to supply steam to the cars in use, and horsepower in a flexible package which could be added or subtracted depending on train size. All this was contained in a low maintenance diesel. While each of the diesel builders made passenger units the best known came from the two primary builders, EMD and Alco, who introduced their E and PA series respectively. Most American railroads acquired E units or PA units during the 1940s as they gradually displaced steam off the major trains. By the mid 50s, steam had generally been replaced or, where it was still in use, relegated to locals.

Canadian railroads and mountain climbing American railroads did not care much for the passenger diesels offered. Instead, they mainly ordered freight units - EMD F units or Alco FA units - with passenger gearing and with a steam generator added.

A number of models of passenger diesels have been introduced. Aristo is just now introducing the EMD E-8 and since in essence, differences among the various E units were small, it serves to represent all E units. Similarly, USA Trains has built a model of the Alco PA and PB which can represent all versions of the Alco cab units. The freight hauling EMD F3 is represented by the USA Trains model and it comes with the steam generator molded in making it a good candidate for passenger service. It can stand-in as a model of the FP7 as well though it lacks the lengthened frame of the prototype. LGB has built an F7 also, though it is in 1:26 scale (approximately) and it is the freight hauling version. Lastly, Aristo freight hauling Alco FAs can also represent their passenger version.

Stan Cedarleaf took this picture of a classic lashup of FAs hauling a dome studded train of streamlined cars on Stan's Prescott Canyon RR..

During the Streamline Era, the old doodlebugs introduced in the 1920s needed replacement. Budd sprang into this part of the market by building stainless steel railcars to replace the older railcars nearing the end of their useful life. As passenger services declined toward the end of the Era, more new "Budd cars" (rail diesel cars or RDC's) were placed in service on lines uneconomic for full trains.

Aristo has made a model of an RDC - a coach offering is all there is of the many variations available to real railroads. Bob Whipple took these pictures of his detailed Aristo RDCs on his West Berlin Garden RR.


JERSEY CENTRAL LINES

Passenger Locos of the Lost Generation

After 1960, most railroads took steps to reduce or eliminate the unprofitable passenger services that they were saddled with. Only Canadian National, among North American roads, took active steps to expand passenger services during this timeframe. The demise of inter city passenger services was almost complete when government intervention in both Canada and the USA introduced ViaRail and Amtrak respectively in the 1970s.

During the Lost Generation, there was essentially no new investment in passenger equipment. The aging fleet of passenger locos soldiered on amidst increasing breakdowns due to age and deferred maintenance. Eventually, most railroads assigned some additional locos to the passenger pools to protect the schedules of the remaining trains.

The most natural assignments were newer diesel power starting with EMD GP-9s or Alco RS 10s or 18s. These assignments only rarely involved re-gearing for passenger speed and even more rarely the addition of steam generator equipment. It was thought to be less expensive to haul a second unit with a steam generator than to add a steam supply from the new loco. Thus 60s-70s lashups sometimes were the matched E or F units of the 50s but were more often a ragtag GP plus a B unit combination.

Second generation GPs are in short supply in the modelers' world however USA Trains does make a very nice GP-9. Otherwise, modelers need only fire up their weathering spray paint to achieve the truly grungy sorry look of the Lost Generation.

Passenger Locos of the Modern Era

With the coming of nationalized rail services in both Canada and the USA, Amtrak and Via inherited a truly awful fleet of old passenger equipment. New investment in locomotives was urgently needed to escape the early horror stories of late trains and dreadful service.

The end result of the reinvestment brought about the F40PH in the 1980s. This loco, based on the EMD GP40-2 but redesigned for passenger service, has been dubbed "the locomotive that saved Amtrak". Compared to the elegant lines of earlier passenger locomotives, it had the aesthetics of a chipped cinder block. It was, nonetheless, almost ubiquitous on passenger runs in both the USA and Canada and was a key element in restoring public confidence in a shaky rail passenger infrastructure. The F40PH was introduced with new Superliner passenger cars and other cars were refurbished. These new cars used electrical power from the loco (HEP) instead of steam for heat and batteries/generators for electricity. As a result, the F40PH was the first loco to routinely supply Head End Power to the cars. In a prototype image by Ron Chouinard from the RR Picture Archives http://www.rrpicturearchives.net/locoPicture.aspx?id=39724 an Amtrak F40PH is shown near Boston in 1988.

Unfortunately, no commercial model of the F40PH has been introduced.

By the late 1990s, the F40PH was getting long in the tooth. New investment, so troublesome in government run enterprises, was slow to materialize. When it did arrive, the Genesis P42 was the result.

LGB has produced a model of the Genesis for those who wish to model the most modern of trains. Stan Cedarleaf shot his Genesis pulling streamliners on home rails of the Prescott Canyon Garden Railroad.

In the Northeast corridor, new electric locos have also been delivered. As well, on the light rail front, a number of different designs, many by Bombardier, have found their place. No models of any of these prototypes have been produced.

Train Types

In choosing the models most consistent with the services our freelanced model railroads offered, it is helpful to understand the kinds of passenger trains run by real railroads in the heyday of passenger service. These can be roughly divided into a number of typical kinds of trains each with a distinctive consist.

- All first class premium overnight service
- Regular overnight service
- Regular day train service
- Local day train service
- Mail and express service

These trains existed until the end of the Streamline Era, about 1960, when the railroads really began to reduce services in earnest due to dropping demand. Throughout the Lost Generation, the extra fare premium trains disappeared, the trucks took away express and mail and the airlines clipped most of the overnight intercity travel. Even the RDC services which replaced the local trains were terminated. By the time that Amtrak and ViaRail appeared, regular day train service in heavy corridors plus a few long distance trains were all that was left of a service that once numbered thousands of trains each day.

Premium Overnight Trains

These trains were the province of the well to do, the famous or the elite business traveler. Typically, introduced around the turn of the century, in the first few decades of the 20th century they offered all sleeper accommodation with no coaches. Later, the term came to mean all-room accommodation, that is, no open sections in the sleeping cars. Parlor cars were not carried on the overnight segments of the trip but may have been cut into the train for portions of the daytime travel. In keeping with the first class nature of the train, express and mail were not usually handled. Baggage was limited to only the passengers' carry-on luggage, but in those now far off days, carry-on luggage could mean a steamer trunk!

These trains were often made up of some or all of the following cars (during the Heavyweight Era) in this order (usually):

- Baggage/dormitory combine
- Diner
- Sleeping cars
- Solarium lounge observation

Examples of trains from this category would be the CPR's Trans Canada Limited (20s), and the NYC's 20th Century Limited or PRR's Broadway Limited.

The Trans-Canada Limited

As an example of a first class train, consider the Trans-Canada Limited. While the name had been attached to a summer only premium service from 1919 on, the CPR instituted a revised train for the summer 1929 season. The train ran Montreal – Vancouver and its premium accommodation was aimed primarily at the wealthy American. The fastest schedule across the continent, fastest steamer connections to the far east, impeccable service, great scenery, and legal alcohol during the American prohibition were the underpinnings of the service. It lasted only 2 seasons as the Depression ended that style of travel forever.

The fixed 8 car consist featured the dormitory car and diner at the head of the train and a totally non revenue solarium lounge car carrying the drumhead. Here the train is shown at Field, British Columbia in 1930.

Regular Overnight Trains

These trains made up the bulk of the overnight trains and offered a variety of travel accommodations to fit all styles. They were the home of the vast array of Pullman lines and also carried a considerable amount of express traffic. They were, in short, the workhorses of intercity travel especially for the business traveler. This was during an age when intercity travel was almost exclusively done by train and it consumed considerable time especially for business travel – taking an overnight train was often the most economical and expeditious way to “get there”.

Typical consists might include:

- Express Reefer
- RPO
- Baggage
- Coaches
- Colonist or Tourist Cars
- Tourist sleepers
- Diner
- Parlor cars
- Sleepers
- Buffet lounge solarium

Most all of the overnight name trains - and there were literally hundreds of them - fall into this category.

The Texas Special

In 1915, The Katy (MKT) announced the introduction of a new train - The Texas Special. This train would run from St. Louis to San Antonio via Kansas City on an expedited schedule. It was equipped with new steel cars although at times, operations led to some older rebuilt wooden cars being substituted. The train did not normally carry an RPO but did offer a full range of other amenities.

Here is the Texas Special on December 16, 1915, during the first year of operation shown at Muskogee, OK.

Regular Day Trains

Travelers who preferred to travel during the daytime usually had a choice of trains for doing so. These trains normally offered a variety of services but often lacked the name status of their nighttime brethren. Nonetheless there were some well known day trains that made very fast trips between major cities. Their consists could include:

- Express Reefer
- RPO
- Baggage
- Coaches
- Parlor Car

A diner may or may not be cut into these trains between the coaches and the parlor car, and often the parlor car was designed with an observation platform or solarium lounge as well.

The Black Diamond Express

On May 18, 1896 the Lehigh Valley introduced a day train departing New York at noon on a 9 and a half hour run to Buffalo. It was scheduled to run through the Poconos in daylight as its competition was the NYC's Empire State Express on a somewhat shorter and faster route. The new train, known as the Black Diamond Express, was resplendent in its new wooden cars pulled by polished 4-4-0 camelback locos. As time went by, the train was upgraded with new equipment. Here is a shot of the Black Diamond in its 1930s Art Deco streamlining.

Mail and Express Trains

The mail and express local was the maid of all work. Although some very famous and fast mail trains were operated, traveling this way usually meant travel the slow hard way as long station stops were needed to deal with the heavy express traffic these trains carried. Consists were generally:

- Express reefer
- RPO
- Baggage
- Combine or coach

If the trip were a very long one, a combine with a lunch counter may be added as well as a coach; if the trip were overnight, an 8-1-2 buffet may be the car of choice.

These trains were generally unnamed and unglamorous though at times they were operated as second sections of some very famous trains.

CNR #75

The Canadian National operated an extensive express service between Toronto and various points in southwestern Ontario. Although many trains carried express shipments, the key train was the unassuming #75 which operated daily between Toronto and London Ontario on a three hour plus schedule. This was in an era when the crack passenger trains made the trip in 2 hours. The train usually carried an RPO and always carried at least three baggage cars. A rider coach brought up the markers for those unfortunate souls who had missed one of the faster trains.

Here is #75 on May 7,1955 at Paris Ontario in the last days of its existence.

The Garden Railroad for Modeling Passenger Equipment

While the modeling effort may consist of acquiring, kit bashing, repainting, or building various pieces of passenger equipment on the workbench, the real enjoyment comes from

seeing them in operation. Theoretically, nothing more is needed than a loop of track to let them run.

However, as many quickly discover, there is a bit more to it than that. Those long passenger cars generally do not care for sharp curves and especially dislike the S curves so typical of the track work modelers tend to stuff into cramped spaces. The longer models barely get around 4 foot radius curves and generally perform much better on 5 foot radius (10 foot diameter). Even wider may be needed for reliable operation of the longest USA Trains streamliners with body mounted couplers.

If the garden railroad is in the planning stages, it is helpful (but by no means mandatory) to include the following:

1) permanent storage space on the track for equipment as carrying big passenger cars from storage to the garden is awkward

2) at least one sweeping curve (for railfanning from the inside of the curve) to best enjoy the passage of the garden railroad's flagship train

Once the trackage has been set down for reliable operation, either in a loop or a more complicated schematic, the modeler can sit back and proudly watch them roll. Who could not respond to the sight of Charles Bednarik's Aster K4 hustling its train of heavyweights down this straight stretch?