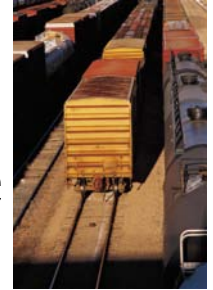




## BIGGS APPRAISAL

PROVIDING VALUATION AND TRANSPORTATION SERVICES TO THE RAIL INDUSTRY



# Subjects of Value

*The Inspection and Appraisal of Rail Equipment*

Volume 6, Issue 3

June 2011

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## BUY AMERICAN

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## Funding Gen Sets without Uncle's Help

It is truly amazing to see how the rail car building industry went from moribund to fully booked in such a short period of time. If you were not fast off the mark you were left in the dust. If you are still looking at the rail space as where you want to invest you might consider 4 axle locomotives and specifically Gen Set Locomotives.

### Why 4 axle locomotives?

The 4 axle fleet of locomotives are the most versatile segment of locomotives being able to negotiate tight curves and can be used by Class Ones, Regionals, Shortlines and Industries. Most of the existing 4 axle locomotives started out being used by the Class One Railroads and have been cascaded down to other users. There has been no significant building of new 4 axle locomotives in over 20 years and much of the technology used on rebuilt locomotives is dated and has been surpassed. The move to heavy haul 6 axle locomotives by the Class One railroads has effectively eliminated any future cascading down of 4 axle locomotives.

### Why Gen Set Locomotives in particular?

Modern Gen Set locomotives using more than one Gen Set operate using the concept of immediate power on demand only when needed. How does that work? In the normal way that an engineer operates the throttle, the Gen Sets

master computer brings an additional engine on the line as needed.

The engine might move around to build a train never going past a throttle notch setting of 4. If the engineer opens the throttle notch to 5, the second Gen Set starts and immediately delivers power to power grid. If the engineer opens the throttle to notch 7 the third Gen Set starts and immediately delivers power to the grid with just enough power to satisfy what power is needed. This is not just power when needed but very effectively used power. Just enough power to do the job and the computer controlled shut down of the Gen Sets when the power requirement drops.

Gen Set locomotives are not a new concept and traces of earlier Gen Set adventures still can be found operating on a regular basis on a number of railroads. Where Gen Sets have really turned the corner in desirability is related to their superior performance, reliability, fuel savings and ultra low emissions. All of these improvements are based on a very sophisticated use of computers coupled with benefits derived from the best offerings of engines and components from the industry.

It is all well and good to have a lot of horsepower to turn your generators to produce a lot of electricity to power the traction motors. The real trick is to effectively get all that power to the wheels without making them spin. Everyone who has ever lived or traveled in the North in the winter is an expert on

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## Sunset

An easy form of stress relief is to imagine yourself overlooking a Western body of water sitting comfortably with a cool one in your hand in the late afternoon watching the sun slowly set into the ocean.

The Sunset I had in mind will also ease a lot of what I think is unnecessary stress for the railroad industry. I would like to see legislation introduced to Sunset the Environmental Protection Agency (EPA). Much like the industry life saving event that sunsetting the Interstate Commerce Commission (ICC) brought the railroad industry; I truly believe that the time has come to do the same with the EPA.

The fact is we have so many tiers of EPA regulations that constantly raise the bar is counter productive to the rail industry and our nation. Don't get me wrong I like to breathe clean air just as well as the next one but the EPA has gone well past its mandate of clean air to protecting their Rice bowl to the point of absurdity.

It was found that the Interstate Commerce Commissions main goals had been achieved and that a much smaller organization could adequately provide the necessary oversight for the transportation industry. The Surface Transportation Board (STB) has and continues to function in that role admirably. The sunsetting of

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## Sunset

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the ICC worked because the transportation industry long ago recognized the value of doing things right without being told to do so. The few exceptions are handled exceptionally well by the STB.

This past March while at the Railroad Financial Conference, one afternoon we had some leisure time. My Son and I took the opportunity to go into Los Angeles to inspect a client's rail cars. Our client representative was a long time employee in the downtown LA rail center and pointed out the visible air quality improvements that had been achieved to reduce the LA Basin SMOG. He described the old bad days saying that you could not read the Sears (big letter on the top of the building) on most days as pointed to the Sears building that appeared to be less than a quarter of a mile away. Now the Mountains many miles away are clearly visible. It is clear that substantial progress has been in air quality made.

I know that main goals of the EPA have been

achieved and that there is a self-sustaining momentum to continue to improve and refine equipment that industry including rail uses to continue in a positive direction without the EPA. Does the nation's industry including rail need more environmental regulations? I think not. I know for a fact that executives of industrial companies breathe the same air that we do. Those same executives have a proven track record of meeting or exceeding the implementation of EPA regulations as well as current technology will allow. The rail industry is a shining example of that.

Revisiting some of the most onerous EPA regulations is probably a good idea as well. You know the ones that make perfectly good running reliable locomotives obsolete because the technology to make them meet a higher Tier after an overhaul is beyond current technology. Somehow the marginal improvement just does not make sense. Will Sunsetting the EPA stop technology improvements? No! As long as there is an

incentive to make things better free market forces will see that technology keeps improving despite the government.

I hope you notice that I am not advocating that all the regulations go away. Just that the EPA in its current form go away. Small departments within appropriate current government organization that are in touch with the realities of the related industry would seem to make sense. That is having a department within the railroad industry related organization, such as the Federal Railroad Administration makes a lot more sense than the unwieldy out of control draconian thing the EPA has become.

Sunsetting of Government organization such as the EPA is a way of bringing reality back into government one step at a time. Time is right for this to happen and it is especially apropos as we enter into the next election cycle and try to work out of the malaise we are in.

## RAILROAD HISTORY AND AMERICAN CIVIL RIGHTS

By Dick Hillman

Are these two seemingly disparate terms somehow connected?

They are, and very much so because it was early railroad employment that gave birth to the American Civil Rights movement.

Going back into history, we find one George Mortimer Pullman creating the railroad sleeping car soon after the end of America's Civil War. When he began to look about for employees to staff his cars it occurred to him that what he needed was a subservient-type of person. That led him to former slaves and the children of slaves, people accustomed to taking orders without question. According to author, Larry Tye in his book "Rising From the Rails", and put quite simply—George Pullman was a racist.

And so, hundreds of negro Pullman porters were soon criss-crossing America aboard Pullman's fleet of railcars. Talk about "unintended consequences", here was an extraordinary example. Think for a moment about the life-style to which these early Pullman employees were accustomed, some not that far removed from slavery, younger ones the children of slaves, all of whom lived lives of deprivation. And now, as employees of the Pullman Corporation they are traveling aboard upscale railroad equipment and being exposed on a regular basis to well-educated, affluent travelers. A small example; travelers would often leave behind their newspapers and magazines upon arrival at their destinations.

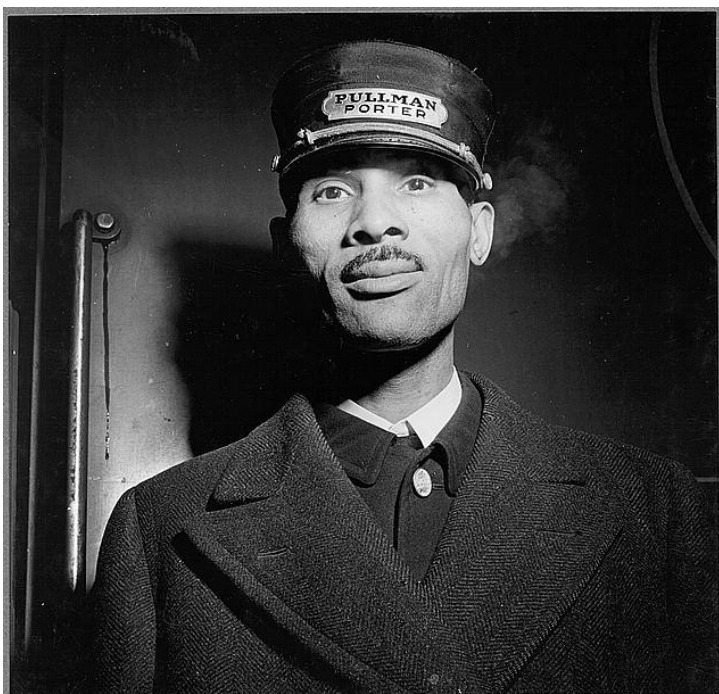
These were picked up by the Pullman workers and read, opening up their minds to very new and different ideas and possibilities.

While George Pullman saw his employees as a sub-standard class of people, not so in within black society. Pullman porters were becoming viewed as the new, black middle class. They were well-traveled, becoming better informed and exposed in somewhat

intimate circumstances to a very different type of person. This led to an amazing level of respect given to the Pullman porter, much to the surprise of one George Pullman.

And out of this group of workers came a new and powerful shift in American society. The children of Pullman porters had new opportunities never before dreamed of in black society. Out of this group came the likes of Justice

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## Funding Gen Set Locomotives without Uncle's Help

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adhesion. Ice is just like wet rails, slippery! Just like on ice, locomotives use sand for traction, except that sand on rails is used more judiciously or it will increase the rolling friction of the train. On the Gen Set Locomotives the adhesion control system does not unload the generators to reduce wheel slip as was the common method in older locomotives. The computer modulates the power to unload just the traction motor that has a wheel slip and then only enough to keep the wheel from slipping. In reality all of the wheels are providing power to the locomotive but at different levels. This power modulation commonly called a Chopper system effectively allows Gen Set Locomotives to out perform similar horsepower rated locomotives under the same conditions.

Who will be using all these locomotives? Class One Railroad, Regionals, Shortlines and Industries have approximately 23,000, 4 axle locomotives in their fleets that range in age from the late 1940's up thru the 1980's. While a large number of the locomotives held by the Class One and Regional's railroads have been rebuilt and modernized over the years these locomotives will either need to be replaced or repowered to meet increasingly stringent EPA regulations. These are the good credits that usually buy in quantity. Large industrial users generally fall in the good credit category but tend to buy units in small quantities. The largest category of potential buyer is the shortline railroads. They generally have the oldest of the old locomotives. Shortlines range from the mega shortline holding company with good credit and a potential appetite for larger numbers of locomotives to the struggling operator who can only see a new locomotive in their dreams. In between the two extremes are shortlines that may operate several disconnected railroad properties all with a need for multiple numbers of locomotives including spares. What most of these shortlines have in common is they have been at it for a long time, have turned cast off rail properties into going concerns with a lot of future upside potential that is in the process of happening right now. Many of these small railroads are family run businesses that have as many as three generations involved. They may be credit challenged.

Where will the locomotive deals come from? In many instances a railroad will come to a Big George's used locomotive showroom and service center to price out repairs to an existing locomotive they have. After they recover from the sticker shock of repairing their existing unit, they are usually very interested in locomotives that might be available. Available qualified units can range from just under \$200,000 to well over \$500,000. This is a long way from the cost of a Gen Set locomotive. It is also just another older locomotive that is a short term solution.

How can both the financier and the railroad get to the magic number that will make a Gen Set Locomotive deal work? Each railroad is different but several cost items are the same across the board, labor, fuel and reduction of locomotives needed based on higher adhesion and decrease in need for spare locomotives. A new Gen Set locomotive is likely to

require less maintenance and reduction in maintenance force and related costs can be compelling.

A Gen Set Locomotive Builder supplied the following based on test data from 19 Beta Test locations on Class One Railroads, Shortlines and Industries using 2 and 3 Gen Set Locomotives with tests running from 14 to 180 days. The operational Fuel Savings Estimates based on the tests ranged from a low of 40% to a high of 67%. Plug those percentages into your current fuel bill with a factor for being conservative and you still see a very large dollar savings in fuel cost. Not having to pull up to the pump so often is a savings in time and increase in potential availability for productive work. In test service using three Gen Set equipped locomotives in Class One Railroad operations, the locomotives ran for close to 94% of the time needing just one 700 horsepower Gen Set running. The Gen Set locomotive shines in the variable duty cycle that is a fact of life in most rail operations and this ability to operate with minimal power translates into real and measurable fuel savings. The available Gen Sets all have cooling systems that are based on ethylene glycol and can be shut down for prolonged periods without freeze issues. Not running an engine just to keep it warm saves both fuel and maintenance expenses.

Additional justifications might be related to bringing down the cost of the new gen set locomotive. The increased adhesion available from the gen set locomotives actually allows a smaller lower powered locomotive to pull a load equal to or greater than a higher horsepower older locomotive. So maybe instead of a three Gen Set unit your railroad can get equal or better performance from a smaller less costly 2 or single Gen set unit. Other ways of reducing the cost may be related to a trade in unit, or the railroad supplying rebuilt trucks and traction motors that they rebuilt themselves. Since the computer controls which gen set starts based on the unit with the lowest hours, maybe a mix of one new Gen Set and using a trade in or two Gen Set with midrange hours in the locomotive could make a Gen Set locomotive more affordable.

At the end of the day you have a willing buyer and seller looking for financing. No matter how much smoke and mirrors are used to come up with a term and lease rate that works you still have to get past the ultimate challenge, the credit committee.

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**BIGGS APPRAISAL**

PROVIDING VALUATION AND TRANSPORTATION SERVICES TO THE RAIL INDUSTRY

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## RAILROAD HISTORY AND AMERICAN CIVIL RIGHTS

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Thurgood Marshall, the mayors of San Francisco, Los Angeles and Denver, Benjamin Mays, president of Morehouse College and Roy Wilkins, president of the NAACP. Leroy Ritchie, Jr. was a director of the Federal Trade Commission, going on to become Vice-President and General Counsel of Chrysler Corporation. Ritchie is quick to credit his father's work as a Pullman porter with giving him the life-skills that shaped who he became. He relates that his father quickly learned what it took to become a very successful Pullman porter who came to love his job. He passed

on the inter-personal skills he acquired to young Leroy, Jr. and that helped him become successful.

More details about this important story can be found in a very comprehensive study of this subject in the earlier referenced book by Larry Tye entitled "Rising From the Rails".

Dick Hillman is a curator at the Southern Museum of Civil War and Locomotive History, located in Kennesaw, Georgia. This museum is home to the famous locomotive "The General" and the collection of the Glover Machine Works that built steam locomotives. Not far off I75 the Museum is a must see if your traveling through Atlanta. This article was prompted by a recent museum exhibit.

## Funding Gen Set Locomotives without Uncle's Help

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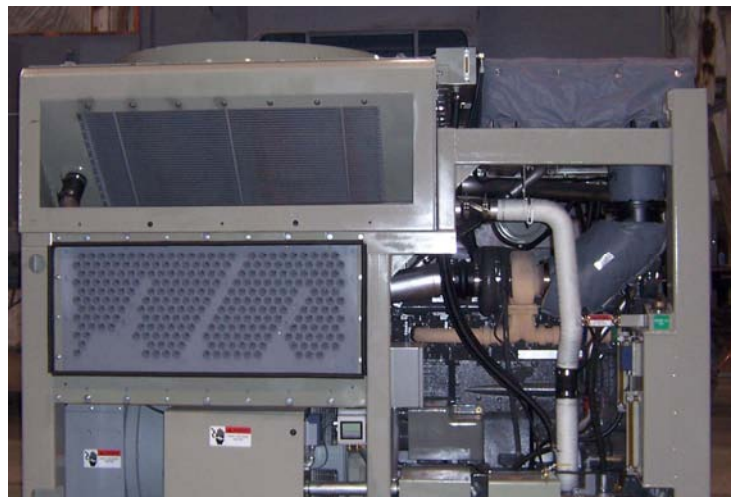
Can Loan Insurance Remove Credit Risk? Yes! How would Loan Insurance be funded? A widely accepted program to mitigate credit risk should be handled internally by the rail industry. Who will fund it? Who has a vested interest in the connection, performance and benefits that the shortline brings to the Class One in the origins and destinations it has? Their Class one railroads overall performance is related to how the shipment is handled by both the Class One and the railroads that participate in the move. A weak link in the performance chain caused degradation of service and has an impact on Wall Streets perception of how that Class One is doing. The Class One should be a willing participant? The financier has a vested interest in seeing the deal work and also should be a willing participant? In some way the shortline should also be a participant. The locomotive builder also has a vested interest in making this work. As this is an insurance product it could be managed by the Insurance Industry with oversight by railroad organizations.

What a concept, an industry wide effort to exceed environmental improvement expectations without a government mandate.

Men of action can bring this concept to reality in short order. You do not need to live in a major metropolitan area to want to breathe clean air. It is easy to talk the green talk, it is quite another thing to walk the green walk. We would all breath easier if we walked more and talked less.

Entering into the locomotive arena is not for the faint of heart. Built into your lease and budget should be the provision for periodic

inspection of the locomotives be it Gen Set or Conventional power to make sure that the unit is being maintained properly to the manufactures standards. Gen Sets are a very good locomotive product whose time has come. There are small cadres of Gen Set Locomotive builders that can offer interesting alternative financial opportunities.



*The Heart of a Gen Set is a quick change palletized unit that can be removed and replaced in about 8 hours.*