REPORT OF SOCIETY MEETING

AN INNOVATIVE PIONEER IN PUBLIC TRANSPORT

by James Greller

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A report of the LURS meeting at All Souls Club House on Tuesday 12 April 2016

James began by telling the meeting that his early career was in the motion picture industry but that at 45 he decided on a career change and to write books on and magazine articles on New York's subway system which had fascinated him as a child. He decided to write books on the Brooklyn Rapid Transport Co. (BRT) and the Brooklyn-Manhattan Transit Co. (BMT), subjects which had not had much coverage previously. James then gave the meeting the history of the subway system.

At the turn of the century New York had the streetcar lines and the elevated lines. The streetcar lines were slow and the elevated lines, being steam, were problematical in a metropolitan area. In 1904 the subway arrived and James showed an image of a standard Interborough Rapid Transit Co. (IRT) subway entrance. The IRT was founded by August Belmont Jr. and was built with much foresight as a four track main line. The first cars were referred to as composites and were made of wood and metal. They had copper sides and two hand operated doors. Two cars needed a motorman and a conductor, two cars a motorman and two conductors and so on. The operation of the cars was very labour intensive but this wasn't a problem in 1904. Several hundred of the cars were ordered which were pretty much a standard railway car with standard roofs and under floor bracing. An image was shown of the first IRT cars. A man had to open the two doors and there were another two doors that you opened to enter the car. They were expecting people to board and leave the cars in a leisurely and patient manner but on opening day this was not the case. People came in their thousands and just pushed their way onto the trains.

Following a big accident in Paris in 1903 when they had a fire in their wooden cars, the IRT got very nervous, and in 1904 turned to the Pennsylvania Railroad to build a prototype steel car which was the first steel passenger car in the US. About 1904/05 the order went out to the American Car and Foundry Co. (ACF), to build a steel car which was a duplicate of the wooden cars with hand operated doors.

When the subway opened it was obvious that Augustus Belmont had a very good thing with a profitable business. So they went to the BRT which was isolated in Brooklyn. Brooklyn was then a city in its own right before it was swallowed up by New York City. The BRT had a large trolley fleet of 2,000-3,000 cars on about 80 lines and they were insulated from the wolves of Wall Street. J.P. Morgan looked at the BRT and said it was the perfect candidate and we can connect it to some of the IRT railroad lines that go to Coney Island. When the IRT opened the first leg of the subway went to City Hall and the second to Brooklyn. When the IRT reached Brooklyn the BRT knew it was going to have to do something. So they built a subway but two terrible things happened to the BRT. Red Mike Hylan, was a motorman on the BRT and unfortunately he was studying his law books whilst driving and was involved in an accident with the superintendent. He was fired. He later became mayor of New York City. This was not good publicity for the BRT. Secondly they had the Malbone Street wreck which is still the worst rail accident ever in New York City – 98 people were killed. The train went too fast into the tunnel at Franklin Avenue. The first car jumped the track and the second car went through the first. The other cars collapsed as they were made of wood. The major tragedy occurred when they shut the power off and were getting people out of the wreckage. Somebody turned the power back on and electrocuted some of the survivors. Within that day the BRT went bankrupt. It was restructured and released from bankruptcy as the BMT.

The BMT wanted to enter the subway business. The BMT already had 900 elevated cars but calculated they would need 1,500 subway cars like the IRT. They looked at the IRT with their 50 feet long and 9 feet wide cars but said they were too short and too narrow. The BMT decided to have bigger cars, 67 feet long and 10 feet wide. They hired Lewis Stillwell who had worked on the first IRT car and had also built cars for the Hudson and Manhattan (H&M) railroad to Jersey. He said that if the cars had steel under floors they would be too heavy for the Manhattan and Williamsburg bridges. The cars needed to be made very light so instead of a centre sill the whole car itself became a structural box. He convinced the engineers and the city that with this type of larger, lighter design they would only need

to order 900 cars. The IRT had found that the one door at each end arrangement did not work so the BMT incorporated centre doors in their new car. The floor plan of the cars had a very suburban look to it, very commodious with room to move around. The cars had large windows with collapsible barriers at the ends so people didn't fall between the cars. Also new to the BMT cars was the H2C coupler. The old IRT cars had to go into the yard to be coupled manually with pin and hook. Also the electrical cables had to be attached and the chains that prevented people falling between the cars. This was dangerous work. The BMT didn't want any of that. The H2C coupler enabled the motorman to couple and lock the train from the cab. Also when he changed direction the white/red lights on the end cars changed automatically. The doors were also opened electrically, no more hand operated doors. Because the new cars were 67 feet long they separated on sharp curves so the inter car doors were locked and pneumatically controlled. The cars had a new deck roof like a monitor roof with a nice rounded shape. Stillwell used the arch windows from the H&M cars which became a trademark for every BMT car built after that. Several images were shown of the bigger cars and their interior. The H2C coupler enabled all the electrics through a six-car train so only one conductor and motorman were required. The Westinghouse H2C coupler is still in use to this day. The trucks (bogies) were an arch bar type. The cars also had auto self-balancing for weight distribution. So whether lightly loaded or full all the cars were at the same level. The interior of the car had a nice monitor roof. These cars were known as the BMT Standards until the next order of cars was placed. The ordered about 2,800 of this type of car with minor variations. The BMT was very concerned about seating. Extra seats could be pulled down in front of the doors and this would lock the door automatically. Fans were installed and five or six types of lighting were trialled. Finally they went for globes. James showed an image of a museum car with concrete floor. In the 1910s automatic announcements were trialled but not proceeded with. The motorman stood whilst driving and James showed an image of the controls. The BMT cars were underpowered leading to a derogatory nickname of 'Barely Moving Trains', however they were used all over the system. Later the BMT took the A units and made them into three-car trains, semi permanently coupled together, called E types. Then they bought 100 trailers put them between two A cars and called them EX types.

William Menden and William Gould, who ran the subway system, were avid readers of engineering publications. They looked at articulated cars in London and noted that this articulation was very successful. They realised that articulation would save on trucks weighing two tons apiece. So they designed three-section articulated trains called D types or Triplexes. James showed an image of a Triplex built by the Pressed Steel Co. in Pittsburgh. Pressed Steel had built some of the Standards along with ACF. The D types also had automatic destination change when the direction of travel reversed. They built over 130 of these D types. They used roller signs never metal. James showed an image of the articulation which enabled the passengers to walk between the cars. These became the standard express cars for the Beach Line. An image of the interior showed the deck roof with ventilators and fans. The cars ran until the 1970s. An image was shown of a Triplex on the Brighton Line. The BMT were very pleased with their subway cars and their success with the public.

Then the BMT's thoughts turned to the Elevated Lines. The City was pushing to buy the BMT and the IRT and thought they, the City, would be much more efficient at running the systems than private companies. The City, in 1925, because of Red Mike Hylan, designed a subway system that went to all the busy areas of New York – The Bronx, Manhattan, Brooklyn etc. A slide was shown of the R1 cars they ordered. These were basically standard subway cars for the Independent Subway System (IND). They were all A units and over 1,800 of these very basic cars were built. In 1934 the BMT ordered the Green Hornet, a five-section articulated train. An image was shown of a Green Hornet at the Pullman plant, Illinois. The cars were built during the streamline era of American railroads. They were beautiful lightweight aluminium cars. They had diffused lighting down the centre, air conditioning and rode on rubber trucks for a quieter ride. Also the motorman had two door controls for each side of the train. Mirrors would open up on the selected side so the motorman could observe the passengers on the platform. There was an audible warning when the doors were about to close. This meant they could have one man operation. A slide was shown of a Green Hornet going over the Brooklyn Bridge. Not to be outdone by the Pullman Co., in 1934, The Budd Co. built the Little Zephyr. This was a stainless steel, aluminium and Corten steel articulated train. An image was shown of the Little Zephyr. The big problem with this train and the Green Hornet were the trucks, but nevertheless the Zephyr ran until 1957.

In 1936 depression era cars were ordered by the BMT. These five-section articulated cars were made of Corten steel. James showed an image of the cars and the articulation. These trains were fast and rode well on the articulated trucks. When they were out on the Canarsie line they cut 15 minutes off the schedule. Because they were light they were able to be used on the Fulton elevated lines which had structures dating from 1880. The insides of the cars were painted a not very imaginative brown. But they had a lot of problems with the trucks and never really resolved them. Another problem was that they had a habit of not stopping! The motorman would get off the dead man's handle, pull out fuses but it was still racing along! James thought this was 'baloney' but experienced it himself one day when a runaway train was reported to Myrtle Signal Tower which eventually was stopped at Knickerbocker Avenue after passing through several stations. The trains ahead of it were kept moving to avoid an accident. They were replaced by Standards on the Canarsie Line but they were unable to operate a two track line with expresses as these were slower.

Also on 1936 the City ordered 100 PCC cars. The PCC in this car's name comes from the name of a design committee formed in 1929 as the Presidents' Conference Committee. Brooklyn was a test bed for the PCC design. They had some problems with the longer Chicago car but were keen on the idea. They had the surface fleet but wanted to buy another 500 PCC cars. They wanted subway cars that had PCC equipment. They went to the Clark Co. who built the Bluebird. Pictures were shown of a Bluebird in service on the West End Line. The interior of the car was very refined with bullseye lighting, velour seats and mirrors at the end of the car which made them look wider. They also had the Cineston controller with power and brake on one lever. The BMT ordered 50 sets of these but when the City took over in 1940 the undelivered part of the order was cancelled. There was a difference in design between these cars and the IND cars. The BMT was not only interested in passenger efficiency but also passenger comfort. There was picture of the cars being cut up in 1962/63. The trolleys had all gone by 1956.

In 2015 the Transit Authority and railfans organised an open day at Brighton Beach with 100-year-old D and E type trains running.

James concluded his talk by advising the audience that he had written books on New York City subway cars and other subjects. He gave details of his website for purchases to be made – **www.xplorerpress.com** The audience showed their appreciation to James in the usual manner for his very informative talk.

Maurice Motley