

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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KAWASAKI RAIL CAR, INC.

Petitioner

v.

SCOTT BLAIR

Patent Owner

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IPR2017-01036

Patent No. 6,700,602

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**EX. 2006- SUPPLEMENTAL EXPERT DECLARATION OF JACK R. LONG**

I, Jack R. Long, hereby declare the following:

## **I. BACKGROUND AND QUALIFICATIONS**

1. I am over 21 years of age and otherwise competent to make this Declaration. I make this Declaration based on facts and matters within my own knowledge and on information provided to me by others.

2. I have been retained as an expert in this matter by Counsel for Patent Owner Scott Blair to provide my independent opinions on certain issues requested by Counsel for Patent Owner relating to the accompanying petition for *Inter Partes* Review of U.S. Patent No. 6,700,602 ("the '602 Patent"). My compensation in this matter is not based on the substance of the opinions rendered here.

3. I have previously summarized in my original declaration submitted herein (Ex. 2002) my educational background, career history, and other relevant qualifications.

4. I have been working actively in the design engineering industry for more than 35 years.

5. As part of my work in connection with this proceeding, I have reviewed the following materials:

- Patent 6,700,602 (the '602 Patent) including the claims thereof;
- Petition for *Inter Partes* Review of U.S. Patent No. 6,700,602, No. IPR2017-01036 including Exhibits;
- Translation of Japan Train Operation Association Magazine, Vol. 37, Issue No. 3 (March 1, 1995) (Ex. 1003, "JTOA Magazine");
- The translation of Japanese Publication No. 04-085379 (Ex. 1005, "Namikawa");

- The translation of Japanese Publication No. 07-181900 (Ex. 1007, "Miyajima");
- The translation of Japanese Publication No. 04-322579 (Ex. 1011, "Sasao");
- The translation of Japanese Publication No. 04-160991 (Ex. 1009, "Maekawa");
- U.S. Patent No. 5,293,244 to Kawaguchi (Ex. 1022, "Kawaguchi");
- The translation of Japanese Publication No. 02-23985 (Ex. 1021, "Amano");
- U.S. Patent 5,148,282 to Sedighzadeh (Ex. 1025, "Sedighzadeh")
- U.S. Patent 3,211,904 to Schwenkler (Ex. 1026, "Schwenkler")
- The translation of Japanese Publication No. 05-042853 (Ex. 1028, "Yamada")
- The file history of the '602 patent provided in Exhibit 1012;
- The reexamination file history of the '602 patent provided in Exhibit 1013; and
- Decision Instituting *Inter Partes* Review (Paper 10) ("Decision").
- A complete copy of the Proposed FRA rules (Ex. 2004)
- Consumer Product Safety Division Guidelines for Television Receiver Safety (Ex. 2005)

## II. OVERVIEW OF THE '602 PATENT AND THE PRIOR ART

### The '602 Patent

6. The '602 Patent is directed to a video display monitor system that is mounted at fixed intervals at the junction of the sidewall and the ceiling of a subway car. According to certain embodiments, the video monitor system includes an enclosure for the video monitor that is designed to be mounted at the junction of the sidewall and the ceiling in such a manner that

the screen of the video display monitor (or an enclosure or a transparent cover unit for the video display monitor) is substantially flush (or substantially contiguous or flush) with the adjacent surface structure of the wall and oriented obliquely downward towards the subway car's seats. See Ex. 1001, p. 12 at 1:23-44, 1:63-67-2:17, 2:33-46. According to other embodiments, the video display monitors are each enclosed within an enclosure which may be secured to a structural member between an inner wall and an outer structural shell of the subway car. See Ex. 1001, p. 12 at 1:55-1:59, 2:56-60. According to still other embodiments, there may be a back lit panel disposed on the adjacent wall surface structure of the car. See Ex. 1001, p. 12 at 1:51-54, 2:29-31 and 2:53-55. The system also comprises a "video signal source unit" connected to the monitors. The "video signal source unit" consists of pre-recorded material for broadcasting on the screens such as news, advertisements, etc. It can be in the form of video disk players, CD-ROM players, and video tape players (Ex. 1001 at 2:15-42).

### **III. UNDERLYING FINDINGS**

#### **Level of Skill of a Person Having Ordinary Skill In The Art**

7. Based on my education, training, and professional experience in the field of the claimed invention, I am familiar with the level and abilities of a person of ordinary skill in the art at the time of the claimed invention. I do not disagree with the qualifications recited by Petitioner's expert that a person of ordinary skill in the art of the '602 Patent at the time of the claimed invention ("POSITA") would have been a person having the equivalent of a bachelor's degree (*e.g.*, a bachelor's in Aerospace, Industrial or Mechanical Engineering) or a practical experience equivalent to these degrees with at least two years of experience in design of rail cars in order to be capable of understanding the '602 Patent and the prior art references discussed

herein. Additionally, I meet at least these minimum qualifications to be a person having ordinary skill in the art as of the time of the claimed invention of the '602 Patent.

### **Background Information on Subway Cars**

8. Subway tunnels are most commonly constructed by tunnel boring, which creates a substantially circular tunnel by a large tunnel boring machine that has a boring head at the front of the machine and cuts through the ground with material removed being moved to the rear and out of the tunnel on small rail cars that operate on track which has been laid for the boring machine. As the boring progresses, the machine moves forward on new track. In this case, the smaller the diameter of the tunnel, the lesser the cost and time involved.

9. With the tunnel diameter being kept at a minimum for train operation, the cross-section of the cars must be carefully designed in relationship to the tunnel walls. To envision this, one can draw a circle, then draw a square inside the circle, with the corners just touching the inside of the circle. This represents a basic "space envelope." However, the relationship between tunnel walls and car structure requires adequate space between them for the car to be able to move vertically and laterally on its suspension system. So now cut the four corners off of the square to provide this clearance, and you have a rough definition of a space envelope in which the car must be built. The inboard two corners of the top may now be connected with a curved section which stays within the clearance and somewhat defines the shape of the roof.

10. In summary, subway cars may have a rounded portion at the junction of the sidewall and the ceiling to accommodate travel through subway tunnels which are bored by a machine in a round shape and made to be as small as possible to reduce costs.

11. It would be clear to one of ordinary skill in the art that the "junction of the sidewall

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