

Electric Trolley Bus Operator's Manual



4100 Series Gillig Phantom Electric Trolley Bus

4200 Series Breda Electric Trolley Bus



King County

Department of Transportation

Revised August 21, 2007

Table of Contents

Section 1: History	1
Introduction to Electric Trolley Buses	1
Section 2: The Trolley Overhead	2
The Overhead.....	2
Special Work	2
Switches	4
Fahslabend Override Selector.....	5
Section 3: Trolley Operating Procedures	9
Dewirements.....	10
Safety Vests	10
Checking the Trolley Shoes.....	11
Passing Line Trucks	12
Slow Orders.....	13
Safety Stops	13
Spacing Restrictions on Hills.....	14
The Counterbalance	14
Hill Holder Use.....	14
Using the Coach Radio.....	15
Pulling Poles to Avoid Delaying other Service	15
Coach Parking Procedure at the Base	15
Section 4: Emergencies	16
Hot Coach Emergency Procedures.....	16
Power Outages	17
Downed Wire	17
Coach Fire	18
Pushing Trolley Coaches.....	18
Section 5: Electric Trolley Bus Operating Reminders	20
Section 6: Equipment	22
4100 series Gillig Phantom Electric Trolley Bus.....	22
4200 Series Breda Articulated Electric Trolley Bus.....	24
Section 7: Special Work and Switch Diagrams	28
Section 8: How to Jump Trolleys	30
Section 9: Trolley Overhead Maps	34



"I'm afraid glue won't solve your problem,

From: Transit Talk March 1943

Section 1: History

Introduction to Electric Trolley Buses

Development of trackless, externally powered electric vehicles began in the late nineteenth century in Europe. Our nation's first commercial trolley line started in Los Angeles in 1910. By the 1930s the trackless trolley had developed and standardized to the point where they began replacing streetcars at transit properties around the country. The new trolley buses were more versatile, able to load passengers at the curb and quickly negotiate their way through the ever increasing automobile traffic. The terms "trackless trolley", "trolley coach" and "trolley bus" were all used interchangeably to describe the vehicles. The term trackless trolley became obsolete as the need to differentiate them from streetcars vanished with that mode of transportation. Electric trolley bus or ETB has become the accepted modern day terminology.

In 1939 the Seattle Transit System was formed to replace the debt ridden Seattle Municipal Street Railway and quickly began replacing the city's streetcar lines with new trackless trolley buses. The conversion from rails to rubber was completed a year later in 1940. The system ran with few changes until 1963, when the trolley routes in the northend were abandoned to expand bus service with motor buses north of 85th Street.

On January 1, 1973, the Municipality of Metropolitan Seattle (Metro) assumed operation of Seattle and Metropolitan Transit. The new agency's plan to completely rehabilitate and expand the city's trolley bus system began in early 1978, when the scant remains of the trolley system were shut down for restoration. By the fall of 1979 the first set of trolley routes were back in service with a brand-new fleet of 109 AMG electric trolley buses. By the summer of 1981 all of the trolley routes were operational. Forty-six German-built M.A.N. articulated trolley buses were added in 1986 for service on the heavily used Routes 7 and 43.

In 1994 Metro Transit merged its operation with King County government. King County's commitment to clean, quiet, electric transit has continued with:

- The electrification of Route 70 from Downtown Seattle to the University District in 1997
- The extension of the Route 36 overhead wire on Beacon Hill
- The upgrade of the trolley fleet with 40' Gillig trolley coaches (4100 series) and renovated 60' Breda coaches (4200 series)

Quiet and emission free, electric trolley buses have superior acceleration and hill climbing capabilities. They are operated in several other North American cities including San Francisco, Vancouver, BC, Dayton, Philadelphia, Boston, Edmonton, Guadalajara and Mexico City.