

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION

MINIMUM SPECIFICATIONS FOR LEASE OF
SINGLE END STREET CARS

C. D. MILLER
General Manager
Municipal Railway of San Francisco

H. E. LLOYD
Manager and Chief Engineer
Hetch Hetchy Water Supply
Power and Utilities Engineering Bureau

COPY No.

JANUARY 1957

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A - GENERAL REQUIREMENTS

A-1 - General Description

It is required that used or second-hand P.C.C. single end street cars equipped for one man operation be supplied to the City and County of San Francisco, hereinafter called the City. The cars shall each have a seating capacity of not less than 54, and shall conform, in general, to the Transit Research Corporation's "Specifications for P.C.C. Cars," with certain special requirements, exceptions and options as specified hereinafter.

It is desirable that the cars furnished, including their motors and controls, shall all be of identical design and made by the same Manufacturer.

The cars furnished under these specifications shall have been manufactured since January, 1946. They shall have proven satisfactory in actual service, or by adequate tests, and shall be capable of providing safety, dependability, operating economy and attractiveness to passengers, and shall meet with the approval of the City. Each car shall be delivered complete in all details and ready for operation.

A-2 - Inspection, Tests and Approvals.

The City reserves the right to send representatives at its expense to the Property or Plant of the Bidder to inspect cars offered under this proposal. Such operating tests as may be required and deemed by the City necessary for the purpose of evaluating bids shall be made at the expense of the bidder. Approval by the City representatives, based on such inspection and tests at the Bidder's Property or Plant, shall not be understood to be an acceptance of the Bidder's Proposal. Formal acceptance of the proposal will be tendered only by the City's

Purchaser of Supplies on a form certified by the City's Controller.

A-3 - Bidders' Specifications

Each bidder shall furnish with its proposal such specifications and drawings and descriptive information as necessary to show compliance with these specifications. The descriptive information shall include the names of the manufacturers of both cars and equipment and dates the cars were manufactured.

A-4 - Drawings Furnished by Successful Bidder.

The successful bidder shall furnish to the City within two weeks after the award is made two sets of corrected drawings giving (1) outline dimensions and seating arrangements, and (2) power and auxiliary schematic wiring diagrams.

TECHNICAL SPECIFICATIONS

B-1 - General

The street cars furnished under these specifications shall conform basically to the Transit Research Corporation's "Specifications for P.C.C. Cars", Sections 1 to 7 inclusive, which were in effect as of the date of the manufacture of the cars offered, hereinafter referred to as T.R.C. Specifications.

On all pages of the T.R.C. Specifications for "P.C.C. Cars" where the word "Company" is used it shall be construed to mean the City and County of San Francisco.

Certain Special Requirements, Exceptions and Options are as hereinafter specified. In case of any conflict between the T.R.C. Specifications and the Special Requirements, Exceptions and Options specified herein, the latter shall govern.

The cars furnished, aside from normal wear and obsolescence, shall be in good operating condition.

B-2 - Special Requirements, Exceptions and Options

(a) T.R.C. Schedules

(1) All cars shall be supplied according to one or the other of the following schedules:

Schedule 1

Car Body - A-3 - Basic P.C.C. Car Body

Width	9' - 0"
Length (overall)	46' - 5-3/8"
Height	10' - 4"
Weight (approx)	36,000 lbs.
Seating capacity	54 (minimum)
Trucks	B-2 - Clark
Springs	C-2 - Rubber and Steel Combination
Wheels	D-2 - (Carnegie) Super-Resilient 25"
Drum Brakes	E-1 - Electric - General Electric or Equal
Brake Actuators	F-1 - General Electric or Equal
Brakes - Emergency	- Magnetic Track
Brakes - Service	- Dynamic
Trolley Voltage	- 600 DC
Motors	- 4 - 55 HP - 300 V. DC

Schedule 2

Car Body - A-3 - Basic P.C.C. Car Body

Same dimension, weight and seating capacity as Schedule 1.

Trucks - B-3 - St. Louis

Springs - C-3A Rubber and Steel Combination

Wheels - D-3 (Carnegie) Super-resilient - 25"

Schedule 2 (Contd.)

Drum Brakes - Same as Schedule 1				
Brake Actuators	"	"	"	"
Brakes-Emergency	"	"	"	"
Brakes-Service	"	"	"	"
Trolley Voltage	"	"	"	"
Motors	"	"	"	"

- (2) The cars shall be single end, double truck type, arranged for one-man operation with center exit and front entrance doors and shall be constructed and equipped for operation on tracks of gauge 4 ft. 8-1/2 inches.
- (3) The wheel gauge shall be 4 ft. 8-1/4 inches, plus 1/16 inches, minus 0 inches.
- (4) The cars shall be equipped for single unit operation.

(b) Painting of Car Body - (T.R.C. Specs. Sec. 2.05 (a)-(3))

In meeting the painting requirements of these specifications the products of the Dupont Company shall be used. Exterior shall be finished according to a color chart to be furnished by the City. Colors to be used are as follows:

Green	Dupont No. 83-28019
Cream	Dupont No. 83-50145
Black	Dupont No. 83-005

Signs, emblems, and vehicle numbers shall be painted according to patterns which will be furnished by the City. Interior shall be finished as follows:

- (1) Wall surfaces up to the window sill level, including seat frames, stepwells and barrier partitions - Orchard Green, Dupont No. 58-19264.

- (2) From window sill level to and including top molding of advertising car racks - Apple Green, Dupont No. 58-248.
- (3) Ceiling - Cream, Dupont No. 83-50145.
- (4) The side exposures of the trucks shall be finished with Black Freight Car Paint, Dupont No. 25-051.
- (c) Plastic Arm Rests (T.R.C. Spec. Sec. 304) (d)
Plastic arm rests are not required. - Supplier's option.
- (d) Window Guards (T.R.C. Spec. - Sec. 3.06 (1)
Window guards are not required - Supplier's option.
- (e) Window Curtains and Brackets (T.R.C. Specs. Sec. 306 (m) and (o)
Window curtains and brackets are not required - Supplier's option.
- (f) Passenger Seats (T.R.C. Spec. Sec. 3.07).
The cars shall have seats for a minimum of 54 passengers.
Foot rests are not required - Supplier's option.
Cross seats shall be non-reversing.
Seat covering shall be vinyl plastic coated fabric, or equal.
- (g) Doors and Mechanisms (T.R.C. Spec. Sec. 1.07, (308)
Doors shall be provided with electric door operators.
Center doors shall be equipped with sensitive edges and all necessary interlocking devices.
Center door steps shall be provided with treadles - National Pneumatic Company's, or approved equal. Door indicating light shall be provided at the operator's position.

Each front door section shall be independently operable from the operator's position. The center doors shall also be operable from the operator's position, either singly or jointly.

The entrance and exit doors shall be interlocked with the brakes and power control so as to prevent movement of the car with the doors open. Emergency switches shall be provided to permit operation of the car with opened doors in an emergency.

(h) Heating and Ventilation (T.R.C. Spec. Sec. 3.10)

Auxiliary heaters are not required - Supplier's option.

A heater (approximately 2,000 watts) shall be provided at the operator's position.

Overhead fans and roof monitors for pressure ventilation are not required. Intake dampers are not required - Supplier's option.

(i) Storage Battery - (T.R.C. Spec. Sec. 3.11 (c) - (4)

Each car shall be equipped with a 32 volt battery in good operating condition.

(j) Fare Collection Equipment (T.R.C. Spec. 3.12 (g)

Each car shall be equipped with a keystone bracket mounting and a "Johnson Fare Box, Type D", electrically operated, located adjacent to the operator's position.

The farebox shall be capable of registering pennies, nickels, dimes, and 0.650" (Diam.) tokens.

(k) Trolley Base, Trolley Pole and Current Collectors - T.R.C. Spec. Sec. 4.05 (e).

Each car shall be equipped with either two complete

trolley bases, poles, current collectors and catchers or one complete trolley base, pole current collector and catcher and the necessary roof mounting facilities, including rubber mat, for the other.

(l) Lightning Arrestors (T.R.C. Spec. Sec. 4.05 (g))

Lightning arrestors are not required - Supplier's option.

(m) Track Brakes - T.R.C. Spec. Secs. 4.06 (c) and 5.10 (b)

Track brakes are required, and at least fifty percent (50%) of the wearing material of the shoes shall exist.

(n) Back-up Controller - T.R.C. Spec. 4.05 (c) and 4.07 (c)

A back-up controller shall be provided at the rear end of car.

(o) Springs (T.R.C. Spec. Sec. 5.09 (d))

The suspension springs of the cars shall provide for at least the following minimum clearances:

(a) B-2 Trucks

The distance between the center of the spring pot tie bars and the lower surface of the housings with the car empty shall be a minimum of 1-3/4 inches.

(b) B-3 Trucks

The B-3 trucks shall be free of any broken or collapsed springs, and the springs shall be in such condition as will maintain the car body in a substantially level position.

(p) Wheels - (T.R.C. Spec. Sec. 5.12 (d))

The cars shall be equipped with standard 25 inch super-resilient wheels.

The minimum diameter allowable on the wheels is $24\frac{1}{4}$ " inches.

(q) Brake Lining (T.R.C. Spec. Sec. E 1-3, E 2-3 and E 2 A-3

Drum brake lining wear shall not have exceeded fifty percent (50%) of new linings.

(r) Safety Interlock Pedal (T.R.C. Spec. Sec. 4.04 (c)

A safety interlock incorporated in the foot control is required.