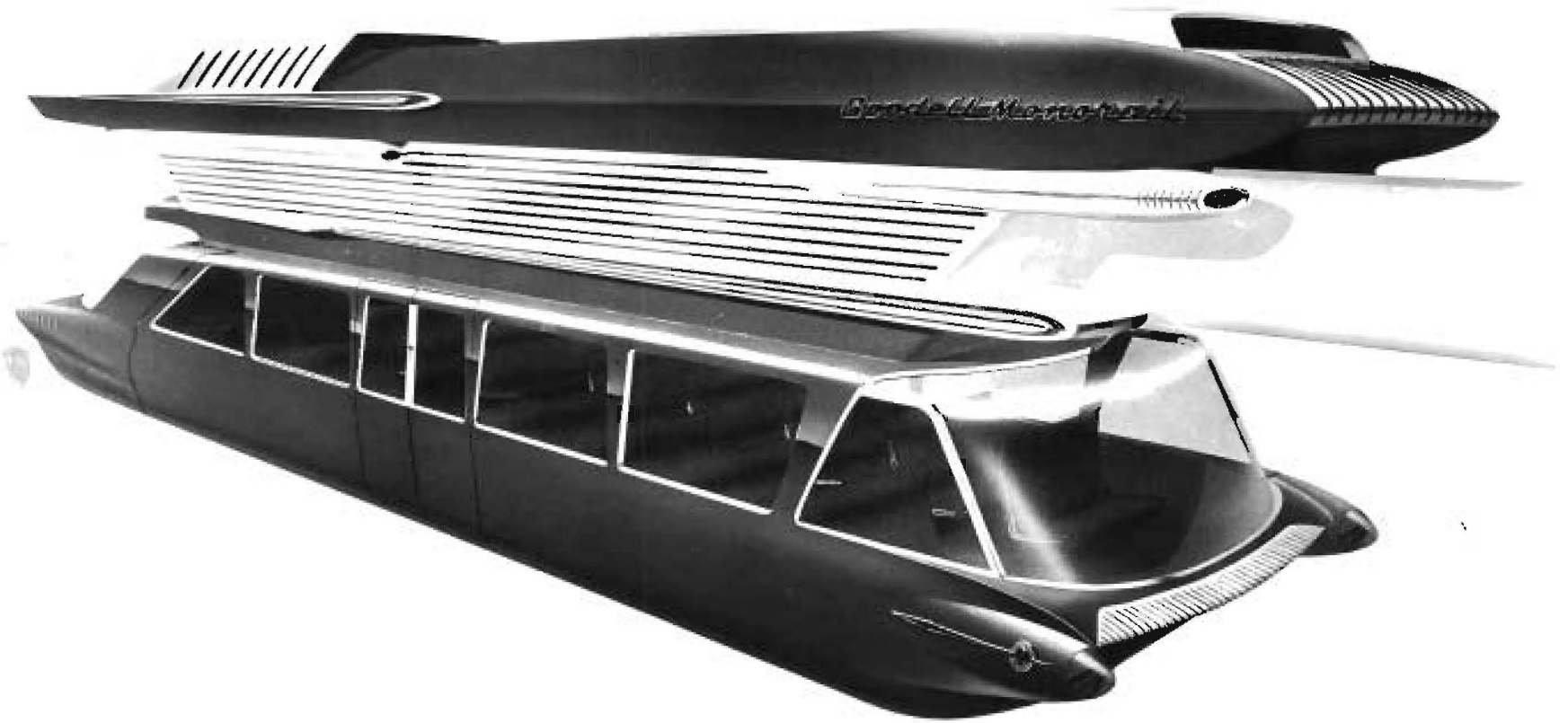


GODELL MONORAIL



BY MITCHELL GOODELL MONORAIL

MONORAIL COACH

Los Angeles Metropolitan
Transit Authority
1060 S. Broadway
Los Angeles 15, California

MONORAIL DATA SHEET

WHAT: A joint proposal to the Metropolitan Transit Authority by Goodell Monorail Systems, Inc. and Paine, Webber, Jackson & Curtis to finance and construct a 90 m.p.h. monorail system between downtown Los Angeles and International Airport.

COST: The proposed line would cost \$40 million to construct. Provision is made in the proposal for additional financing for required site acquisition, if economically feasible.

WHEN: Construction could be completed 18 months from the date MTA completes rights-of-way clearances.

WHERE: The line would run along Century Boulevard from the airport to Harbor Freeway, thence along Harbor Freeway to a downtown terminal at a point designated by MTA.

INTERMEDIATE

STATIONS: The system is designed to serve ultimately the Southwest area, with intermediate stations, for example, at the Coliseum and Sports Arena, Century at the Harbor Freeway, Hollywood Park, Century at Western, and at Crenshaw. The system will be so constructed that these intermediate stations may easily be established as soon as passenger and revenue studies indicate patronage warrants the stations.

WHO: George Cantelo, vice president and general manager of Goodell Monorail Systems, Inc., made the presentation to the MTA board of directors.

Murel Goodell is a mechanical engineer and transit specialist responsible for development of Goodell Monorail over the past several years. Goodell pilot systems have been successfully operated in Texas. The basic system is proven, and has been approved by casualty insurance underwriters for safety.

- h. All applicable insurance, safety and local building codes have been met by the proposed system.

RIGHTS-
OF-WAY

The Metropolitan Transit Authority has the power to operate transit lines over the streets and freeways, but must have the permission of the public body having jurisdiction in order to construct a new system. Before the airport line can be built, the MTA must have right-of-way clearance and the approval from the City and County of Los Angeles, the City of Inglewood, the Los Angeles Airport Commission and the State Division of Highways.

SURVEYS:

Before making the underwriting commitment, Paine, Webber, Jackson & Curtis retained two independent engineering firms to make engineering and financial feasibility surveys of the proposed airport monorail line. Both reports approved the practicability of the project.

OTHER:

The 17-mile-long line would be the longest monorail line in the United States.

Provision would be made for monorail service between the airline terminals at International Airport.

Engineering studies of the proposed line have been under way for more than three years.

MTA executives have been kept fully apprised of the progress of the engineering studies during the development and survey period.

Ernest R. Gerlach, MTA chief engineer, has reported favorably on the feasibility of the proposed monorail line, from an engineering standpoint.

September 4, 1962

Los Angeles Metropolitan Transit Authority
1060 South Broadway
Los Angeles 15, California

Attention: Mr. A. J. Eyraud, Chairman

Gentlemen:

On behalf of Goodell Monorail Systems, Inc. of Los Angeles and its affiliate, Goodell Monorail, Inc., (Goodell Monorail) and on behalf of Paine, Webber, Jackson & Curtis (Paine, Webber), we propose to finance, design, build, erect and equip a two way Goodell Monorail Airport-Type Suspended System from the Los Angeles International Airport to a point adjacent to the Harbor Freeway in downtown Los Angeles to be designated by the Authority.

Background of the Proposal

Early in 1959, Goodell Monorail contacted the Executive Director of the Metropolitan Transit Authority (MTA) to discuss Goodell Monorail's proposal for a mass rapid transit system for Los Angeles.

Since that date, more than three years ago, Murel Goodell and other members of the engineering staff of Goodell Monorail have maintained a close working relationship with MTA staff and committees in a step-by-step development of a system which was being particularly designed for installation in the Los Angeles area.

A subsequent meeting with the MTA Engineering Committee in 1959 developed a number of engineering and operational questions which Goodell Monorail was in the process of answering on November 3, 1959, when your Authority retained the engineering firm of Daniel, Mann, Johnson and Mendenhall (DMJM) as independent Engineering Consultants to the Authority.

The MTA then issued a general invitation to all proponents of mass rapid transit systems to submit their plans for review by the MTA engineers.

Goodell Monorail was among those who responded to the MTA invitation. During October, 1959, it submitted to the Authority specifications for the Goodell equipment, including track construction and automatic control. As a consequence, engineering construction and operational features of the Goodell Monorail system were disclosed. The primary objective of the Authority survey, at that time, was to find the best equipment and system for a high-capacity, mass rapid transit commuter installation, which later became identified as the "MTA BACKBONE ROUTE." During the DMJM review, it became apparent that the Goodell Monorail Airport type equipment was particularly adaptable to a low-capacity, high-speed service, such as that which would be required to serve between the Los Angeles International Airport and downtown Los Angeles. In the two years since that time, Goodell Monorail engineers have, in a careful step-by-step program, developed an attractive light-weight, convenient and fast system to be considered for installation between the airport and downtown Los Angeles.

Since our first meeting in 1959, Goodell Monorail principals have met with the MTA staff on 26 occasions.

On October 24, 1961, Goodell Monorail Systems, Inc. presented to the Engineering Committee of the Authority its engineering report and an independent economic feasibility report by Arthur C. Jenkins & Associates, nationally recognized transit and transportation authority. The Engineering Committee instructed the Authority Chief Engineer and the Executive Director to continue developmental work.

Thereafter we caused a further independent engineering feasibility report to be prepared by John A. Houseman & Associates. This report was filed with and discussed with the Authority's Chief Engineer and staff.

The system has also been declared feasible from an engineering standpoint by the Authority's own Chief Engineer, Mr. Ernest Gerlach.

Recognizing that the Metropolitan Transit Authority Act requires that the Authority "pay its own way," we were aware that any proposal for construction and operation of an airport-type rapid transit system had to include a self-liquidating financing program.

In view of this, Goodell Monorail consulted with Paine, Webber, Jackson & Curtis, one of the country's leading investment and underwriting firms, for the purpose of developing a plan for the independent financing of the proposed system. Jointly, Goodell Monorail and Paine, Webber retained and have paid substantial

amounts to the firm of Arthur C. Jenkins & Associates for the purpose of preparing an independent economic feasibility study of the proposed Goodell Monorail Airport system.

Based upon the gratifying conclusions contained in this report, Paine, Webber determined to form an underwriting syndicate to purchase from the Authority its revenue bonds sufficient in amount to completely finance the proposed system.

Accordingly, the proposal we are making to your Authority today is a joint proposal of Goodell Monorail with respect to the construction of the system and of Paine, Webber with respect to the complete financing thereof. The terms of the financial proposals are a part hereof.

The proposal submitted to you hereby is, therefore, a joint proposal of Goodell Monorail and the firm of Paine, Webber, Jackson & Curtis to finance, build and deliver on a "turn key" basis to the Metropolitan Transit Authority a complete system connecting the International Airport to downtown Los Angeles.

Co-operation of Others

In making this proposal, we recognize that there are other public agencies not only vitally concerned but with particular responsibilities in connection with the right-of-way that would be required for the installation of the proposed system. It is recognized that this project can only be completed with the full co-operation of Metropolitan Transit Authority, the City and County of Los Angeles, the City of Inglewood, the Los Angeles Airport Commission and the State of California Department of Public Works, Division of Highways.

Characteristics of the Proposed System

General

The proposal contemplates a two way airport-type monorail system with cars suspended from "T" shaped columns supporting a monorail on each arm. It is a light-weight, high-speed airport-type transit system designed to meet requirements for safety of operation and passenger capacity.

The Route

The within proposal is based upon an approximate 17 mile route from the Los Angeles International Airport along Century Boulevard to the Harbor Freeway, thence along the edge of the Harbor Freeway right-of-way to a point in downtown Los Angeles adjacent to the Harbor Freeway to be designated by the Authority, or along such alternate route as may be mutually acceptable to the parties.

The Passenger Coaches

The initial system would be comprised of 11 light-weight, fully automated, high-speed, television monitored, heated and air conditioned cars. Each car would accommodate 28 passengers. Nine such cars, each with baggage capacity, will together provide an aggregate maximum normal one way passenger capacity of 400 seated persons per hour. One coach will be designated for standby duty, and one coach is classified as an automatic inter-airline terminal transfer coach available for making a closed circle operation between individual airline passenger terminals.

Noise

The noise level inside and outside the Goodell Monorail coaches is no greater than that of most modern passenger elevators manufactured today.

Air Conditioning

Each coach will be equipped with 8 ton capacity air conditioning to maintain air at 75° f.d.b. with 50% relative humidity when outside air is 95° f.d.b. and 78° f.w.b.

Heating

The heating system for each coach is capable of 100,000 BTU/hr., which will maintain 75° F. car temperature when outside air temperature is 0° F.

Background Music

Each coach will be equipped with high fidelity background music for passenger enjoyment.

Baggage

There will be built in each car quickly detachable porter-operated mobile baggage pods for airmail and packages.

Propulsion

In recognition of the possible air contamination problem, the system will provide for electric propulsion - each car equipped with four 100 h.p. traction motors and dynamic braking. The system shall be designed for 600V DC transmission operation. Included in this proposal are seven 750 k.w. silicon diode rectifier substation units with the capacity to maintain operation of 22 coaches.

Body and Hanger Arm Design

The traction chassis unit and hanger arm are of high alloy grade cast aluminum design. The coach is of aircraft type construction. Door operation will be comparable to full automatic modern elevator doors.

Columns

Rails and Columns. Rails and columns are of streamlined design, fabricated from A-36 grade welded steel.

Foundations. Each foundation is particularly designed to suit local conditions and generally wherever possible sonic driven piling clusters.

Operations

Speed. Each coach is designed for normal operating speeds of approximately 90 miles per hour on level and tangent track.

Acceleration. Designed for 4 MPH/SEC at maximum load and normal track conditions.

Deceleration. Designed for normal rate of 3.0 MPH/SEC and an emergency rate of 5.9 MPH/SEC.

Car Coupling. Cars may be operated independently or in tandem as determined by traffic requirements.

Automation. All coach operation will normally be in a predetermined circle as to acceleration, normal running time, deceleration, station stops and loading. The central station operator who will observe coach pattern through television equipment will regulate headway time, seat capacity per car and electrically place into system operation additional coaches from storage yard rail parking track.

Safety

The fully automated system provides independent check and double check circuits for Fail-Safe operation. In addition, closed circuit television monitoring permits the Chief Operator to override automatic controls if necessary.

Technical Requirements

The proposed system has been designed to conform to applicable codes, insurance requirements, safety requirements and other local requirements relative to operations, detailed data respecting which are already in the Authority's files.

Terminals

Passenger loading facilities of functional and aesthetic design would be provided at the airport and at a location adjacent to the Harbor Freeway in downtown Los Angeles.

Cost of the Proposed System

It is proposed that the system shall be delivered and the financing paid for at a price of approximately Forty Million Dollars (\$40,000,000.00) subject to appropriate adjustments depending upon (1) the final route and the location, type and cost of terminal points and station facilities as determined by the Authority, (2) the initial number of cars, and (3) certain other engineering decisions with respect to alternate equipment and facilities.

The Contract

The proposal contemplates that a definitive construction contract will be executed between the Authority and Goodell Monorail Systems, Inc. to build an Airport Type Monorail system having the

characteristics set forth above along the route and at the cost specified. The proposal further contemplates that on completion the system will be fully equipped and ready for regular and full operation - in others words, a "turn key" job.

Completion Time

It is proposed that the foregoing system will be completed within 18 months from the date on which the Authority has provided rights-of-way and all other rights pertaining thereto and following the execution of a definitive construction contract and bond indenture providing for the financing of the system. Work under the contract shall be commenced and we shall proceed therewith with due diligence promptly following the execution of the contract and upon delivery of proper completion bonds.

Progress payments shall be made on the contract price in accordance with a schedule satisfactory to the Authority and to the undersigned.

Financing

Paine, Webber, hereby proposes with respect to the matters relating to financing of the project contemplated within this joint proposal of Goodell Monorail and Paine, Webber as follows:

A. Paine, Webber proposes to form an underwriting group to enter into a definitive underwriting agreement (hereinafter referred to as "the" or "said Underwriting Agreement") in form and substance to be mutually satisfactory to the MTA and Paine, Webber which will provide for the purchase by Paine, Webber and the underwriting group from the MTA of revenue bonds to be financed from the

operation of the airport-type monorail system herein described in the approximate aggregate principal sum of Forty Million Dollars (\$40,000,000.00); and

B. Paine, Webber further proposes that the bond proceeds hereinabove mentioned will provide the funds necessary for the following:

(1) The construction and completion of the airport-type monorail system described in this joint proposal, including all necessary and incidental facilities such as coaches, automation equipment, etc., so as to cause the entire system to be delivered to Authority in a complete and operable condition;

(2) The construction and completion of the terminal facilities at both ends of the system to the extent that said facilities are described in the construction proposal and feasibility reports herein contained or referred to;

(3) The funding of monies sufficient to meet the interest requirements of the bonds for a suitable period of time covering the period of construction and early period of operation of the system;

(4) All financing costs including printing of the bonds and Official Statement respecting their sale and issuance, legal opinions respecting the validity of the issuance of the bonds, and bond discount;

(5) All incidental costs related to the construction of the facilities hereinabove referred to,

including engineering, legal, financial, incidentals and contingencies; and

C. Paine, Webber acknowledges that it may be necessary in order to assure the construction and operation of the airport-type monorail system for the Authority to acquire certain incidental rights-of-way and a terminal site in the downtown Los Angeles area and the existing franchise permitting the operation of the airport service bus system now operating between the airport and downtown Los Angeles. In this regard, Paine, Webber further proposes that in order to provide such additional funds as may be reasonably required for these purposes the aggregate principal sum of the revenue bonds herein mentioned may be increased to the extent economically feasible so as to exceed the aforementioned sum of Forty Million Dollars (\$40,000,000.00); and

D. Paine, Webber further proposes that the Underwriting Agreement and/or the terms of the bond indenture shall, among other things, provide for the following to the mutual satisfaction of Paine, Webber and the Authority:

(1) Adequate provision will be made so that the total gross revenues obtained from the operation of the airport-type monorail system shall be applied to the servicing and safeguarding of the underwriting;

(2) All matters relating to the authority to enter into and execute the Underwriting Agreement, as well as to the form and substance of the issuance by the Authority of such revenue bonds, shall be subject to the mutual approval of Paine, Webber's and the

Authority's counsel;

(3) All terms relating to the bond issue and more specifically those defining the maturity schedule, price, rate of interest, the proper segregation of funds (as hereinbelow more specifically described), and terms of call and/or tender;

(4) The segregation of the gross receipts received from the operation of the airport-type monorail system into such funds as may be reasonably necessary and required under the circumstances. Examples of the funds herein referred to would be:

- (a) Construction Fund;
- (b) Revenue Fund;
- (c) Operation Fund;
- (d) Interest Fund;
- (e) Bond Retirement Fund;
- (f) Sinking Fund;
- (g) Bond Reserve Fund;
- (h) Depreciation Reserve Fund;
- (i) General Fund; and

E. Paine, Webber further proposes that the revenue bonds herein described shall be authorized by the Authority pursuant to proceedings as may be reasonably necessary so as to enable the Authority to issue and sell such bonds separate and distinct from proceedings heretofore taken with respect to the bonds of the Authority presently outstanding. It is further proposed that the

MTA's revenues from its existing surface system should not be obligated in any way to service the bonds sold for the purpose of paying for the cost of the Goodell Monorail Airport-Type system as herein described. If it is decided by bond counsel that the financing cannot be done under a separate indenture because of the terms of the indenture on the outstanding bonds or for other legal reasons, Paine, Webber proposes that the outstanding bonds be refunded and a new indenture written that would allow either of the following: (a) separate financing of the airport-type monorail system; or (b) that the financing for the airport-type monorail system be included in the single indenture of the refunding bonds. Whether the airport-type monorail system is financed under a separate indenture or combined with the refunding bonds must be determined to the mutual satisfaction of the Authority and Paine, Webber.

Early Acceptance

We recognize that between the time of your acceptance of this proposal and the execution of the definitive contracts, action by you with other public authorities, particularly with reference to rights-of-way, is essential. To the end that this important project may be quickly brought to fruition, we urge your prompt consideration of our proposal and respectfully request that the same be acted upon at your next regularly scheduled meeting.

Upon your acceptance of the foregoing proposal, we will proceed promptly with you to the drafting and completion of the

definitive terms of the necessary contracts specifying all details within the scope of this proposal, the terms of which contracts shall be acceptable to our respective counsel.

Very truly yours,

GOODELL MONORAIL SYSTEMS, INC.

By _____
William L. Hoyt
President

PAINE, WEBBER, JACKSON & CURTIS

By _____
Stevens Manning
General Partner

ACCEPTED:

LOS ANGELES METROPOLITAN TRANSIT AUTHORITY

By _____

Paine, Webber, Jackson & Curtis is one of the nation's leading investment and underwriting firms.

BONDS: Under the proposal, Paine, Webber would purchase MTA revenue bonds in the amount of \$40 million or more to finance construction of the airport line. The completed system, to be built by Goodell Monorail, would be turned over to MTA on a ready-to-operate basis. System revenues would be earmarked to amortize the bond issue. (The monorail system would be an entity separate from the MTA's present surface lines.)

SYSTEM: The Goodell Monorail System highlights:

- a. Wholly automated, the 28-passenger cars would be air conditioned, travel 90 m.p.h. under control of an operator at a central control panel, deliver passengers from downtown to the airport in 12 minutes.
- b. The lightweight cars would run suspended from a rail supported by steel T-columns. The entire line would be double-tracked.
- c. The noise level inside and outside the cars is no greater than a modern passenger elevator.
- d. Detachable baggage pods on each car would carry passenger luggage for quick handling by terminal porters.
- e. With nine cars in operation, 400 passengers an hour could be delivered to the airport, and 400 an hour carried to the downtown terminal.
- f. Each car would be propelled by four 100 h.p. electric traction motors, operating on DC current. Seven 750 k.w. silicon diode rectifier substations along the route would provide power.
- g. The entire system would be monitored at the central control panel by closed circuit TV, with each car constantly in sight of the operator. An independent "fail safe" system would supplement other automatic safety devices.

LOS ANGELES METROPOLITAN TRANSIT AUTHORITY
ROUTE OF PROPOSED AIRPORT MONORAIL
10 SEPTEMBER 1962

