

Transportation--A Civic Problem

Everyone concedes the need for a solution to Los Angeles' ornery transportation problem. Then why such bungling and delay? Here are the facts — and the hope for the future.

by MARTIN WEBSTER

UP through the streets and vacant lots of Los Angeles, through back yards, and plots from which houses have been moved by trucks, threads the Hollywood Freeway project (see above). This \$25,000,000 highway will be more than 96 feet wide and will accommodate eight lanes for vehicular traffic. Construction is proceeding apace. But the highway has a center strip too narrow for conventional rail traffic; instead there is provision for bus turn-outs.

This simple statement represents a bitter conflict which has been developing in Los Angeles for a number of years — and which is very little nearer solution now than it was ten years ago.

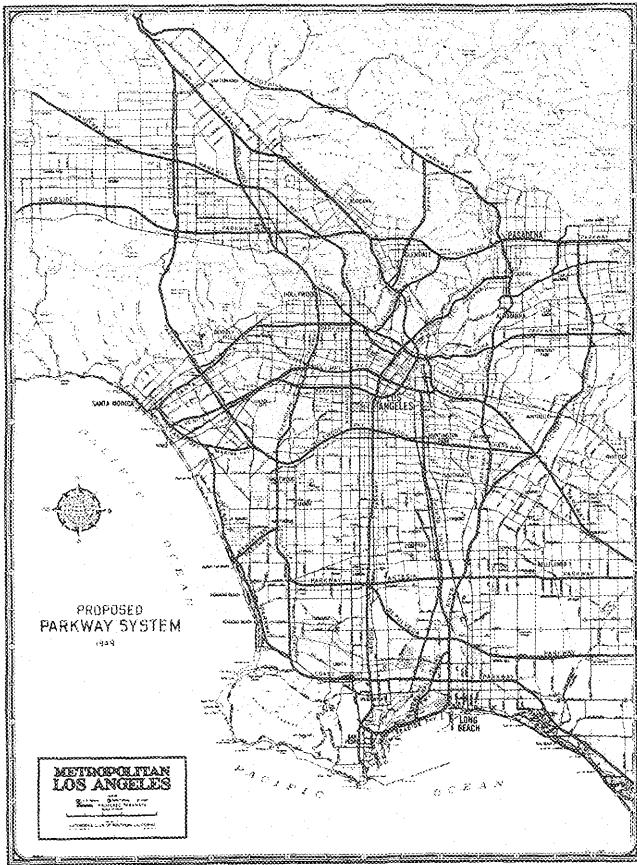
An ever increasing population in the Los Angeles area has created a transportation problem without parallel. The problem stems from the growing number of people living on the periphery of metropolitan Los An-

geles who commute to the downtown area. There are more than 2,000,000 people living within the city limits today—more than 4,000,000 in the metropolitan area. Estimates put the 1970 Los Angeles population at 6,000,000 and automobile registrations at 3,000,000.

Super-highways alone will not solve the problem. Additional automobiles or busses can only add to the traffic in the downtown area. And even so, completion of the 613 miles of projected freeway is estimated for no earlier than 1960.

These facts are pretty well conceded. The total solution of Los Angeles' transportation problem consists of freeways—*plus*. Determination of this plus factor has been — and still is — marked by conflicting theories, disputes and delays.

For 24 years, studies made in Los Angeles have recommended rail rapid transit installation as the in-



The Los Angeles area will be shot through with super-highways when proposed plans are carried out, as in the parkway map at the left. But super-highways alone are not going to solve Los Angeles' transportation problem.

In February, 1948, with startling suddenness, RTAG announced its plan. It proposed State legislation creating a county rapid transit authority which would vote \$310,000,000 of bonds. The money raised would be used to construct nine miles of subway beneath the downtown business district, and a surface rail rapid transit system running in the center of projected freeways. Operation of the system would be by a private utility. If the Los Angeles City Council approved the plan, Governor Warren would call a special session of the legislature.

But one member of the Council balked at the requirement of operation by a private utility, and the approval theretofore considered routine was withheld. This gave time for more study of the RTAG plan by neighboring cities, and opportunity for more loudly-voiced complaints. One indication of the quality of the plan was the revelation that its proposed freeway from Los Angeles to San Pedro might ruin three hospitals. It would pass within seven feet of the Orthopaedic Hospital, cutting off its entrance; it would go through the Nurses' Home of the California Hospital; and it would swing within a few feet of the Methodist Hospital.

The problem takes time and study

Even the RTAG realized the need for more time and study. It recommended passage of a bill through the State legislature which would set up a "metropolitan rapid transit district" to study the problem. Such a bill was introduced in the Legislature in January, 1949, this time with provision for public operation. Passage was reasonably assured, and the bill was referred to the Los Angeles City Council for endorsement. But again this unpredictable body turned thumbs down, and the legislation died.

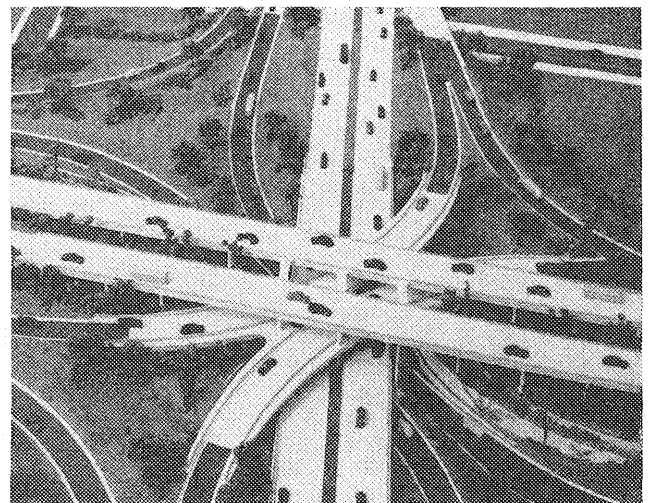
The transportation muddle can be brought up to date with notice of a recent \$300,000 appropriation by the Los Angeles County Board of Supervisors for a survey of rapid transit needs in the county.

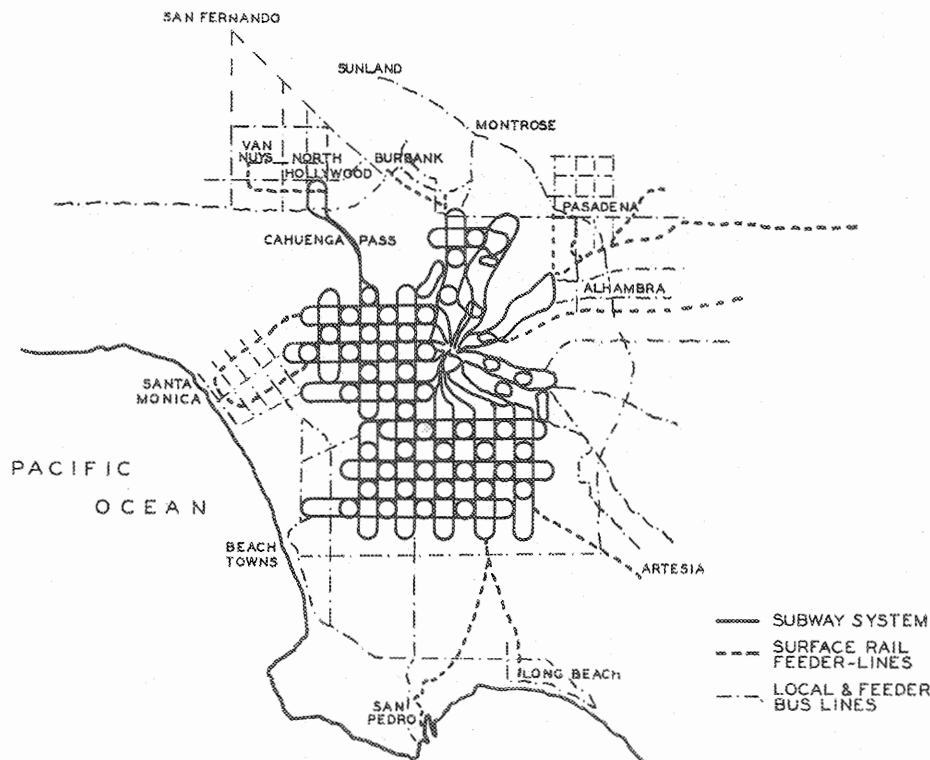
How can all of this be explained? Everyone concedes the need of a solution to the problem; why such bung-

gradient which, supplementing freeways, would produce a well-balanced transportation system. The present interurban rail transportation system in metropolitan Los Angeles consists of tracks running without real rights of way (except in one or two isolated instances, such as the double track rail line in the center of the expressway through Cahuenga Pass in North Hollywood). For the most part, interurban tracks run at street level. The trains are delayed by vehicular and pedestrian traffic, by traffic signals, by intersecting streets and grade crossings. The equipment is largely deteriorated; 44 cars bought between 1907 and 1913 are still in use. Since 1916, the company operating the interurban rail system has had only five profit years, four of them during wartime. Its president recently stated, "We do not propose to subsidize the public by further continuing our losses." The result has been a long-threatened breakdown in interurban rail travel. This breakdown and anticipated population increases prompted the recommendation, made as long as 24 years ago, that a real rail rapid transit system be created.

In September, 1947, a subcommittee of the Los Angeles Chamber of Commerce, known as the Rapid Transportation Action Group, was formed to breathe life into the search for a total solution to Los Angeles' problem. This subcommittee, dubbed RTAG, has made headlines ever since its appointment. The extent of its actual progress has been a good deal less newsworthy however.

When three parkways meet it takes a four-level construction to unscramble them. This model shows the four-level intersection of the Hollywood, Harbor and Arroyo Seco Parkways in Los Angeles; it can be seen under actual construction in the foreground of the picture on page 11.





Engineer Henry A. Babcock's proposed mass transportation system for Los Angeles includes a subway system for highly-populated areas, with bus and surface rail systems serving as feeder lines in outlying districts.

ling and delay? The answer would appear to be the lack of a well-engineered plan, and the existence of a number of competing and overlapping factions:

(1) The "bus group." It maintains that freeways with provision for automobile and bus traffic are the only solution to the problem. This group has been said to be led by the Pacific Electric interests, which—faring badly on passenger rail transportation and well on buses—are anxious for a universal switchover to busses.

(2) The "rail group." It claims that busses merely aggravate the problem in metropolitan Los Angeles, and advocates instead the use of the center strip of freeways for rapid rail transportation feeding out of a subway network under Los Angeles.

(3) The "subway group." It conceives of the subway as playing a larger part in intraurban travel than the rail group would give to it. It's a small group, and its greatest proponent is Henry Babcock, a Los Angeles consulting engineer who has well-conceived ideas of a total solution which envisages a unique network of integrated subway operation.

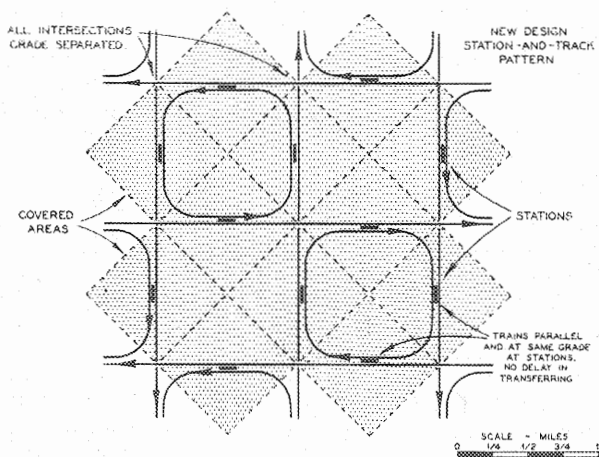
(4) The "monorail group." This group, also small in number, claims that suspended rail transportation over the freeways will, at the least, solve the interurban travel problem.

It should be reasonably apparent that in the areas where these groups do not definitely conflict, they certainly do overlap. Thus, while subways may not be the total solution, subways plus monorail—plus freeways—might be the answer. Busses as feeders and some surface rail transit through the center of future freeways may add to the completeness of such an answer.

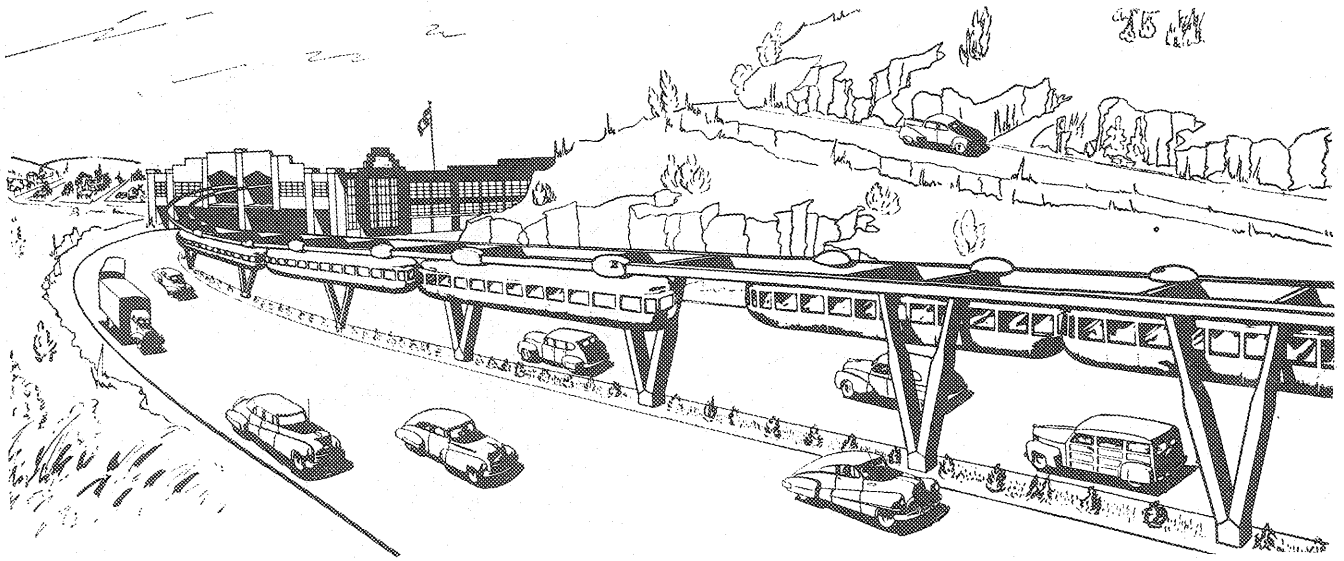
"Special interest" hurdles

But achievement of such a resolution of conflict and overlap is no easy job. There is first a kind of "special interest" political hurdle to overcome. Take the Assembly bill recently killed by the Los Angeles City Council. This bill was ballyhooed as merely an "enabling act," an act to set up a transit district which could study the problem. But buried within it were provisions limiting the total borrowing that the district could authorize to 15 percent of the assessed valuation in the district. This meant that subways, on any extensive scale, would almost automatically be excluded from any plan the transit district might decide upon. The bill also contained conditions as to voting power which endowed the city of Los Angeles with a franchise greater than smaller outlying communities could tolerate.

Another illustration of this "special interest" political hurdle is the activity of real estate groups located outside of the downtown Los Angeles area, but within its metropolitan area. These groups are opposed to develop-



The heart of the proposed Los Angeles subway system (above) is a series of single-track loops like these at the left. Each loop covers a square mile, with platforms at the quadrant points of the loop. No one in the subway area would have much more than a half-mile to walk.



Monorail, a carrier suspended from, and running along, an overhead rail, could be built on center strip of freeways.

ment of transportation facilities with downtown Los Angeles as the focal point, since it would divert patronage from neighborhood shopping and business facilities.

The political hurdle of competing urban communities must also be overcome. Long Beach and San Pedro, for example, are arch enemies. Transportation facilities from Los Angeles to one, without provision for the other, are sufficient to rouse internecine conflict.

Finally, there is the hurdle of competing ideas. Given an unlimited supply of funds, the subway group, for one, could produce a total solution independent of freeways. But funds are limited, and even the subway group would concede that interurban travel over long distances would best be accomplished through other transportation media. This opens the area of combat to busses, monorail and surface rail transportation all over again.

After 24 years—still a problem

Thus, after over 24 years of study, and after years of political wrangling, the problem still remains unsolved. The situation isn't entirely hopeless, but its solution will require straight—and, more important, selfless—thinking. Meanwhile, for better or worse, freeway construction continues without provision for rail transportation within its center strip.

Two phases of this discussion would seem to merit special attention. Both are unique in this country, and of great interest to transportation circles.

The first of these is the so-called "subway plan." Henry A. Babcock, its designer, is an engineer who approaches the local problem from a scientific point of view. It is necessary, he says, to ask and receive answers to two basic questions before one may feel that the transportation solution is at hand.

What role do we want mass transportation to fulfill in this area? Do we simply want to supplement the automobile, or do we want a self-sufficient integrated transportation system? Babcock's answer is, of course, that the ideal role would be fulfilled by a self-sufficient public transportation system, independent of the automobile. Particularly to those families living on marginal income and less (the great public for whom all transportation systems should be designed) this makes sense.

Mr. Babcock's second question is on an equally practical level. Is our problem, he asks, primarily one of moving people between population centers—or isn't it

rather the problem of collecting passengers, wherever they may be, and delivering them to any one of a large number of possible destinations?

A perfect solution?

Given these premises, Mr. Babcock has developed what seems to him and a small group of followers to be a perfect solution to the problems as he sees them. In highly populated areas, he envisages a system of single track loops. Each loop covers a square mile, and requires 3.1 miles of single track. As shown (p. 13), there is one platform placed at the quadrant points in each loop. The operation of each loop is synchronized with the operation of adjacent loops. This loop system is combined with a so-called belt system, so that with a maximum of three transfers, one can travel from any given point to any other given point in the system. The whole system is operated automatically and is self-regulating. If one train in the loop slows down due to extra-long loading time, for example, the whole system slows down in synchronization. A switching system enables replacement and repair of cars within any loop.

It may readily be seen that Babcock contemplates a network system within a heavily populated area—as distinguished from most rail transit plans, which are based on a radial or spoke system centering in a single important terminus. The advantages of the subway plan as Babcock conceives it should be obvious, for no greater coverage could be obtained with such minimal inconvenience to passengers. His loop and belt subway system provides for transportation facilities for 2,000,000 persons living within an area of 175 square miles, with no more than slightly over a half-mile of walking for anyone within that area.

Moreover, Babcock has thought of his construction problems. Preformed concrete forms can be dropped into mechanically-cut troughs; all wires, conduits, pipes, and mains would be cut through at random, and the breaks rejoined through flexible lines which would run up the side and along the top of the concrete forms forming the subway tunnel.

All of this sounds, of course, at once dramatic and appealing. Opponents center their attention principally on the economics of Babcock's plan. Estimated costs run as high as \$1,250,000 per mile, and for the whole project

between \$800,000,000 and \$1,000,000,000.

Babcock's estimates envisage a lower cost per square mile covered than any other proposed system. And Babcock's supporters consider the financing arrangements for such a system entirely feasible. But the sum of \$800,000,000 to \$1,000,000,000 is far above any anticipated to be spent in the area, and has thus far served Babcock's opponents well in relegating his plans to a relatively non-competitive level.

The case for monorail

Relying on the economics of the situation is a totally different type of rail transit system, advocated principally by Mr. George Roberts, head of Pacific Monorail Systems, Inc. Only one passenger monorail line is currently in existence, and it has been running for 48 years. This seven-mile line is located in Elberfeld, Germany, has carried nearly a billion passengers, and has established a remarkable safety record. During one 25-year period, there was only one passenger fatality—a man who jumped out of a window. The Department of Commerce has stated within the past three years that "for service and income, the line holds the best record of any transportation system in existence."

Monorail is nothing more than a carrier suspended from, and running along, a single overhead rail. It has received the attention of the consulting engineering firm of J. M. Montgomery & Co., Los Angeles, and has been pronounced not only mechanically feasible here but entirely sound economically.

The basic advantages of the system are:

- (1) It may be projected within the center strip of freeways presently under construction, with no widening necessary.
- (2) Average speeds could be developed exceeding present scheduled speeds by over 100 percent. On a test route surveyed, traveling time between termini 17 miles apart would be 27 minutes (allowing for eight stops) as compared to a presently-scheduled time of slightly more than one hour by bus.
- (3) Operating safety would, according to present estimates, be exceptionally good. A reduction of litigation and insurance costs would result.
- (4) Operational costs per passenger mile would be relatively low, because of the low man-hour-per-passenger-mile requirements of the system. Five cars, each carrying 100 persons, could be operated by two men.
- (5) Through low requirements for land (the supporting towers can be designed for a strip 12 feet wide), and reinforced concrete construction, the average cost has been estimated—along a typical test route—to be \$834,000 per mile, a figure competitively below any other comparable system.

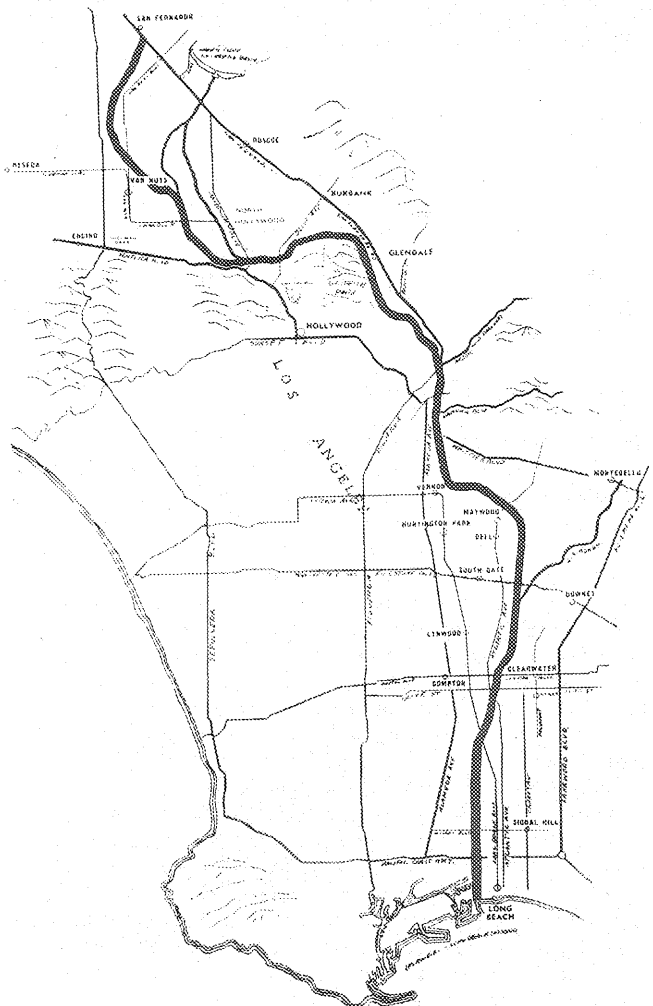
Opponents of monorail are, however, not without ammunition. One admittedly weak point is the switching system which would have to be developed at termini. This mechanical problem has, however, been analyzed and a solution proposed by the J. M. Montgomery Co.

More basic, however, is the observation that the system is primarily interurban. When we turn back to the Babcock postulates, that the role of mass transportation is an integrated public system, and that the major prob-

lem is not transportation between termini but picking up loads in heavily populated areas where termini would normally be located, it is apparent that monorail is no total solution. For monorail is primarily designed for transporting large groups between one heavily populated area and another located some considerable distance away. Frequent stops would destroy speed, one of monorail's chief advantages; hence, the ideal operating conditions for monorail would have stations no less than about two miles apart, and preferably even more widely separated. But this arrangement conflicts with transportation requirements of the masses, unless feeder systems of busses—or subways—act as supplement.

This survey is written without emphasis on technical problems and is admittedly somewhat cursory. Even this treatment should make it apparent, however, that there is a real problem, and that its solution—like the solution of so many other current problems—rests on compromise and not on stubborn adherence to one single notion bred of politics, selfishness, or shortsightedness.

It is to be noted that the native common sense of the masses, and their leaders, has compelled a fresh attack just now beginning. A University Presidents Committee—headed by Dr. Clarence Dykstra of UCLA, and with Caltech's Dr. Lee DuBridge as a member—has now been set up to seek an adequate total solution. The committee will advise the Los Angeles County Board of Supervisors on a mechanism for making a competent study of the problem and for drawing up plans for a solution. Objectivity would seem to be at hand at last, and with it Los Angeles' first real chance for an adequate, modern transportation system.



Monorail is primarily interurban, designed to transport large groups between one heavily populated area and another, as in this proposed Long Beach-San Fernando line.