- The "Backbone Route"
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LOS ANGELES
METROPOLITAN TRANSIT AUTHORITY

RAPID TRANSIT SYSTEM

"BACKBONE ROUTE"

- SUBWAY
- FREEWAY RIGHT OF WAY
- STATIONS

OTHER ROUTES AND EXTENSIONS
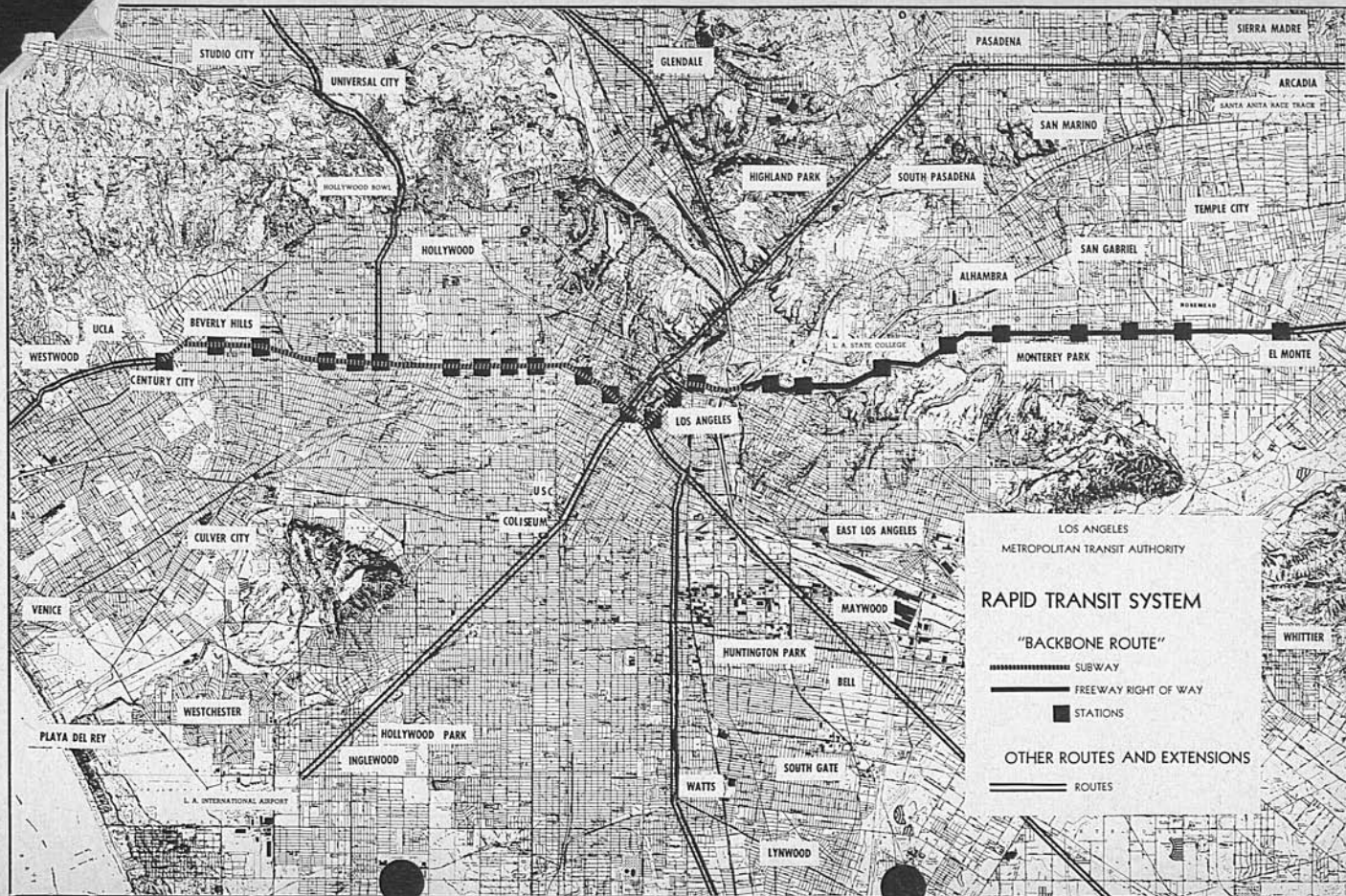
- ROUTES

(See story below)

What Is the "Backbone Route"?

THE "BACKBONE ROUTE," as shown in dotted black (for subway) and solid black (for surface) lines in the map above, is 22.7 miles in length, extending from Century City on the west to El Monte on the east, according to Chief Engineer Ernest R. Gerlach. It includes 12.1 miles of subway, of which the entire western section of the route is composed; and 10.6 miles of grade-separated right of way, of which the entire eastern section is composed.

There are 25 stations (black squares on map) of which 16 are in subway.

DESCRIPTION OF ROUTE

The west terminal is under Santa Monica Blvd., at the north entrance to the Century City development. The route follows Santa Monica Blvd. to Wilshire Blvd., and continues east under Wilshire to Vermont, with stations at Beverly Drive, Robertson Blvd., a point just west of Fairfax Ave., Masselin Ave., La Brea Ave., Crenshaw Blvd., Western Ave., Normandie Ave., and Vermont Ave.

East of Vermont, the route swings north of MacArthur Park, and the Alvarado St. station would be at Sixth and Alvarado Sts. The Lucas St. station would again be at Wilshire Blvd., and the subway then swings a little to the south to enter the Central City under Seventh St.—the next station being at Seventh and Hope Sts.

The subway continues east under Seventh St. to Broadway, and then turns north under Broadway, with stations between Fifth and Sixth Sts. and at First St. to serve the Civic Center. From the Civic Center, the subway swings east, with a stop at Union Station.

After passing under the Los Angeles River, the route emerges from subway alongside the San Bernardino Freeway, at which point it runs on the surface, sharing the grade-separated right of way of the Pacific Electric Railway north of the freeway. Stops in this area would be at State St., Soto St., and Eastern Ave. East of this point, the route follows the railroad right of way down the center of the freeway, with stops at Fremont Ave., Atlantic Ave., New Ave., San Gabriel Blvd., and Rosemead Blvd. East of Rosemead Blvd., the route leaves the freeway median strip and follows the railroad right of way to a terminal at Hoyt Ave., El Monte.

The plan includes provision for parking automobiles at outlying stations, particularly on the east side, where stations are farther apart.

CARS AND TRACKAGE

The system proposed would employ electrically propelled trains operating on standard-gauge steel rail cushioned in rubber and welded between joints. Train design would permit maximum speeds of over 70 miles an hour, and would provide scheduled speed of 34 miles an hour. Travel time between either end of the line and the Central City would be about 20 minutes.

The design of the 85-seat cars includes wide aisle space,

Backbone Route

air conditioning, excellent lighting, and other comfort features. Cars are planned for single-end operation in two-car units placed "back to back." Trains of one, two, or three two-car units will be used.

COST OF "BACKBONE ROUTE"

Basing their figure on the route which MTA has selected, Daniel, Mann, Johnson, and Mendenhall advises that its estimate of costs for the system proposed would be $192,000,-000. Kaiser Industries, as the result of an independent study, report their conclusion that the line can be built and completely equipped today for that amount.

"BACKBONE ROUTE" FIRST STEP

The proposed route would be the first step in the four-corridor, 75-mile rapid transit system.

The new plan was first unveiled at a press conference May 15 by the Authority with Chairman A. J. Eyraud and Chief Engineer Gerlach as spokesmen. Both men pointed out that the Backbone Route could be financed by a low-interest loan which could be retired out of farebox revenues.

"Basing figures on an interest rate of 3% and a loan available in increments as needed, first to retire our present bonds and then to pay for the cost of building the Backbone Route, the MTA could repay the $192,000,-000 cost for the new route and the $40,000,000 cost of retiring present bonds in 30 to 35 years after the new route is placed in service," they stated.

Subsidy or taxing powers are not asked for in the current MTA legislative program.

SUBWAY ADVANTAGES

Traffic along Wilshire Blvd. would flow uninterrupted during subway construction, according to Mr. Eyraud, because the subway would be built by tunneling under the street.

"Traditional open-cut methods of construction are not proposed for construction of the subway along this important thoroughfare," the Authority Chairman stated.

"Station platforms and stairways at or near the curbs would be the only parts of the project which would be done from the street surface."

The tunneling method, with the top of the tunnel about 10 feet below street level at stations, and as much as 50 feet below between stations, would enable construction crews to pass under utilities, which are located near the street surface.

Mr. Gerlach pointed out that the subway "could become an important factor in the development of the area's civil defense program, serving as a fall-out shelter, and through underground links with shelter areas in major buildings adjoining the route, a means of equalizing the loads on emergency facilities and of moving personnel under shelter for the performance of critical duties."

ENABLING LEGISLATION

Legislation to enable MTA to go ahead with rapid transit plans was still pending before the State Legislature as THE EMBLEM went to press June 8.

ACME Gift to Heart Fund Brings Award of Merit

AN AWARD OF MERIT has recently been sent by the Los Angeles County Heart Association to MTA employees in appreciation of their contribution through ACME of $1200 toward the fight against heart disease.

Credit Union Moves

EFFECTIVE July 1, the Lamta Employees Federal Credit Union will move from its present quarters to Room 302 Transit Authority Building, 1060 S. Broadway, Los Angeles.

Telephone number will be changed to RIchmond 7-5208.

Greater Benefits Provided In New MTA Pension Plans

Authority Adopts New Plans at May 24 Meeting;
Cover BRT, BRC, and Many Non-Contract Employees;
Normal Pension Upped 16⅔% over Old Plan

INCREASED BENEFITS are provided for employees represented by the BRT and the BRC and for many non-contract employees by pension plans approved by the Authority at its May 24 meeting.

Officially known as the BRT-BRC Retirement Income Plan, the plan for operating and clerical employees had earlier been approved by the unions involved. The details of the plan are almost identical with those of the former Los Angeles Transit Lines Retirement Income Plan, but benefits are extended to former MCL and Asbury employees.

The non-contract employees included at the present time are those who have been participants in the Los Angeles Transit Lines Retirement Income Plan, and those hired by LATL, MCL, or Asbury on or after June 1, 1957, but before June 2, 1958. No change has so far been made in the old pension plan for other non-contract employees hired before June 1, 1957, by MCL, Asbury, or their predecessors.

All funds accumulated from the contributions of both employees and employers under the former LATL plan are transferred to the new plans for the exclusive benefit of the respective employees who were participating in the LATL plan on May 31, 1960.

The rate of contributions to the new plans will not be increased over that of the LATL plan.

SUMMARY AND APPLICATION GIVEN OUT

A summary of the contract employees' plan was prepared by the authority's pension consultants and placed, early in June, in the hands of each eligible employee represented by the BRT or BRC, along with an application for enrollment. Eligible non-contract employees also received an application for enrollment.

BENEFITS OF NEW PLAN

According to the introduction to the summary:

"The several areas in which the new plan represents substantial improvements over the plans heretofore maintained by the Authority include:

"1: An increase of 16⅔% in the amounts of normal monthly retirement income benefits under the former LATL plan. (Group "a" employees)

"2: Increased monthly retirement income benefits, computed on prevailing wage levels, for employees born after Jan. 1, 1905, and previously able to qualify for pensions under the former MCL plan; plus additional collateral benefits. (Group "b" employees)

"3: Increased minimum normal monthly retirement income benefits, after offsetting Social Security benefits, for employees born on or before Jan. 1, 1905, and previously able to qualify for pensions under the MCL plan. (Group "c" employees)

"4: Normal monthly retirement income benefits for certain former MCL and Asbury employees hired after attaining the age of 45 and previously unable to qualify for pensions under the former MCL plan. (Group "d" employees)

"5: The creation of retirement reserves, by periodic contributions which the Authority intends to make to a trust fund, to provide for retirement income benefits for qualified former

Prizes to Be Awarded Divisions With Most Improved Safety Records

MANY PRIZES will be given in a new "Improve Your Record" safety contest scheduled to begin July 1 at each transportation division, according to a joint announcement early in June by George F. Goehler, General Superintendent of Transportation, and J. W. Prutsman, Chief Safety Engineer.

On that date, every division will begin to compete, month by month, for the remainder of 1961, against its record for the same months of 1960, in the following categories:

1. Traffic accident frequency.
2. Passenger accident frequency.
3. Type 23 accidents—rear-end collisions.
4. Type 63 accidents—on board accidents due to quick stops.

5. Average number of witnesses per report.
6. Ratio of accident reports with no witnesses.

Improvement in each category is scored on a point basis. Each month, the two divisions having the largest number of points (showing the most improvement) will have a free coffee-and-doughnut day. Moreover, the winning division each month will receive a loving cup—which it must pass on the next month to any division that surpasses it in points.

The contest is also cumulative; that is, the Operators at the division showing the greatest improvement (greatest accumulation of points) over last year

Pension Plan

MCL and Asbury employees in the same manner as for former LATL employees."

In connection with Item 5, Director of Personnel W. C. Scholl also pointed out that "MTA will also pay the entire cost of the life insurance covering pre-retirement death benefits.

MEMBERSHIP IS REQUIRED

"All enrollment applications must be filled out and returned to the Personnel Department, because participation in the new plans is a condition of employment under section 5.04 of the plan," stated Mr. Scholl.

PAY-ROLL DEDUCTIONS

"Because the new plans are retroactive to June 1, 1960, it is necessary for all members except those currently participating in the former LATL Retirement Income Plan to make additional contributions in order to bring their contributions up to date.

"Members of the LATL Retirement Income Plan will continue to make pay-roll deductions once each month.

"Employees who were originally hired by MTA or a predecessor company between June 2, 1957, and June 1, 1958, inclusive, and who became eligible for the new plans June 1, 1961, will have two pay-roll deduction made in July to cover both the June and July contributions.

"Former MCL or Asbury employees who became eligible to participate in the new plans as of June 1, 1960, will have contributions by pay-roll deduction made *each pay-roll period* until they are brought up to date.

"It is estimated that by June 1, 1962, all retroactive contributions will have been made up.

"Employees who have no earnings for pay-roll periods in which deductions for pension plan contributions—current or retroactive—are made, are required to remit contributions to MTA on the same dates that deductions would have been made if these employees had been working," Mr. Scholl concluded.

Commendations

Division 8 Man Selected
For May Courtesy Award

FOR his unvarying courtesy toward his passengers, Division 8's C. L. Carmichael was selected Operator of the Month for May.

"For extreme consideration, courtesy and tact he has no equal," wrote a woman passenger, who also stated that in her travels in many cities of the United States and Canada she had found no bus drivers equal in courtesy to those in the Los Angeles area.

C. L. Carmichael

"I have observed him every day for many months and he doesn't deviate one iota from this pattern I have mentioned," she continued.

Prizes for Safety

for the six-month period, July 1 through Dec. 31, will be declared contest winners. They will have an opportunity to draw for $200 worth of prizes.

FULL DETAILS AT DIVISION MEETINGS

Full details of the contest will be explained in a series of divisional meetings beginning July 11, with Safety Engineers and MTA executives as speakers. "Code 1179," an absorbing motion picture showing the California Highway Patrol in action, will also be shown. Watch your bulletin board for dates.

Door prizes (cigarette lighters and wallets) will be drawn for at each meeting. Those who attend divisional meetings will also be eligible for a grand prize to be awarded after the series of meetings is over.

186 Operators Honored In April for Courtesy

CONGRATULATIONS to the following 186 Operators, who received commendations during the month of April:

E. A. Abbott, Division 3; V. V. Adams, 7; S. M. Alexander, 3; H. E. Anderson, 5; K. C. Anderson, 5; D. R. Armack, 8; A. J. Arone, 3; E. R. Austin, 5; Louis Baca, 7; E. W. Barnett, 9; D. W. Bartholio, 3; Joseph Baumwoll, 2; E. N. Beezley, 12; T. F. Benedict, 12; W. H. Bentley, 20; F. A. Bergeron, 7; L. C. Birdwell, 20; A. E. Bliss, 5; H. A. Brown, 2; J. W. Brown, 8; F. C. Brune, 20; O. C. Buckner, 5; L. L. Burdick, 7; C. T. Burris, 7; D. H. Bogenbergh, 7; Willie Bradford, Jr., 5; C. R. Brenner, 12; E. L. Brentham, 7; G. A. Briggs, 6; S. H. Brody, 20; N. B. Brooks, 5; A. R. Brown, 7; Odrey Bush, 1.

R. A. Capehart, 6; E. E. Capek, 3; P. W. Cole, 12; E. J. Constantine, 20; Marvin Cropper, 5; F. J. Chapman, 5; E. P. Cure, 2; F. E. Dahlstrom, 7; A. A. Davison, 5; Roscoe Dawkins, 5; J. A. Deal, 3; J. R. Decoste, 11; Theodore DeLora, 7; C. H. Donahue, 2; N. J. Eller, 3; Leonard Elmore, 8; Lula E. Epp, 20; W. K. Erdman, 2; G. C. Esposito, 3; Ermal Fain, 7; E. J. Filek, 11; M. H. Fisher, 2; G. T. Fitzpatrick, 5; H. H. Foster, 9; Roger Fowlston, 7; H. G. Gardner, 1; Joseph Giulietti, 12; D. L. Gladwell, 12; G. E. Goodman, 7; F. E. Gordon, 7; O. V. Gray, 20; M. M. Gross, 8.

R. D. Hamilton, 12; H. J. Harrigan, 2; J. S. Harris, 5; V. E. Harris, 7; Charles Hatfield, 6; S. R. Hawks, 5; Charles Hayes, 5; Orvil Hazelton, 3; Lawrence Hill, 7; C. L. Hobby, 12; C. E. Holcomb, 3; J. G. Holland, 7; W. K. Holsberry, 7; R. H. Howard, 3; J. A. Inkerbrandt, 10; L. D. Jensen, 6; J. M. Jernigan, 6; J. P. Jones, 3; W. B. Jones, 5; J. C. Jordan, 9; Thomas Kane, 3; W. E. Kelly, 2; H. R. Kerley, 6; M. E. Kittinger, 12; F. W. Koening, 6; R. D. Kornell, 20; J. H. Kosman, 2; S. A. Knight, 5.

V. L. LaFrance, 3; E. D. Lee, 2; Joe Liscano, 7; M. L. Levin, 7; F. K. Lilley, 7; H. L. Lovato, 3; Fred Martinez, 10; L. R. Maspero, 20; H. A. Mathews, 1; G. S. Mattern, 2; M. W. McBrayer, 9; S. P. McGee, 7; L. W. McWatters, 3; G. H. Melcher, 3; J. L. Melton, 1; R. M. Melton, 8; F. C. Mohawk, 3; J. F. Montoya, 3; Howard Morris, 20; Nicholas Mostronsky, 7; L. L. Murdock, 5; George Nahra, 1; J. L. Neander, 2; H. C. Nields, 20; H. G. Norie, 5; A. L. Norris, 9; O. A. Ortega, 20; L. E. Osborne, 7; S. J. Paproski, 20; C. A. Paramo, 5; S. O. Parker, 2; J. C. Patterson, 2; R. J. Patterson, 7; F. A. Payrow, 2; T. R. A. Perry, 20; E. E. Peters, 20; F. A. Peters, 7; D. E. Pickett, 8; E. G. Pike, 20; C. G. Pollok, 11; AunFrance Reed, 7; Creighton Rinderknecht, 8; D. S. Rocha, 1; R. J. Romaine, 7; Seymour Rona, 6; W. T. Rouse, 3.

M. J. Saniga, 7; M. F. Saylor, 12; J. A. Schmidt, 8; E. L. Schonbachler, 5; W. F. Scott, 20; J. W. Segger, 12; Leonard Sellick, 5; C. R. Sharrock, 2; R. V. Simmons, 3; Alvin Sims, 10; M. J. Smith, 11; M. M. Smith, 5; O. H. Smith, 8; W. L. Soloman, 3; Dan Stasi, 20; K. T. Stock, 7; J. E. Story, 8; Edith P. Swanson, 20; S. C. Swanson, 7; P. C. Swayze, 7; L. B. Taylor, 8; J. C. Thompson, 20; Marie Thompson, 3; R. A. Thompson, 6; H. M. Tooley, 10; C. C. Townsend, 9; J. E. Truett, 7; Bennie Varon, 7; Artra Virden, 5; G. F. Vogel, Jr. 2.

W. J. Walsh, 2; J. E. Ward, 5; W. S. A. Weary, 2; Raymond Weatherly, 6; J. E. Wharton, 7; O. E. Wheeler, 9; D. B. White, 7; P. B. White, 20; Roosevelt White, Jr. 20; C. E. Wilson, 8; L. G. Wilson, 8; J. W. Winston, 5; B. F. Williams, 7; Sam Williams, 2; S. S. Wollan, 3; H. V. Wright, 8; L. A. Yantis, 7

Safety and the MTA Operator

(The second of three installments)

Important Facts about Time, Distance, and Speed
And Their Meaning for Everyone Who Drives

"IF YOU CAN CATCH this dollar bill between your thumb and forefinger after I let go the greenback, the money's yours!"

The speaker was William B. Winters, one of Transit Casualty's Safety Engineers. He was dangling a dollar bill between the outstretched fingers of Operator C. B. Spackman, who had volunteered to help in a demonstration of reaction time before a seated group of Operators who had gathered at Division 11 to attend a refresher course put on for the stated purposes of teaching defensive driving, preventing accidents, and reducing claim costs.

It was one of many such classes now being held from time to time at the divisions by the Safety Engineers. All meetings last exactly one hour, and the content of the instruction of one meeting is practically—and purposely—identical with that of any other.

Without further warning, Mr. Winter let go the bill. It fell fluttering to the floor.

"I've lost very few bills this way," the speaker said, casually recovering the money and putting it back in his pocket.

WHAT IS "REACTION TIME"?

"The reason is that a period of time always elapses between the moment one perceives a need for action and the action itself. In this experiment, the elapsed time is about two-tenths of a second. This, as you know from your tests with the transitometer on the safety coach or the detonator tests on the bus down in the river bed, is called reaction time. In your driving,

it's the time that elapses from the moment you get a warning of danger to the time you can start applying the brakes. For the average driver this reaction time is about three-quarters of a second."

OTHER DEMONSTRATIONS

"Let's have a couple of other demonstrations to illustrate reaction time," Mr. Winters continued.

He asked another member of the class, Operator D. L. Correll, to separate a deck of cards, first, into black and red piles, and then into the four suits. The first separation required 24 seconds by a stop watch in the hand of the speaker; the second, 48 seconds.

"This demonstration illustrates the slowing effect of multiple choice or distraction on reaction time," Mr. Winters commented. "Perhaps while you're driving your bus a signal is changing to red while a passenger is asking you a question. You might have stopped sooner but for the question."

The third experiment was to ask a volunteer (Operator William H. Miller) seated in a chair (as though in the driver's seat) to pick up a coin dropped on the floor near his chair. The stop watch showed that the operator would have had to take his eyes off the road for at least two seconds.

DISTANCE FORMULAS

"Now let's turn these different times into distances traveled," said Mr. Winters. "A universally accepted formula, and one you will find easy to remember, is that *1½ times the speed in miles per hour equals feet travelled*

MONEY SLIPS THROUGH HIS FINGERS—Operator C. B. Spackman, right, tries—and fails—to catch a dollar bill that Instructor William B. Winters drops at an unexpected moment to illustrate reaction time to a group of operators in a safety refresher class. "Whether you're driving a bus or trying to catch a dollar bill, there's always a delay between the time you perceive a need for action and the moment you act," points out Mr. Winters.

per second. Hence, if you're traveling 20 miles an hour, you're going 30 feet each second. In a tenth of a second, you go 3 feet.

"So if it took two-tenths of a second for Mr. Sparkman to react to the dollar bill, his bus, at 20 miles an hour, would have traveled six feet. Under similar conditions, Mr. Miller's bus would have traveled at least 60 feet in the two seconds he took his eyes off the road in order to pick up the dime from the floor.

"And, of course, the greater the speed, the greater the distance traveled in a given time.

"Here's another simple formula that will help you to determine the distance you travel while reacting to danger. It's based on the average reaction time of three-fourths of a second: *The distance in feet that you travel while reacting is approximately equal to your speed in miles per hour.*

"Thus, if you're going 30 miles an hour when you receive a danger signal, you'll actually travel about 30 feet before you can start applying the brakes;

Refresher Classes

at 25 miles an hour, about 25 feet.

"It's quite obvious that the less the time needed for reaction, the more chance there is of avoiding an accident. A tenth of a second may mean the difference between an accident that happened and one that didn't. By these statements I don't mean that the Operator with a faster reaction than another is necessarily a safer driver. If he depends on his fast reaction, he may become careless where the slower Operator exercises caution.

"What I'm getting at is that there are ways to reduce reaction time. For instance, when you're approaching an intersection, keep your foot ready on the brake pedal instead of on the accelerator. If an emergency should arise, you'd be able to apply the brakes sooner because you wouldn't have to take time to move your foot off the accelerator and to the brake pedal.

"And let's not forget the passengers; they have reaction times, too. Give them warning—most of you do—of a possible quick stop by touching your brake pedal lightly so they'll have time to grab a hand rail.

HOW TO ESTIMATE TIME

"We've been talking about reaction time. Now let's consider time in another respect. How do you estimate the passage of time?"

Mr. Winters held up a stop watch. "I'd like to have each of you raise his hand when he thinks ten seconds have passed. I'll count them by this stop watch.

"Go!"

Hands came up at a great variety of different times—almost all before the ten-second period was actually over.

"This experiment illustrates the difficulty people have in correctly estimating time," commented Mr. Winters.

"An easy way to arrive at a fairly accurate idea of time in seconds is to count the seconds by thousands. Counting 1001, 1002, 1003, 1004 for example, is a pretty accurate way to measure the passage of four seconds.

"Now, using this method, let's try counting ten seconds again."

This time a majority of hands went up at almost exactly the time measured by the stop watch.

"Let's leave the subject of time now and go to the important factor of distance," Mr. Winters went on.

STOPPING DISTANCE

"The total overall stopping distance of your bus is governed by two factors: (1) the distance the bus goes while you are reacting to danger (reaction distance); (2) the distance your bus travels from the time the brake is applied to the time a complete stop is effected (braking distance). The reaction distance and the braking distance added together make up the total stopping distance.

"How far do you think you would travel in making an emergency bus stop from, say, 30 miles an hour?"

Again, answers were various: "95 feet"—"120 feet"—"130 feet." Answers for total stopping distance at speeds of 10 and 20 miles an hour were equally varied.

"Your answers were mostly guesses," the lecturer remarked. "If you had known another simple formula, based on the average reaction time of three-fourths of a second, you'd have been able to give reasonably correct stopping distances for all three of the speeds.

STOPPING DISTANCE FORMULA

"This formula—a standard one, accepted in all courts of law, like the other formulas I've given you—is that *3 or 4 times the speed in miles per hour equals the total emergency stopping distance in feet, where buses or trolley coaches are concerned. Multiply by 3 for speeds up to 20 miles an hour and by 4 for speeds between 20 and 30 miles an hour.*

"Thus, the approximate stopping distance at 30 miles an hour would be 30 x 4, or 120 feet; at 20 miles an

FAST DEAL—It takes twice as long for Operator D. L. Correll to separate a deck of cards into two piles (red and black, picture at left) as it does for him to separate them into the four suits (picture at right) because there are twice as many choices to make. "In driving or dealing, the more choices you must make (distractions), the longer it takes to decide what to do, and the longer your reaction time," Mr. Winters told the class.

hour, 20 x 3, or 60 feet; at 10 miles an hour, 10 x 3, or 30 feet.

"I should add that where PCC cars are concerned, the formula for stopping distance is 4 or 5 times the speed in miles per hour; again, using 4 for speeds up to 20 miles an hour, and 5 for speeds between 20 and 30 miles per hour.

QUOTE FIGURES CAUTIOUSLY

"Notice that I've used the word 'approximate' or 'about' wherever I've given a figure derived from one of the formulas. The reason is that the formulas are simplified for easy recall. Moreover, you are well aware that many factors may change the figures. Reaction distance may be slowed by distractions; braking distance may be altered by slippery streets, grades, load carried, condition of brakes, and so on.

"For these reasons, learn to use the words 'approximately,' 'about,' 'nearly,' and other similar expressions when stating figures, unless you have absolute proof that you are correct.

HOW TO ESTIMATE DISTANCE

"Let's talk for a moment about estimating distances. Suppose you are involved in an accident and the question comes up as to how far away you were when you first saw the danger. How would you know?"

The class supplied a number of methods: "Pace off the distance between the point of impact and the place where you saw the danger."— "Estimate the number of bus lengths figuring the average bus at 35 feet." —"Remember the landmarks."—"A city block is about 300 feet."

Mr. Winters nodded his approval of all of these methods. "Any way is good, so long as you can arrive at a reasonable estimate of the distance," he continued.

"Now let's talk about the third major factor in accidents—speed," he said.

SPEED FACTOR IN ACCIDENTS

"What speed is safe?" he asked his audience.

There was silence for a moment before one man volunteered, "It depends on traffic conditions."

"Right! There is no such thing as a safe speed until you know and evaluate the existing conditions. Posted speeds may be safe at one time of day and dangerous at another.

11

Refresher Classes

"It is as important to be able to estimate speed with reasonable accuracy as it is to estimate time and distance. Can you men think of ways to estimate speed other than by the speedometer?"

Answers came slowly and cautiously: "Buses go from fluid to direct drive at about 23-24 miles an hour, and from direct into fluid drive at about 17 miles an hour."—"A man walks about 4 miles an hour."—"You can figure speed if you know stopping distance."

"Good!" said Mr. Winters. "How do you figure speed from stopping distance?"

SPEED AND STOPPING DISTANCE

"You divide your total stopping distance by 3 to get speed up to 20 miles per hour, and by 4 if you were going between 20 and 30 miles an hour," came the reply from a member of the class.

"Right! You must have taken this course before," Mr. Winters said with a smile. Turning to the class, he said, "Do you remember the formula that, for buses and trolley coaches, 3 to 4 times the speed in miles per hour equals the approximate stopping distance in feet? If you express it as a simple equation:

$$3 \text{ to } 4 \times \text{mph} = \text{SD in feet}$$

(where SD means stopping distance), then:

$$\text{mph} = \text{SD divided by } 3 \text{ to } 4$$

Always remember to use 3 for speeds up to 20 miles an hour; 4 for speeds between 20 and 30.

"(For PCC cars, remember that stopping distance is 4 to 5 times the speed in miles per hour. Hence, to get the speed of the PCC car, divide stopping distance by 4 or 5 instead of 3 or 4.)

"Accurate estimates of time, distance, and speed can be important factors in court cases," continued the speaker. "We saw the truth of this statement in the case mentioned earlier,* in the accident involving thet woman pedestrian. The Operator, who had never learned simple methods of estimating time, distance, and speed, erroneously testified that when he first saw the woman he was going 20 miles an hour. He also said that he sounded his horn 20 seconds before his bus struck her. The opposing attorney was quick to point out to the jury that, on the operator's own statements, the bus would have traveled 600 feet during the time the Operator was blowing the horn instead of applying the brakes. At 20 miles an hour he could have stopped in 60 feet—so why didn't he?

"(Remember how to obtain the stopping distance of 60 feet: 3 times miles per hour equals emergency stopping distance in feet, and in this case the asserted speed was 20 miles an hour. Also remember how to obtain the 600 feet of distance the operator would have traveled while blowing the horn: 1½ times miles per hour equals feet traveled per second; or, 1½ x 20 mph equals 30 feet per second. In 20 seconds, at 20 miles an hour, the bus would travel 20 x 30 or 600 feet.)

PREVENTING ACCIDENTS

"Now we've covered the three major mathematical factors in accidents — time, distance, and speed — and their relationships with each other. Let's talk about clues to accidents— ways you can tell in advance that unless you're careful an accident is about to happen."

(The remainder of the safety refresher lecture, including a discussion of clues to hazards, getting witnesses, and MTA's four most costly kinds of accidents, will be presented in the next issue of THE EMBLEM.)

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*See the May issue of THE EMBLEM, "Safety and the MTA Operator," p. 5, col. 2.

VEHICLE.	MILES PER HOUR	FEET PER SECOND	.75 SEC. REACTION TIME DISTANCE	LEVEL, DRY STREET/ TRACK BRAKING DISTANCE FEET	CHART OF STOPPING DISTANCES
					TOTAL DISTANCE REQUIRED FOR EMERGENCY STOP
AUTO				1	7 FT.
COACH	5	7.3	6	5	11 FT.
P.C.C.				10	16 FT.
AUTO				5	16 FT.
COACH	10	14.6	11	11	22 FT.
P.C.C.				19	30 FT.
AUTO				11	28 FT.
COACH	15	22	17	23	40 FT.
P.C.C.				38	55 FT.
AUTO				20	42 FT.
COACH	20	29.3	22	33	55 FT.
P.C.C.				61	83 FT.
AUTO				31	59 FT.
COACH	25	36.6	28	51	79 FT.
P.C.C.				92	120 FT.
AUTO				45	78 FT.
COACH	30	44	33	62	95 FT.
P.C.C.				127	160 FT.

SAFETY DEPT.   6-1-1952

On Their Way Up

CONGRATULATIONS to the following employees, who took a step up the ladder between Apr. 19 and May 15:

Theodore A. Ashley from Operator to Operator-Extra Division Clerk, Division 5, Apr. 20. Employed Oct. 26, 1959.

James M. Baker from Extra Supervisor-Operator, Division 12, to Supervisor, Transportation Department, Apr. 25. Employed Jan. 18, 1955.

Eugene Barnett, Jr., from Operator to Extra Supervisor-Operator, Division 5, Apr. 27. Employed Mar. 19, 1952.

L. H. Brugmann from Relief Assistant Division Superintendent, Transportation Department, to Assistant Division Superintendent, transportation, Division 7, May 7. Employed Oct. 31, 1935.

Burnett C. Brazell from Operator to Extra Supervisor-Operator, Division 1, Apr. 27. Employed Aug. 12, 1952.

Jack L. Carmichael from Mechanic "A" Leadman to Equipment Foreman II, Division 2, Apr. 23. Employed June 8, 1936.

Jules Gauthier from Mechanic "A" to Mechanic "A" Leadman, Division 2, May 7. Employed Sept. 19, 1946.

Frederick A. Gertsch from Operator-Extra Division Clerk to Division Clerk, Division 9, Apr. 25. Employed Jan. 15, 1954.

Bobbie G. Hurst from Operator to Operator-Extra Division Clerk, Division 1, Apr. 23. Employed Oct. 16, 1956.

J. T. Johnston from Assistant Division Superintendent, transportation, Division 1, to Division Superintendent, transportation, Division 9, May 7. Employed May 21, 1937.

Grace V. Jordan from Medical Clerk-Receptionist to Assistant Insurance Clerk, Personnel Department, May 8. Employed Jan. 24, 1961.

"H" "T" Lambert from Mechanic "B" to Mechanic "A," Division 5, Apr. 23. Employed Oct. 5, 1960.

Marsell E. Larsen from Lineman to Lineman, Heavy Gang, Electrical Department, May 4. Employed Oct. 1, 1958.

F. J. Matzner from Division Clerk-Relief Assistant Division Superintendent to Relief Assistant Division Superintendent, Transportation Department, May 7. Employed May 20, 1936.

Claude H. McCracken from Operator to Operator-Extra Division Clerk, Division 5, Apr. 19. Employed Nov. 5, 1960.

Manuel Montes from Lineman to Lineman, Heavy Gang, Electrical Department, May 4. Employed Oct. 1, 1958.

Joseph H. Reeves, Sr., from Operator to Extra Supervisor-Operator, Division 9, Apr. 27. Employed July 22, 1953.

Leslie E. Stage from Lineman to Lineman, Heavy Gang, Electrical Department, May 4. Employed July 30, 1959.

Torman W. Thompson, from Lineman to Emergency Mechanic, Electrical Departent, May 15. Employed Oct. 7, 1958.

Jimmy D. Upton from Junior Stock Clerk, Purchases and Stores Department, to Shop Clerk, Maintenance Department, Division 2, Apr. 24. Employed June 27, 1960.

Osie L. Williams from Utility "A," Division 12, to Junior Stock Clerk, Purchases and Stores Department, May 4. Employed Oct. 31, 1960.

Edwin D. Ziegler from Operator to Extra Supervisor-Operator, Division 7, Apr. 27. Employed Sept. 22, 1954.

New Faces

A HEARTY WELCOME to the following new employees who joined MTA between Apr. 22 and May 15:

EQUIPMENT MAINTENANCE DEPARTMENT
Utility "A": Andrew Davis.

OFFICE OF CHIEF ENGINEER
Assistant Transportation Engineer: John J. Ammerman.
Research Assistant: Turner F. Kindred, Jr.

PERSONNEL DEPARTMENT
Steno-Clerk: Cyril Esther Poll.

PURCHASING DEPARTMENT
Junior Stock Clerk: Jack W. Langford.

REAL PROPERTY MANAGEMENT
Information Clerk: Joan Anne Finan.

TRANSPORTATION DEPARTMENT
Operator: Edward Aguero, Division 2; Joseph P. Avery, 7; Roger W. Bailey, 7; Kenneth M. Brennan, 5; Edward E. Buggett, 5; Charles E. Burt, Jr., 5; Robert A Collier, 5; Derrell D. Crandall, 7; Donald L. Goins, 5; Alma D. Dain, 7; Howard R. Davis, 2; Floyd L. Franklin, 20; Teddy "L" "E" Grimes, 20; Alvey L. Holland, 2; Bernard J. Hurley, 5; Charles W. Kellams, 2; Louis Mancaruso, 5; Robert E. Messner, 5; James E. Morrison, 20; William A. Nordholm, 5; Joshua Peretz, 20; Louis F. Scarfia, 5; Harvey W. Segal, 5; William C. Shafer, 5; Clyde L. Sherman, 2; William E. Smouse, 5; Clarence W. Sterling, 7; Lowry W. Strange, 5; Donald R. Turner, 7; Raymond F. Underwood, 20; David B. Utiger, 5; Norman D. Van Derworp, 7; Fred W. Walsh, 5; Howard L. Whitley, 7; Leonard "G" Willington, 5; Charles B. Wolf, 8.

Stenographer: Johnnie Fortson Miles.
Typist-Clerk: Elizabeth Pontello.

OUR COVER

Draftsman Paints Conception Of RT Car in Watercolor

ARTIST'S CONCEPTION of proposed MTA rapid transit car on rails in freeway center strip is being completed by Robert E. Miller, Draftsman, Office of Chief Engineer.

On the wall above his head is his conception of a proposed rapid transit car at subway station, with section cut away to show more of the car.

These watercolor drawings were made to show at the press conference May 15, when the Backbone Route was unveiled for the first time to the public.

Mr. Miller's hobby is sketching in pencil and painting in watercolors. Before coming to MTA early in April, he worked for four years for Eastern architects, for whom he prepared, in his favorite media, many renderings of proposed buildings.

In Memoriam

THE EMBLEM announces with regret the death of the following:

John N. Almanza, 60, Track Oiler, Way and Structures Department; May 24; service from 1946. Survived by his wife, Anna.

William Cox, 82, retired Flagman, Transportation Department; May 7; service from 1911 to 1944. No known survivors.

Charles H. Finney, 69, retired Conductor, Division 3; April 12; service from 1920 to 1944. No known survivors.

Herbert L. Myer, 72, retired Operator, Division 5; May 24; service from 1919 to 1946. Survived by his wife, Marie.

Herbert H. Peterson, 74, retired Chief Clerk, Electrical Department; May 7; service from 1911-1946. Survived by two sisters: Mrs. Hortense Pomnier and Mrs. Helen Sanger; and a brother: John.

Paul W. Reynolds, 60, retired Operator, Division 11; May 1; service from 1921 to 1954. Survived by his wife, Helene.

Myrtle R. Schmidt, wife of Louis L. Schmidt, Dispatcher, Way and Structures Department; April 27. Survived by her husband.

Fred T. Sweatt, 65, retired Clerk, Transportation Department; May 16; service from 1937 to 1959. Survived by his wife, Lela.

The Emblem

IN THIS ISSUE

Stanley J. Whitelock, 62, Supervisor, Transportation Department; May 23; service from 1921. Survived by his wife, Olive.

Behind
this driver:
48
relaxed
riders

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