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Ohio State Engineer

Title: Under and Over the Metropolis

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Issue Date: Feb-1929

Publisher: Ohio State University, College of Engineering

Citation: Ohio State Engineer, vol. 12, no. 4 (February, 1929), 8, 22-23.

URI: <http://hdl.handle.net/1811/34554>

Appears in Collections: [Ohio State Engineer: Volume 12, no. 4 \(February, 1929\)](#)

UNDER AND OVER THE METROPOLIS

M. L. ALLEN, '31

Recent transportation developments in the city of New York present many interesting phases. On one hand we have man burrowing underneath the surface like a mole, while if we shift our gaze skywards, we see pinioned mortals flitting about with great unconcern.

While these activities are by no means confined to the metropolis, it is found that they are carried on with a greater intensity than elsewhere. This is because of the cramped condition that Father Knickerbocker finds himself in these days. Unable to expand laterally because of the water obstacle (a handful of Dutch traders saw fit to establish Nieuw Amsterdam on an island instead of on the mainland), Manhattan is expanding vertically.

The total trackage of the rapid transit systems, until recently, was 625 miles. Even with this extensive system the rush-hour mobs strained facilities to near the breaking point. At the present these same conditions prevail although several new lines have been opened up and several more are to be opened to the public within a few months. This refers, of course, exclusively to subways; elevated railways are a thing of the past, and are being demolished as rapidly as conditions permit.

A hazy idea of the titanic crowds of people accommodated is furnished by the reports of the Board of Transportation. An investigation disclosed that in one car, having 44 seats and 56 straps, as many as 252 passengers have been carried. Further figures show that the New York subways carry, within the space of two weeks, the equivalent of the entire population of the United States!

An expert on rapid transit conditions in New York has likened the subways to feed-pipes which supply the skyscrapers. Without the subways, these huge buildings would be empty. One building, surrounded by streets of alley width, houses 12,000 workers. It is evident that such an army would be unable to reach their destination without the accommodations provided by the underground railways.

The new lines, when completed, will practically double the present facilities. They will cost approximately \$700,000,000, or double the cost of the Panama Canal.

Day and night more than 10,000 men are at work on these new tubes. The construction is difficult as well as being extremely delicate because of the myriad conduits of telephone and telegraph cables, water and gas mains, and power lines that are buried under the street surface and must be placed out of the way while the subterranean construction goes on. The service furnished by these arteries cannot be disrupted for an instant without throwing the complexities of city existence into turmoil. The traffic on the street surface cannot be stopped because other streets will be cvertaxed by the surplus. All in all, building a subway presents a complex problem.

Surprising engineering feats are accomplished every day. At the southwest corner of Central

Park, the well-known Columbus monument has been trussed up for the second time to permit the passage of a subway underneath. The monument is 75 feet high and weighs 724 tons. Farther north, the subway had to be cut through the bases of the heaviest and tallest elevated railway structure in the city. These 50-foot columns on Cathedral Parkway (West 110th Street) were picked up and supported on temporary steel frame-works and later reset on the roof of the underground without the slightest dislocation.

In the financial district, construction work has been extremely ticklish. Several skyscrapers have been underpinned and the path of one line passes but arm's length from the vaults of the sub-treasury, J. P. Morgan and Company, and the Stock Exchange. This particular spur, less than one mile in length, is costing over \$10,500,000.

Besides continually blasting among the mazes of communication and supply lines, the workers twice have had to blast up against the four-foot main water conduits of the west side of Manhattan.

Statisticians claim that the projected new skyscrapers will jam the new lines within less than five years. It is a continuous cycle—more subways, more skyscrapers.

The publicity accompanying a searchlight has caused two large hotels in New York to install beacons.

One light, located in Brooklyn, is 480,000,000 candle-power, which is twenty-eight times as strong as the beacon in any one of the government's major light-houses. The Hotel St. George 'light, just referred to, has been seen five miles above the earth. In fact, a night flier, leaving Boston, picked up the St. George 'light and flew to New York without the need of consulting his compass. This hotel is going to put up a new 'light which will be visible to pilots for five hundred miles, providing they are at high altitudes.

It takes three motors and a crew of four men to keep the St. George 'light going. Carbons are changed every hour, causing a pause of twenty-five seconds in the regular swing of the beam, which is at the regular rate of two revolutions per minute.

This 'light cost \$30,000 and it takes two-thirds that much per year to run it.

In searchlight language, a 'light is said to "speak" instead of to "shine." According to calculations, the St. George 'light speaks ten times as loud as would all the electric light signs in Manhattan, if they were put together.

Five miles or so down the Long Island Motor Parkway (the toll road where but for a small sum you may enter and open your throttle as wide as you like) from Curtiss Field, is located a practice field the Curtiss people have constructed for student fliers. Motorists are wont to gather here to

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watch the fledgling's shaky take-off and landing; pessimists say that they gather to watch for a mishap. Even so, minor accidents are rare, although nearly five hundred students are enrolled.

The news reels formerly portrayed young aviators-to-be in the act of being churned in some complex device to determine the extent of their dizziness after passing through the equivalent of tail-spins, loops, and related exercises. This method is still used at Army training posts, but the civilian flier is given barely any tests by the Department of Commerce. If one's heart and eyesight are good, he may be granted a license.

After passing the medical examination of the Department of Commerce, the student pays three hundred dollars and is well on the highway to aviatorship.

The 'planes have dual controls, with the student sitting behind the instructor. The student is taken up for a half-hour hop. After a dozen or so of these flights, he should be able to fly alone. During the war, fliers were often put into the air with half that much experience.

They are using up-to-date 'planes for instruction, but ere a student is turned loose, he must make a flight in a "Jenny," one of the old Army training 'planes. If he can fly a "Jenny," it is presumed he can fly anything.

Much attention is paid to tail-spins, landing, and all the other bothersome and terrifying details. Acrobatic stunts, night flying, and kindred phases of this aerial business are taught in a fifty-hour course costing eight hundred dollars.

They tell an interesting tale about Charlie Levine out at Curtiss Field. Levine, you remember, made the trip in the "Columbia" with Chamberlin. Mr. Levine was flying out at Curtiss Field. On the take-off his 'plane shot up with its wings nearer the vertical than the horizontal. A dozen mechanics rushed out and an ambulance loomed in the offing. Levine, however, righted the 'plane and, to the surprise of everyone, zoomed on up. Soon, however, an experienced pilot who had witnessed the incident from above, landed quietly and let Charlie have the sky to himself.

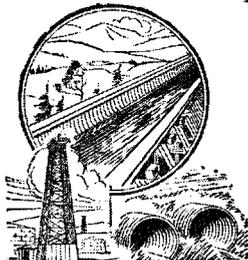
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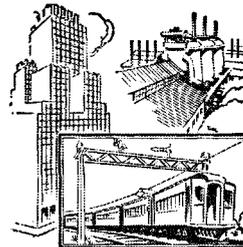
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