## SATURDAY COCKTAIL PARTY

By W. E. Hill





## Test Flying **Necessarily** Dangerous

By WAYNE THOMIS

THE LOSS of ten lives in the crash of the Boeing Airplane company's experimental strato-liner on March 18 is one of the tragic consequences of pioneering. Those lives at least were not lost in the senseless slaughter of a war, but in the advancement of commercial aviation-part of the expected toll of test flying.

The plane was one of six identical machines now being built by the Boeing company. They are 45,000-pound, four-engined monoplanes constructed entirely of metal, capable of carrying thirty-two passengers and a crew of five. The type is a commercial refinement of the army's B-17 bombardment machines, but it has a larger, rounder cabin that can be supercharged for passenger comfort at high

The plane that crashed was the first of the six to be assem-



The left outboard engine of the strato-liner, lying a quarter of a

mile from the main wreckage. No-

tice unfeathered propeller.

bled, and it had just begun its the left outboard engine had program of flight tests. The pressure cabin apparatus was not being tested in the air, although it already has been tested on the ground. Instead the ship was up for dive tests and pull-outs. This was to test the inherent strength of wings and tail surfaces and to determine the controlability of the ship at high speeds.

According to eyewitnesses of the accident, a breakage of one of the wings occurred after a prolonged dive in which, unquestionably, high speeds were The plane was extremely "clean," and speeds up motor. to 300 miles an hour might easily have been reached in a few seconds with the nose down.

Photographs of the wreckage reproduced here show that the major part of the left wing, including the left outboard motor, broke away from the ship in flight. That motor and pieces of the wing tip were found about a quarter of a mile from the rest of the wreckage. This led investigators to consider that a weakness in the motor mounting of

through trains because of its

Commuters come in on the

lower level, and this concourse

immediately below the upper

level hives with shoppers and

workers early in the morning

and with home-going throngs at

dusk. Two towers raised in the

subterranean recesses of the

lower level control the move-

ments of trains in this area,

while five towers govern move-

ments on the upper level.

with baggage.

Wreckage of the Boeing strato-liner in which ten died.



(Acme photo.)

Grand Central Station

Nose and pilot house of the demolished plane.

caused it to rip away, taking with it the wing. A failure within the engine itself might also have caused this to happen.

The photograph of the engine shows that the hydromatic propeller on it was not feathered at the time the motor tore loose from the wing. This would indicate that the breakage was violent and sudden. If the motor had failed internally, and the pilots within the ship had been given as much as thirty seconds, thus relieving the strain on that

Some of those who looked at the wreckage said that the right wing outside the two right engines also pulled away in flight, and the wreckage from the wings also sheared away the horizontal tail surfaces. They added that the machine apparently descended at high speed in a flat spin. Evidently the fuselage struck the ground in a horizontal position, so that the cabin "broke its back" in several places, but was not accordioned into a heap of metal, as it would have been had the machine struck nose first.

An air transport executive recently said that it was far better that such accidents should occur during tests than after the plane began carrying passengers. Findings after the accident should enable the engineers to prevent any such accident in the future.

The strato-liner had a wing spread of 105 feet and was 90 feet long. It was reported to have a top speed in level flight of more than 250 miles an hour and to be capable of cruising at 230 miles an hour at 17,000 feet. The cabin was built to withstand 21/2 more pounds of air pressure inside than outside, so that at 17,000 feet the pressure in the cabin could be maintained this propeller could have been at an equivalent of 11,000 feet fully feathered and stopped, in actual height - a pressure



The strato-liner as it took off on its first test flight.

(Continued from page eight.) building and back at night by another passageway to the Biltmore, Commodore, or Roosevelt hotel.

Beneath all this pulsating life the railroad trackage system feeds into the terminal like an convenience for the travelers unraveling rope. The tracks leading from upstate New York and New England skim underneath the surface of the streets at 96th street in Manhattan. Four tracks run directly beneath the shell that is Park avenue until 57th street, when the system divides into ten tracks. These extend to 50th street, where forty-two tracks widen out on the upper level and thirtyseven on the lower. Most of the tracks are stub end, but there are five which tie into a comgo back to the Mott Haven yard at 149th street, where they are cleaned and serviced, where the steak you will order that night on the Century going back to Chicago is prepared and placed on the diner.

is afforded by a series of ramps. The main concourse is ten feet below street level, so that plat-

forms for the trains on the upper

Tower A, the master control tower, is located at 50th street. plete loop, enabling trains to At this point the engineer who guided this correspondent through the labyrinthian passages of the terminal indicated a brick wall a few feet away which he identified as the supply basement of the Waldorf-As-

Baggage is handled by a series of elevators beneath 45th street Access to the terminal tracks and a subway extending east and west under this thoroughfare. The Grand Central postoffice shoots mail bags downward through chutes to tracks

level are only four feet down numbered 14 and 15, where mail on an easy grade. This upper cars are always standing for level is used for express or loading. Overhead are belt conveyors 800 feet long to carry the mail to the proper car. The conveyors are implemented by metal slides on wheels down which the sacks slip and finally plump to the station platform. The guide explained that these contraptions are necessary because Uncle Sam's postal regulations will not permit mail to be dropped vertically for more than three feet.

Twenty-five hundred persons are employed in the terminal, and unknown to the millions of persons who tramp about it every year is the nerve center which supplies life to the huge development, the physical plant which is carved out of the granite ribs of Manhattan Island 110 feet beneath street level and under the Graybar building. Here are the shops of the marble cutters and polishers, the painters with their paint-spraying apparatus, the carpenters with their dust-removing equipment, the plumbers, machine workers, and masons. Beneath the shops

is the room in which live steam is passed through giant boilers to obtain the hot water for all the buildings.

Down at the bottom is the electrical substation where juice is transformed from alternating to direct current by a battery of ten huge converters singing a symphony of power. Paneled control boards on one side govern the amount of electricity sent into the smallest light bulb at the furthermost point in the terminal and also dispatch a current of 660 volts to the third rails for propelling the trains. Near by is a wet-cell battery room, a constant reservoir of power from which enough voltage may be drawn to operate the lighting of the terminal for three-quarters of an hour, during which time, the station officials say, any emergency may

Not until late at night does Grand Central quiet down. A small army of cleaners wielding mops, brushes, and rags advances over the polished floor of the main concourse about 1 a.m. Then the station rests for a few hours until early in the morning, when it receives the first surge of commuters or a rush of holiday pleasure seekers. So it has been for twenty-six years.