A1
(X)B-48 (hist)

THE GLENN L. MARTIN COMPANY
PUBLIC RELATIONS DEPARTMENT
BALTIMORE 3, MARYLAND

EXCLUSIVE TO STEEL HORIZONS

RELEASE # 1479

Within the past few months the mighty XB-48 has been added to the U. S. Air Force's arsenal of fighting aircraft. The XB-48, built by The Glenn L. Martin Company, Baltimore, Maryland, is the world's largest high-speed jet-bomber of conventional exterior design -- though in some respects it remains highly unconventional.

Rated a lightweight among Air Force bombers, the XB-48 is powered by six General Electric J-35 gas turbine engines capable of delivering a total of 24,000 pounds of thrust. This power potential, when converted into more familiar horsepower, would about equal the combined energy of 280 average passenger automobiles.

With information on its performance characteristics still largely under wraps due to military security regulations, the Air Force has admitted that the XB-48 flies in the "500 mile per hour" class. Because of its speed, which is great, indeed, for a bomber, an entirely new development in landing gear was designed -- a tandem type, in which the main wheels like those of a bicycle are located one behind the other.

Tricycle landing gear, found on most aircraft today, was entirely impractical for the XB-48, for with tricycle gear, the main wheels fold into wing wells after the craft becomes airborne. With the XB-48, there is not sufficient room in the wings for large wheel wells because the wings are designed for high speeds and had to be extremely thin. By arranging for the tandem gear to fold into the fuselage of the XB-48, the desired wing design became practical.

Obviously, some wing support is necessary when the new bomber is stationary on the ground. Hence, small wheels are located midway under each

wing, and fold into the nacelles of the outboard engines when the craft is in flight.

Viewed directly from the front, there is a noticable droop to the wings, particularly toward the tips. However, in a fast taxi run, the droop becomes reversed -- to a degree where the outrigger wheels are lifted from the ground. From this point on, the XB-48 moves forward on its two "bicycle type" gear, and a strange sight it is, for at a distance the small wheels are not easily visible. In a fast run or actual take-off, with outriggers already off the ground, lateral stability is supplied by the lift of the wings.

So complete a departure from conventional landing gear types required a great deal of advanced planning and testing. Early in design stages, a Martin B-26 Marauder was secured from the Air Force and fitted up with tandem main wheels and outrigger balance wheels. Then dozens of landing and take-off tests were made. Movies and pilot reports were studied thoroughly before the decision was made that the new gear would function in a completely satisfactory manner on the XB-48.

Because of high temperatures necessarily present in the operation of a modern jet aircraft like the XB-48, certain parts had to be designed to withstand unusual heat. Therefore, stainless steel was used for vital components of the jet engines; for anti-icing ducting; for a number of flexible connections, and in other installations where metals must give high performance while being subjected to temperatures of 800° F. and more.

The XB-48 packs a lethal punch -- more than 10 tons of bombs, over a combat radius of hundreds of miles, and when necessary it can take its load to 40,000 feet where danger from flak is greatly diminished.

In building the first XB-48 in the unprecedented time of thirteen

months, the Martin Company developed a streamlined production technique which won high praise in the industry and from the Air Force's top command.

The engineering staff, which at its peak numbered 137, moved right into the plant, adjacent to the shop. A separate accounting section was established, its files and desks almost touching the engineers' drawing boards. Blueprints were made on the spot in "while-you-wait" style and materials ordered at the same time the designs were being drawn.

The XB-48 mock-up was only a few steps away, making possible instant checking of changes of placement of parts. The plane itself was built in the same section of a huge assembly building, a few hundred feet from the project offices. To add even more speed, a separate raw stores was established, stocking only raw materials and parts need on the XB-48.

This streamlined, simplified system boiled the entire project down to its essentials -- kept each part moving at maximum speed and efficiency toward its proper place in the finished airplane.

An engineer would sketch a simple plan for a special part. Instead of sending it through channels, he'd walk a few feet to the shop, lean over a machine and discuss it with the man who would make the part.

If no tooling were necessary, work on the part would begin immediately. If a tool were required, both men would walk over to a tool designer, explain their problem, and the three of them would work out the necessary tool. Then tool and drawing would be taken to the shop for manufacture. When the part was ready, it would be taken immediately to the airplane, where the man who designed it and the man who made it could watch it installed. All of which adds up to one of the most unorthodox airplane production programs ever attempted -- and, also, one of the most successful.

Two of these great new bombers have been delivered to the Air Force and are now undergoing advanced testing at Wright-Patterson Field, Ohio. The second is expected to show even more advanced performance than

the first.

They have a gross weight of 102,600 pounds; an empty weight of 58,500 pounds; wing area of 1,300 square feet; span of 108'4"; length of 85'9"; and height of 27'6". Crew is 3 men.

# # #