



COMPLETE MODEL

*It would delight any airplane model enthusiast to play with one of the most complete wind tunnel models of an airplane ever built—this tenth-scale edition of the four-engine 33-passenger Boeing 307 Stratoliners that will be flying soon. It has a 10-foot, 9-inch wing span and a hollow fuselage packed full of electric motors, wiring, etc., that will allow it to do almost everything except fly away. In the wind tunnel, flight is simulated by moving air.*

## AERONAUTICS

# Airplane Gasoline Tanks Made of Synthetic Rubber

**Bullet Holes or Other Punctures Easily Mended; Greater Fuel Capacity, at Less Weight, is Claim**

**G**REATER fuel capacity for airplanes, easier repair and reduced fire hazard are among the advantages of the new synthetic rubber gasoline tanks for aircraft described at the National Aeronautic Meeting sponsored by the Society of Automotive Engineers in Washington.

The new style tanks are flexible bags of airplane cloth impregnated with the synthetic, gasoline-resisting, man-made rubber called neoprene, declared F. J. Pepersack and C. E. Roberts, engineers of the Glenn L. Martin Company, Bal-

timore, who described the aviation advance.

The fuel tank bags are contained in light-weight frames which fit into the wings, pontoons or other parts of an airplane. The bags are made slightly larger than their containers so that, when full, they will press against the supports. The weight of the gasoline is thus carried on the structure and not by the containing bags.

Based on tests and experience the new tanks—called Mareng Cells—have the following advantages, the engineers reported:

1. They eliminate corrosion from gasoline which occurs in metal fuel tanks. The neoprene rubber material is highly resistant to gasoline's action.
2. They are not affected by vibration or the sloshing of fuel within them.
3. They can be easily repaired in the field by the use of temporary patches and cement in the same way that inner tubes on automobile tires are mended.
4. They permit a greater fuel capacity to be carried in a given space, with less weight per gallon, than is possible with conventional removable metal tanks.

5. They reduce fire hazard in a crash because they tend to reduce spillage of gasoline over wide areas. Bullets fired through the cells produce only small slits which can easily be repaired with small patches.

6. They permit easy removal and replacement because, when empty, the cell bags can be put through small openings and do not require the removal of large portions of the airplane structure as does the repair of permanent tanks built into wing structure.

7. The reduced air space above the fuel, due to the fullness of the cell, and the expelling of chlorine gas from the synthetic rubber material in event of fire, assist in extinguishing the flames.

Actual installation in airplanes shows that the rubber bag type of cell gives satisfactory performance at temperatures from 20 degrees below zero Fahrenheit to 110 degrees Fahrenheit.

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people more than any other form of government, Mr. Stephan said:

"Citizens need to know the facts about national development in order to vote intelligently on public questions."

Recalling that when President Hoover appointed commissions to study economic and social trends, these commissions reported a lack of satisfactory information on many important questions relating to American population, Mr. Stephan said that surveys in limited districts have been made since. But these, while useful, point to the need for nation-wide facts.

Information about distribution of income in various districts is needed by business concerns for the efficient marketing of their products, Mr. Stephan explained, in comment on the importance of questioning Americans about their incomes. This information is also needed by Congress, he added, for estimating the probable cost of changes proposed from time to time in Social Security legislation, and for many other uses.

Advising the American public to remember the flurry over a radio broadcast depicting an attack from Mars, Mr. Stephan predicted that many will calmly test the charges of "Census snooping" with all the facts they can find and then decide for themselves what to believe.

"Danger to our liberties in the collection of this information," he added, "is much less than the danger to our liberties from government that is based on rumors and guesses rather than facts."

*Science News Letter, March 23, 1940*

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## PATON RANCH

Situated on a mountain stream in the foothills of the Big Horn Mountains. Here a limited number of guests are cordially welcomed.

It is a region of great geological and historical interest. Marine fossils, dinosaur bones and Indian implements are found nearby.

Guest cabins are comfortable and attractive. Food is good. The use of a saddle horse is included in the weekly rate.

*Write for illustrated folder with map.*

WILLIAM PATON

Shell

Wyoming

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