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ENGINEERING ABSTRACTS

CHEVOLAIR AERO ENGINE

Arthur Chevrolet, formerly an automobile engine designer, has placed on the market a four-in-line, inverted, air-cooled, engine developing 120 horsepower. Gasoline and oil-feed control as well as the ignition system are dual and are designed to minimize complete engine failure while the plane is in the air. The new engine, which weighs 325 pounds, was used in a Travel-Air low-wing monoplane which won first place in a race for planes of its class at the Cleveland Air Races. The manufacturer plans to build also a six, eight, and twelve cylinder engine of this design.

—*Aero Digest*, November '29.

CONSOLIDATED COMMODORE FLYING BOAT

The Consolidated Aircraft Corporation has started production on the Commodore, a commercial adaptation of the navy flying boat XPY-1. It is designed to seat 32 passengers and is powered with two Pratt and Whitney 525 horsepower "Hornet" engines giving it a high speed of 130 miles per hour and a cruising speed of 110 miles per hour. The ship accommodates besides its thirty-two passengers, a crew of three and a certain amount of baggage and express. The interior of the plane is divided into cabins, each accommodating about eight passengers, while one of the cabins is provided with day beds for the comfort of the passengers.

The chairs in the cabins are of aluminum construction and are each provided with life preservers set in the base of the seats and covered with various colored cushions. Each of the cabins is furnished and decorated in a different manner from the others, the walls and seats being made to harmonize. The ship is equipped with a dressing room and a lavatory.

—*Aero Digest*, November '29.

GERMAN DEVELOPMENT IN GLASS AND METAL BUILDING CONSTRUCTION

The purpose of the research, by the Germans, in building design has been to give better-lighted, more beautiful and more conveniently arranged buildings. No attempt has been made to force art and function into unwilling co-operation but only to bring out the potentialities of art in structural necessities.

One example of construction with regard to the above ideals is the department store of Schocken in Stuttgart, Germany, designed by Erich Mendelsohn. As in most modern buildings, the structure is of steel, but steel is used more in the building than in other buildings of like size. Most of the outside walls are of glass and even the corners of the building are of rounded or curved glass.

Opaque glass is used to a large extent and some of the possibilities of the use of opaque glass in art and industry are brought out. Buildings with structural steel framework, opaque glass floors, ceilings and walls of clear glass were exhibited.

They were not found to be excessively expensive in construction and no additional ornamentation was needed to bring out their natural beauty. In fact, they gave a restful atmosphere not found in the ordinary building.

Another phase of the use of glass, both opaque and clear, was in the beautifying of steel supporting columns. Heretofore these columns were painfully concealed and camouflaged, but in the new models, the need of them is readily admitted by having them stand boldly where they are needed, but by the use of proper design of the column itself and liberal use of clear, frosted, and opaque glass ornamentation the columns are changed from a necessary construction evil to a means of beautifying and enhancing the structure.

Most of the illumination is accomplished by means of hidden reflectors, though some lighting effects are produced by placing lights behind the opaque walls and ceilings. The center of ornamentation is usually high and the lights so arranged as to carry the eye upward to this center.

—*Nation's Business*.

TRUSSLESS WOOD AIRPLANE HANGAR TESTED FOR RESISTANCE TO SNOW LOADS AND WIND PRESSURE SHOWS SLIGHT DEFLECTION

The ability of the trussless type all-wood airplane hangar to withstand high wind pressures and heavy snow loads has been conclusively demonstrated, it is said, by tests recently conducted on a Notrus Hangar belonging to the Great Lakes Aircraft Corporation, Cleveland, Ohio.

Wilbur Watson and Associates, engineers, report that a cable pressure of 10,500 pounds applied at three points, ranging from near ground level to near the apex of the structure, and equivalent to a 90-mile wind, produced a maximum deflection of only $\frac{3}{4}$ inch and an average deflection of only $\frac{1}{4}$ inch in the arch of the hangar after removal of pressure.

Bags of sand weighing 19,500 pounds, piled for a distance of 25 feet on each side of the hangar's crown, equivalent to a snow load of 30 pounds per square foot, caused a maximum deflection of only $\frac{5}{8}$ inches from original positions after removal of the weights.

No evidence of crushing of material at joists, movement of bolts, or splitting of members, was found, say the engineers who conducted the tests.

WOOD LINING USED IN SHIELD-DRIVEN TUNNEL

Wooden lining is creating an engineering precedent in the two-mile shield-driven tunnel being built to supply the new Ford plant at Detroit with water from the River Rouge. At the bottom of a seventy-foot shaft a huge steel shield will be forced horizontally through the earth by twenty hydraulic jacks, creating as it advances a tunnel 19 feet in diameter. As the shield progresses the tunnel behind it is lined with 8 x 8 dense long-leaf

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yellow pine timbers, four feet long. They will be beveled and fitted around the periphery of the tunnel so as to be held in place by the pressure of the surrounding earth. The use of wood for this purpose is novel. Cast iron has been the conventional material for this purpose.

SOLDIERS ALL

"When I was a little child," the sergeant sweetly addressed his men at the end of an exhaustive hour of drill, "I had a set of wooden soldiers. There was a poor little boy in the neighborhood and after I had been to Sunday School and listened to a stirring talk on the beauties of charity I softened enough to give them to him. Then I wanted them back and cried, but my mother said,

"Don't cry, Bertie, some day you will get your wooden soldiers back."

"And believe me, you lopsided, mutton-headed, goofus-brained set of certified rolling pins, that day has come."

—Exchange.

SUCH IS ART

Artist (to friend): "See that picture over there? Well, I painted it and a million wouldn't buy it."

Friend: "Well, I'm one of the million."

—Tick Talk

ADVANCEMENTS MADE

Announcement has been made of the advancement of Walter W. Tangeman from the position of General Sales Manager of The Cincinnati Milling Machine Company, Cincinnati, Ohio, to the post of Vice President, increasing his responsibilities and executive duties. Mr. Tangeman has been affiliated with The Cincinnati Milling Machine Company since 1909 when he began his cooperative schooling at the University of Cincinnati.

The appointment of Frederick B. Heitkamp as General Sales Manager to succeed Mr. Tangeman has also been announced. Mr. Heitkamp, who is a graduate of Rutgers University and who has been associated with the company since 1921, was formerly Assistant Sales Manager. His new duties will include complete supervision of sales activities.

DECEPTION

The fortunate youth gazed delightedly at his stunning date, as she gracefully descended the stairway. His heart beat violently as he realized that all this beauty was his. Charmingly she stood before him and whispered, "How do I look?" "Sweetheart," he murmured, as he took her in his arms, "you look mighty good to me."

"Don't let your impressions mislead you," she breathed, snuggling closer.—*Princeton Tiger*.

"Where was the wedding tonight?"

"Ha! ha! The joke is on you. That old man with the gun was going duck hunting.—*Lampoon*.

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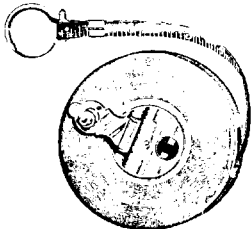
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