as close to indestructibility as any airplane can come. These design features have been developed, the engineers were told, within a plan for low-cost, rapid production.

Science News Letter, October 9, 1943

Manly Medal Awarded

➤ RESEARCH on oil systems of aircraft has won the Manly Memorial Medal for John Dolza and Harry C. Karcher of General Motors' Allison Division in Indianapolis.

Although the two engineers are the first medalists to be so honored since 1939, the award is available annually for the best paper on theory or practice in the construction of, or research in, aeronautical power plants, parts or accessories. It was established in 1928 to honor Charles M. Manly, designer of the forerunner of modern radial airplane engines. The subject of this year's prize-winning paper was, "Correlation of Ground and Altitude Performance of Oil Systems."

Science News Letter, October 9, 1943

ENGINEERING

Gas Tanks of Magnesium

Other uses in warplanes, such as turret cases, tail surfacing and parts, has resulted in the tripling of magnesium production.

➤ PRODUCTION of magnesium will soon be more than tripled as better gasoline tanks, turret cases, tail surfacing, and other aircraft parts are developed by use of the feather-weight metal, J. C. Mathes of the Dow Chemical Company, Midland, Mich., reported to the Society of Automotive Engineers meeting in Los Angeles.

Present abundance of magnesium, which is expected to continue under present conditions, will supply the plants now coming into production. By early next year production of magnesium sheet should triple, the engineers were told, and extruded parts should be available in five to ten times the former quantity.

The problem of building fabrication facilities has been complicated since many of the parts have never been made of magnesium before, and their requirements must be determined by further engineering study.

Used to supplement aluminum, the hard, silvery metal helps increase a plane's range, load, speed and maneuverability. Sheet magnesium was reported to be satisfactory for such uses as instrument panels, turret parts, and oil and gasoline tanks.

Twelve gallons more capacity and nine pounds less weight resulted from using magnesium gasoline tanks on the British Spitfire. The tanks are also more resistant to gunfire because the magnesium does not "tulip" and form ragged holes which prevent the coat of bullet-proofing rubber from sealing punctures effectively.

From 11% to 26% weight reduction is achieved by using magnesium sheet for surfacing ailerons, flaps, elevators and tail assemblies, Mr. Mathes reported.

Many researchers have been at work on the problem of part failures due to stress corrosion. Stresses resulting from arc-welding were named by Mr. Mathes as the most serious offenders, but it is now believed that this can be overcome by a stress-relieving process conducted at 400 degrees Fahrenheit for an hour.

Captured Nazi planes have shown a much higher base metal corrosion compared to American magnesium alloys due to impurities. Despite this, no corrosion failures were observed.

Science News Letter, October 9, 1943

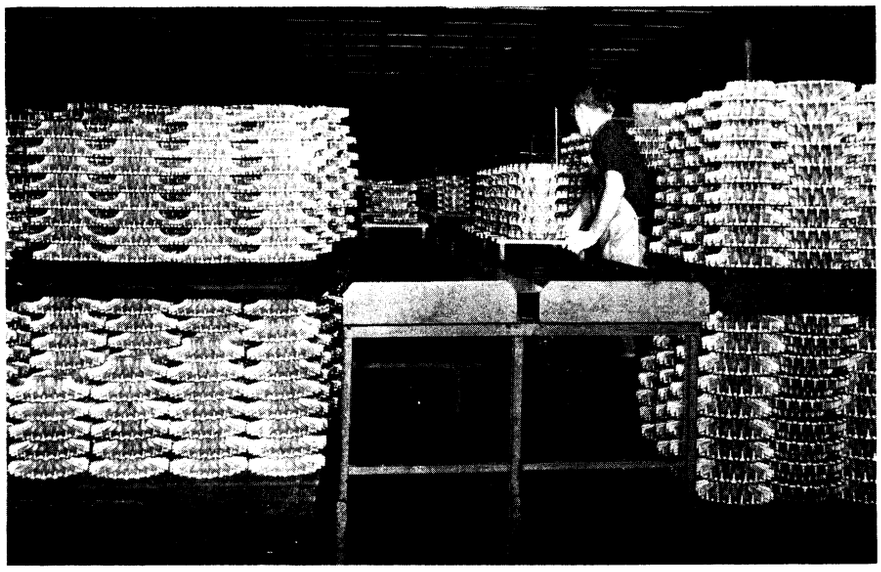
AGRICULTURE

Victory Gardens Produced 8,000,000 Tons of Food

➤ AMERICA'S Victory Garden program for 1943 has proved that Americans can meet emergencies. Approximately 20,000,000 gardens were cultivated. About 4,000,000 acres of land were used for them. Some 8,000,000 tons of food were produced. These are figures of the U. S. Department of Agriculture.

This means that approximately one out of every two families in the country had victory gardens. In the two severe drought areas, the Middle Atlantic states centered about the District of Columbia and the Oklahoma-Texas region, many of the gardens were a failure. Throughout the nation as a whole they produced abundantly. In tonnage the production is as great as that of the food for the entire Army. A soldier uses a ton of food a year. The Victory Garden production amounts to about 125 pounds for every man, women and child in the civilian population.

Science News Letter, October 9, 1943



FOR STRATOSPHERE—These are supercharger impellers, "fan" blades for the bombers that will fly in the upper air over enemy territory. They are being built in General Electric's Fort Wayne, Ind., plant.