

PLANES

NEWS OF THE
AVIATION
INDUSTRY

ALL MATERIAL
MAY BE
REPRODUCED

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Quoting a Few Land Generals

What opinion do ground army commanders—American and German—have of the effectiveness of air power?

Calling the roll of famous ground leaders from both sides:

General Eisenhower: "City after city has been systematically shattered. Our artillery could scarcely add to the completeness of the material destruction."

Field Marshal Gen. Karl von Rundstedt, following his capture, declared that the biggest single reason for Germany's losing the war was the Allies' tremendous air superiority which paralyzed the Wehrmacht.

He said of the Battle of Normandy: "The chaotic condition of the heavily bombed French roads and rail lines around D-Day—particularly in the Paris area—prevented me from bringing up troops to counterattack."

Referring to the ill-fated Ardennes offensive, he said it failed because Allied planes prevented troops and supplies from moving rapidly enough and because of the Nazi fuel shortage.

Specifically he said failure was due to lack of fuel for tanks "and the few planes we still had," after the loss of Rumanian oil fields; the systematic destruction of railroad communications so that during the Ardennes offensive "we couldn't cross the Rhine on a single rail line;" air raids on German industrial centers plus the loss of Silesia, which wrecked production of arms and ammunition.

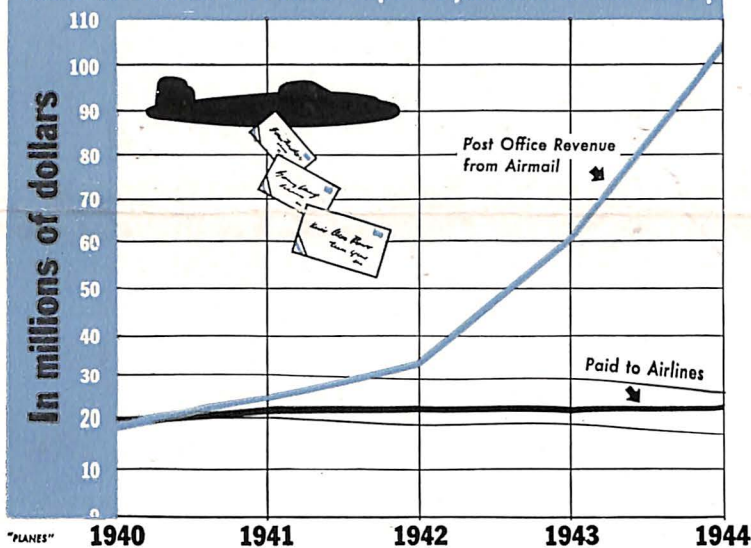
German Field Marshal von Kluge six weeks after D-Day:

"The troops have suffered heavy losses in men and equipment by strong air activity, and morale has greatly suffered . . . Yesterday's heavy fighting was successful for the enemy only because he paralyzed all our movements by employing fighter-bombers on an un-entented scale . . . Every movement of the enemy is prepared and protected by its Air Force. Our losses are extraordinary."

German Lieutenant General von Rothkirk, Army Group commander:

SENATOR MCKELLAR'S "FAD"!

Airmail Postal Revenue Tops Payments to Airlines



It Appeared "Utopian" to Some But The Tennessee Senator Won

Did you ever hear of Senator McKellar's "fad"?

Let's go back to 1918. It was May 8 and the Senate was in session. The clerk was still monotonously reading the annual Post Office Appropriation bill when one of the Senators arose, and, with surprise and some concern in his voice, said:

"Mr. President, I notice that the section just read provides for carrying of mail by airplane."

Senator Bankhead: "Yes."

Senator from Utah: "I want to ask the Senator whether the investigations of this committee (Post Office) justify the embarkation by the Government now upon a scheme to employ airplanes in carrying the mails? It seems to me that at this time, and in view of the unstable condition of aeronautics, it is a visionary, utopian and absurd plan . . ."

QUICKLY ON HIS FEET

Senator McKellar, now President of the Senate, was then serving his first term from Tennessee.

"How can you be expected to win a war when you have no gasoline and no horses?"

Our own **General George S. Patton, Jr.:**

"For about 250 miles I have seen the calling cards of the fighter-bombers, which are bullet marks in the pavement and burned tanks and trucks in the ditches."

He knew the Senator's remarks were meant for him and he was quickly on his feet.

"I just want to call the attention of the distinguished Senator to the fact that objections of this kind have been uniformly made, and frequently by our most distinguished men, to new discoveries and inventions of this kind. . . . I can say to the Senator that he is standing across the path of progress.

"I have no doubt that the time will come when we will use airplanes for a hundred different purposes and the world will feel that it could hardly get along without them.

"It may be that the money may not bring full results the first year or the second or even the third, but the time will come when the results will be shown by reason of these experiments."

Undeterred, the Senator from Utah replied:

Call For Action On Reconversion

Prompt action to settle the many aircraft industry reconversion problems has been urged in V-E Day statements by Donald W. Douglas, Chairman of the Board and Eugene E. Wilson, President of the Aeronautical Chamber of Commerce.

These, and other leaders in the aircraft manufacturing industry, say the following is required:

1. A courageous disposal of war surpluses.
2. An expanding program of Air Commerce development.
3. A long-range program of industrial research and development.
4. A program of uninterrupted procurement and replacement of military aircraft.
5. Specification as to the strength and composition of the post-war armed forces in World Security.
6. A long-range program of development and production and fullest encouragement to civil aviation, as called for in the Air Corps and Air Commerce Acts.

"It is possible that airplanes may be constructed for carrying a limited number of persons or for use commercially in a limited way, but I repeat that it is more or less a fad to talk of carrying the mails by means of airplanes at the present time."

BUT MCKELLAR WON

But when it came to a vote Senator McKellar had won, and \$100,000 was appropriated to "experiment" with use of airplanes to carry the mails.

On May 15, 1918, the first regular air mail service was inaugurated between New York and Washington.

Today, twenty-six years later, we find government revenue from air mail almost four times the amount paid by the government to mail-carrying domestic airlines.

In 1944, the government received \$103,359,000 in airmail revenue. It paid the airlines \$28,528,000.

A profitable thing, this "fad" of Senator McKellar's.

Where Boys Step Into the Age of Flight



“They Feel That in Aviation They are Heading Somewhere”

Fifteen-year-old boys engrossed in the study of arithmetic and physics at a summer vacation camp.

We didn't think it possible but it's true.

It is a phenomenon to everyone except the 50 boys at the Summer Aviation Camp at Easton, Pennsylvania, who are stepping into the age of flight as naturally as birds take to the air.

Opening its second summer session, this newest approach to aviation education is being pioneered by Lafayette College as a unique development in its engineering guidance program for boys.

And, according to Prof. Paul B. Eaton, Head of Mechanical Engineering Department and Camp Director, it has remained for aviation to provide an incentive sufficient to engross teen-agers in subjects which have tortured the college life of many an older college student.

“Never in my educational experience,” says Prof. Eaton, “have I witnessed such a display of consuming interest in any subject as I have by these boys in aviation.”

“The studies are fascinating to them because they feel that in aviation they are heading somewhere—they need no arguments on the future of aviation.”

The boys, 14 to 17, do not spend all their time pouring over books, but mix work with typical summer camp recreation activities. But even aviation is recreation.

Many learn to fly. Others only ride to get “flight experience.”

However, the general purpose of the camp is not to train pilots, but to introduce the boys to many aspects of aviation; to broaden their understanding of aviation as it will affect their everyday lives and to help them prepare to

participate in the air age.

The boys are familiarized with many phases of aviation by classroom, laboratory and flight demonstrations. The elementary students study basic principles of flying, air navigation, meteorology, and even essential geometry and trigonometry needed for an understanding of navigation.

All students study the Civil Air regulations. The advanced students use maps and charts to learn navigation; they go into weather forecasting in the study of meteorology, and discuss air foils, gravity, lift and drag, in learning the fundamentals of aerodynamics. They are taught to use a slide-rule in aviation mathematical computation.

The air age is here.

Wars Spur Transport

Greatest impetus to the development of all forms of transportation has come during or immediately after a war. Early European war extensively increased use of waterways; the Revolutionary War, the post roads and stage coaches; the Civil War, the railroads; World War I, the automobile and highways, and this war has developed the airplane and airways to unprecedented proportions.

Vigorous Rivalry Among Towns on Airpark Plans

Hundreds of Servicemen Show Interest In Small Landing Facilities

The greatest landing facility development program in aviation history apparently now is underway throughout the United States as indicated by marked increase in requests for planning guidance received by government and private aviation agencies.

Reports of seven regional field offices of the Civil Aeronautics Administration reveal that an average of 1600 individual consultations are being held monthly by CAA field engineers with municipal officials and private individuals on landing facility plans.

This is twice the activity experienced a year ago and does not include consultations between local officials and private engineering firms.

Interest which has steadily mounted since the first of the year is expected to increase further as the result of several new civil aviation developments which have given added urgency to the need for early planning of adequate landing facilities for both personal aircraft and air transport operations.

THREE NEW DEVELOPMENTS

These developments include:

1. Announcement by War Production Board of imminent relaxation of controls to permit tooling for early manufacture of personal planes.

2. Flood of applications by military pilots for civilian pilot licenses. Military pilots still in service are being given civilian pilot certificates at the rate of 5000 a month. Already 25,000 have been licensed, more than total certified civilian aircraft in the United States in 1941.

3. Increase in airline schedules due to return of military transports to airlines and allocation of other surplus transports bringing airline equipment totals to an all time high.

SERVICEMEN SHOW INTEREST

In addition to personal conferences in the field, hundreds of written requests are received weekly by the CAA Airports Division in Washington, The National Aeronautics Association and by the Personal Aircraft Council of the Aeronautical Chamber of Commerce.

Spearheading this interest are servicemen who account for more than 25 per cent of these communications. Many of those, from men overseas, direct that airport data be forwarded directly to municipal authorities of their hometowns.

Foot Power

W. F. Gerhardt built and succeeded in flying a 98-pound airplane with foot-pedal-operated propeller in 1923 at Dayton, O.

“Jaycees” Launch Air Age Program

The United States Junior Chamber of Commerce has adopted an “Air Age” development program and will utilize its 900 local “Jaycee” organizations to encourage community airport and airpark development and aviation education in the public schools.

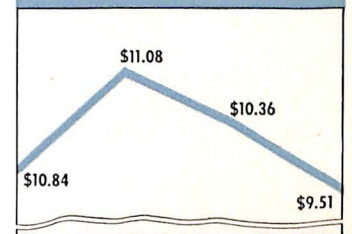
Kenneth E. Benson, National Aviation Committee Chairman told “Planes” that the young business leaders of the Jaycee “believe that establishment of a nation-wide system of small airparks and airports and aviation education for American youth are two important requisites to the full realization of the promised benefits of the Air Age.”

“To this end our organization will assist community and civic leaders in early planning for landing facilities and assist local school officials in establishment of aviation courses in school curricula at the elementary and secondary school levels,” he said.

German Rocket First

The first flight by a man-carrying rocket plane was made Sept. 30, 1929, at Frankfort, Germany, by Fritz von Opel, German automobile manufacturer.

PRODUCTION “KNOW HOW” CUTS AIRCRAFT COSTS



1941 1942 1943 1944
COST PER AIRFRAME POUND

When the aircraft industry production of new designs rolling in 1942, the cost curve took a plunge. Industry-developed production techniques have saved the taxpayers millions of dollars in aircraft costs.

Plane Makers Adjust Production Schedules for a One-Front War

The aircraft manufacturers, who built 26,296 planes during the first four months of this year, are materially reducing production schedules and shifting emphasis to production of combat types for the Pacific war.

With the European war over, manufacturers are adjusting schedules to meet rapidly changing cutbacks and cancellations expected to reduce production by at least 2000 planes a month before the end of the year. A total of 6,412 planes were produced in April, 1945.

Virtually all Army planes, with the exception of superbombers and certain transports, are involved in cutbacks, while the Navy is expected to continue at present or even higher level of production as air power heads for the Pacific in greater force than ever before.

Gradual easing of the production burden was revealed in the production record so far this year, which was more than 25 per cent less than the 35,009 plane output for the first four months of 1944.

At the same time, the average airplane weight continued to go up indicative of continuing emphasis on bigger and heavier air-

craft types.

Here is a comparison:

	Planes	
	1944	1945
Jan.	8789	6535
Feb.	8760	6296
March	9117	7053
April	8343	6412
	Average Plane Weight	
	1944	1945
Jan.	8931	11,063
Feb.	9292	11,292
March	9772	11,229
April	9876	11,478

The average weight of war-planes has more than doubled in four years. The average weight in 1940 was 4486 pounds.

Tunnels Aid Research

The chief tool of the scientists for aerodynamic research is the wind tunnel which measures air-plane characteristics under simulated flight conditions. The three general classes of wind tunnels are those which can test: 1. Full-sized aircraft in a moving airstream. 2. Free flying models in an inclined airstream. 3. Models under compressed air conditions (to more closely resemble actual flight performance).

PLANE QUIZ

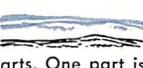
A 70 per cent score on this quiz is excellent. Sixty per cent is good. Answers on Page 4.

1. Air moves faster over the upper surface of a wing than it does the under surface. True or False?

2. At extremely high altitudes, homing pigeons have two distinct advantages over human beings. What are they?



3. A nation's Air Power is considered to be composed of three parts. One part is Air Force or use of aircraft as a weapon. Another is Aircraft Industry, or manufacturing resources. Can you name the third part?



4. What are the three busiest U.S.

Just a Lad

Although the superbombers of the 20th Air Force are striking body blows at Jap homeland, the 20th Air Force is "just a lad" according to its commanding officer, General H. H. Arnold. "Operationally, the 20th Air Force is just a lad" General Arnold said recently, "but it will grow up before the end of the summer."

air terminals in volume of daily passengers picked up and discharged?

5. Approximately how many battle-ships have been sunk by aircraft in this war? (a) none (b) five (c) 10

6. How many hours a day does the average air transport plane fly in scheduled domestic operation? (a) 6 hrs. (b) 10 hrs. (c) 13 hrs.

7. How far did Orville Wright fly on the first airplane flight at Kittyhawk in 1903?



8. In what year was first regular air mail service inaugurated?

9. If you were flying from Denver to Casablanca over the great circle route you would pass over (a) Washington (b) Quebec (c) Jacksonville, Fla.

10. More engineering time is spent in developing a new aircraft design before its first test flight than afterwards. True or False?

FOR SALE!

How would you like to own a 400-mile-an-hour surplus fighter plane?

It would probably cost you \$10,000 cash to buy it. It would take another \$2000 to put it into shape necessary for license by the Civil Aeronautics Administration.

But that's just the beginning. Here is what some of the engineers figure it would cost you to operate it per hour, assuming you would fly it 200 hours a year.

Gas (83 gallons an hour)	\$26.60
Oil (2 gallons an hour)	2.12
Hangar rent (per mo. spread over 200 hours)	1.50
Maintenance and periodic checks.....	5.00
Insurance	6.00
Depreciation	12.00
Spare parts	2.00
Personal property tax60

Total hourly cost \$55.82

Briefly, then, it would cost \$12,000 cash to buy and modify, and more than \$11,000 a year to operate.

In contrast, it may cost only \$2000 to buy certain types of small planes and around \$6.00 an hour or less to operate them at 100 miles per hour, instead of \$55.00 for the 400-mile-an-hour fighter.

P.S. And that personal plane will carry two persons, not just one.

Surplus Aircraft Available to Schools at Nominal Cost

Thousands of samples of precision aircraft equipment built for war soon will enhance American classroom study of aviation in its expanding peacetime role.

Costly bombers, sleek fighter planes, electronic instruments and parts obsoleted by the fast pace of technological development are being made available to schools at nominal cost from the increasing stockpiles of surplus equipment.

All material is restricted to non-flight use in classroom, research and general education activities in elementary and secondary schools and colleges which need only qualify as non-profit educational institutions.

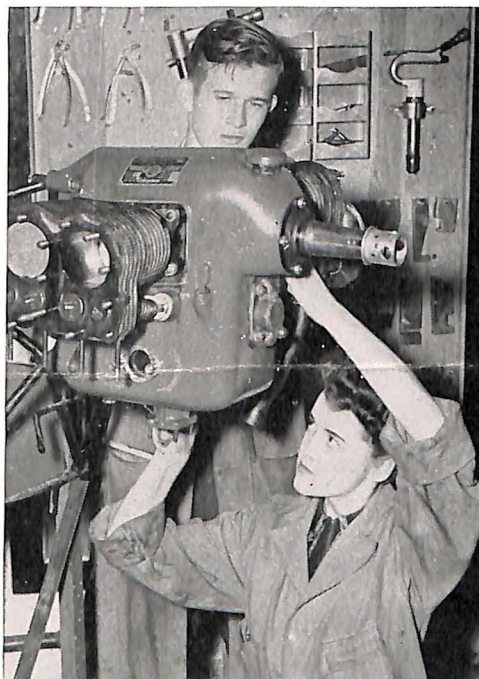
Under the program a half-million-dollar four-engined bomber will be obtainable by schools for \$350 and a 1500 horsepower engine will sell for \$10.

All schools must pay the shipping charges from Army or Navy bases where the surplus equipment has been stored.

Only that equipment unfit for military use and considered unsalable for commercial purposes will be made available to schools.

Educators indicate that a substantial proportion of the same 247,000 elementary and 30,000 high schools and colleges will avail themselves of the opportunity to obtain surplus aircraft equipment for both vocational and avocational purposes. In primary schools equipment will serve as exhibits to enhance considerations of general phases of new developments in aviation as they affect geography, world trade, and social culture of the world.

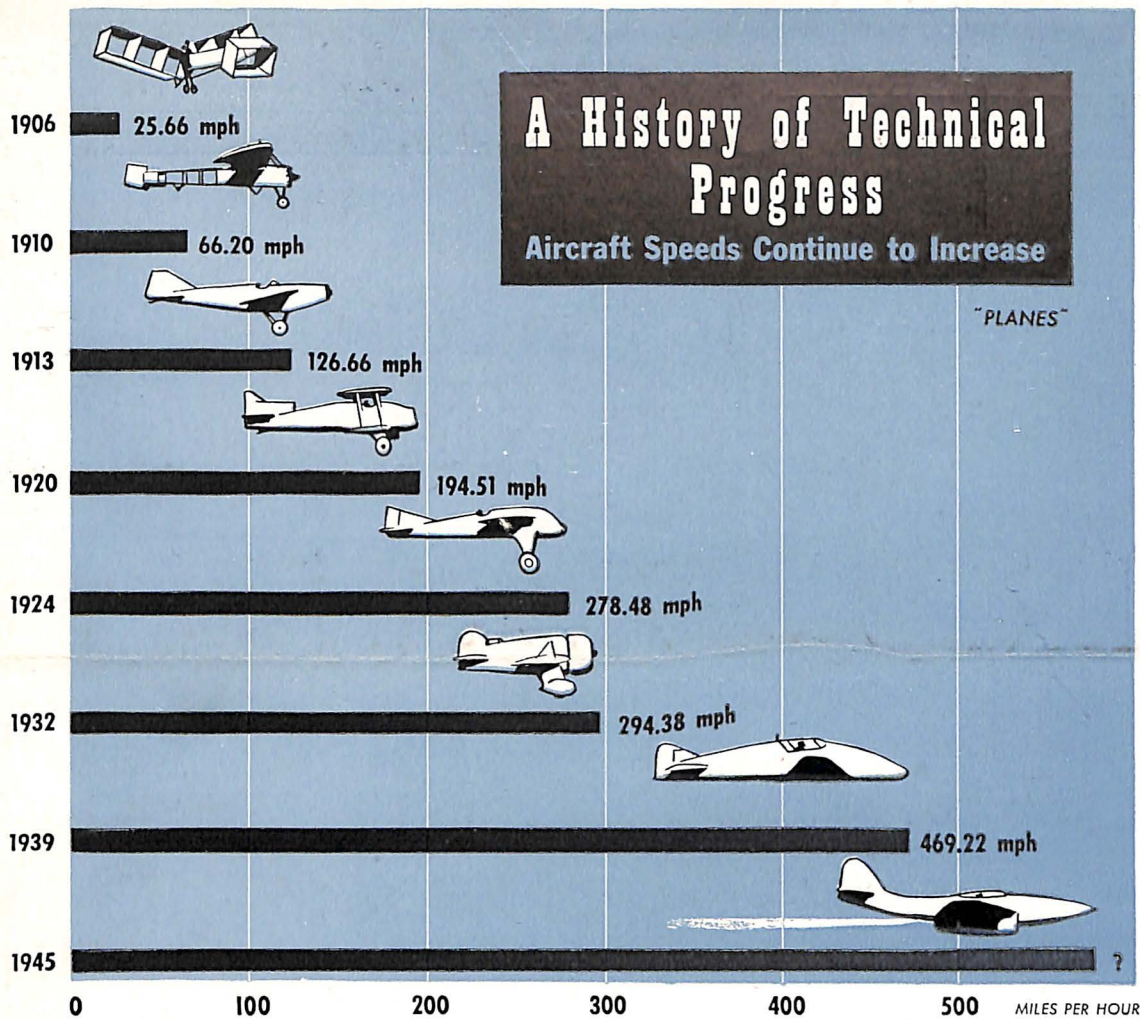
In high schools, the aircraft, engines and parts will be used not only as exhibits to supplement study of general aviation aspects but for vocational training



as well. The equipment will augment engineering laboratory equipment in the colleges.

A survey of schools to determine total equipment desired and types in demand is now being conducted by the Reconstruction Finance Corporation, the disposal agency, which is forwarding to each school superintendent a list of equipment that is to be made available.

All inquiries should be addressed to Education Disposal Section 63 of the RFC, Commonwealth Building, Washington.



There is no natural law today that limits either the size or speed of aircraft and present speeds already are approaching that of the speed of sound, around 750 miles per hour. The new forms of propulsion, jet and rockets, permitting these speeds, are still in their infancy.

Answers to Plane Quiz

- True. Wings are designed with greater curvature on top, forcing airstream to travel farther, thus faster. This results in a lower relative pressure on the top surface than underneath. The pressure differential acts as aerodynamic lift.
- According to tests, pigeons are unaffected by altitudes up to 40,000 feet, requiring neither pressurization nor extra oxygen.
- Air Commerce, or civil air transportation and personal flying.
- As of 1944: New York, 1870 passengers; Washington, 1381; and Chicago, 1285.
- c. At least ten. Oklahoma, Arizona, Utah (U.S.); Prince of Wales and Repulse (British); Tirpitz, Lutzow and Admiral Scheer (German); and Musashi and Yamato (Jap).
- c. It flies an average of 13 hours and slightly over 2000 miles a day.
- 120 feet; less than the wing span of a superbomber.
- May 15, 1918 between New York and Washington.
- Quebec.
- False. War experiences show many more times the engineering effort is devoted to developing a new model after it has reached the prototype stage.

New Book Voices Strong Plea for Maintaining Air Power for Peace

Possession by the United States of the greatest Air Power imposes upon it a major responsibility for World peace, Eugene E. Wilson, President of the Aeronautical Chamber of Commerce writes in his new book, "Air Power for Peace."

Mr. Wilson introduces a new and forceful concept of Air Power and its relation to future history, declaring that "in reality air power is the sum of the properly balanced air force, air commerce, and aircraft industry, just as sea power is the combination of the Navy, Merchant Marine, and the shipbuilding industries."

Mr. Wilson, who has an intimate knowledge of aviation's 41-year-old history writes: "This new medium of transport and communication is capable of

keeping the peace and helping to bring abundance to the people of the World. The airplane is at once a symbol and the embodiment of human freedom and can hold high freedom's torch."

He contends persuasively that Air Power, acting through air force to keep the peace, can earn its keep through air transport and aircraft production in the promoting of domestic and foreign commerce. While it may prove impractical, he says, to balance the wealth created by this new industry against the costs of new and improved equipment for the Air Forces, it is obvious that substantial sums will be recovered. In fact, the recovery could, in time, exceed the original cost. Beyond this, the savings resulting from maintaining an adequate air force as insurance against war are incalculable.

"Air Power, as we have seen it function in war, has been devastating," Mr. Wilson writes. "Air Power dedicated to peace can be correspondingly beneficent."



E. E. WILSON

War-improved aerial reconnaissance techniques will be a boon to postwar exploration of deposits. Color cameras flying planes will register colors and shades of vegetation and rock formations which are clues to the identity of underlying geological strata.

Air passengers and crews now are able to secure life insurance protection on the most liberal basis of any time in history. Of 36 life insurance companies surveyed, more than two-thirds now include airline passenger travel, regardless of the amount, at standard rates.

Army planes now can lay telephone wire. In a recent test a twin-engine transport plane laid 16 miles of army telephone wire in a little more than six minutes over rough wooded slopes with elevations between 1500 and 5000 feet.

The war utility of the little "grasshopper" plane reached a new high during closing phases of European war when a little artillery spotter, armed with five bazookas, knocked out five German tanks and two armored cars.

One of the newest applications to simplification of aircraft operation is a "controllable wing" which moves around two pivots to give control without need for conventional ailerons. The wing is undergoing preliminary flight tests by one of the major aircraft manufacturers.

American air carriers flew approximately 600 million passenger miles in 1938—twice as many as all European carriers combined.

Ten aircraft and engine manufacturers have thus far announced they are engaged in development of gas turbines for jet-propulsion and propeller applications, or both.

The Aero Club of Washington has recommended to Congressional leaders that the proposed National Memorial Stadium include a memorial Airpark, to accommodate not only personal plane owners flying to Stadium events but to serve as a convenient landing area for those flying to the nation's capital on business or pleasure events.

The post-war pattern of air traffic handling may be derived from tests at Army training bases where fighter planes take off and land every 30 seconds and superbombers take off at the rate of one every minute.