ANC

THE RUSSIAN H-BOMB—A GROWING THREAT

AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

"THE INEXCUSABLE RISK"

In the Airpower Stretchout we are losing our greatest asset—the sense of urgency

JUNE 1952 • THIRTY-FIVE CENTS

C. deM. Barnes '52

Wherever Man Flies

Hamilton Standard's long experience as the leader in propeller design and production is also devoted to supplying other equipment for such outstanding airplanes as the Boeing B-52, eight-jet bomber for the U. S. Air Force.

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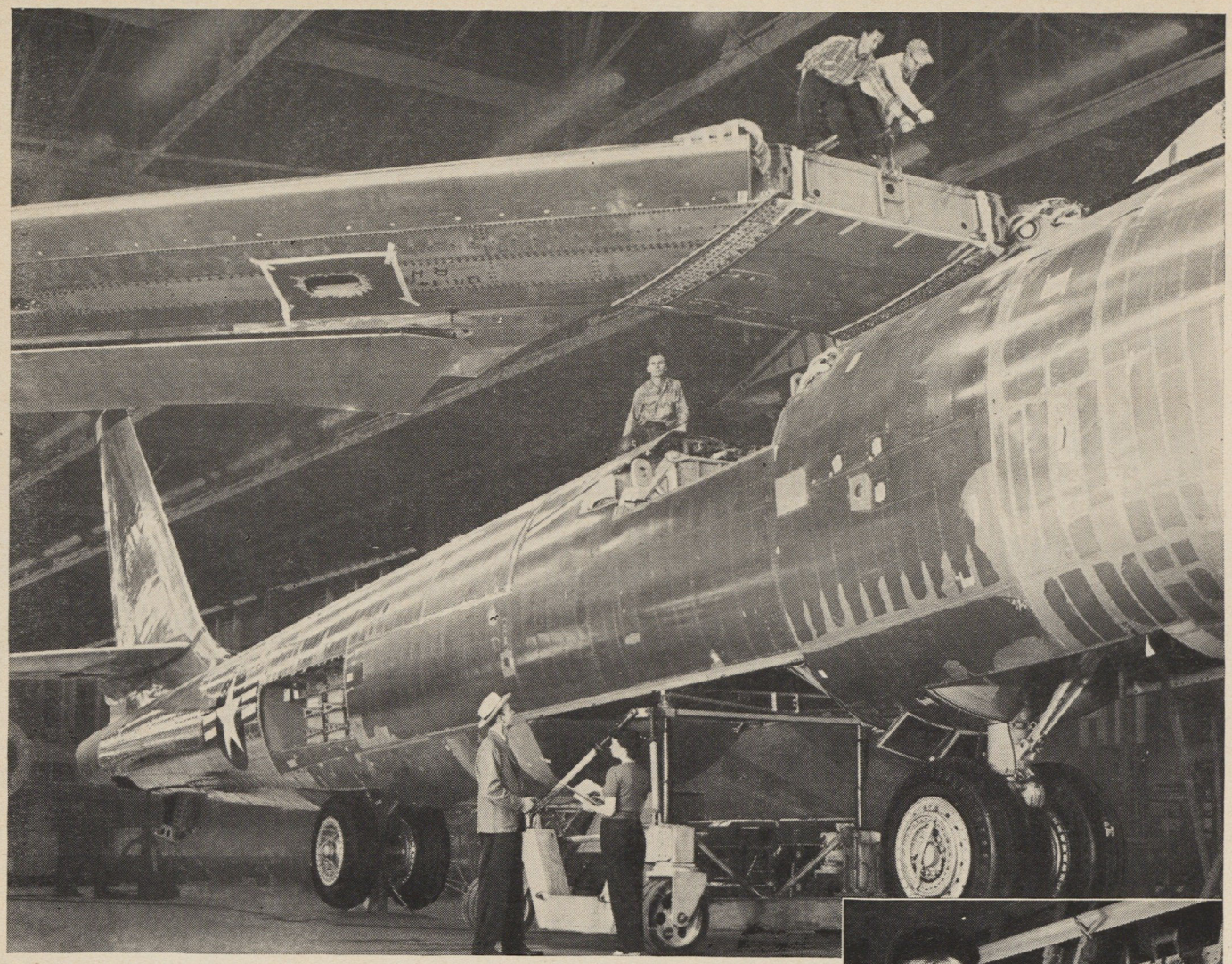


"Mating" the eight-ton B-47 wing with the fuselage.

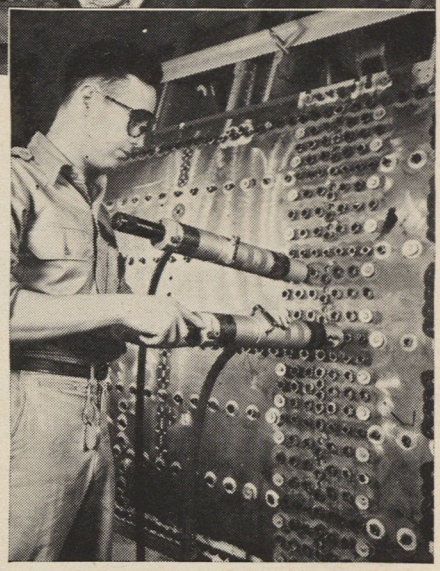
92 tons of watchmaker precision

In the world's fastest bomber—the B-47 Stratojet—Boeing engineers designed a completely revolutionary airplane. Its 92-ton bulk is composed of 52,000 different parts, each requiring a degree of precision comparable to that of a fine watch. When Boeing men set out to build it in production quantities they had to devise revolutionary methods.

As one example of their ingenuity, take the wing skin. Thick as the hide of a destroyer, it has to be drilled with 15,000 bolt and rivet holes, each positioned to tolerances as close as half a thousandth of an inch. A specially designed Boeing wing jig does the job.

Gigantic forgings which form the stiffeners at the wing shoulder must be drilled and machined with such precision that when the wing is "mated" with the fuselage, the huge assembly slips into place with less than a hair's breadth of clearance. Such accuracy in big aircraft building would have been called "impossible" a few years ago. Today it is routine.

From 35 years' experience in aircraft manufacture—and the building of thousands of B-17's and B-29's during World War II—Boeing had the men and the know-how to solve the highly complex manufacturing problems of putting the B-47 Stratojet into full production. These same manufacturing skills have also produced the XB-52 Stratofortress, America's new eight-jet heavy bomber, and have prepared the way for production of an undisclosed number of this great aircraft.



The unique Boeing wing jig permits drilling to extremely close tolerances.

For the Air Force, Boeing is building the
B-47 Stratojet, B-50 Superfortress, C-97 Stratofreighter, KC-97 Tanker and the B-52 Stratofortress;
and for the world's leading airlines, Boeing has built fleets of twin-deck Stratocruisers.

BOEING


Partners
Pratt & Whitney Licenses Ford Motor to Manufacture J-57 Axial Flow Jet Engines
East Hartford, Conn. The Ford Mo
licensed to build the P
according
f Detroit has been
urbo-Wasp engine,
Chrysler Corp. is Licensed to Build J-48 Turbo-Wasp
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United Air
Pratt & Whitney Licenses Nash-Kelvinator to Prod Double Wasp Piston Eng
East Hartford, Conn. The Pratt & Whitney Aircraft Divis
eration has licensed Nash-Kelvinator Corpora
orse-power Double Wasp piston engine
Canadian P&W to Produce R-1340 Wasp Engines
East Hartford, Conn.—An announcement was made here today that the Canadian Pra Whitney Aircraft Company
licensed
quanti
Ford Motor Co. Building Wasp Majors Under a P & W License
licens
East Hartford,
been grante

in Air Power

Pratt & Whitney Aircraft Teams Up With Licensees To Speed Supply of Aircraft Engines

"TEAMING UP" with other industries to produce more aircraft engines is not a new concept at Pratt & Whitney. The idea of licensing outside manufacturers was pioneered and developed into a practical system right here during World War II. It worked so well that Pratt & Whitney and its licensees produced almost half of all the horsepower used by Allied combat planes.

And now—at no profit to itself—Pratt & Whitney Aircraft is again building up another team of licensees. In the interest of national defense, this company is sharing the fruits of its research and its hard-earned production knowledge with—

The Ford Motor Company. This company is now swinging into production on the Wasp Major piston engine, which powers the Convair B-36F bomber, the Douglas C-124, Boeing C-97 and Fairchild C-119 transports for the Air Force. Ford has also been licensed to build the big axial-flow J-57 Turbo-Wasp jet engine, which will power the Air Force's Boeing B-52 and Convair B-60 bombers as well as other combat craft still under security restrictions.

The Chrysler Corporation. The Dodge division has been licensed to produce the J-48 Turbo-Wasp jet engine and the DeSoto division will build afterburners, for this power plant. The J-48 powers the Navy's Grumman F9F-5 Panther and swept-wing F9F-6 Cougar fighters and the Air Force's all-weather interceptor, the Lockheed F94-C.

Nash-Kelvinator Corporation. Licensed to build the Double Wasp piston engine, which powers the Navy's North American AJ-1 Savage bomber, Grumman Guardian anti-submarine airplane and Vought Corsair fighter. This engine also is used in the Air Force's Convair T-29 and Beech T-36 transport trainers and the Chase C-123 and Douglas C-118A and R6D-1 transports, as well as in new large helicopters.

Canadian Pratt & Whitney Aircraft Ltd. This subsidiary of United Aircraft Corporation will build the 600 h.p. Wasp engine in a brand new plant now nearing completion at Longueuil, Quebec. The Wasp will power the de Havilland Otter transport and the Canadian-built T-6 trainer.

Supplementing Pratt & Whitney's own greatly expanded production, these outstanding companies will put their manufacturing know-how to work to produce the large quantity of Pratt & Whitney engines needed for the defense effort.

Pratt & Whitney Aircraft

PRATT & WHITNEY AIRCRAFT — DEPENDABLE ENGINES

ONE OF THE FOUR DIVISIONS OF
UNITED AIRCRAFT CORPORATION

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The Aircraft: Lockheed F-94
The Engine: Pratt & Whitney Aircraft J-48 Jet
Fuel Metering: Holley Turbine Control

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AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

VOL. 35, No. 6

JUNE 1952

Shooting the Breeze

It has often been said, cynically perhaps, that getting ahead in the world depends, not on what you know but whom you know. In our kind of magazine-publishing operation this can be paraphrased to read, "It's not how many people who read your magazine but who they are that counts."

The circulation of AIR FORCE Magazine probably will never equal the millions of some of our outsize newsstand competitors. We rather hope not, although we must confess we wouldn't boggle at a substantial increase.

We do feel, however, that the influence of what appears in these pages is penetrating far beyond the comparatively cozy circle of our members, subscribers and newsstand buyers. And there is a growing body of evidence that such is the case.

During recent months articles appearing in this magazine have been widely quoted in the nation's press, on the floor of Congress, on radio and television, have been incorporated into the curriculum of top-level schools within the Air Force and other armed services.

This kind of recognition is extremely gratifying because it means that the air power message is being brought to a large segment of the public that would otherwise never be exposed to it. Spreading the airpower message is one of the prime reasons for our existence as a magazine.

All this doesn't mean that we're not open to suggestions from our long-time readers as well as from our new-found friends. We welcome them and wish we'd get more. Please don't hesitate to drop us a line, whether in criticism or in praise.

FEATURES

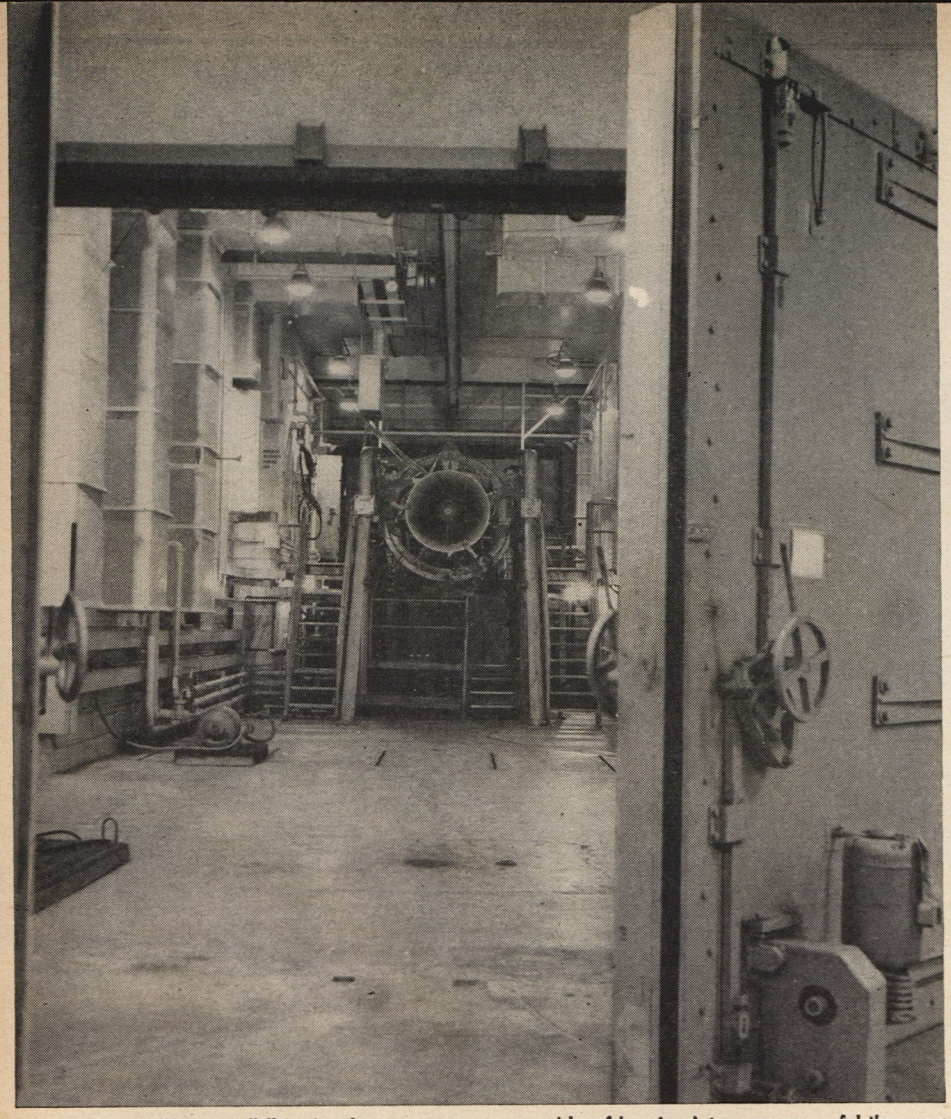
DEPARTMENTS

THE COVER

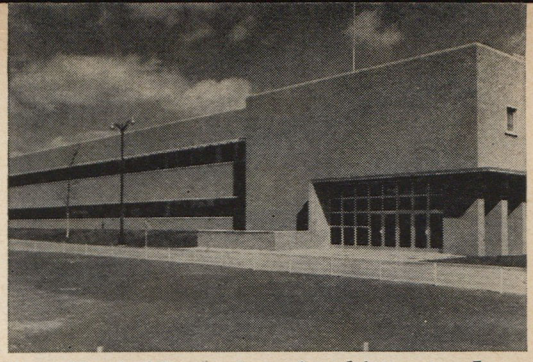
To drive home the implications of our cover, executed by artist Charles DeM. Barnes, we can do no better than to quote Senator Brien McMahon, chairman of the Joint Atomic Energy Committee—"Do not for a moment overlook the obvious—that Soviet Russia broke our atomic bomb monopoly sooner than we expected, and she would break any hydrogen-bomb monopoly with equal or greater speed." See page 21

AIR FORCE MAGAZINE is published monthly by The Air Force Association at McCall Street, Dayton 1, Ohio. **EDITORIAL OFFICE:** 1424 K St., N.W., Washington 5, D. C., Sterling 2305. Publisher assumes no responsibility for unsolicited material. **ADVERTISING OFFICES:** Main Office: 114 East 40th Street, New York 16, N. Y., Murray Hill 9-3817, Sanford A. Wolf, Advertising Director. Pacific Coast Offices: Keenan and Eickelberg, 638 S. Van Ness Ave., Los Angeles 4, Calif., Dunkirk 2-8458; 235 Montgomery St., San Francisco 5, Calif. Douglas 2-1323; 333 S.W. Oak St., Portland 4, Ore. Broadway 3210. Mid-West Office: Urben Farley, 120 S. La Salle St., Chicago 3, Ill. Financial 6-3074. **MAILING:** Re-entered as second class matter, December 11, 1947, at the post office at Dayton, Ohio, under the Act of March 3, 1879. **SUBSCRIPTIONS:** $4.00 per year. Single copy, 35 cents. **REGISTRATION:** Trademark registered by the Air Force Association.

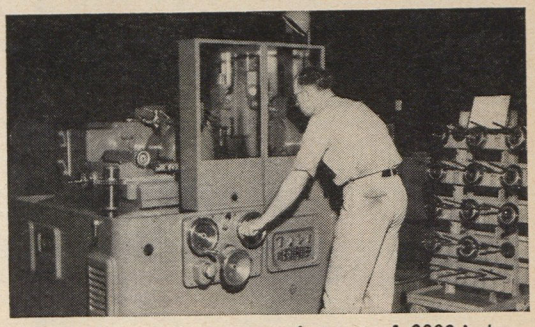
Printed in U.S.A. **CORRESPONDENCE:** All correspondence pertaining to editorial matter and change of address should be sent to Air Force Association, 1424 K St., N.W., Washington 5, D. C.



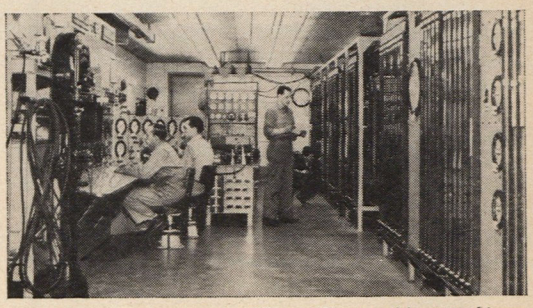
"Super-cells" in development area are capable of housing jets more powerful than any now in existence. Thirty-three new cells for production engines have also been added.



New office building is pivot-point of jet center. Functional construction and decor contribute to efficiency.



New machine grinds gears to tolerances of .0003 inches. Modern machinery like this speeds jet manufacture.



Test cell control room is "floated" on rubber cushions and suspended in air to insure instrument accuracy.

JET CENTER, U.S.A.

Nearly four million square feet of floor space, employment approaching 8000, and some of the most modern and complete jet-producing facilities in the world make up "Jet Center, U.S.A.," the new General Electric plant at Lockland, Ohio. Dedicated on the tenth anniversary of the first American jet engine, this new jet giant will be a tremendous factor in the future of American aviation.

Lockland provides for rapid expansion to meet national emergencies as well as a foundation for peace time production. While its recent rapid growth has been due mainly to the demands of increased aircraft production, Lockland will remain to spearhead the progress of aviation and to bulwark national security.

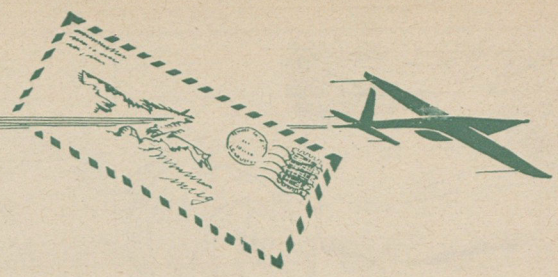
Features of the new plant are a new parts production building and a new engineering and administration building, both recently completed, and a new Components Development Center now under construction. One large building, previously used for assembly of production engines, is now devoted to development work to bridge the difficult gap between experiment and production. Two huge new test cells, with a common control room, have been built especially large to accommodate engines of extremely high thrust ratings.

During the fastest ten years in history, jet engines designed and developed by General Electric have powered more planes, set more records, and flown more hours than all other U.S. jets combined. Now, with this experience, a team of skilled workers and the new facilities available at Lockland, General Electric works for the future.

210-28

You can put your confidence in—

GENERAL ELECTRIC



AIR MAIL

Still Wanted

Gentlemen: My son, soon to complete OCS artillery training, has been told that no more candidates are wanted for flight training. Your article "Directing Artillery to Directing Traffic" (April issue) states "The Army is trying to encourage more young officers to volunteer for flight training." Is this obsolete information?

Redleg's Father

• *Army says it still wants young officers to apply for aviation training. However, and especially in the case of OCS graduates, a given applicant may be more urgently needed for an overseas artillery assignment. If so, the officer may reapply six months before his overseas tour is scheduled to end. Chances are, if he meets requirements, he will then be accepted.—The Editors*

Flight Pay

Gentlemen: We all hope you guys are doing something to enlighten Congress on the proposed $30 flying pay. This ridiculous amount won't stand up under any examination when one considers an airman's required technical qualifications, time spent directly and indirectly in maintaining proficiency, risk, et cetera.

Maj. Paul Marriott
San Bernardino, Calif.

• *Ridiculous it is.—The Editors*

Caught Off-Base

Gentlemen: Your magazine performs an invaluable service for those of us on off-base duty and otherwise unable to keep completely current with developments within our Department.

1st Lt. Royale L. Steele
Garden City, L. I., N. Y.

One Man's Opinion

Gentlemen: This letter, although a bit late, will nevertheless be of some interest to you and perhaps your readers. I was more than a little interested in your April issue, and believe it among the best to date. I feel you could do better on giving us more information on the present-day USAF as to groups, men, and machines. It seems you're getting too many articles on the future (?) AF, and far too many articles on the whys and wherefores of our policy today. You have, it would seem, turned your publication into a political sword rather than an organ to keep AF men and other persons interested in the AF and its development.

The wartime AIR FORCE Magazine was the type of book I'd like to see your present-day publication revert to. As a suggestion, you could publish short histories of the various groups, and give us more details on today's and the last war's aircraft.

We who are truly interested in the Air Force need no reasons or explanations as to why the B-36, or why the losses on ground support work, or a dozen other whys. If you want the Congressmen to know the whys, how about doing it some other way? Instead of using up all that paper for what I term political wrangling, use it to show us the Air Force today. I know your creed states something about the furtherance of the Air Force and its aims, but for crying out loud, let us know more about the Air Force you're fighting so hard for!

As an example, I heard from a fellow the other day who just recently found out his old World War II unit was reactivated and had been in battle; yet this was old news to those of us who are interested in and study the Air Force and its history. That article on the 106th ANG (former) wing was fine—why not more shorts like that? Everyone wants to know about his unit, be it present day or World War II, or his aircraft, or his buddies. You've got the material to use at your offices; why not dust it off and get it into print!

Once again, thanks for the April issue, and here's hoping for a better AIR FORCE (magazine, that is).

A. E. Ferko
Salem, Ohio

• *What say, readers?—The Editors*

From the Front

Gentlemen: I am gratified to see that, in your April issue, so much time was devoted to the thought and research necessary to make an excellent presentation of the Korean air war, and compliment you on the interesting manner in which it was compiled. I feel that the wide circulation which this information will be given through the medium of your magazine will be of great value to military personnel.

Col. Francis S. Gabreski
51st Fighter Interceptor Wing
APO 970, San Francisco, Calif.

CAP Booster

Gentlemen: Have just acquired a copy of AIR FORCE Magazine and think it's a most informative and interesting publication. Congratulations on such a fine job.

I was surprised that you didn't include any information about the Civil Air Patrol. This organization is a very important part of the defense of our nation, and is supported by the United States Air Force. During World War II, CAP sacrificed men and aircraft to the cause of liberty, yet many people don't know of it and its job in military aviation.

Pfc. Robert W. Caccia
Chanute AFB, Ill.

• *We've tipped our hat freely and frequently to the CAP. An article about CAP's tenth birthday appeared in our December 1951 issue. But space requirements just don't permit the kind of coverage every month we'd like to give CAP.—The Editors*

Another Ace Uncovered

Gentlemen: It seems to me you bypassed an Ace in your April article "More About Aces." Lt. Col. Gerald Johnson, of the 49th Fighter Gp., 5th AF, had 24 Nips to his credit. Col. Johnson lost his life in an operational accident in a B-25 over Japan in 1945 after the war was over.

James Gallagher
Baltimore 18, Md.

• *Reader Gallagher is not the only one who has questions on Aces. Our only defense is to say that our spread was based on information furnished by the Air Force from its official records.—The Editors*

Happy Reservist

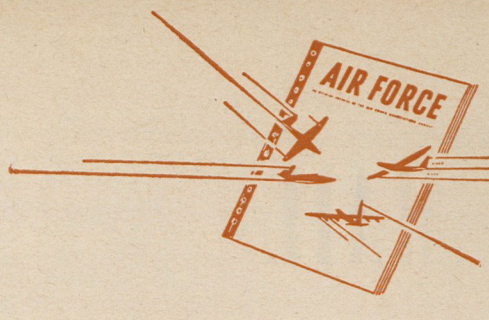
Gentlemen: I'm a bit shamefaced about waiting so long to renew my AFA membership, especially in the light of a pretty important favor AFA did for me.

I'm one of those 1950 AFROTC graduates who have not yet been called. Now in my second year of law school, I'm hoping to get through the year before going on active duty. My draft board classified me 1-A last fall, and it was at this point that I thought of applying for immediate active duty. Then I was referred to Mr. Jake Culpepper in your Headquarters. He was my one source of friendly and accurate advice as to my status and the possibility of being activated immediately.

As it turned out, the Local Board deferred me, and I'm hoping that between my commission and my now-eight-year contract, I will be able to stay out of the Army until June, when I'll be applying for active duty.

I mention this little incident, a small part of Mr. Culpepper's day's work probably, to explain that I do appreciate not only the large-scale interest AFA has in the USAF, but also in the little things so important to the individual reservists. I want to go on record as being sincerely appreciative to Mr. Culpepper and the Association for the help and advice I got in this matter.

2d Lt., USAFR



RENDEZVOUS

Where the Gang gets together

376TH BOMB GROUP (H) VETS: The sixth annual reunion of the 376th Heavy Bomb Group Veterans Assn. will be held at the Park Sheraton Hotel, New York City, July 10-13. Get in touch with *Wiley Golden, 371 Probasco Ave., Cincinnati 20, Ohio.*

379TH SQUADRON REUNION: The 379th Sqdn., 310th Bomb Gp., 12th AF is holding its reunion July 4-6, 1952, at The Hotel Carter, Cleveland, Ohio. Big things planned, so hurry and write for questionnaire and further information. *Joe Rademacher, 1535 E. Willard, Decatur, Ill.*

388TH BOMB GROUP (H) REUNION: The third annual reunion of the 388th Bomb Group (H) Assn. will be held at the French Lick Springs Hotel, French Lick, Ind., July 17-19. For additional information write *Lloyd Long, Secretary, 383 Adam, Tonowanda, N. Y.*

C.B.I.V.A. GET-TOGETHER: The fifth annual reunion of the China-Burma-India Veterans Association is scheduled for Aug. 7-10, in Omaha, Nebr. Details from *Ernest F. Brose, 348 Pennsylvania Ave., Lones Park, Ill.*

485TH BOMB GROUP (H): Any information on proposed history of the 485th Bomb Gp., 830th Bomb Sqdn., 15th AF in Italy 1944-45? Would also like to locate Capt. A. R. Molloy, T/Sgt. James McFadden, and S/Sgt. Wilfred Kirkhoff, all of the Bombsight Dept., 485th Bomb Gp. (H), at Venosa, Italy, during 1944-45. *1st Lt. Paul R. McCutcheon, 335½ West 9th St., Traverse City, Mich.*

GLENN MILLER RECORDS: Several members of the Los Angeles ETO Squadron are planning an 8th Air Force party, and would like to borrow some of the old Glenn Miller Overseas Band transcriptions or records that he cut in England. Anyone know where they can be located? *Richard C. O'Brien, 1462 Silverlake Blvd., Los Angeles, Calif.*

306TH BOMB GROUP HISTORY: Only about 25 copies of *First Over Germany: The Story of the 306th Bomb Group* are still available. Write the author, *Arthur P. Bove, 100 South Main St., Putnam, Conn.*

"JOLLY ROGER" HISTORY: A few copies of the history of the 90th Bomb Gp. (Jolly Roger) (H), 5th AF, are available. I'd like to swap one for a copy of the 320th Bomb Sqdn., 90th Bomb Gp. *S/Sgt. F. A. Gutierrez, 111th Recon. Tech. Sqdn., GWAFB, Fairchild, Wash.*

24TH COMBAT MAPPING SQUADRON: Anyone know if a history of the 24th Combat Mapping Sqdn. has ever been written? The outfit was part of the 8th Recon. Gp. with headquarters in Calcutta, India. *Herbert R. Wampole, 34 North Third St., Souderton, Penna.*

318TH & 73D HISTORIES: Anyone know of a history of the 318th Fighter Gp.? Also the 73d Fighter Sqdn.? Would like to hear from some former members of the 73d. *Vernon C. Rubenking, P.O. Box 185, Beason, Ill.*

385TH BOMB GROUP (H): What happened to the history of the 385th Bomb Gp. (H), 8th AF? I received publication notice in '45 but have never been able to locate a copy. *Robert E. Dennard, 1320 Kirby Bldg., Dallas, Tex.*

486TH BOMB GROUP: Am interested in information re history of 486th, formerly of 4th Wing, 3d Div., 8th AF. If any former member contemplates a compilation I have numerous photos, etc. *Capt. R. H. Hodges, Det. 19-10, 19th Wea. Sqdn., 35th Air Div., Dobbins AFB, Ga.*

AIRLIFT VETERAN: My son, Capt. Robert E. Cockburn, who was killed in a C-47 crash Aug. 15,1950, in Shelbyville, Tenn., was in a weather squadron during the Berlin Airlift Dec. 1948 to June 1949. I'd like to hear from any of his "Vittles" buddies. *Mrs. Victoria M. Moore, 710 16th St., Santa Monica, Calif.*

"POOP DECK DADDY" NAVIGATOR. Leaving England Nov. 16, 1944 on a mission to Oslo, Norway, B-24 Liberator "Poop Deck Daddy" and its crew were lost. My son, 2d Lt. Irving Fann, 0-798775, of the 67th Bomb Sqdn., 44th Bomb Gp., 8th AF, was navigator. Would appreciate hearing from anyone who could tell me where or how the plane was lost. *Harry Fann, 701 South Mariposa Ave., Los Angeles 5, Calif.*

To insure appearance in a given issue, Rendezvous items should be in this office approximately six weeks prior to publication. For example, copy for August issue should be in our hands by June 15.—The Editors

When Decisions, are based on Precedent . . .

Precedent — the reservoir of experience. It enabled such great jurists as John Marshall, Oliver Wendell Holmes and Charles Evans Hughes to reach many of their most important decisions. Today, this same principle is equally reliable in business. Applied to your problem of deciding the best source for your aircraft instruments and accessories, precedent will inevitably lead you to Eclipse-Pioneer: Practically every American plane that flies carries Eclipse-Pioneer equipment; Aircraft and engine manufacturers as well as airlines have learned to rely on Eclipse-Pioneer quality; From aviation's earliest days, Eclipse-Pioneer has demonstrated its ability to design and manufacture for both experimental and operational requirements. It is a record unmatched in its field...ample precedent for your decision to call on Eclipse-Pioneer.

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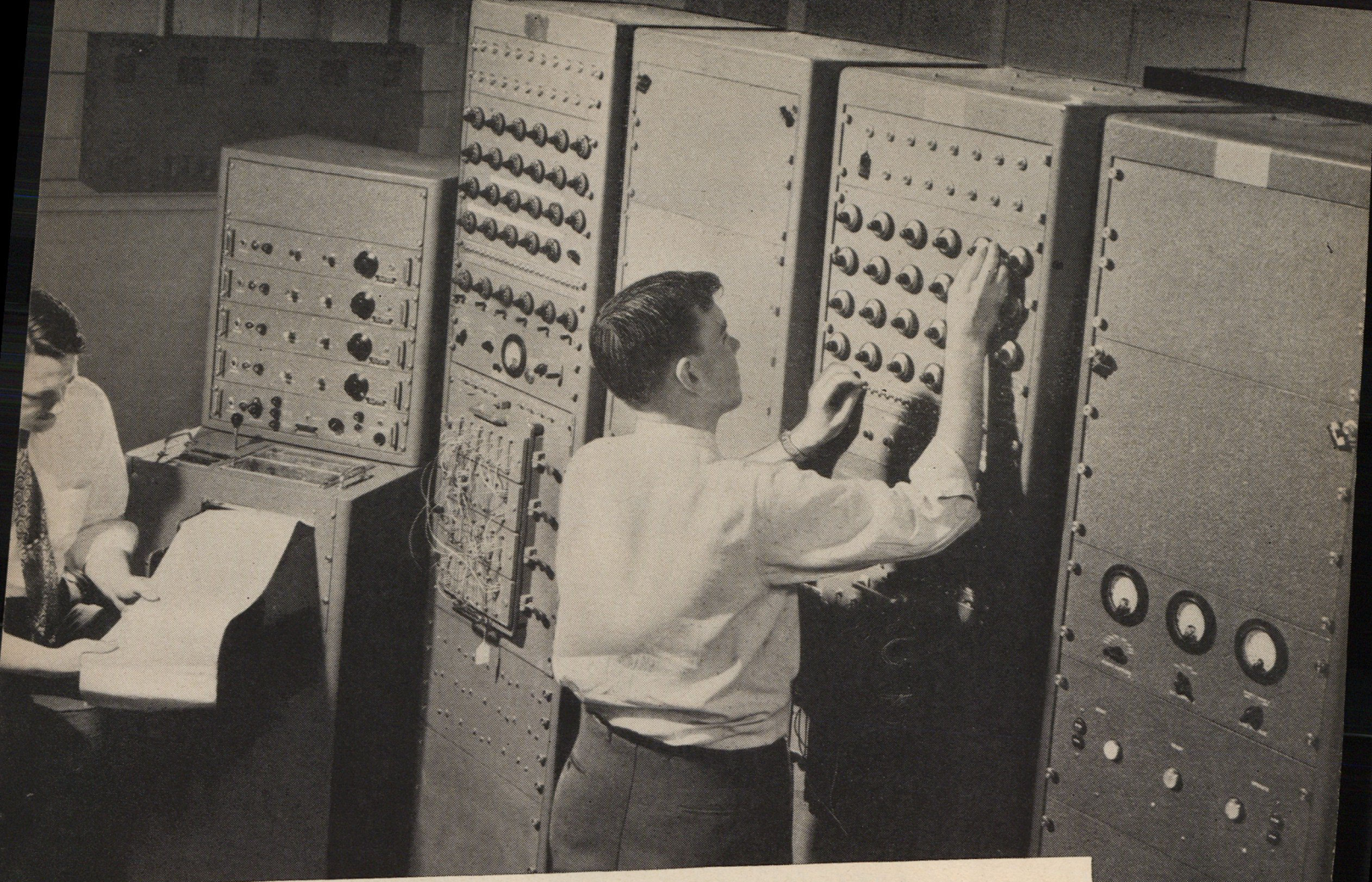


HOW TO "WRING OUT" AUTOMATIC CONTROLS FOR AIRCRAFT

That, in effect, is what these engineers are doing—by means of mathematical equations fed into Honeywell's analog computing equipment, part of which is shown above.

Simulated flight testing of automatic controls in this manner is constantly being done by Honeywell aero research men because it makes actual flight testing easier and less costly.

Use of the analog computer is just one example of the kind of research being done at Honeywell to help build better automatic controls for airplanes. Research activities in the fields of jet engine, temperature and fire control, nonlinear mechanics, digital data operation and control, as well as many others are constantly being carried out.

We expect to expand our research program in the years ahead—because *automatic control* is such an important part of aviation progress. And *automatic control* is Honeywell's business.

AERONAUTICAL DIVISION

MINNEAPOLIS-HONEYWELL • MINNEAPOLIS 13, MINNESOTA

MINNEAPOLIS **Honeywell**

Aeronautical Controls

AIRPOWER IN THE NEWS

SMALL BUSINESS participation in defense effort should be increased to high degree under new purchasing procedures jointly negotiated by Small Defense Plants Administration and Department of AF. Together they have established a method which makes certain that contracts which may be handled by firms qualifying as small business are actually placed with such firms. To facilitate placing of orders, representatives of SDPA may be assigned to Headquarters of Air Materiel Command.

MATS world-wide operations, estimated from its founding on June 1, '48 to May 1, '52, total: 1,165,970 passengers, 227,000 air-evacuated patients, 238,000 tons cargo and mail, and 395,000 total tons (includes tonnage of passengers, patients, cargo and mail). MATS Pacific Airlift statistics, estimated from July 1, '50 through April '52 (inbound and outbound), follow: 281,000 passengers, 45,000 patients, 62,000 tons of cargo and mail, 98,000 total tons (includes tons of passengers, patients, cargo and mail).

AF BASES: Wherry Act housing projects have been approved, but not yet begun, for following bases: Connally AFB, Tex., 500; Craig AFB, Ala., 225; Great Falls AFB, Mont., 400; Hill AFB, Utah, 350; and March AFB, Calif., 644...Master plan for 12-week indoctrination training has been drawn up at Lackland AFB, Tex. Course was shortened from 13 weeks in July '50 following outbreak of Korean War...Better steaks and less stew are in store for airmen as result of Armed Forces' four-way method of cutting side of beef, Chicago specialist H. L. Borten explained to three-day meat cutting conference at Great Falls AFB, Mont...Air Crew School (Medium Bombardment) at Randolph AFB, Tex., has been renamed USAF Advanced Flying School (MB)...Now known as USAF Advanced Flying School (Fighter) is former USAF Air Crew School (Fighter), Nellis AFB, Nev.

GREATEST aerial strike in Korean War took place when successive waves of Allied fighter-bombers wiped out ancient city of Suan, near North Korean capital of Pyongyang...First successful landing at geographic North Pole was accomplished last month by USAF C-47 crew.

NEW push-button hangar which will enable air defense interceptors to leave ground in less than three minutes and challenge possible enemy bombers will be in operation at Burlington, Vt., shortly...Thrust of British Sapphire engine has been increased from 7800 pounds to 8300 pounds, according to a manufacturer's announcement.

SIXTH annual all-woman transcontinental air force race from Santa Ana, Calif., to Teterboro, N.J., is scheduled to be held July 4-9.

CLAIM forms are presently being prepared by War Claims Commission for use by WWII prisoners of war in obtaining newly approved $1.50 per day for those who were subjected to uncompensated forced labor and/or inhumane treatment in violation of Geneva Convention of 1929. This payment will be in addition to the $1 a day previously received in compensation for substandard living conditions.

NOISE PROBLEM near congested airports will be a major headache when jet transports come into general use, says the Acoustical Society of America.

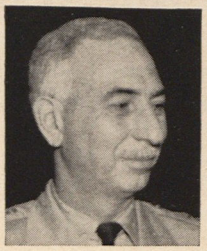
(Continued on page 45)

PEOPLE

In The Air News

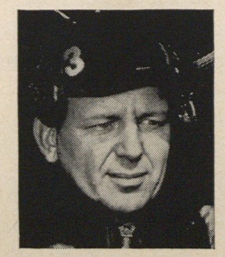
Lt. Marianne I. Nutt, housewife, former WASP pilot and now Air Force Reserve officer, who, along with 164 World War II retreads, is getting refresher training at Mitchel AFB, Long Island. A veteran of 1,400 pilot hours, and qualified on fighter aircraft, Lt. Nott was a ferry pilot during World War II. She joined the Air Force Reserve in 1946.

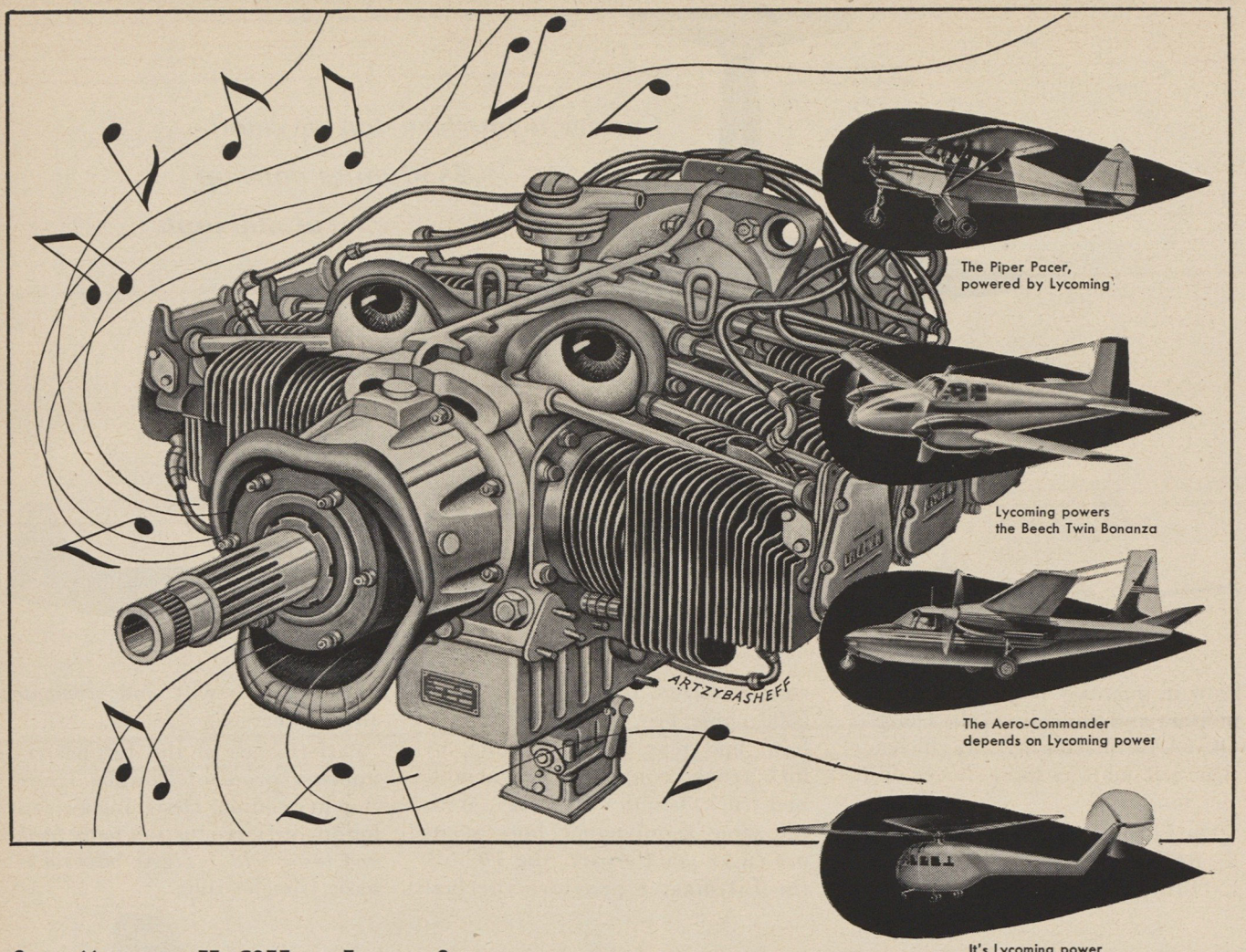
Maj. Gen. Joseph Smith, commanding general of the Military Air Transport Service, whose command celebrates its fourth birthday in June. MATS recently was awarded a bronze plaque by the National Safety Council for its 30 percent reduction of ground accidents in 1951. The plaque is awarded annually to the major command having the best safety record.



Jacob DeShazer, former AF sergeant and Tokyo Raid veteran, honored by the Doolittle raiders at their annual reunion in Miami. DeShazer, who was imprisoned in Japan after the raid, has returned there as a missionary. His comrades, meeting on the tenth anniversary of the epic mission, adopted a motion lauding his work.

Capt. Harold D. "Digger" Unger, at 43 called the oldest combat aircraft commander in the Air Force. He recently completed a tour of duty flying the reconnaissance version of the B-29 in the Far East. A Reserve officer, Unger was a funeral director in Indianapolis before being recalled to active duty. Hence the nickname.





The Piper Pacer, powered by Lycoming

Lycoming powers the Beech Twin Bonanza

The Aero-Commander depends on Lycoming power

It's Lycoming power for the Doman Helicopter

its "song" fills the air

The power that puts Piper, Beech, Aero-Commander, Doman, and many other planes into the air offers to American industry numerous other applications. For *this* is *air-cooled* power—practical, economical, dependable wherever and however it is used. More than ever, it's the power of today, destined to be the power of the future.

Whether such power offers possibilities for you, or whether your need is precision machining, product development, or high-volume production—Lycoming offers extensive facilities and well-rounded experience. *Whatever* your problem—look to Lycoming!

For a more complete story on Lycoming's varied activities and facilities, write—on your company letterhead—for the interestingly illustrated booklet "Let's Look at Lycoming."

To power their planes with fine engines—in a wide horse-power range—**many famous American aircraft makers call on Lycoming for precision production.**

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LOOK TO **LYCOMING** FOR RESEARCH FOR PRECISION PRODUCTION

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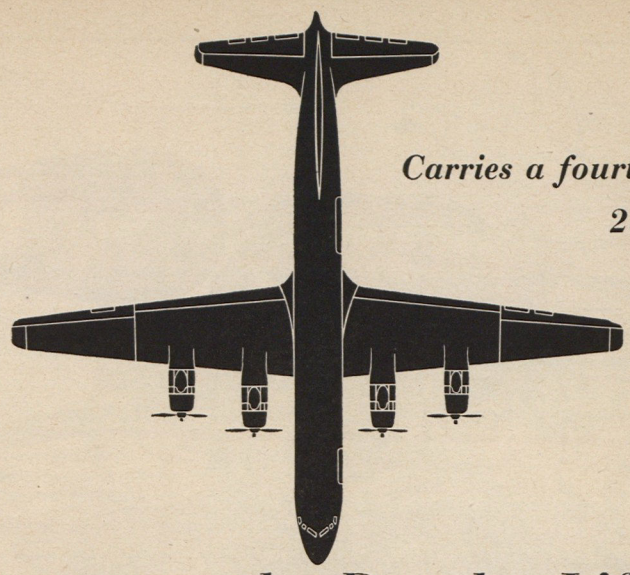
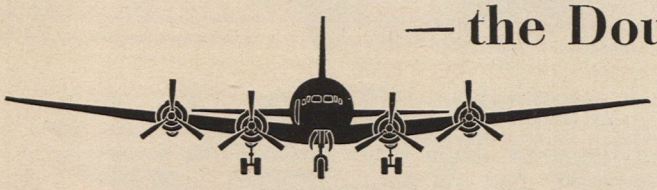
BRIDGEPORT-LYCOMING DIVISION, STRATFORD, CONN.

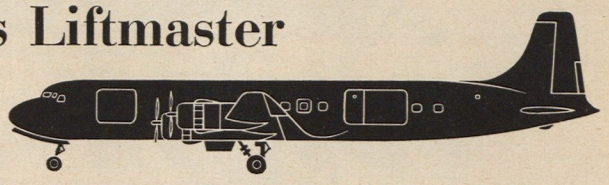
AVCO MANUFACTURING CORPORATION



Carries a fourteen-ton payload
2850 miles nonstop
at 300 mph

—the Douglas Liftmaster

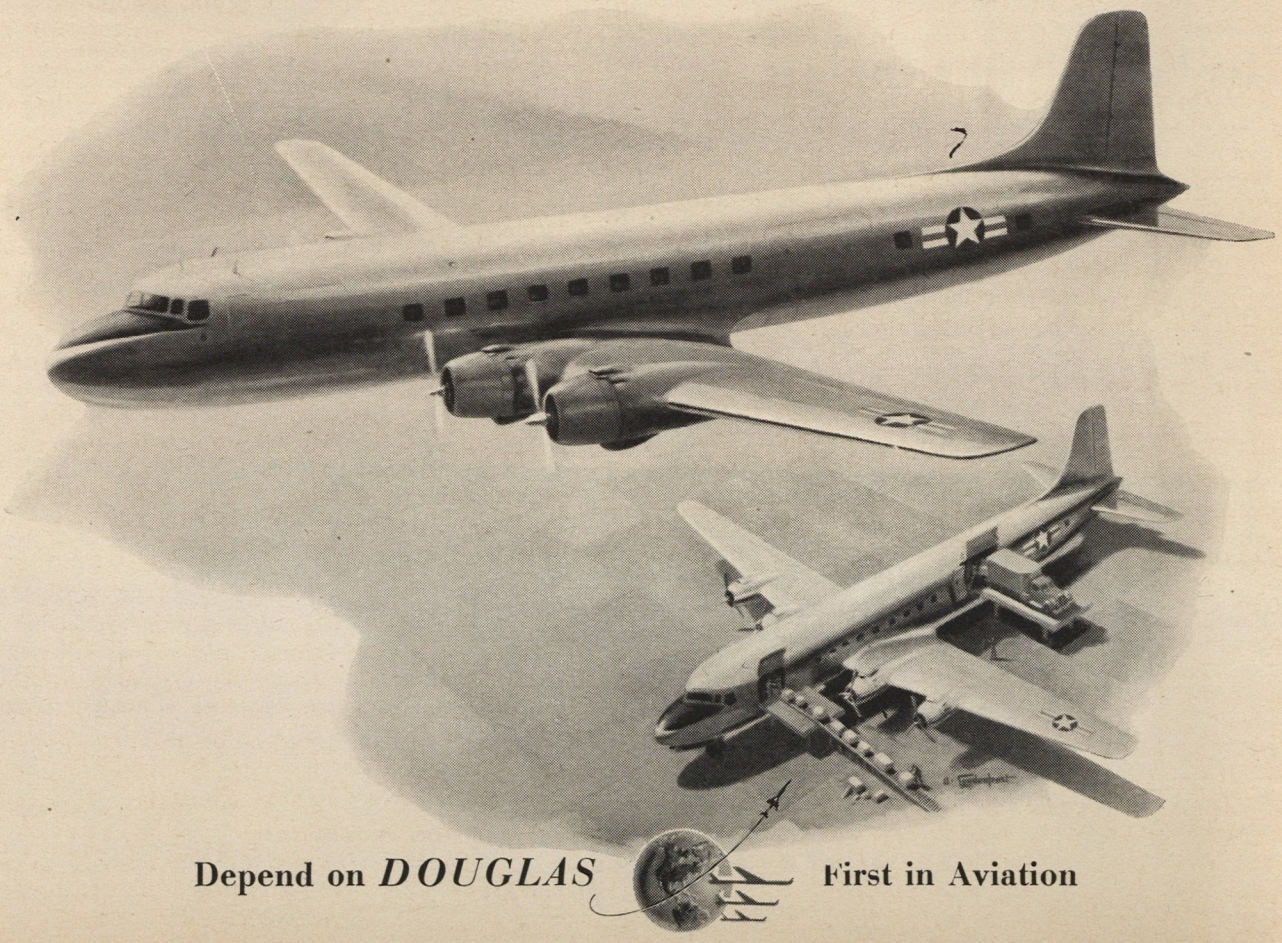




Now in quantity production for the military and the airlines, the Douglas DC-6A Liftmaster delivers efficiency where it matters most, *lower costs per ton mile!*

The Liftmaster, known to the Navy as R6D, and to the Air Force as C-118-A, has *three* level floored cargo compartments, totaling a capacious 5000 cubic feet. Access is through front and rear doors. Loading, by fork truck, conveyor, or variable bed truck, is quick and easy. With the same aerodynamic lines as its passenger counterpart, the DC-6B, the Liftmaster provides the last word in the swift and *economical* airlift of cargo.

Performance of the Liftmaster is another proof of Douglas leadership in aviation. Designing airplanes for quantity production to *fly farther and faster with a bigger payload* is a basic Douglas rule.



Depend on *DOUGLAS* **First in Aviation**

THE 'SIT-DOWN' STRIKE

AN EDITORIAL

By Harold C. Stuart

President, Air Force Association

THE much-publicized "sit-down strike" of a few Air Force reserve flyers should have surprised no one. Sooner or later our vacillating, stop-and-go defense policy was bound to infect the cockpit, as it has infected so many other elements of the preparedness effort. If anything, it is surprising that the distasteful headlines were so long in coming.

Refusals to participate in the defense program have not been uncommon. Numbers of business executives, sorely needed in Washington to help guide the program, have refused the call to duty on the basis that it would interfere with their personal plans. Segments of labor have refused to accept personal dislocations resulting from military production. Portions of industry have refused to accept defense business for the simple reason that it was more convenient and more profitable to continue to service their regular customers. Some members of Congress have refused to come to grips with vital military legislation for fear that it might not be politically compensating to do so.

Under a system of government which depends in large degree upon the voluntary participation of its people, each of these refusals must be considered, in its own fashion, a form of "sit-down strike" against the preparedness effort. All stem, in turn, from a "sit-down" at our highest policy levels. Here there has been consistent refusal to face up to the facts of the nation's military requirements. Here the sense of urgency has been drained from the defense program through a series of cutbacks and stretchouts.

Without in any way attempting to defend their actions, I urge that the incident regarding a handful of flyers who refused to fly be weighed with these considerations in mind.

Air Force Association has a deep personal interest in the factors surrounding the flyers' "sit-down," and in the problems which led to it. Our Association was formed on the premise that adequate airpower was vital to national security, airpower which is dependent upon the adequacy of our air crews. Further, as the largest organization of Air Force veterans and reservists, we are concerned about any situation which involves the integrity of this group. Several thousand of our members have been recalled to active duty since the start of the Korean War, numbers of them involuntarily. We have received hundreds of letters from these men. The personal problems relating to the "sit-down" were not new to us.

As early as 1947, we advocated a "70-group Air Force," which included an extensive pilot-training program, and, in addition, an adequate reserve force, equipped with modern aircraft and readily available to augment the 70-group structure when needed. Then we saw both the 70-group establishment and its reserve program compromised into impotency. With the Korean War, and the resulting shortages in skilled military manpower, the Air Force called upon its civilian war veterans to bolster the regular establishment. Thus, many thousands of air reservists, including two complete combat wings which went directly to Korea, were immediately recalled under the announced pressure of a war emergency. The involuntary recall program dipped deep into the ranks of reservists who were unpaid, untrained, and unenthusiastic about military service.

Dislocations in family life were inevitable and, as always, the wives and children suffered. But by and large the reserves accepted their return to active duty as a necessary, although often inconvenient, fulfillment of an obligation to their government. Quite rightly, they asked that their military experience and civilian skills be fully utilized, something which has not always been the case. They also asked, with justification, that they receive fair treatment in promotions, personal benefits, assignment to combat duty, rotation and the like. In such matters the government, and in this case the Air Force, has an obligation to see to it that reservists and regulars are treated as equals, dependent upon individual qualifications and military requirements.

As the early crises of the Korean War passed and the conflict dragged on, other questions arose from the reservists. "Is this trip necessary?" they asked. And for good reason. Korea continued to be officially recognized as only a "police action," the airpower build-up continued to drag its feet, and butter continued to hold sway over guns. The sense of urgency had gone, and the recalled reservist seemed to be the man caught in the middle. Under these circumstances, the reserve record is unusually good.

There are 50,000 rated reserve officers on active duty with the Air Force, including 7,500 flyers who have

(Continued on page 19)

INFORMATION on positions at NORTHROP

Northrop Aircraft, Inc. is engaged in vitally important projects in scientific and engineering development, in addition to aircraft production. The program is diversified, interesting and long-range. Exceptional opportunities await qualified individuals.

The most responsible positions will go to top-caliber engineers and scientists. However, a number of excellent positions exist for capable, but less experienced, engineers. Some examples of the types of positions now open are:

ELECTRONIC PROJECT ENGINEERS...
ELECTRONIC INSTRUMENTATION ENGINEERS...RADAR ENGINEERS...
FLIGHT-TEST ENGINEERS...
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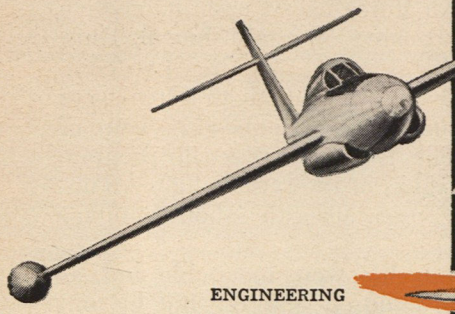

ENGINEERING DRAWING CHECKERS...
AERO- AND THERMODYNAMICISTS...
SERVO-MECHANISTS...POWER-PLANT INSTALLATION DESIGNERS...
STRUCTURAL DESIGNERS...
ELECTRO-MECHANICAL DESIGNERS...
ELECTRICAL INSTALLATION DESIGNERS.

Qualified engineers and scientists who wish to locate permanently in Southern California are invited to write for further information regarding these interesting, long-range positions. Please include an outline of your experience and training.

Allowance for travel expenses.

Address correspondence to Director of Engineering, Northrop Aircraft, Inc. 1045 E. Broadway, Hawthorne, California

5A9

The U. S. Air Force's F-89 Scorpion all-weather interceptor combines devastating firepower, advanced electronic equipment and high speed for its vital defense task. Designed and built by Northrop Aircraft's famed engineers and craftsmen, these new aerial destroyers are now on guard in the U. S. air defense system.

NORTHROP AIRCRAFT, INC.
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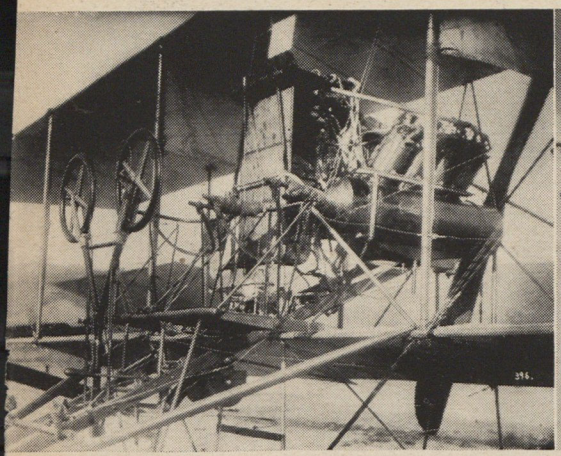
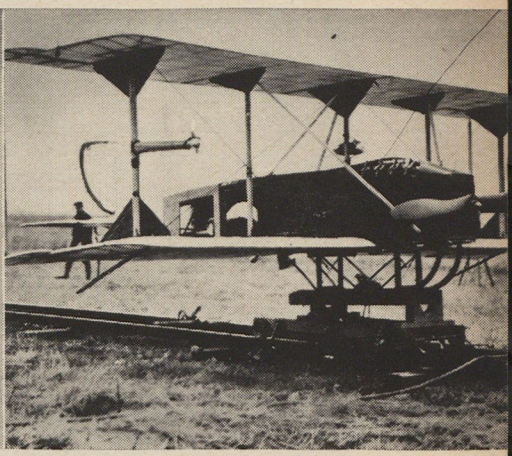
PIONEER BUILDERS OF NIGHT AND ALL-WEATHER FIGHTERS

40 YEARS OF AUTOMATIC FLIGHT...BY SPERRY

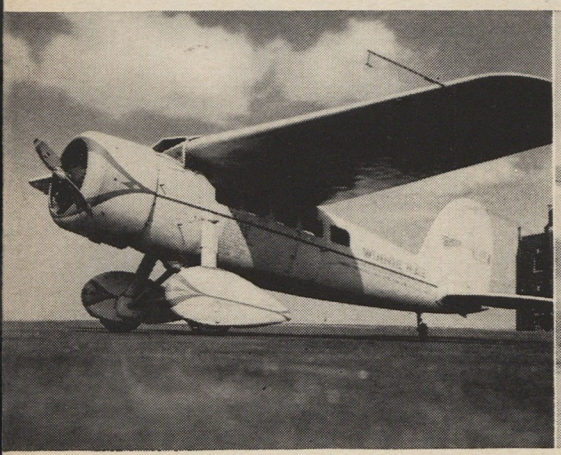


1912 The first Sperry automatic pilot was flight tested in a Curtiss hydroaeroplane in 1912 at Hammondsport, New York. This was the world's first gyroscopic automatic pilot to fly an aeroplane.

1914 Lawrence Sperry, in a public demonstration of automatic flight in Paris, 1914, won the International Safety Competition with his "stable" aeroplane.

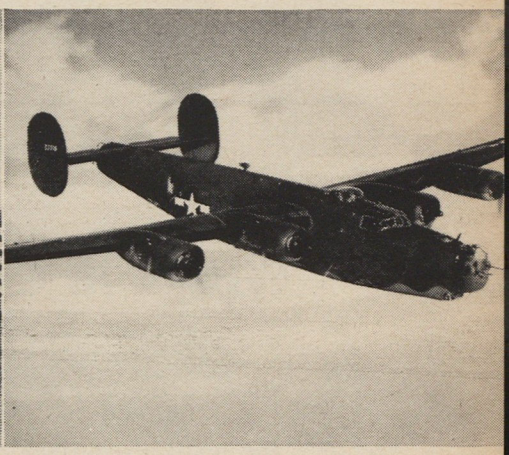


1916 Ancestor of the guided missile was the aerial torpedo developed during 1916-18 by Sperry working with the U.S. Navy. These automatically controlled "flying bombs" were tested over Great South Bay, Long Island.



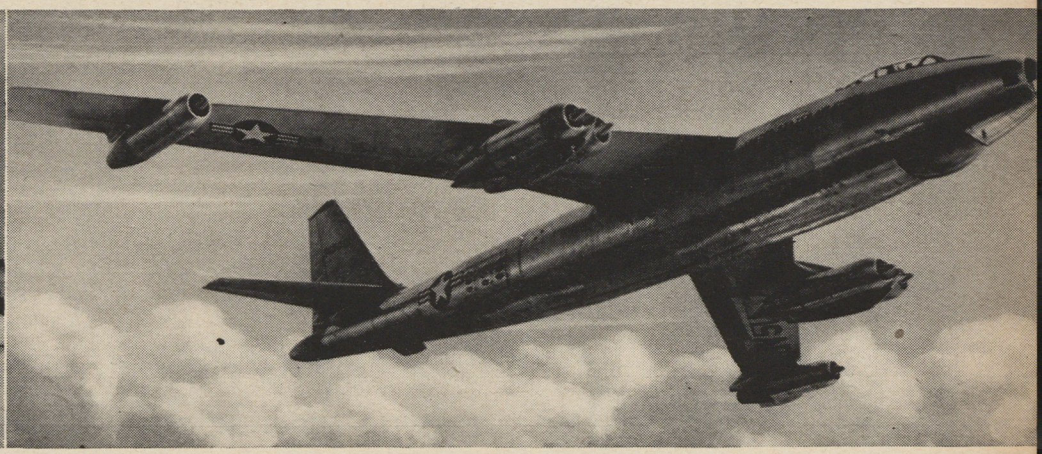
1933 Automatic flight again won public acclaim in 1933 when Wiley Post made the first solo flight around the world with the Sperry automatic pilot as his "co-pilot" in the WINNIE MAE.

1937 First completely automatic landings were made by the U.S. Army Air Corps in 1937 by coupling radio aids to the Sperry automatic pilot.



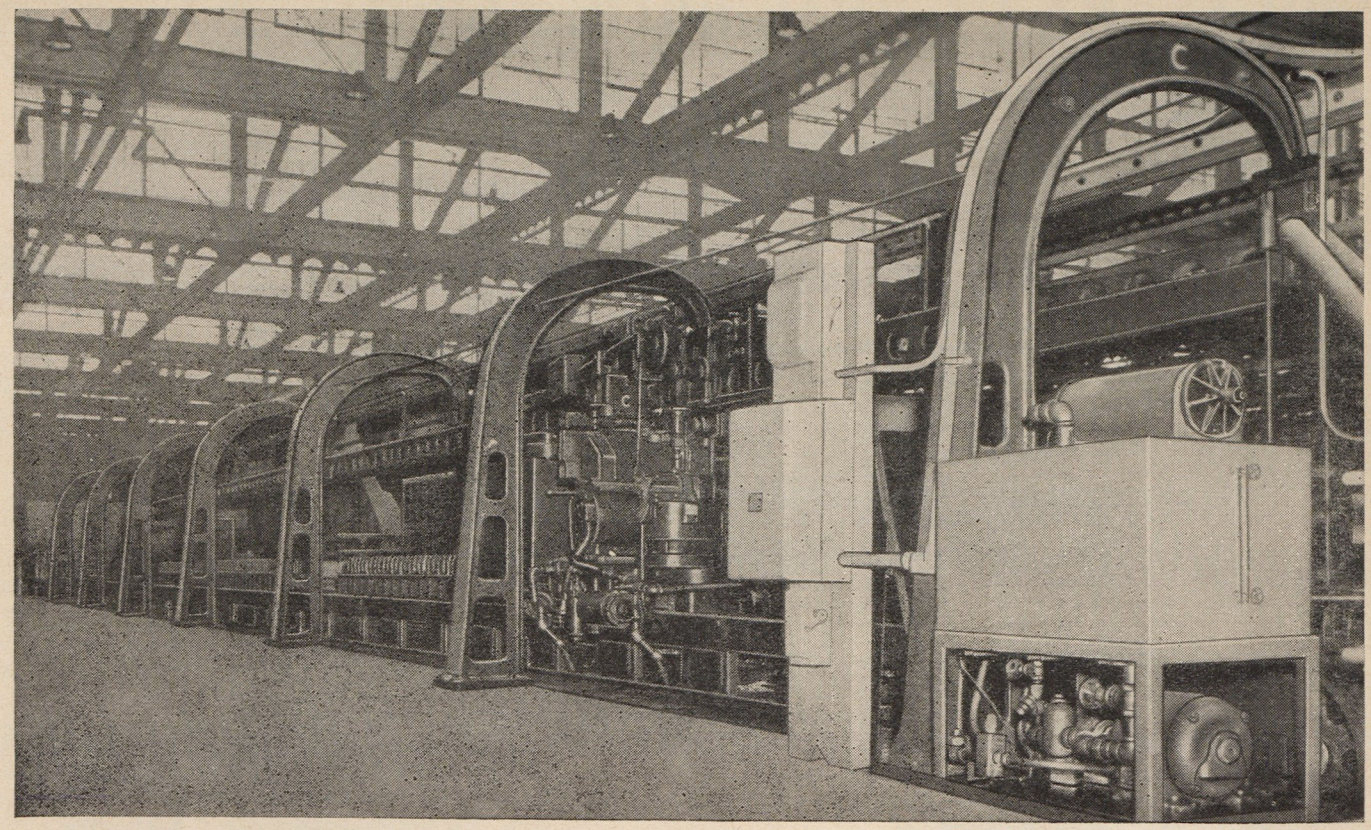
1943 The first electronic automatic pilots flew thousands of B-24 s in World War II and advanced the art of precision bombing by providing an improved stable platform.

1947 The first "pushbutton" aircraft, U.S. Air Force's All-Weather Flying Division's C-54, equipped with Sperry automatic pilot and automatic approach control, crossed the Atlantic both ways in 1947 without human hands touching the controls—including take-offs and landings.



1952 The modern Gyropilot* flight control is the outgrowth of Sperry's 40 years of research, development and manufacture of automatic controls for aircraft. This versatile, all-weather pilot represents a high-performance technique for automatic control which is readily adaptable to all types of aircraft—airliners, executive craft, jets, helicopters, lighter-than-air ships and guided missiles. This technique pioneered by Sperry has led to a new fundamental concept of flight for the aircraft of tomorrow. Sperry Gyroscope Company, Division of The Sperry Corporation, Great Neck, New York.

*T. M. REG. U.S. PAT. OFF.



Typical of Canadair's fine equipment:
a huge spar cap milling machine.

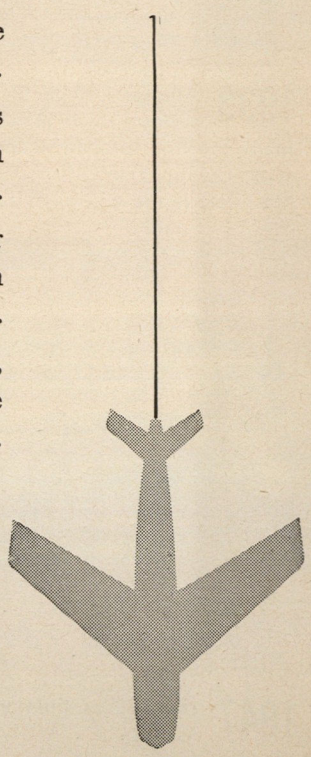
WHAT IS CANADAIR'S *Production Capacity?*

Canadair's production capacity is something that never fails to amaze the many executives of the industry and military officers visiting the plant.

It is a capacity great enough to handle the simultaneous production of 3 types of military aircraft . . . for the Royal Canadian Air Force and the Royal Air Force.

It is a capacity great enough to have built fleets of luxury airliners for Trans-Canada Air Lines... British Overseas Airways Corporation... Canadian Pacific Airlines... and military transports for the Royal Canadian Air Force.

It is a capacity that has the key production essentials . . . facilities, men, designers, engineers and experience . . . a potential of definite interest to those with future plans to buy aircraft.



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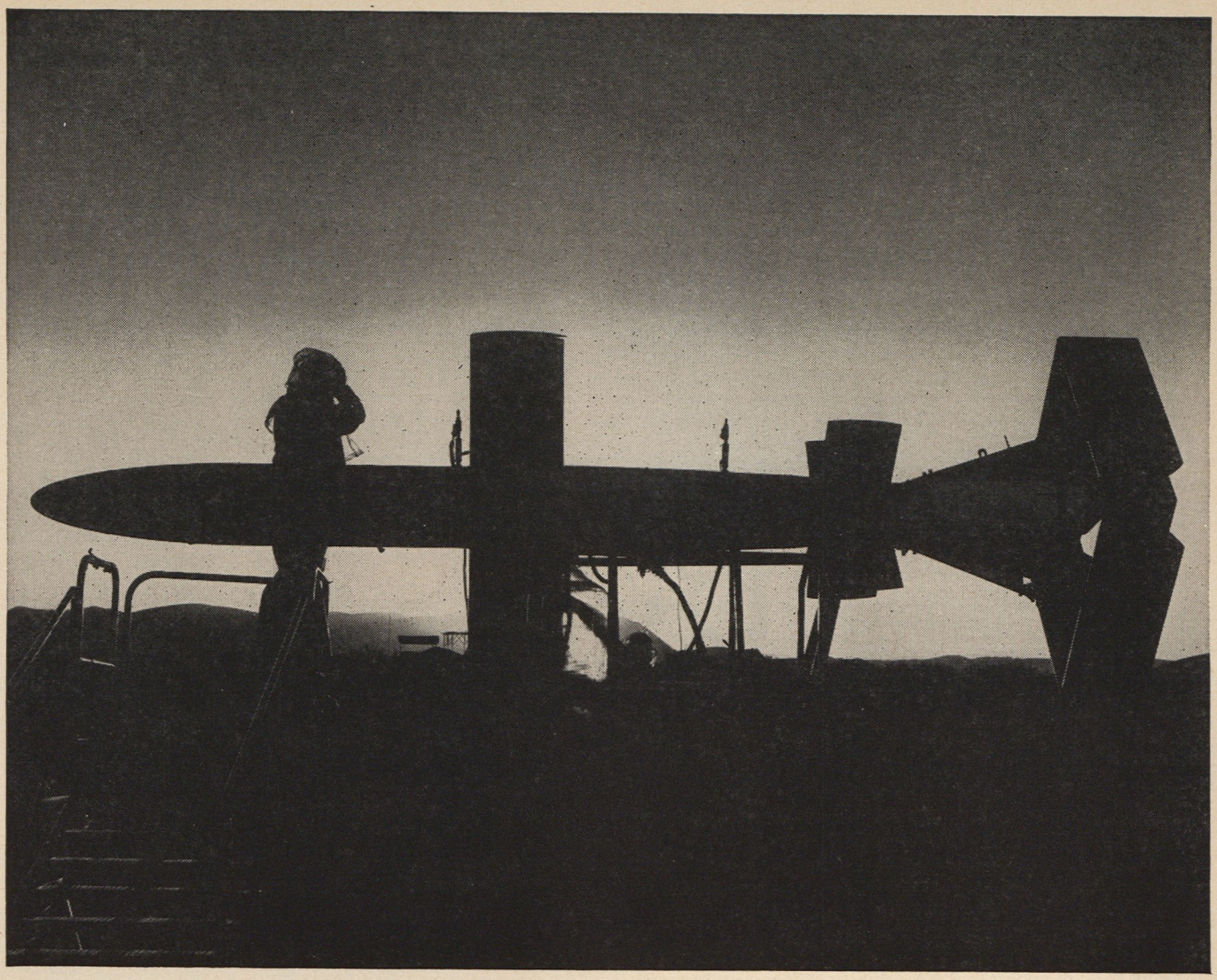
been recalled *involuntarily* to active duty since the start of Korean War. Of this involuntary group, only a few hundred have requested that they be taken off flight status, and fully 3,000 of them have requested that their flying duty be extended beyond their temporary service period. Up to the time of this writing, only fourteen have actually refused to fly. These were the so-called "sit-down" strikers. Of this group, two were pilots; twelve had served in the reserve on a non-pay status; four had been voluntary recalls; ten had had combat duty in World War II; their average age was about thirty. So much for the vital statistics.

Suspension from flying duty, a rather old story in the Air Force, is fully covered in Air Force regulation 35-16 dated February 10, 1950. It provides for such suspension under certain conditions, including lack of proficiency in flying duty, failure to meet minimum annual flight requirements, fear of flying, undesirable habits or traits of character, and serious and willful violation of flying regulations. Of these possible reasons, "fear of flying" has been the most prevalent cause cited in requests for suspension. On the basis that flying is a voluntary duty, the Air Force normally has approved such requests. However, as the Air Training Command has stated, "In cases where there is not an exhibited fear of flying but rather an attempt to avoid combat duty, it is not normal to approve the requests for suspension."

Short of a full investigation (ten cases are still pending) it would be impossible to diagnose adequately the reasons which prompted the fourteen reservists to refuse to fly for the Air Force. From a review of the evidence available, however, it would seem to be clear that in several instances, at least, fear of flying was not the case in point. In fact, the most publicized refusal in the group came from an officer who had requested extensive flying time. His refusal was prompted, according to substantial evidence, by a desire to accept a lucrative civilian job and by a pregnant wife's fear of flying. Since neither justified suspension from flight duty, according to the regulations, he decided to take matters into his own hands.

From the thousands of reserve flyers who have been recalled to duty with the Air Force, especially those who are fighting and dying in Korea, this officer could expect to receive little sympathy and less support. Many of them also left good civilian

(Continued on page 55)



ADVANCED TRAINER...

FOR THE FIRST GUIDED MISSILES GROUP, U.S. ARMY

The United States Army Field Forces today is training its first Guided Missiles Group with Fairchild Missiles. In firing these advanced type anti-aircraft missiles, the Army Field Forces is preparing now for the day when missile batteries will defend cities and vital military installations.

Firing on the desert missile range at Ft. Bliss, Texas, officers and enlisted cadres are learning the skills and techniques necessary for the tactical application of these new weapons under conditions similar to those in actual combat.

Fairchild's Guided Missiles Division also is providing similar anti-aircraft missiles for the United States Navy and the United States Air Force. Its advanced engineering and technical facilities are being devoted to the design and development of new missiles and improved versions of current missiles to provide our Armed Forces with the latest and best possible weapons.

The Fairchild Plant at Wyandanch, L. I.—The World's First Privately Built Missile Plant

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FAIRCHILD *Guided Missiles Division*

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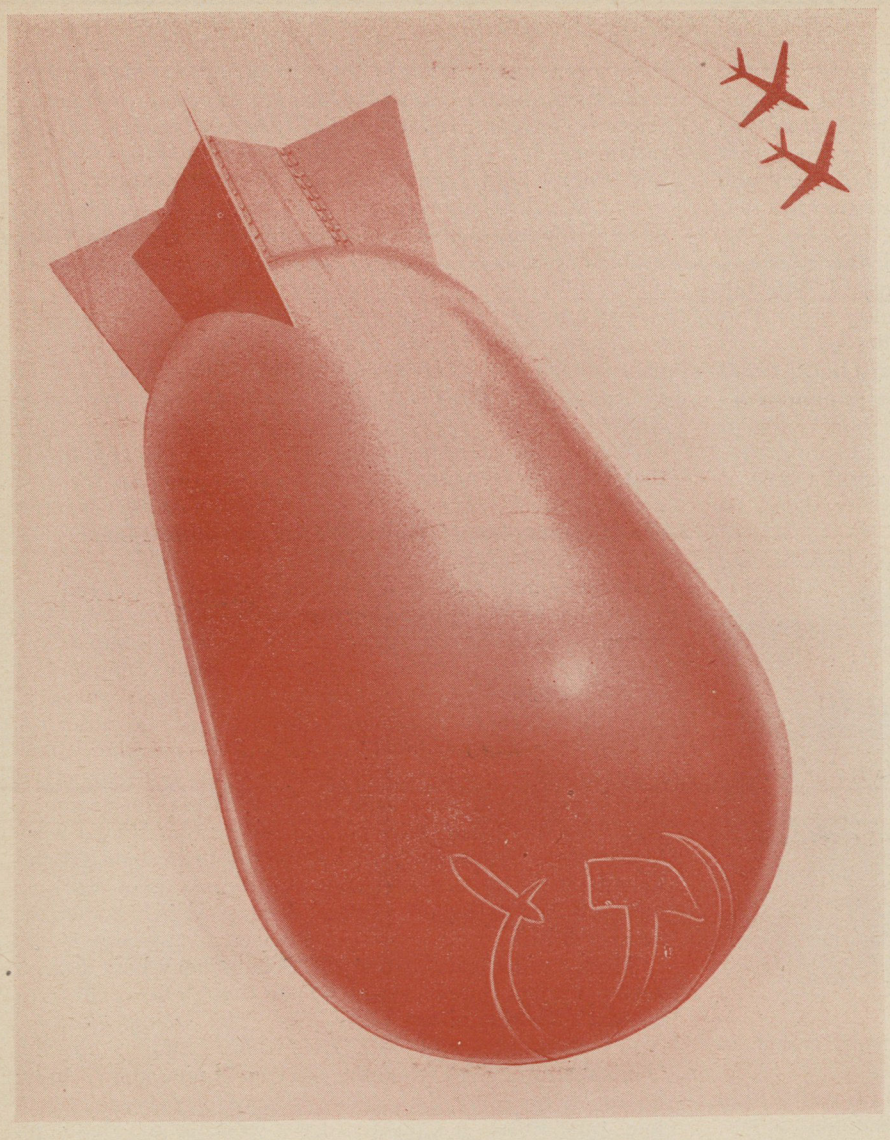
Fairchild Aircraft Division, Hagerstown, Maryland • Fairchild Engine and Stratos Divisions, Farmingdale, Long Island, New York

AIR FORCE
JUNE 1952



"THE INEXCUSABLE RISK"

While the threat of Russian nuclear supremacy continues to grow, the sense of urgency is stretched out of existence

SOON a few men in one airplane, flying at sonic speeds and never seeing the ground, will be able to drop anywhere on the face of the earth a single bomb containing an explosive power far greater than the total dropped during World War II."

Considering that the AAF alone dropped more than 2,500,000 tons of bombs during World War II, the above statement is staggering in its implications and profoundly disturbing as well. But it was made recently by an eminent authority before a Congressional committee. At his request it was placed in the record although subsequently stricken from the published account of the hearing. Assuredly it is not the voice of a crackpot.

By John F. Loosbrock, *Managing Editor, AIR FORCE*

Not long afterward it was reported in the press that the atomic tests scheduled to be held at Eniwetok this September were for the purpose of testing the first US prototype of the hydrogen bomb, the only conceivable weapon that could approach a destructive capability of the magnitude described in the opening paragraph. The assertion has neither been confirmed nor denied.

At about the same time, on Capitol Hill, the House of Representatives slapped a spending ceiling of $46 billion on defense spending for the forthcoming year. This meat-axe approach to defense spending followed hard on the heels of a Presidential slash in the military budget that already had postponed our achievement of minimum security from the 1954 date arrived at by the Joint Chiefs of Staff to sometime in 1956. The House ceiling, unless removed by the Senate, would further postpone the time at which minimum, and only minimum, security could be obtained.

It all added up to what General Carl A. Spaatz, testifying before the Senate preparedness subcommittee, called an "inexcusable risk."

The planes we did not build in 1948 are the planes we now lack. The planes that we are cutting back now are those we may need in the not-distant future

To examine this risk and its implications falls well within the province of this magazine. And in the examination certain inescapable conclusions stand out with startling clarity.

- Russia, as of now, may well possess atomic weapons in sufficient quantity that would, if delivered upon this country, seriously cripple our ability to strike back, wound grievously our productive centers and inflict such casualties upon the civilian population that its will to resist would be badly weakened, if not broken. And there is a mounting body of evidence to indicate that the USSR is as near, or nearer, than the United States to the attainment of the almost infinitely devastating hydrogen bomb.

- Russia has the capability to deliver these weapons successfully against the United States in a surprise, one-way attack.

- If our retaliatory power were knocked out, or seriously impaired, we would be virtually helpless against further blows, since we have no air defense worthy of the name.

- In the face of the above we are stretching out our airpower capability, we are still preparing to buy less rather than more of the defense we need and to pay more for it.

Whether or not the prototype of what William Laurence of *The New York Times* calls the "Hell bomb" is actually scheduled for detonation this fall, the President did direct the Atomic Energy Commission to begin work on the hydrogen bomb back in 1950. Our nuclear scientists and engineers have been working hard—but not all out—on the project since then, despite incredible naivete in certain influential scientific quarters about Russian H-bomb capabilities and intentions. It's a good guess that we are making progress and are not too far away from our H-bomb goals.

But, it will be said, Russia was about four years behind us in exploding her first known atomic weapon. Isn't she probably just as far or farther behind us in the development of the infinitely more complex hydrogen bomb?

The answer to that, categorically, is "it ain't necessarily so." Here's what Senator Brien McMahon (Dem., Conn.), chairman of the Joint Atomic Energy Committee, said in February 1950, shortly after the President's directive to the AEC:

"Let me warn, with all the solemnity at my command, that building hydrogen bombs does not promise security for the United States . . . Do not for a moment overlook the obvious—that Soviet Russia broke our atomic-bomb monopoly sooner than we expected, and she would break any hydrogen-bomb monopoly with equal or greater speed."

Senator McMahon said further in the same speech, "Kapitza, the great Soviet physicist, and German scientists imported into Russia are noted for their special competence in the technical problems relating to hydrogen weapons. Densely populated American cities are made to order for an explosive that will level hundreds of square miles. Communism suffered a defeat in prestige when our democracy completed the earliest atomic bombs but this prestige defeat would be more than recouped, assuming that Russia were to complete hydrogen bombs soonest. Furthermore, if the Kremlin believes that it cannot outproduce us in ordinary weapons . . . its logical strategy is to excel in the thermonuclear field."

There are indications that the Senator may have been a better prophet than he realized even though he might have erred on the side of optimism. (*See "The Atomic Illusion,"* AIR FORCE, *Jan. and Feb. 1952—The Editors.)* For the "logical strategy" to which he referred is now known to be based on far more than considerations of prestige. For a long time Russia has possessed the working knowledge on which to base the production of a hydrogen bomb, through Klaus Fuchs, British nuclear scientist now serving a prison term for espionage. It is known that American and British authorities have been far more concerned about the amount of data concerning the hydrogen bomb that Fuchs passed on to his Red masters than about any conventional A-bomb data he possessed. The extent of the information that Russia so received has been indicated by the types of directives Fuchs received from Moscow.

There is reason to believe, then, that Russia may be endeavoring to close the gap that still lies between her and the United States in the nuclear field by concentrating her effort in the thermonuclear field while we expend an unreasonable portion of our effort on "baby" A-bombs and atomic artillery. It is true that tactical A-bombs have important applications in surface warfare, particularly in the defense of Western Europe. However, neither atomic artillery nor atomic propelled battleships in vast numbers are apt to satisfy the forlorn hope of those nuclear-knights who feel that modern war has become "too messy" to be waged anywhere but on the battlefield. Unfortunately, communist aggression is a messy problem.

And what better way could Russia choose for catching up with us? One hydrogen bomb has the destructive power of some 100 conventional A-weapons. Thus, the matter of relative size of stockpiles becomes academic. Similarly, the possession of vast productive facilities, in which we have

THE POINTING FINGER

- SOON...one plane plus
- one bomb will equal

the destructive power of all bombs dropped

in World War II—2,500,000 tons of bombs

prided ourselves that we can never be bested, becomes less essential as time goes on, given a Russian capability for producing limited amounts of fissionable material.

A solid hint that Russia might be further along in the thermonuclear field than previously calculated is found in Gen. Spaatz's testimony before the Johnson preparedness subcommittee in which he said:

"I think that time is running out as far as we are concerned. We have been rather lucky in our wishy-washy policy in getting away with it. We have not faced the fact that Russia is acquiring a stockpile of H and A bombs. Ruthless as they are, when they have that stockpile they will use it to get whatever they want. The due date for that you can put anywhere, whether 1954 or 1955."

And when the Russians do go after whatever they want it appears that the United States will have little with which to stop them, at least on the basis of present plans and appropriations. Our air defense at the moment is pitifully weak, we are turning out all-weather fighters in driblets, our radar warning system is far from complete, and our guided missile program, while promising, is still a long way from the kind of perfection that will be needed.

Testifying before the same committee that has quizzed Gen. Spaatz, retired Lieutenant General Ennis C. Whitehead laid it on the line.

"I think," he said, "that a well-planned, well-executed surprise attack on the United States would succeed beyond the fondest hopes of its commander. Such an attack would have to be a one-way mission and the commander of such a force . . . could be entirely cold-blooded about it and only be interested in getting as many bombs as possible on American targets."

But does Russia have the capability for such an attack? All indications are that she does. She is known to possess the TU-4, a B-50-type bomber, in quantity. The TU-4 can hit any target in the United States from bases in Russia (except, perhaps, the Little White House at Key West). It would be a one-way mission, of course, but it is important to remember that one-way does not mean suicidal. The crews could drop their bombs and continue on to internment in a neutral country like Mexico or take their chances on parachuting over the United States. (Soviet aircrews must know that prisoners of war of the United States enjoy a standard of living considerably better than that of the average Russian comrade.) One-way missions are not unheard of, as witnessed by the famous Doolittle raid on Tokyo.

In good weather and in daylight, in areas where we have concentrations of high-performance day interceptors, said Gen. Whitehead, we would be lucky if, today, we got a quarter of the attackers. The over-all average would be closer to ten or fifteen percent. And at night, or under instrument conditions, the chances are that ninety-five to ninety-nine of every hundred bombers would get through to their targets! His figures, of course, are based on the state of our defense as of July 31, 1951, when he retired. They have since improved but not enough to change his figures by more than one or two percentage points.

It is easy to figure out what these statistics might mean, although hardly encouraging. Assumed that we had found a miraculous method of beefing up our air defense to the point where we might intercept half of the attacking bombers. Out of a force of 200 airplanes, taking off from bases within the Soviet Union, one hundred could be expected to deliver their bombs to within one nautical mile of a hundred US targets. In such a surprise attack, only a dozen or so bombers would be required to knock out the bulk of our atomic retaliatory force. The remaining eighty-eight bombers could be assigned to lucrative population and industrial centers. We would be whipped before we could get started.

That is what people are prone to forget when they would have us find refuge in the comfortable assumption that our retaliatory strength is so great as to make atomic war unprofitable for an aggressor. This is what the respected newspaper pundit, Walter Lippmann, forgot when he wrote, in February 1952:

". . . the American capacity to strike hard blows immediately and to mobilize the full military capacity of this country has now been brought to a point where any war of aggression could be anything but long, indecisive, and infinitely destructive."

For if our retaliatory power is our sole deterrent to war and is knocked out, what then? That is why the Japs aimed for our fleet at Pearl Harbor. Not because its loss represented a knockout blow to the United States but because it represented the only deterrent force to hamper Japanese freedom of movement in the Pacific. Today, with the Air Force as our first line of defense, the atomic retaliatory striking forces of the Strategic Air Command must play a similar role in an enemy's thinking.

The Air Force had no other alternative but to pour the lion's share of its lean budget into retaliation during the postwar years, when Russia's air fleet lacked an intercontinental capability and we enjoyed a monopoly on the bomb. Today, when the reverse is true, the air defense of SAC becomes fundamental to the defense of the country at large.

Time, long considered to be on our side, is beginning to run out. When asked by Senator Johnson how much time we had to create the minimum 126-group Air Force recommended by the Joint Chiefs, Gen. Spaatz replied that no one could guess what went on in Stalin's mind. Instead of

(Continued on page 49)

FORESIGHT

Memorandum from General Spaatz to General Arnold, dated 11 October 1945.

"Memorandum for the Commanding General, Army Air Forces: I consider the date presented in the attached papers excellent. However, the conclusions do not cover enough ground. With the rapid weakening of our forces in Europe and Asia, the USSR is able to project moves on the continent of Europe and Asia which will be just as hard for us to accept and just as much an incentive to war as were those occasioned by the German policies.

"I agree that there is very little likelihood of Russia's being able to deliver an attack against the United States in the very near future. However, the next war will not necessarily be started by attacks against the US proper.

"Until the interior of Russia is open to us with the same freedom with which the United States has been open to them, I believe we should proceed rather slowly toward demobilizing our armed forces, particularly units of our Strategic Air Forces."

PATTERN FOR DESTRUCTION

"A well-planned, well-executed surprise attack on the United States would succeed beyond the fondest hopes of its commander."—*From testimony delivered before the Senate preparedness subcommittee by Lieut. Gen. Ennis C. Whitehead, USAF Retired, former Commanding General, Air Defense Command.*

A force of two hundred Russian bombers, taking off from bases within the Soviet Union, could hit every important target in the United States . . .

Even if our air defense were beefed up far beyond its present capability at least half the attacking planes would reach their target . . .

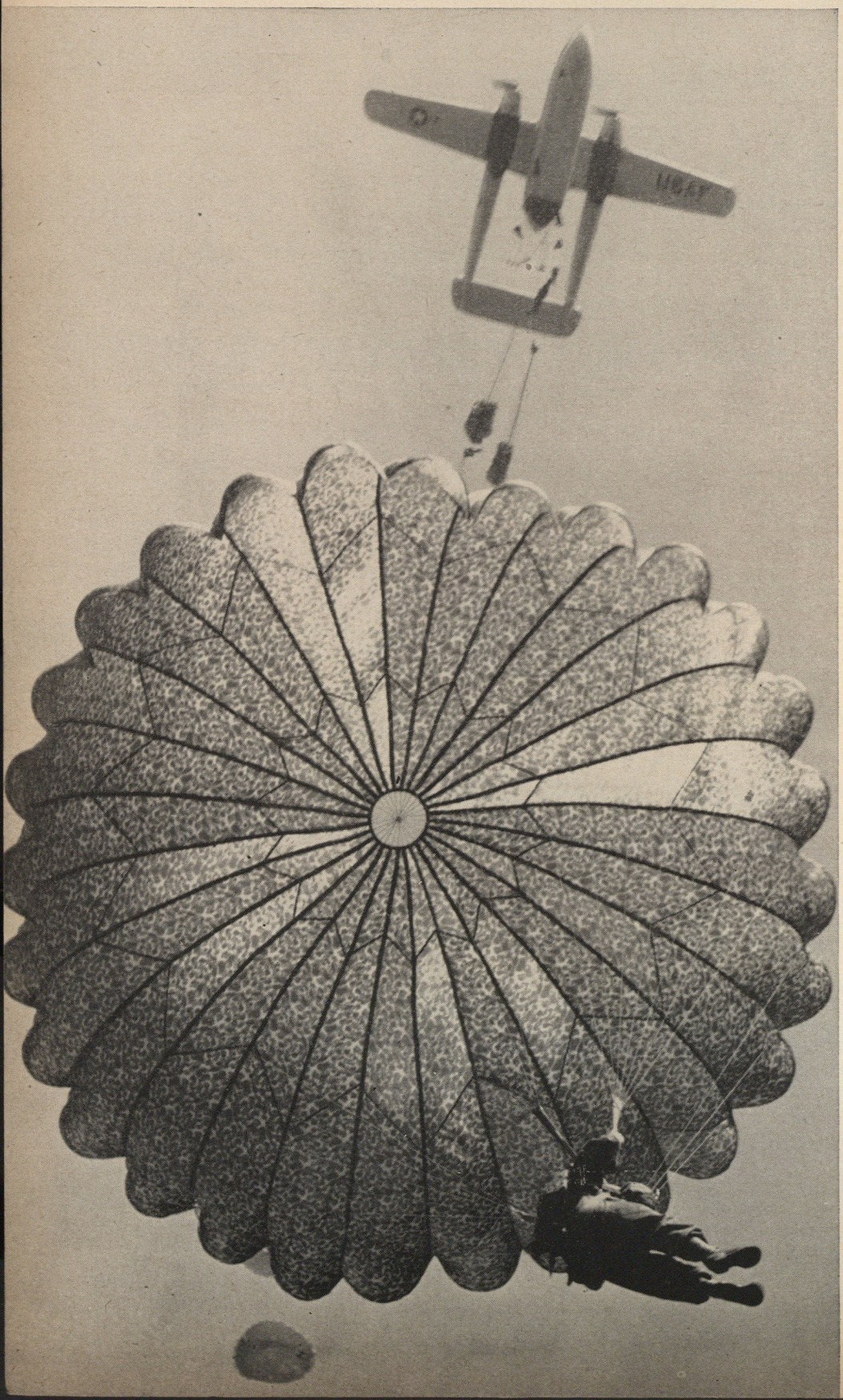
Only a dozen, if directed at bases of the Strategic Air Command, would be required to knock out the bulk of our atomic retaliatory power . . .

The remaining eighty-eight could be assigned to lucrative population and industrial centers. We would be whipped before we started!

And the shocking truth is, that at night and in bad weather, it is far more likely that *ninety-five* to *ninety-nine* percent would get through!

NEW JOBS FOR COMBAT CARGO

Korean operations are setting a pattern for new military transport techniques that promise to influence deeply future air and ground warfare



By Robert Hotz

A NEW approach to military air transport is emerging from the Korean war. Begun by Maj. Gen. William Tunner, chief architect of the Berlin airlift, and developed by Brig. Gen. John P. (Jock) Henebry, the combat cargo operations of the 315th Air Division presage an increasingly important role for air transport in both ground and air combat operations.

The simple idea of organizing all air transport resources in a combat theater into a single pool, trained to perform any type of mission and operating under a single command on a theater priority system, has led to sharply increased operational efficiency combined with economy of forces required.

"The taxpayers simply can't afford to build and maintain a vast fleet of air transports for every special military job that needs to be done," says General Henebry. "It is up to us to figure out how to do all these jobs well with a relatively few but efficient planes and highly trained crews."

The 315th Air Division operates about 250 transports, most of them designed more than a decade ago as commercial airliners and with thousands of hours of service on the Hump in China, the Berlin airlift and the global routes of MATS before their Korean service. Of the four types of transports operated by the 315th only the Fairchild C-119 was specifically designed for cargo operations. The bulk of the combat cargo tonnage in Korea is still carried by Douglas C-54s and Curtiss C-46s with the faithful C-47 still called upon to get in and out of small, advanced airstrips where no other transport can safely operate.

With this small and largely obsolete transport fleet the 315th performs these missions:

- Air assault by paratroopers.
- Air drop supply to combat units.

One of combat cargo's most important jobs is that of dropping paratroopers.

● Supply by air transport wherever airfields are available.

● Air evacuation of virtually *all* sick and wounded to base hospitals in Korea and Japan.

● Air transport for combat troops to rest and relaxation leave in Japan.

● Training air and ground units in Japan and Korea in air transportability.

● A variety of special missions, many top secret, including all of the psychological warfare missions over enemy lines.

● Operating military airlines and courier service throughout the Western Pacific where there are US military installations, including Guam, Okinawa, Formosa, Japan and Korea.

When General Tunner and a small group of veterans of the Hump and Berlin airlifts, all borrowed from MATS, arrived in Korea in the fall of 1950, air transport was a chaotic affair. Aircraft were often "lost" for days in the scramble of the retreat to the Pusan perimeter. All of the air transport equipment then in the Far East was quickly merged into a single organization under General Tunner. The C-54s and C-47s of the Troop Carrier and MATS units already in action were reinforced by C-46s hastily taken out of mothballs and a group of C-119s flown from Georgia to Japan. Later an entire reserve wing from the Midwest joined the command, flying their C-46s all the way from Chicago without mishap.

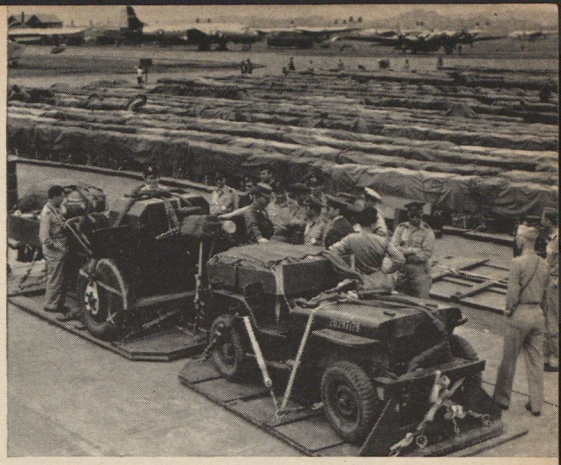
A joint logistics allocation board was organized in General MacArthur's headquarters, including representatives of the Army, Navy, Air Force and Marines. The board daily determined, from front-line requests, what supplies were required. They then drew up a freight manifest for combat cargo to be delivered within twenty-four hours. Soon supplies could be delivered to a front-line unit within three hours after a request was received. A hard-pressed regimental commander could get the ammunition, gas or rations his men desperately needed simply by ordering them over the telephone, like a housewife calling the corner grocery.

The Korean problem was totally different from either the Hump or Berlin airlifts. In both of those operations the situation at the delivery point was static and the airlift was a routine shuttle with schedules laid down weeks in advance. In Korea air supply had to be as flexible and fast as the pace of combat. It had to meet the rapidly changing demands of the swiftly flowing tide of battle in order to be effective. From three main bases in Japan combat cargo operations sprayed out to thirty-three airfields in Korea and hundreds of hastily marked drop zones. To earn its keep, combat cargo had to be able to deliver any type of cargo to any location on only a few hours notice.

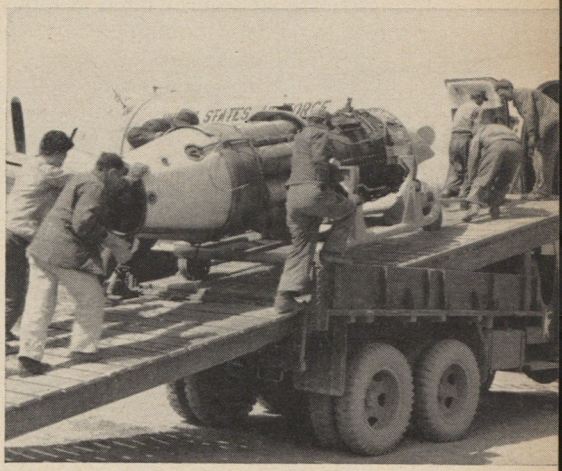
With a single transport pool operating under a single command and a priority system daily determined by battle requirements, combat cargo soon amazed both air and ground commanders with its versatility, flexibility and efficiency. On less than twenty-four hours notice the transports could pour their entire capacity into a single Korean airfield or they could deliver to a series of widely scattered spots simultaneously. If there were no airstrips handy, a couple of bulldozer passes over a road could make a strip for the C-47s and C-46s. If the terrain was too rough for that the C-119s and C-46s dropped supplies by parachute. On only seventy-two hours notice combat cargo could deliver an assault behind enemy lines by airborne infantry and supply it for as long as necessary.

Each service had a basic tonnage allocation but, as the speed and flexibility of combat cargo operations became appreciated, these were traded freely to meet the most pressing need of the moment. When the 8th Army was pressing north toward the Yalu River in the fall of 1950, its commander, Lt. Gen. Walton Walker, relinquished all his tonnage for several days to the 5th Air Force so that combat cargo could move the 5th's fighter-bomber units into advanced airfields from which they could support the 8th's advance. When Marine airmen flew their Corsairs into Kimpo airport after the Inchon invasion, ground troops allocated their tonnage to the airmen to keep the Corsairs in action. Later the Air Force gave its tonnage to the Marines so combat cargo could fly in urgently needed troops for the Han River crossing.

Within a few months the military value of the improvised operations had proved itself so well that its provisional status was made permanent, as the 315th Air Division. Command passed to General Henebry early in 1951 when General Tunner returned to MATS. "Jock" Henebry had a brilliant combat record in the Pacific during World War II and commanded the Midwest troop carrier reserve wing that entered active duty, trained its crews and flew the Pacific in record time to join combat cargo operations in the critical fall of 1950. Under General Henebry, at thirty-three the youngest general in the Air Force, the 315th has expanded the concept of flexible air transport and set a pattern for what should be a new type of Air Force unit. On many occasions the



Combat cargo bases in Japan are well stocked with pre-packaged loads of battle equipment.



Airpower hasn't completely replaced manpower. Japanese laborers load a Korea-bound engine.

Sometimes combat cargo planes landed while the battle for an airfield still raged, carrying new loads for the fighter-bombers (above) and gas with which the tanks refueled from plane.

315th has delivered up to 150 percent of its normal capacity to meet combat emergencies. It is averaging 35,000 hours of flying a month and has its aircraft in the air an average of seven hours a day.

The real payoff comes when the fighting is the hottest. Ground commanders, who have consumed about eighty-five percent of combat cargo tonnage, are the most enthusiastic in its praise. They find that properly organized air supply has given them a whole new logistical approach. The speed and flexibility of combat cargo was a vital factor in enabling the numerically inferior United Nations forces to contain the numerically superior Communist forces in Korea.

General Ridgway credits combat cargo with plugging the gap at several critical periods during his command. Before he was killed, General Walker said that only air supply of the 8th Army had kept its offensive rolling north of Seoul in the fall of 1950. Maj. Gen. Robert McClure wrote the 315th that its airborne supply was instrumental in enabling his 2d Division to hold off the Chinese offensive at Wonju in January 1951 "after all other means of supply had been denied due to enemy action."

Major Gen. "Iron Mike" O'Daniel, commander of the 8th Army's I Corps and a steady consumer of combat cargo supplies, says:

"The airlift to Korea is one of the greatest developments of this war. It gives a commander advantages he never had in wars before. The Korean airlift is doing a terrific job to keep us supplied and to prevent shortages. I think they are just beginning to scratch the surface of what they are eventually going to do with it."

Combat cargo operations offered four specific advantages to ground troop commanders:

- The pace of offensive action geared to air supply increased enormously. When UN armor and infantry had achieved a breakthrough they no longer had to stop and wait for supplies to catch up with them. Air transport could deliver supplies directly to the offensive spearhead wherever it happened to be.
- Field commanders were spared the consequences of mistakes in logistical planning and of unpredictable dislocation of their supply lines. Combat cargo operations could replace lost or misdirected equipment before its lack became critical. Air transport easily jumped gaps in normal supply channels.
- Most of the critical consequences of encirclement by the enemy were alleviated by air supply. Air-landed and air-dropped supplies enabled encircled units to maintain their fighting strength and usually allowed them to fight their way back to the main UN forces. Air evacuation of sick and wounded saved thousands of lives.
- Defenses could be bolstered with unprecedented speed to meet enemy offensive action. Air supply was able to move troops, equipment and supplies to plug holes in the line.

The first United Nations offensive in the fall of 1950 demonstrated this unprecedented mobility. Without air supply the offensive would have ground to a halt soon after the Inchon invasion. Allied airmen had bombed out the main rail and highway bridges north of Seoul. Most of the rolling stock had been destroyed and the roadbeds were cratered by bomb blasts. No adequate ground supply lines could penetrate this bomb-blasted wasteland.

Instead of stopping when it reached the limits of ground supply lines the UN offensive made a headlong dash for the Manchurian border. For weeks thereafter *all* the supplies consumed by the 8th Army were delivered by air.

As soon as Kimpo airport, just north of Seoul, had been cleared by Marine infantrymen, pilots of Marine Air Group 12 landed their Corsairs. Behind them came C-54s of combat cargo carrying high octane gas, ammunition, rockets, napalm and bombs. The supplies originally scheduled for the Marine airmen were still aboard freighters in Inchon harbor, unable to unload because of smashed docks and thirty-foot tides. For three weeks combat cargo supplied everything the Marine airmen needed and flew in several thousand infantry reinforcements besides.

Whenever an airfield was about to be captured combat cargo headquarters in Japan was alerted. Transports were loaded and manned, ready to take off within minutes after the flash confirming the field's capture. Often the first cargo planes landed while fighting still raged and had to make their final approach through enemy fire.

After the field at Sinmak, eighty-five miles north of Seoul, had been taken over, combat cargo transports tore it up so badly in three days of heavy operations that it was unusable. But they delivered the gas, rations and ammunition that the 8th Army used in its final descent on the North Korean capital of Pyongyang. Two days after Sinmak went out of business the 8th Army radioed that it had captured the airfield at Pyongyang and asked for airborne supplies to be laid down there. The battle for

(Continued on page 30)

Operation Lifesaver

ONE of the three greatest medical achievements in the Korean war, along with the use of whole blood and anti-biotic drugs—that's how Col. Thomas Page, surgeon of the 8th Army, ranks air evacuation.

It has probably saved more lives in Korea than any drug, according to Col. Allen D. Smith, air surgeon of the 315th Air Division, who has supervised the air evacuation of more than a quarter million sick and wounded from Korean battlefields.

Medical men agree that air evacuation has been a vital factor in cutting the Korean death rate from wounds to half that of World War II. And it has also proved to be economical. Solely on the basis of economy, air transport already has displaced the hospital train and ship.

This is how air evacuation works in Korea. A wounded man is first flown to a mobile hospital by helicopter. During one six-month period 'copters flown by USAF, Army and Marine pilots flew out 25,000 badly wounded men. A smooth flight of a few minutes is a welcome substitute for a rugged trip down a mountain on an A-frame.

'Copters then fly the wounded from the hospital to the nearest air evacuation strip. From here planes whisk them back to a base hospital. These planes are flown by pilots of the 315th Air Division and staffed by flight nurses and medical technicians. They range from C-54s down to C-47s that flit in and out of tiny mountain-ringed strips where a runway looks more like a ski trail than an airfield. They are on twenty-four-hour call and will fly out to pick up only one patient if he is an emergency case. During the big Chinese offensives, when United Nations casualties were heavy, the 315th didn't wait for requests. It sent its airplanes out at first morning light, knowing that they would be badly needed by the time they reached front-line strips.

Generally the most seriously wounded are flown to hospitals in Japan, while those who are likely to return to duty within thirty days remain in Korea. Wounded who require special facilities, or who face a long convalescence, are usually flown back to the United States by MATS.

Time is air evac's biggest medical asset. Often a soldier is on the operating table within hours after he is hit. Some have made the trip in a single hour. This kind of speed greatly lessens the danger

First stop on the air evacuation lifeline usually is a mobile Army field hospital where emergency treatment is administered.

of shock and infection. Air evacuation in Korea has made it possible to organize specialized base hospital facilities, since any front-line area is within a few hours of any hospital in Korea or Japan. Casualties are classified at front-line air strips and then flown directly to the hospital specializing in their problems. The base hospital at Taegu, for example, specializes in frostbite, another near Seoul in neuro-surgery, another in large bone fractures, and so on.

When fighting is heavy and battle casualties rise rapidly, advance medical facilities become quickly overcrowded. Now they can be cleared in a single day. Air transports have cleared as many as 1,800 patients a day from Korean hospitals to make room for new casualties. During the bitter fighting of December 1950 a total of 28,000 patients were handled by air evacuation in thirty days.

In addition to the measurable physiological advantages of air evac, military doctors agree that the psychological effect is strong on wounded men. A swift departure from the battle area by air makes a marked improvement in a wounded man's morale.

Dr. Elmer Henderson, president of the American Medical Association, put it this way, during his visit to the Korean war:

"I talked with many of the wounded and all were outspoken in their praise of the medical treatment they received. One soldier, a Negro, told me: 'Doctor, I was wounded when a mortar blew up. I was taken to a first aid station in five minutes and within fifty-five minutes I was on a plane heading for the hospital. When they take care of you like that you don't mind fighting.' "—END

'Copters, transports work together.

A wounded doughfoot is loaded aboard a combat cargo C-47.

A flight nurse accompanies each planeload back to Japan.

Weary combat troops (left) file aboard a C-54 which will carry them to welcome rest and relaxation leave in Japan. To take their places the return trips (below) are made up of fresh replacements, complete with new gear.

Pyongyang was still going on when the first planes landed. Tanks lumbered out of the fight to replenish their gasoline from the transports and rumbled back into battle within sight of the air crews. Artillery batteries were so close to the transports that ammunition was passed directly from plane to gun crew. Concussion from the artillery blasts knocked out plexiglass navigator domes on the C-54s as they discharged their loads. At night plane crews shouldered rifles to help man the perimeter and smoke out snipers who were still firing into the area.

While the bomb-battered main runway at Pyongyang was being repaired the transports used a grass strip. After one day's operations the heavily loaded planes had torn up the grass until it looked like a plowed field. They merely shifted over a few hundred feet onto fresh grass and never stopped their round-the-clock shuttle. Fortunately, on the second day the ground froze solid, providing hard surface until the main runway was back in action. At Pyongyang the field was equipped with runway lights and radar landing aids and was ready for night operations within nine hours after its capture.

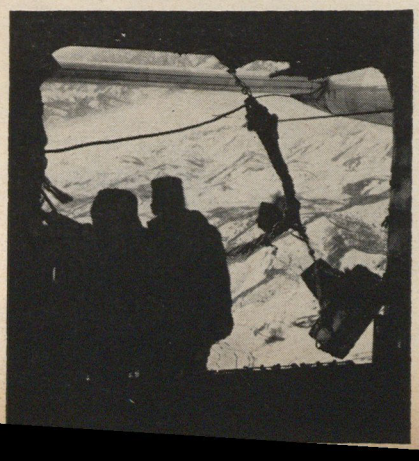
When Sinanju, now at the southern edge of MIG Alley, was captured it marked the high tide of combat cargo operations in North Korea, although some air drops were made to troops only eight miles south of the Yalu River. At Sinanju thousands of North Koreans, including many enemy soldiers, were corralled to build new airfields. The transports flew in fifty tons of dried cuttlefish, seaweed, and rice to feed the Korean laborers.

During the dash north, when fighting was sporadic, rations accounted for the most air tonnage. For days at a time the transports served the 8th Army, breakfast, lunch and supper. Advanced strips were littered with empty C ration cans and every surge of prop wash sent them skittering about the fields.

Time and again air transport plugged gaps caused by poor planning. The overlooked tides and smashed docks at Inchon would have throttled close air support operations out of Kimpo had it not been for the swift alternative of air supply. And when it came time to force a crossing of the Han River the treadway bridge required to span the stream was also aboard a freighter bobbing on the Inchon tides. Another bridge was flown from Japan and the river was crossed on schedule.

When the X Corps invaded the east coast, near Wonsan, it was scheduled to be supplied completely by sea. But when the Navy attempted to enter Wonsan harbor it encountered one of the thickest and trickiest minefields in naval history. The freighters could not unload. Airlift was quickly diverted from support of the 8th Army to rescue the stranded X Corps.

During the fighting around Kimpo in the spring of 1951, when the Communists threatened to recapture this vital airfield, the key defense position was held by British troops using 25-pounder artillery. During the heavy fighting they fired up all the 25-pounder ammunition in Korea and Japan. No other UN ammunition would fit their guns. A British ship loaded with 25-pounder ammo was about to dock at a central Japanese port but it would have taken seven days for it to reach Inchon and unload. By that time the battle could have been lost. The ammunition was unloaded by lighter to the nearest airport and flown to Kimpo to keep the British batteries going. In two days the entire shipload of ammunition had been delivered.



Combat cargo "kickers" dump another chute-load from the tail of a C-119.

When 20,000 men of the First Marine and 7th Army Divisions were surrounded by 70,000 Chinese Communists near the Chosin Reservoir on November 20, 1950, their only hope was air supply. For twelve days combat cargo supplied the force, larger than a division, with everything it needed to fight its way back to the main body of the X Corps. C-119s and C-46s parachuted supplies around the clock, often making their drop runs in the face of enemy fire. At night the troops lit oil fires or clustered jeep headlights to mark the drop zones.

When the Republic of Korea's 7th Regiment was isolated on the east coast during a heavy Chinese assault, C-119s kept it supplied for two weeks by air drop. The fighting was so hot that often the ROK troops were firing newly arrived ammunition at the Chinese before the C-119s had left the drop zone. After the ROKs re-established communications their commander radioed General Henebry:

"It was most convenient. We were almost out of ammunition."

A tragic exception was the fate of the Royal Gloucester Rifles which fought a gallant delaying action to

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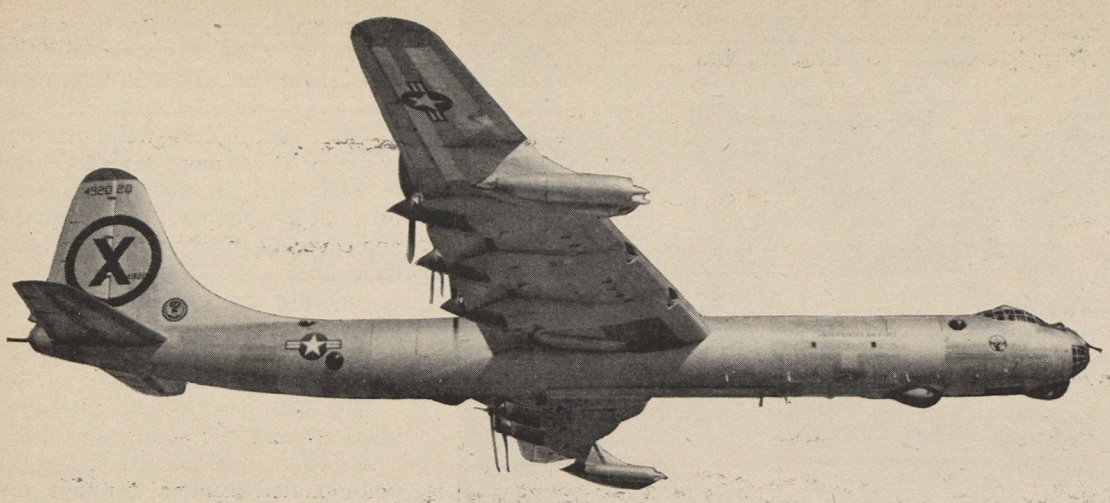


RECON CREWS SNOOP FROM 40,000 FEET

Strategic Air Command's RB-36s are putting aerial reconnaissance on an inter-continental basis

By Capt. Ken Blank

AFT compartment! Photo compartment! Passing through thirty thousand—cabin pressure eight thousand." The number one engineer speaks as he scans the scores of instruments on a vast panel.

"We're passing through thirty-five thousand—cabin pressure eight thousand," crackles the interphone.

"Photographer from photo-navigator! We are one hundred miles from target area." The number one photographer checks his oxygen pressure, adjusts the hose extension to his mask and begins to check the fourteen giant cameras.

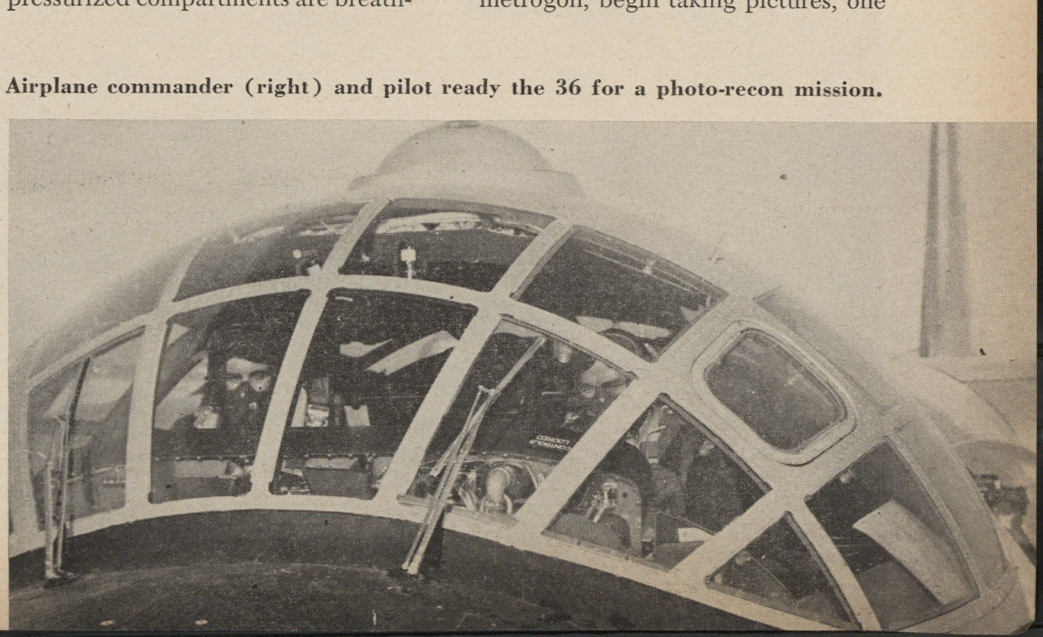
"Aft compartment! Photo compartment! Forward compartment! We are passing through forty thousand—cabin pressure nine thousand eight hundred."

"All compartments! This is the aircraft commander! Give me an oxygen check." Twenty-one men tersely report in turn, beginning with the tail gunner and ending with the pilot. Throughout the long fuselage masked men are busy at control panels, radio dials busily probe for the enemy's radars, nylon-gloved hands work smoothly over the navigation tables, watchful eyes search the sky from the scanners' positions.

A one-hundred-seventy-ton silver ghost probes the earth's surface as it moves along through the stratosphere. The twenty-two men in the pressurized compartments are breathing pure oxygen. The outside air temperature is more than sixty degrees below zero, but inside the big plane it is warm and comfortable.

"Photo-navigator to photographer! Five miles from IP (initial point)—start your tri-met." Three of the giant cameras, aligned across the compartment so that they make up the trimetrogon, begin taking pictures, one

Airplane commander (right) and pilot ready the 36 for a photo-recon mission.



A scanner scours the sky for bandits (above). A reconnaissance man's life is a lonely one. There are no friendly formations. Second photographer (below) changes a film magazine on one of five giant cameras on the multi-station.

vertically, one left oblique, one right oblique. The result will be three overlapping photographic strips, covering the ground below from horizon to horizon.

"Start your multi's—we're over target area." Five more cameras begin to click. The multi-station cameras turn out five strips, also overlapping and covering an area more than fourteen miles wide. The thirty-six-inch magnifying cones bring the earth three times nearer to the film. Once past the target the multi's stop but the tri-met continues.

"Navigator to second photographer! Airfield left about ten miles." The second cameraman aims his tripod-mounted camera through the side viewing window. As the crosshairs of the sight split the airfield, the camera clicks for a few seconds, then stops.

"Waist-scanner to airplane commander! Number five engine flaming!" The pilot acknowledges as the engineers scan the instrument panel, push levers and flick buttons. A fuel pressure gauge needle jerks crazily back to zero, indicating a probable fuel leak. Outside, the huge propeller on number five engine stops and feathers. A cloud of white vapor belches from the cowl as the fire extinguishers smother the flame. The pilot adjusts the trim controls—the big ship holds steady to her course. The navigator gives the pilot a two-degree course correction and again the airplane is trimmed. In the forward nose compartment a compact little camera clicks away, photographing the radar scope picture painted by the electronic sweep.

The mission continues, in spite of

Three navigators plus a scanner jam the bottom

An airfield lying ten miles off the flight path of the RB-36 is picked up by the lens of this king-size oblique camera.

the power plant failure. The scanners sketch airfields in the target area as the cameras grind away. The lenses don't miss an inch — all industrial plants, military installations, everything is photographed. While the scanners scour the skies for bandits they continue to sketch in the runways of the airfields they spot, then the hangar lines and the revetments.

"Photo-navigator to photographer! Run is completed—cut your cameras." As the RB-36 leaves enemy territory the radar camera stops and the crewmen sigh contentedly. They have been in the air for more than twenty hours and it will be another twelve before they touch down. In a matter of hours after they land sister ships can be on their way to destroy the newly photographed targets.

"I had a fifty-cent business that jumped to ten dollars." This is the way Col. Walter E. (Pop) Arnold puts it. Little more than a year ago Arnold's 5th Strategic Reconnaissance Wing was flying RB-29s (reconnaissance version of the obsolete World War II superforts). But it is a different story today around Travis Air Force Base in California. Now several million dollars worth of RB-36s crowd the vast ramp.

When the Air Force's only heavy bomber was introduced it was evident that some of them would be earmarked for intercontinental reconnaissance. Converting the airplane was a factory proposition and not too difficult. Arnold's problem was to convert his crews. There were a lot of questions and no one knew the answers. Instead of the eleven-man RB-29 crew the 36 required twenty-two. Not only were the aircrews increased but many more ground crew technicians and specialists were needed. The engine mechanics knew how to maintain reciprocating type engines, but the airplane also had four jet engines—a different breed of cat. Instead of two pilots each crew had three. Instead

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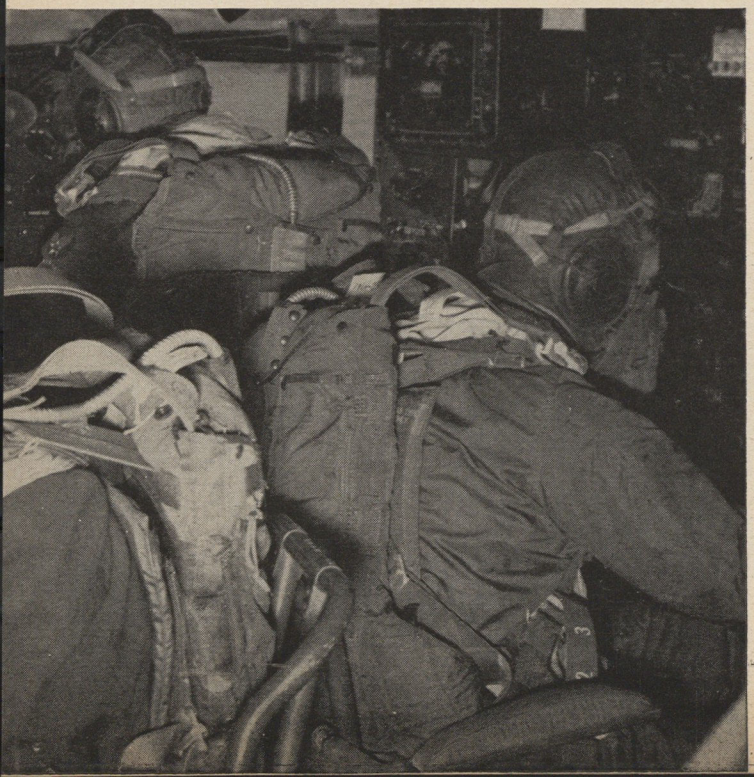
half of the nose compartment directly below the pilot's cockpit.



Twelve cameras can be set in motion from this single panel.

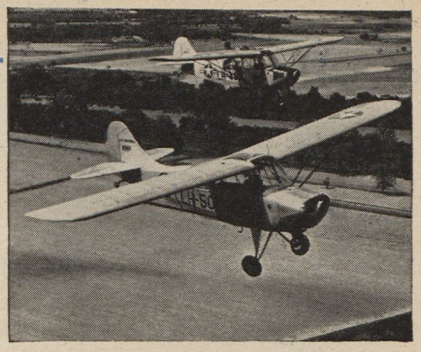
Army Flyers Would Like to Train Their Own

Proposal being studied that would let Army take over technical as well as tactical training of the 2,250 pilots it is authorized

There is growing sentiment among Army flyers that the Army should take over the technical as well as the tactical training of its pilots. Enthusiasts say that the Army now has enough senior aviators to run its own flying school. No formal proposal has been made but the Army is studying the question informally.

Today eight of the Army's arms and services are authorized organic aviation. Artillery still has most of the Army's aircraft—roughly fifty percent. Infantry is next with thirty percent. Armor has ten, the Corps of Engineers five, Ordnance and Transportation Corps each have two percent and the Signal Corps one. The Medical Corps' percentage is as yet unfixed.

Each arm or service is authorized aviators in proportion to its planes. At present Artillery and Infantry have a backlog of applications for flight training. The Transportation Corps has had no difficulty in obtaining warrant officer candidates for helicopter training. The Corps of Engineers is in good shape, too.



Single-engine Aeronca L-16 liaison aircraft are used to train Army pilots at San Marcos Air Force Base.

Liaison pilot holds his breath as he barely clears "landing hurdle," used to teach flyers to land and take off on rough fields where space is at a premium.

But Armor, Signal Corps and Ordnance Corps are still short of applicants, probably because flying is relatively new to these branches.

Most Army aviators are in company grades with lieutenants predominating. Because of recent promotions there is a "hump" in the number of flying captains and majors.

Applicants for flight training cannot be more than thirty years of age, be more than seventy-two inches tall or weigh more than 180 pounds. There are special requirements for non-regular officers, including extensions of duty in certain cases. A newly-commissioned officer from the Military Academy, ROTC or OCS may apply but if the quota is filled in his arm he may find his application deferred until he has completed a tour of ground duty. Experienced officers get preference in the selection of candidates for flight training. Eligible officers who are members of a branch that is not authorized Army aviation may find it possible to get the training by transferring to a branch in which it is. Eligibility requirements and method of applying are outlined in Department of the Army Special Regulation 605-95-1, dated 25 September 1950 (with changes).

Under the Army-Air Force agreement, the Air Force is responsible for all technical training and the Army for all tactical training of Army aviators. Candidates get four months of basic training in fixed-wing flying at San Marcos AFB in Texas. At present a class of sixty candidates begins training every four or five weeks. About thirty percent is washed out. Graduates go to Fort Sill, Okla., for advanced tactical training at the Artillery School. Helicopter pilots return to San Marcos for five additional weeks of technical training and then go back to Sill for another five weeks of tactical training in helicopters.

Instrument flying is taught by civilian schools under contract to the government. Qualified Army aviators on duty in the States may be assigned to a civilian school in the Army area in which they are serving for two months of training in instrument flying.

Early this spring the Army had some 1,700 pilots and was pressing for its authorized goal of 2,250. Some would like to speed up the program by increasing beginning classes to 100. So far this hasn't been done.—END

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for the
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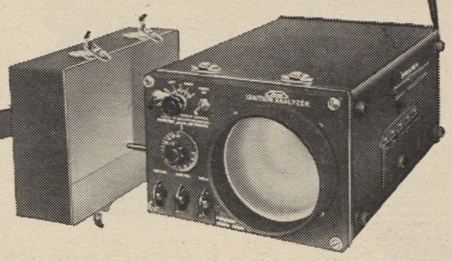

The wide-spread acceptance of the Bendix Ignition Analyzer by airline operators, airplane builders and industry in general is the finest possible tribute to its outstanding efficiency. It will pay to find out more about this outstanding Bendix product. *Literature available on request.*

COSTS LESS—DOES MORE

The Bendix Ignition Analyzer is available for airborne or portable-airborne installations with high or low tension magneto or battery ignition. Predicts spark plug failure before it occurs . . . checks spark plugs on a large, easy-to-read screen . . . costs less than comparable analyzers.

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Aeroprop—

Ruggedness Starts with....

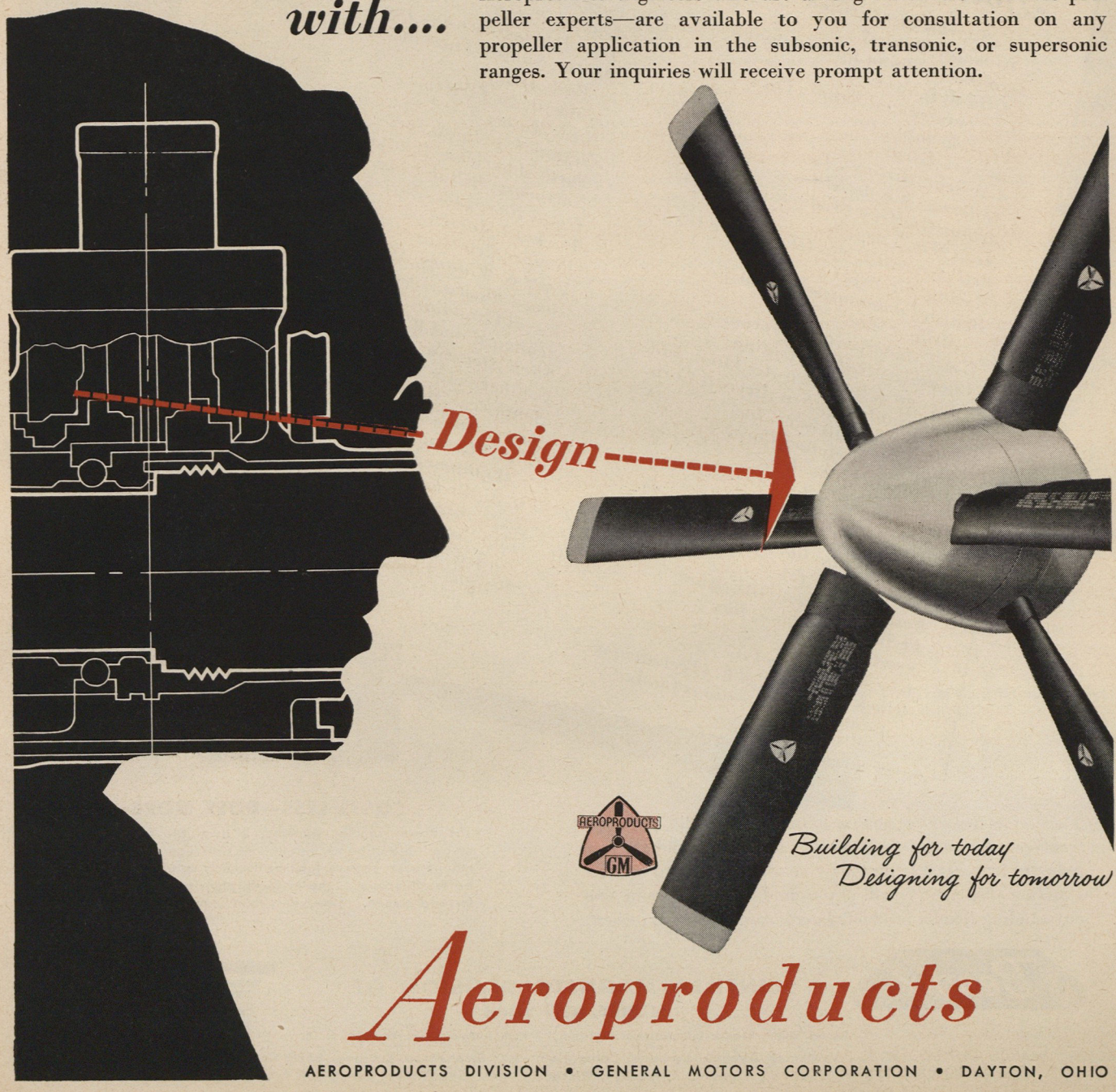
Ruggedness comes straight off a drawing board, as the engineers at Aeroproducts will tell you.

For an idea, drawn in all its details, was the beginning of a great new Aeroprop—the first propeller to successfully handle the enormous power of turbo-prop engines. Yes, from this drawing, from this design, came the ruggedness of the dual-rotation Aeroprop for planes of near-sonic speed.

But the design produced much more than ruggedness. It produced the reliability and precise control which resulted in having the Aeroprop specified for the U. S. Navy's XP5Y, R3Y, A2D, and the A2J.

This great turbine propeller is reversible—cuts landing runs safely and smoothly. Electronic governing and synchronizing circuits control turbine speeds automatically. And Aeroprop's self-contained hydraulic system makes installation and maintenance a simple matter.

Aeroproducts engineers who are among America's foremost propeller experts—are available to you for consultation on any propeller application in the subsonic, transonic, or supersonic ranges. Your inquiries will receive prompt attention.

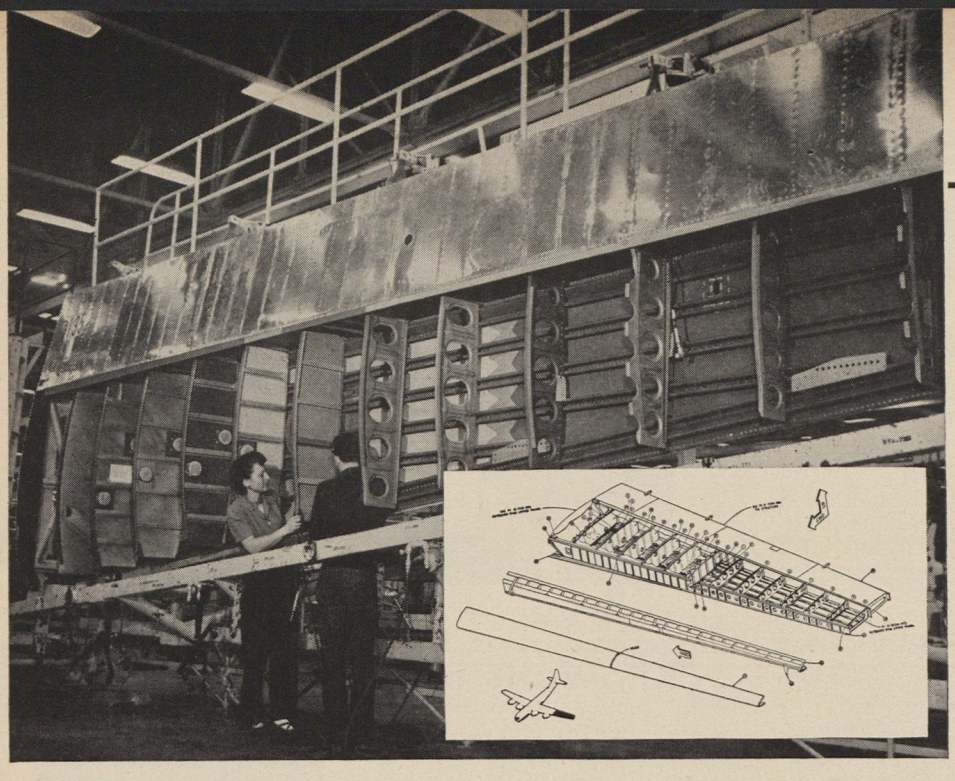


Building for today
Designing for tomorrow

Aeroproducts

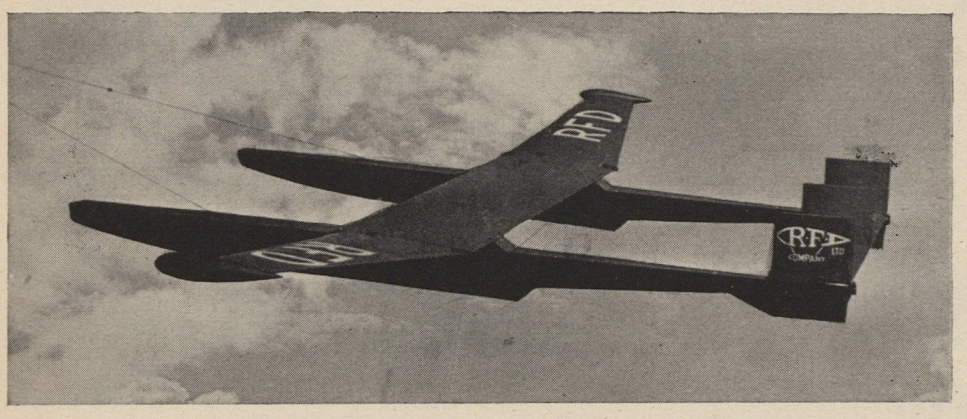
AEROPRODUCTS DIVISION • GENERAL MOTORS CORPORATION • DAYTON, OHIO

TECHNIQUE



Isometric Drawings Speed Production

Art and engineering combine at Boeing in isometric drawings—pictures with much the accuracy of blueprints—and speed production of B-47s and C-97s. First used in World War II, production illustrations let mechanics spot structural details without prowling through mountains of blueprints. Time needed for wiring and tubing is cut about in half.



High Speed Target As New Training Aid

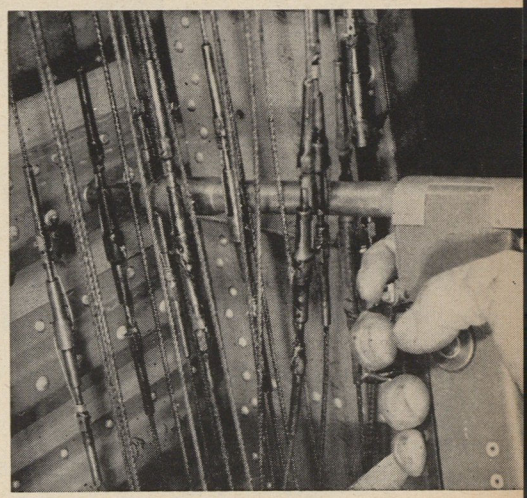
A winged target craft that has been towed at speeds up to 420 mph at 24,000 feet is the British MK.I, developed by the RFD Company and a Swedish associate firm. The wooden twin fuselage, being made radar responsive, will aid jet and anti-aircraft training. It has a wingspan of twenty-six feet. The speed test was conducted with a Hornet towing. High-speed targets are one of the complications of the jet era.

Piper's Light Transport Plane Unwrapped

With first flight tests of its new Twin-Stinson successfully over, Piper is aiming at 1953 production and a target price of $25,000 for the four-place light transport. Two Lycoming 125 hp engines power the plane, designed for business and industrial use.

Better Than Raw Carrots

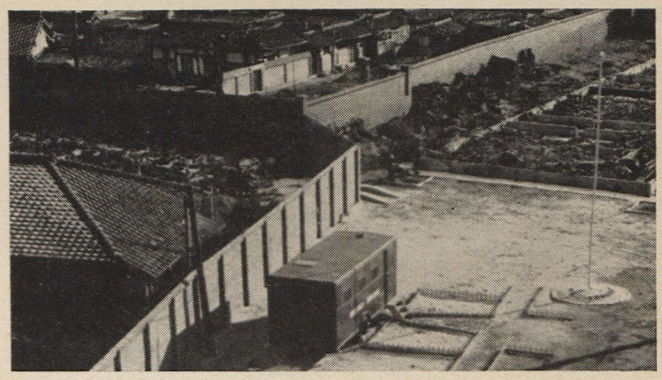
Recalled pilots of World War II vintage, whose night-flying vision isn't quite as sharp as it was ten years ago, get an assist from a new type of glasses being perfected by Lt. Wayne E. Gulley, optical researcher at the USAF School of Aviation Medicine. Corrective lenses in sunglass frames are coated with magnesium fluoride, which cuts down reflection by half.



Fewer Wasted Rivets

An extension for Cherry rivet gun barrels, consisting of a pull rod inside a housing, enables workmen at Temco to drive rivets in seconds instead of minutes and do a better job.

TECHNIQUE



An AFRS "Vagabond" van stands amid the rubble of Seoul.

Kilowatts in Korea

If you had your own radio station, wouldn't you rather name it "Gypsy" or "Troubadour," instead of WMAQ, WTOP, or KXOK? They did in Korea. These stations and a couple of others are part of the Far East Network of the Armed Forces Radio Service. Their twenty-one-hour broadcast day furnishes news and entertainment for UN troops from Pusan to the front—one "captive audience" that doesn't mind a bit.

Key AFRS men are the program and station directors.

The first Korean AFRS station popped up in Seoul in October 1950, had to "bug out" when the Reds moved in in January, and returned as "Vagabond" when UN forces reoccupied the city. Then other stations appeared: "Kilroy" at Taegu; "Homesteader" at Pusan; "Gypsy" north of the 38th Parallel; and "Troubadour" near Inje.

Eight-man teams keep the transmitters humming. They include the same key men you'd find at a network outlet back home—a station director, program director, traffic manager, librarian, announcer-operators, and engineer.

Broadcast schedules are tailored to the likes of the GI audience. World news is presented fifty-five times a week. A special effort is made to include programs for the British, French, Dutch, Greek, Turkish, and other nations with troops in Korea. "Vagabond" and its sister stations also air the popular statewide programs—Dave Garroway, the Air Force Hour, Hollywood Bowl, Dragnet, Arthur Godfrey, Jack Benny, the NBC Symphony, and others. But local talent gets in its licks too. There are disc jockey and request shows, and interviews with such visitors as Paul Douglas, Jan Sterling, and Mala Powers, recently named "Miss AFRS of Korea."

But so far at least nobody's mentioned TV for Korea.—END

Behind the scenes at one of the stations, an original show is taped, to be beamed later to troops serving in the area.

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There is nothing newer than Gilfillan GCA...world's most widely accepted aircraft approach system.

Yet, GCA is actually 40 years old! For it is the end result of Gilfillan pioneering in electronic research and development during the past four decades.

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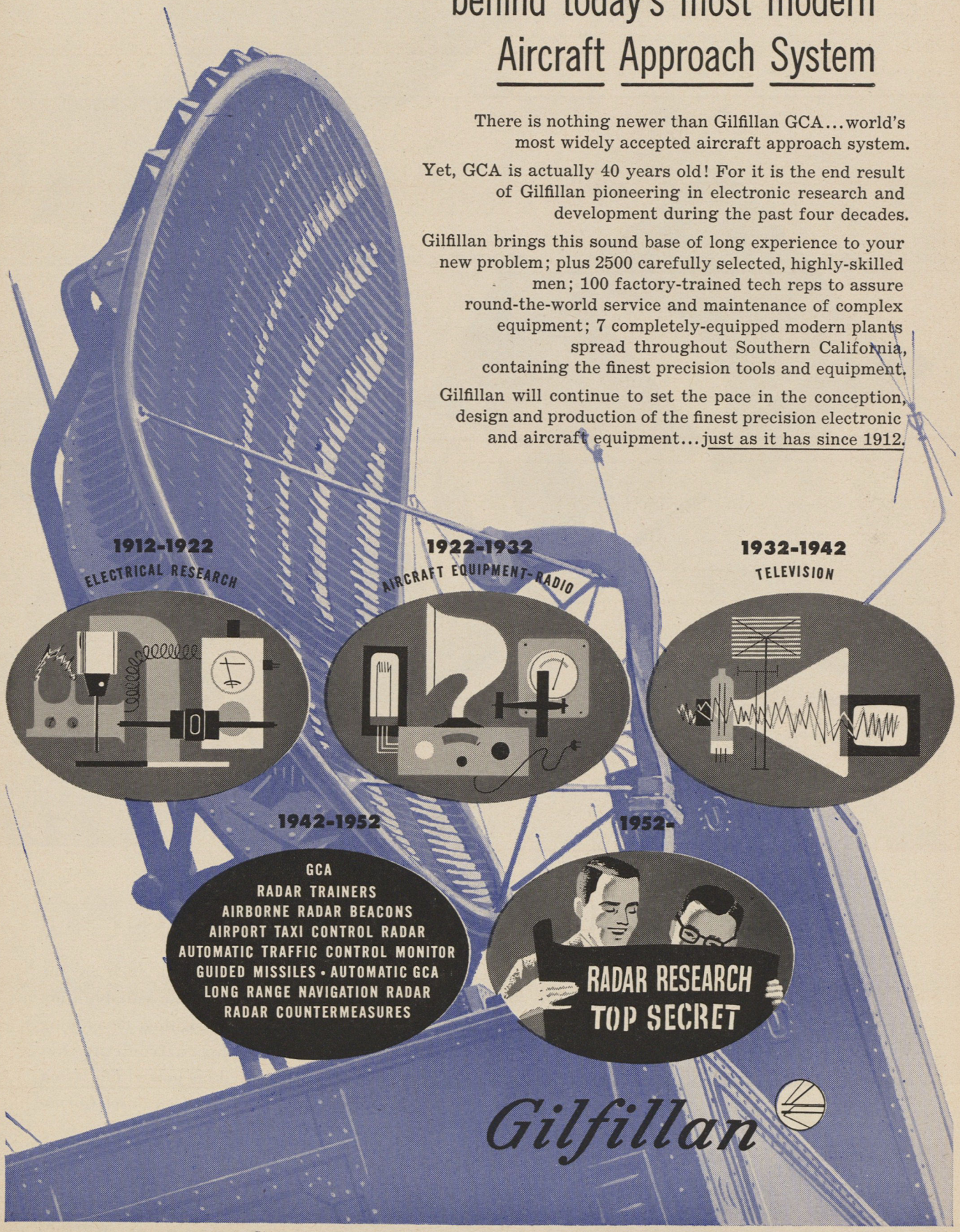
Gilfillan will continue to set the pace in the conception, design and production of the finest precision electronic and aircraft equipment...just as it has since 1912.



Gilfillan

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Increasing air speeds and higher level flight pose ever tougher problems for bombing accuracy. Finer and faster target pin-pointing requires bombing mechanisms of extraordinary precision and almost instantaneous action—yet they must function flawlessly under the most rigorous conditions. Not only engineering ingenuity but precision manufacture—to ultra-fine tolerances—is essential. Such are the skills that Arma provides in close collaboration with our Armed Forces in designing, developing and producing the complex instruments that strengthen our defensive striking power. *The Arma Corporation, Subsidiary of American Bosch Corporation, Brooklyn, N. Y.; Mineola, N. Y.*

ARMA FOR THE ADVANCED IN CONTROLS ARMA INSTRUMENT

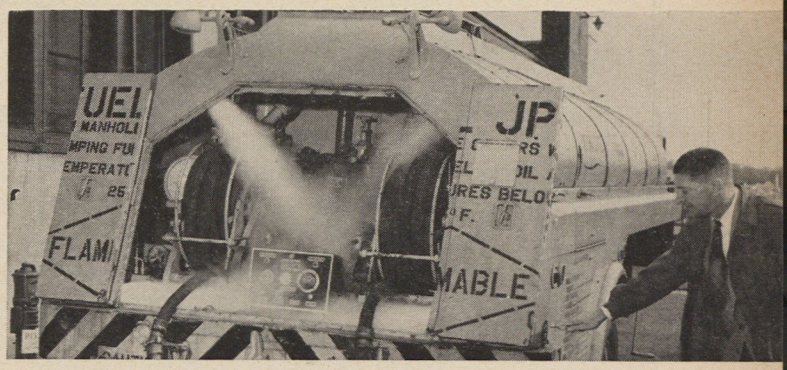
People Who Live in Glass Houses

British aerotechnicians at Hawker Siddeley are busy shattering glass panels, using an oil-filled pressure chamber in their search for panels able to withstand seven tons. The result is a "club sandwich," with strengthened glass outside, then a layer of Vinal plastic, and special glass inside, toughened by being rapidly cooled while still molten.

No Sweat Unhinging Thunderjet Wings

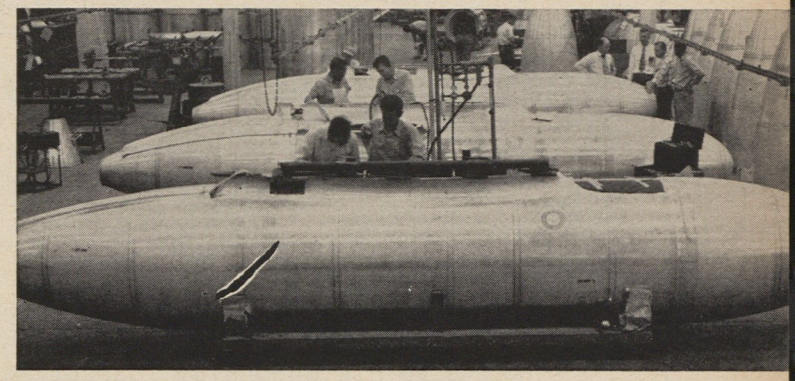
Ingenuity payoff in Korea. M/Sgt. Leroy L. Henderson's technique for removing F-84 wing hinge-pins makes a one-man, two-hour job of a chore that used to take two men up to twenty hours. The 5th AF sergeant's home-made "C" clamp breaks the hinge pins loose with minimum effort when used with bushings and a drive screw turned with a box wrench.

TECHNIQUE



In Case of Fire

AF refueling trucks get automatic fire protection from twin, 35-pound cylinders of carbon dioxide that release the gas through seven Multijet nozzles in case of fire. The Kidde device can also be operated manually.



Giant Drop Tanks Boost Range

What are claimed to be the largest external fuel tanks in production are coming off Ryan assembly lines and promise to give combat aircraft increased range. The cigar-shaped cylinders are made of sheets of aluminum alloy joined with more than 30,000 electric welds. Joints around the circumference are closed with two rows of spot welds and a single row of seam welding. The single longitudinal seam is fusion welded.

Plane Within a Plane

A C-24 Globemaster II gobbles up the first of six Sikorsky H-19 helicopters being airlifted by MATS to the Far East. Skids are used to load the 2½-ton 'copter through the clamshell doors in the nose of the Douglas transport. The Globemaster totes two of the ten-passenger H-19s.

MOBILIZATION NEWS

ENLISTMENTS of Armed Forces personnel, whether serving on active duty or not, normally expiring between July 1, '52 and June 30, '53, inclusive, have been extended for maximum of nine months from normal expiration date. Maximum authorized active duty tours of Reservists and National Guardsmen are not lengthened by this extension; nor are existing programs for separating Reservists and National Guardsmen affected. Extension does not affect: (a) personnel whose enlistments have been previously extended; (b) personnel inducted through Selective Service; (c) Selective Service registrants who voluntarily enlisted in Army for period of twenty-four months.

RATED Reserve officers who were suspended from flying status upon being ordered to active military service for assignment to non-flying duty may volunteer for return to flying status under certain conditions. Status will also be returned to rated officers who were suspended in pre-Korea economy cut, and to those who requested suspension to fill mobilization assignment prior to being ordered to active military service. Return to flying status will be on voluntary basis in all cases.

FOREIGN SERVICE credits are being discarded as overseas selection basis. Future selection will be based on person's date of return from last foreign tour. No officer or airman will serve more than 18 months overseas separated from his dependents.

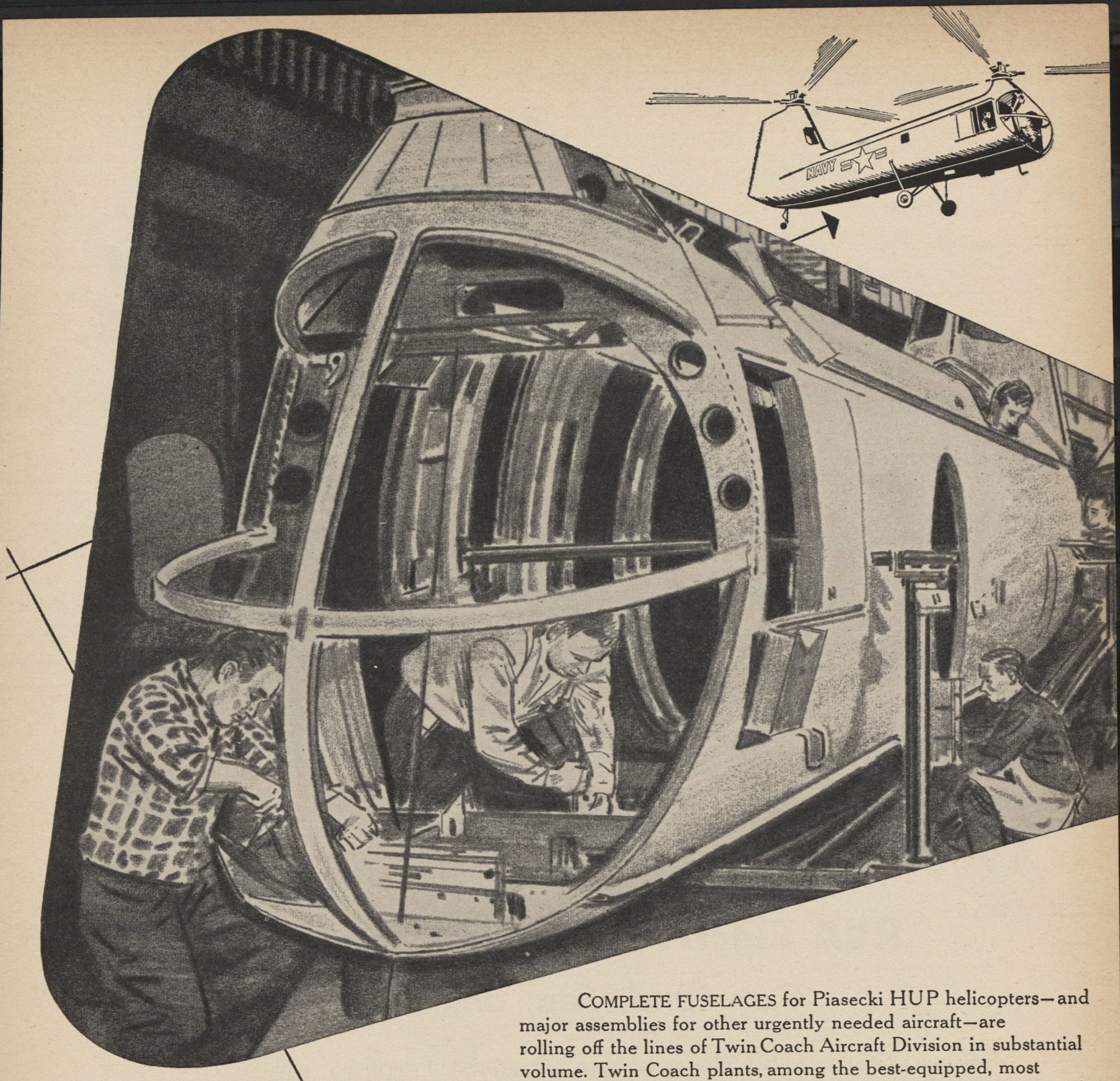
EARLY RELEASE from active duty for non-volunteer Reserve and ANG officers has been authorized by USAF Headquarters when following conditions are met: (a) Surplus to immediate requirements of local commands and for whom no replacement will be required during period for which retainable, (b) have six months or less of active service remaining under current tour, (c) individual desires release. Reserve and Guard officers who have finished full combat tour in or over Korea may elect separation on return to ZI.

USAF is continuing its policy of opening more opportunities for Aviation Cadet training. It has announced that Reserve and ANG airmen with high school education and not on active duty may now apply for participation in the program.

MAJOR portion of the Group Observer Corps, affecting 27 states, was recently placed on 24-hour operation. At present, our civilian component numbers only 30 percent of desired strength, 500,000, and it has taken more than two years to reach this figure.

OFFICERS serving on active duty for specified period of 24 months, by reason of having signed ROTC deferment agreement, will be eligible for release from active duty in 17, 21, or 24 months, under same criteria as other Reserve Forces officers on EAD. . . WAF and male airmen high school graduates may now apply for Officers Candidate School. Only applicants stationed within continental limits of US, Hawaii, Alaska, Puerto Rico and Panama Canal Zone will be accepted.

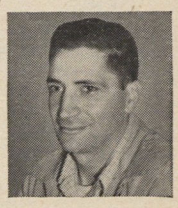
AF needs approximately 100 Catholic chaplains and several hundred Protestant chaplains as Reserve officers. . . During June, July and August approximately 336 additional direct Reserve appointments will be available for engineering students graduating from college.



Twin's Early Birds Build Whirly Birds

COMPLETE FUSELAGES for Piasecki HUP helicopters—and major assemblies for other urgently needed aircraft—are rolling off the lines of Twin Coach Aircraft Division in substantial volume. Twin Coach plants, among the best-equipped, most modern in the nation, are competently staffed by men who are the real early birds of the aviation industry. Many have over 25 years of unbroken aircraft experience. Modern facilities, modern equipment plus *experienced* manpower make Twin Coach a dependable source for every type of airframe assembly.

A-5358



Joe Sacco, lofting leadman, constructed and flew his first glider in 1929 while still attending Buffalo Technical High School. He has been in the aircraft industry continuously ever since.

FAGEOL TWIN COACH AIRCRAFT

TWIN COACH COMPANY *Aircraft Division* **BUFFALO, N. Y.**

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AIRCRAFT ASSEMBLIES • MOTOR COACHES • TROLLEY COACHES • SUPER FREIGHTER CARGO TRUCKS • FAGEOL GASOLINE AND PROPANE ENGINES • FAGEOL-LEYLAND DIESEL ENGINES

RCA Electronics serve the Military

—on Land, Sea, and in the Air

MORE AND MORE the Military Services are turning to electronics in the development of new and better weapons for use on all the battlefields—on land and sea, under the sea and in the skies.

The rapid advance in aircraft, guided missiles, tanks, fast ships and mechanized weapons call for all kinds of electronic devices. RCA research, design and application engineers work in close co-operation with the Military Services in the expanded application of radio-electronics in the progress of military science.

RCA is an "arsenal" of electronics from which the Armed Forces are equipped with the finest and most efficient electronic apparatus in the world. In addition, RCA has a large staff of field service engineers working with all branches of the Armed Forces as the link between RCA's research developments, manufacturing capacity —and America's military strength.

RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

F-84 Thunderjet lowered from floating crane to deck of aircraft carrier on April 30, at Port Newark, N. J., marked 3,000,000th ton of military equipment for delivery under MDAP. . . USAF has ordered a number of medium transport aircraft, designated C-131, from Convair. . . First flight of Boeing XB-52 Stratofortress was announced recently by USAF. . . New USAF rescue helicopter, YH-21, made its first flight several weeks ago at Philadelphia Airport plant of Piasecki Helicopter Corp.

MODEL aviation's great show of shows, Plymouth's Sixth International Model Plane contest, will be held at Detroit, August 2-25.

137TH Fighter-Bomber Wing, equipped with Republic F-84 Thunderjets, will soon be deployed to France for duty with NATO forces. Composed of former ANG squadrons from Kansas, Georgia and Oklahoma, the Wing at present is stationed at Alexandria AFB, La. . . USAF resumed operations on a limited basis at Newark Airport several weeks ago. . . North American Aviation's T-28 trainer has been authorized for export. . . USAF has transferred Dover AFB, Dela., from ADC to MATS, which will use it as supplemental East Coast aerial port of embarkation. Atlantic Division headquarters, now located at Westover AFB, Mass., will move to Dover.

CECIL MEADOWS of Bakersfield, Calif., has been elected president of American Association of Airport Executives. . . Brig. Gen. John H. Michaelis, Deputy for Training in Operations and Training Division of SHAPE since July, '51, will return to US in August to become Commandant of Cadets at West Point. . . Jack Purcell, former manager of Capital Airlines' news bureau, has joined AIA staff.

COMMAND AND STAFF: Maj. Gen. Junius W. Jones was retired several weeks ago . . . Maj. Gen. Arthur W. Vanaman replaced Gen. Jones as commanding general of Sacramento Air Materiel Area in Calif. . . Maj. Gen. Morris R. Nelson has been named commanding general of Eastern Air Defense Force with headquarters at Stewart AFB, Newburgh, N. Y. . . Maj. Gen. William E. Farthing, director of transportation in USAF's Office of Deputy Chief of Staff, Materiel, will retire in August when he reaches mandatory retirement age. He will be replaced in important transportation post by Brig. Gen. John P. Doyle, now commanding general of FEAF AMC. . . Brig. Gen. Robert E. Condon, former chief of National Organizations Branch, Department of Defense, has been named deputy for Reserve affairs in USAF's ConAC. . . Maj. Gen. George G. Finch was named deputy for ANG affairs of ConAC.

NEW POLICY statement concerning flying has been issued by Sec'y Finletter. Points stressed were: (a) that training leading to flying rating "must remain entirely voluntary," but, once rated, flying becomes a "military duty." (b) "So long as rated officer is physically and professionally qualified, and so long as his services are needed in rated capacity, voluntary suspension from flying status will be approved only under most unusual circumstances." (c) Those who indicated an "incapacitating fear of flying" will be examined and, if found disqualified, "due to a psychoneurosis," will be grounded and given medical treatment. (d) Efforts of qualified flyer to avoid hazardous duty "and, in particular, training for an actual combat" indicated that officer has failed to live up to AF standards, and should be "separated from the service." . . . Since Korean War, some 2,200 officers have been removed from flying status for all causes; of this group, 306 made specific requests to be removed.

NEW

VICKERS

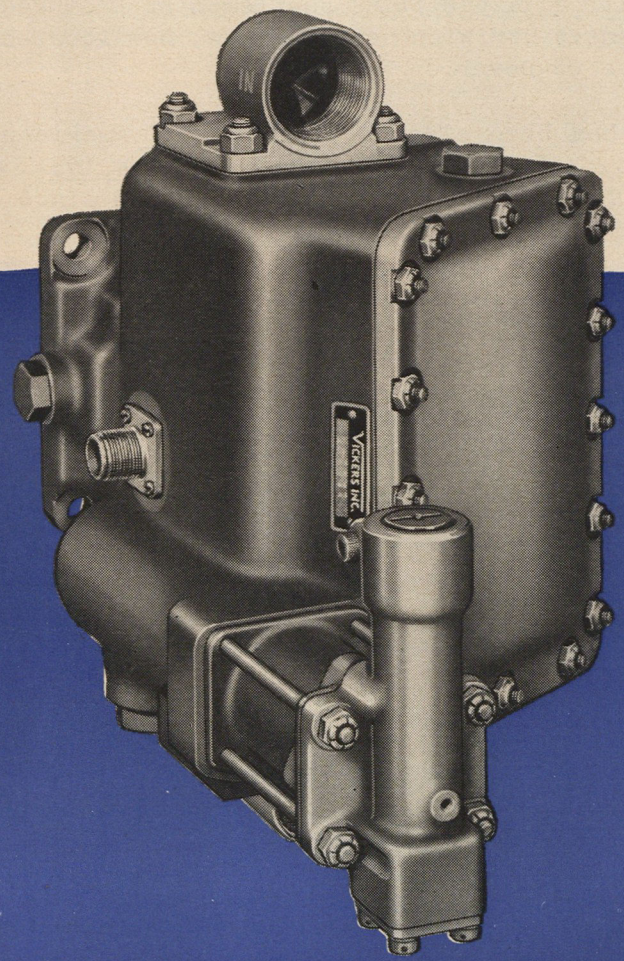
EDV* PUMP

The new Vickers EDV Pump is a variable delivery, piston type pump which automatically delivers the hydraulic fluid at rates from zero to full rated volume . . . governed by the demand of the load. In addition, an electrical control latches the pump at zero delivery and pressure when no fluid is required. The instant there is any demand, the pump automatically delivers the volume of fluid required at full pressure.

This arrangement has many advantages, particularly on long flights. In the first place, the power required by the pump in the "latched zero" position is negligible. Fuel savings in the order of 700 lb per flight have been estimated. This saving can be used to increase pay load or to extend range.

As the pump does not circulate any fluid in the "latched zero" position, if any line is damaged (e.g. by gunfire) fluid loss is confined to that line . . . the pump does not empty the reservoir.

The pump is not stopped in the "latched zero" position . . . it operates at normal speed but at no load. It is ready the instant demand occurs . . . nothing has to be brought up to speed. Other advantages are low maintenance costs and longer periods between overhauls. It can often simplify hydraulic systems. For additional information on the Vickers EDV Pump, ask for Bulletin A 5202.



*Electrically Depressurized Variable

AUTOMATICALLY DEPRESSURIZES
entire hydraulic system when demand ceases

AUTOMATICALLY RESTORES
system pressure at instant demand reoccurs

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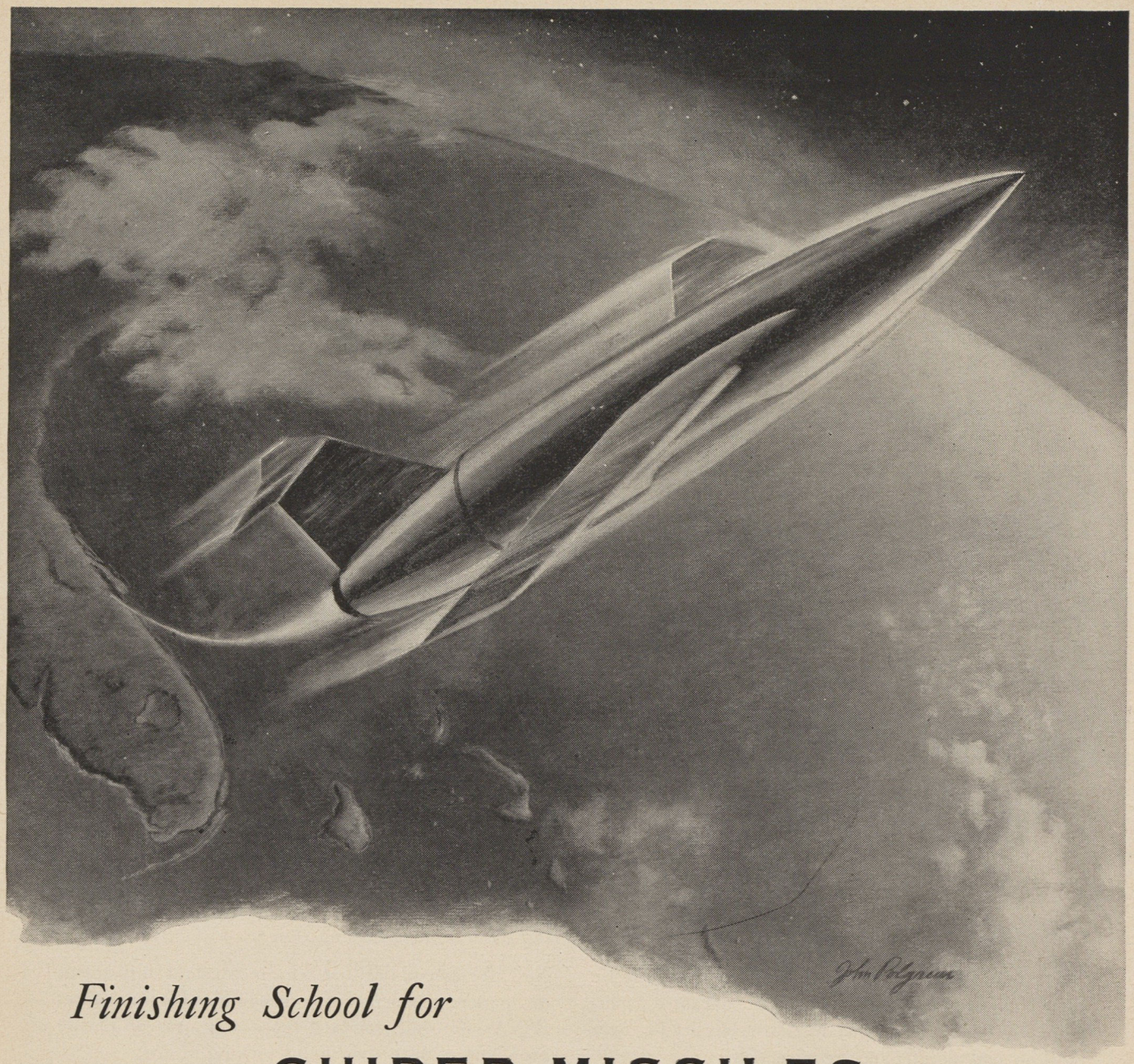
DIVISION OF THE SPERRY CORPORATION

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT • SINCE 1921



Finishing School for
GUIDED MISSILES

The Air Force Missile Test Center, used by all our military services as a long-range proving ground, stretches thousands of miles from Florida, out over the Bahamas, into the South Atlantic.

A pilotless bomber roars away from its launching stand, picks up speed, zooms into the blue. Setting its course for a far-off target in the ocean, it rockets over a chain of tiny islands where men and machines check its flight, its behavior, the operaion of its guidance and control systems. It's a vital part of our air power of the future—aeronautical research and development laying the foundation for continued U. S. air supremacy!

Operated by the USAF's Air Research and Development Command, the Missile Test Center is geared up to test the wide variety of missiles, rockets and pilotless aircraft vital to modern air power. It reached its full stature with the recent completion of down-range observation stations. And the dramatic B-61 pilotless bomber, the Matador, designed and produced by Martin as part of its diversified missiles program, was the first to use the completed range. THE GLENN L. MARTIN COMPANY, Baltimore 3, Maryland.

Martin
AIRCRAFT

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Illustration is artist's conception of Air Force B-61 Matador pilotless bomber.

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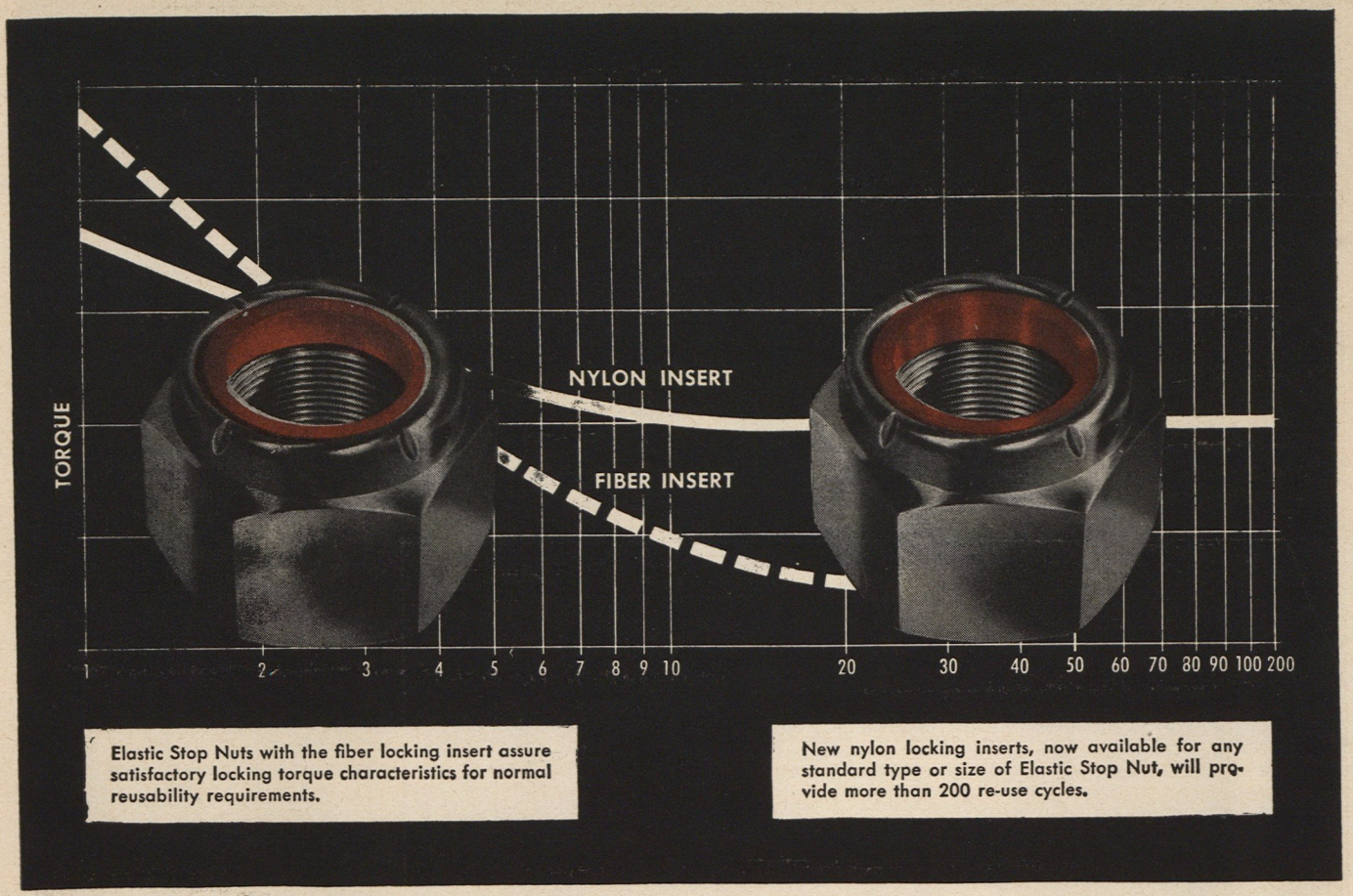

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GOOD NEWS FOR YOU

talking about a stretchout and the impossibility of meeting certain objectives, he said, "our aircraft manufacturers should be forced to produce high quality planes at the most rapid rate they can until our Air Force more nearly approximates that of Russia. I think if we start now we may not have any more than enough time."

Time, then, has become our most precious commodity and the airpower stretchout, ballyhooed as an economy measure, is likely to become the greatest waste of all—far greater, for example, than the investigators have been able to turn up in all their scrutiny of the defense effort. It is now conceded that the stretchout will not result in economies to the taxpayer. General Spaatz has testified that it is likely to add as much as $2 billion to our total spending. It will cost more to build the same number of planes in four years as it would to build them in two.

The American public has been fed many plausible arguments to justify both the Administration's original "stretch-out" and the House of Representatives' subsequent "drag-out" of the airpower program. Among them is the contention that the original production schedules, set up by the Air Force to meet its requirements, were unrealistic and could not possibly have been met. Part and parcel of this argument is the claim that numerous design changes have caused unwarranted delays.

Neither of these contentions, or perhaps "excuses" is a better word, will wash. Additional testimony before the Senate preparedness subcommittee made this very plain. The witness was Lieut. Gen. K. B. Wolfe, retired, former Air Force Deputy Chief of Staff for Materiel, who demolished both complaints in short order.

With regard to schedules, Gen. Wolfe testified, "In my opinion the schedules . . . were realistic. . . . In approximately March or April of '51 it became apparent that the assumed conditions around which we and the industry had built the program would not be met . . . the industry told the Air Force that they were not getting delivery on machine tools; their priorities for material were not coming through; that the arrangements for the constructions of new plants . . . were not coming through as we had originally assumed."

On the subject of design changes Gen. Wolfe pointed out that we had many design changes during World War II and still managed to produce quite a few airplanes. As he put it, ". . . thank God we did, because that gave us the most modern equipment at all times. . . . The worst thing that we could have happen to us would be to completely freeze the program."

He then pointed out that frozen designs would not meet the requirement of various theaters of war and would not meet the competition of the enemy air, concluding, ". . . I just can't go along with saying that design changes one, held us up, or, two, that they can be stopped."

In this connection it is interesting to note that the inadequacy of pre-World War II military research and development was largely responsible for many design changes during that conflict. We just weren't "ready-to-go" with suitable prototypes at Pearl Harbor time.

There are collateral harmful effects of the stretchout, and for the first of these the Administration will have to pick up the tab. For the plain fact is that the stretchout, upon which Congress has not yet voted, is already in effect.

Just to name a few actions resulting from the announcement of the stretchout budget, the Fairchild plant at Chicago was closed before it could open for business; a General Electric plant at Louisville now will produce home appliances instead of jet engine parts; twenty million pounds of aluminum originally scheduled for use in the first two quarters of this year were turned back to the Defense Production Administration. And there are many other indications that the proposed stretchout already is in effect.

Perhaps the most stunning blow of all to our national defense posture is that the sense of urgency has flown completely out of the window. After all, if the President doesn't mind missing the Joint Chiefs' target date by a couple of years why should Congress balk at missing it by a few additional months?

But we are stretching out far more than our production of planes. We are stretching a period of explosive tension which needs only a spark to set off a third World War. And we are stretching out all these things at the very time that the enemy is not only maintaining but increasing her capacity.—END

N. J. AFA Meeting

The 1952 New Jersey Wing Convention will be held in Newark on June 21, at the Douglas Hotel. For information, contact C. T. Bearby, 12 Beaumont Place, Newark, New Jersey.

allow the main portion of the 8th Army to withdraw. A formation of C-119s carrying fifteen tons of ammunition was over the Gloucesters when the British commander warned them off. The embattled regiment could not lift its artillery barrage long enough to allow the C-119s to come down to 800 feet to make their drop.

After the Communists recaptured Kimpo and Suwon in their drive to the 37th parallel, combat cargo operations were hampered by the lack of suitable airfields. Only two rough gravel strips were available—at Wonju and Chungju. Both were less than 2,000 feet long. Only C-47s could use them safely. Consequently combat cargo embarked on the biggest air drop operations in military history to keep the UN forces in action.

When General Ridgway took command after General Walker's death there was not enough fuel on hand to keep his armored forces in action. He appealed to the 315th. Next day C-119s parachuted 55,000 gallons of gas to the armored forces near Chungju. This was the maximum air drop capacity at that time.

But air drop was not enough. In response to an urgent Army plea, General Henebry ordered his C-46s to land gas at the Chungju strip. This was an 1,800-foot gravel strip lying in a river bend, a cliff at one end of the runway and a steep drop-off to the river at the other. Accepting the danger as a calculated risk, the C-46s began shuttling in and out of the strip. On the first day a C-46 landed short, sheared off its landing gear and skidded into two other planes that were unloading gas. All three planes were lost and several crewmen died in the flames. Nevertheless the field was cleared, the runway lengthened a few hundred feet and trees cut down to provide a better approach. Two days later the C-46s resumed their delivery service and kept it up for a week despite the loss of three more planes.

The gas they delivered enabled General Ridgway's armor to halt the Chinese offensive and to begin a counterattack. During the weeks that followed, as the counteroffensive gathered momentum, combat cargo conducted the largest air drop operations in military history. For weeks the entire UN offensive was supplied primarily by drop.

Many new air drop techniques were pioneered. General Henebry believes that air drop has now eliminated the need for gliders because everything that can be carried by a glider has been successfully parachuted in Korea. The 315th has dropped field artillery, weapons carriers, trucks, jeeps, radio equipment, ammunition, water, gas, rations, medical supplies, ambulances—and once some ropes to enable the Navy to pull some of its ships off the mud flats.

Cargo is carefully packaged on plywood pallets that ease the slide out of the plane and also absorb much of the landing shock. Combat cargo bases in Japan are well stocked with pre-packaged loads of every kind of equipment.

The C-119 is used primarily for air drop missions because its roller-bearing floor, wide rear doors and cargo release equipment make it possible to disgorge a five-ton load in three seconds. Air dropping is a dangerous mission and requires precise training and skilled piloting. The C-119s slow down to 120 mph for the drop and fly at 800 feet. As the pilot approaches the drop zone he flies nose high and the cargo "kickers" release the steel cables that secure the load in flight and allow it to settle back into a huge nylon net that keeps it from falling out of the rear doors. At the drop signal the net is released along with the cargo. Some types of cargo such as clothes, blankets, wire are dropped in a free fall without chutes.

Accuracy is a prime requirement. For three months last winter the 315th completely supplied by air drop an Air Force radar station perched on a 4,000-foot ridge. Successful night drops have been made, and during the big UN counteroffensive the C-119s dropped supplies from midnight to dawn every night for a week, using flaming oil barrels to mark the drop zone. Improved techniques to mark accurately the drop zone in bad weather and at night are badly needed to make round-the-clock deliveries feasible. Better air-to-ground communications are also needed.

When Suwon was recaptured, providing the first airfield large enough to take heavy transport operations, C-54s were landing on the battered runway even before the field was cleared. A 315th Air Division officer, who was directing air traffic that day, describes the scene:

"It was a terrible day, with a low ceiling and drizzling rain. Scud clouds were drifting by at 500 feet. We had no let-down procedures or GCA. The pilots just had to fly to about seventy-five miles out, let down in the valley and come on in under the clouds flying contact to the field.

"By the time it was full light we

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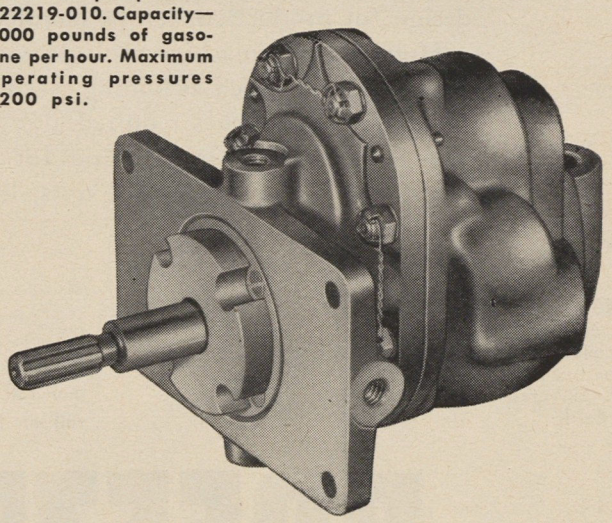

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could hear the drone of the transports, and a steady stream of C-119s, C-54s and C-46s came sneaking in under the scud—one plane every two or three minutes. All of them were loaded with 155 and 105 millimeter artillery shells.

"There was only a 4,500-foot surfaced runway and the bomb holes had been filled with loose rubble. The landing planes soon pounded the rubble down. More than a thousand tons of artillery shells moved into Suwon that day."

It was the massed artillery fire and the ability of combat cargo to keep the hungry guns supplied that finally broke the Chinese offensives. With Kimpo recaptured and repaired and a new field built on the central front, combat cargo was able to make its greatest effort of the war during the heaviest Chinese attacks in May. From May 16 to 23 combat cargo delivered 150 percent of its normal tonnage capacity, laying down over 6,000 tons of artillery shells in a week at a single field.

Although the ground forces use about eighty-five percent of combat cargo tonnage in Korea, the 315th serves all units. The 315th has moved every Air Force unit in Korea at least once, and has shuttled the 18th Fighter-Bomber Wing fourteen times during the ebb and flow of battle. They became so practiced in the art of aerial movement that the fighters could end operations at a field with a morning mission and fly their afternoon mission off a new field, finding their ground echelons there to meet them. All aircraft parts for Korea are delivered by air—one reason why the rate of aircraft out of commission for lack of parts is lower in Korea than stateside. When a number of B-29s crash landed at Korean bases after encounters with MIG-15s, combat cargo flew the necessary parts and maintenance men from Okinawa to Korea to put them into flyable condition. All jet engines are flown between Korea and Japan for overhaul. Without the speed of air transport there would not be enough jet engines to go around.

It is becoming increasingly obvious that only reorganization of military transport resources along the Korean pattern will enable the armed forces to develop the kind of flexible air transport that they urgently need on the limited budget at their disposal. The lessons learned from combat cargo operations in Korea seem to point the way for a thorough reorganization of military air transport resources and techniques.—END.

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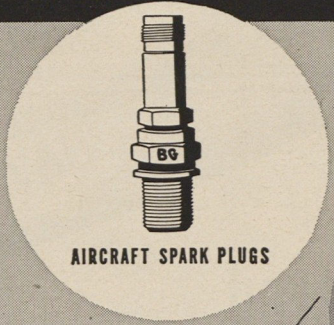
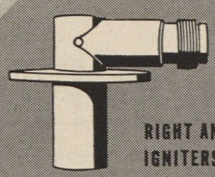
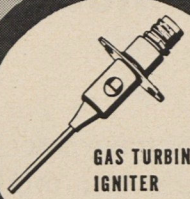


AIRCRAFT SPARK PLUGS



RIGHT ANGLE IGNITERS FOR GAS TURBINES



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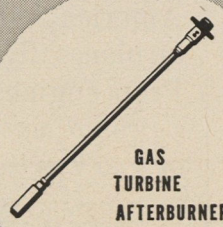

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Another First Flight Powered With Allison Turbo-Prop Engines

Again Allison T40 Turbo-Prop engines have powered the first flight of a mighty new aircraft—the North American XA2J-1 Savage. A development from the AJ-1 Savage, now in fleet operation, the new Savage will add punch, speed and range to the attack arm of U.S. Navy aviation.

Developing more than 11,000 equivalent shaft horsepower, the two Allison T40's will enable the new XA2J to take off from carrier deck with the heaviest bomb load of all the Navy's carrier-based aircraft. Fully loaded for combat, it will gross more than 26 tons at take-off.

Here is another striking demonstration that, when Allison Turbo-Prop engines replace reciprocating engines, higher power and better aircraft performance inevitably result. Today America has four leading airplanes* flying with Turbo-Prop engines—*all of them powered with Allison T38 or T40 Turbo-Prop engines.*

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PROOF-TESTING ENGINES TODAY FOR THE AIRPLANES OF TOMORROW

jobs and also left wives at home, including mothers-to-be.

Nor are the reservists now in Korea (where "sit-down" refusals to fly are unknown) particularly in love with their second tours of combat duty. They represent, however, a group of men who are fulfilling the obligations they assumed, however inconvenient these obligations might be, when they voluntarily accepted a commission in the Reserve or Air National Guard. It can hardly be argued that such obligations can be scrapped arbitrarily for personal convenience. Indeed, the 50,000 reservists now flying for the Air Force have been badly libeled by the "sit-down" publicity which, though it has involved only fourteen of their number, has pointed the finger at all Air Force reservists.

On the other hand, while the great body of Air Force reservists are fulfilling their obligations to their government in the most commendable fashion, it is also true that their government has not responded in kind. For we must not forget that the wholesale recall of reservists to meet the requirements of a Korean War never should have been necessary.

In failing to adopt an adequate, long-range airpower program after World War II, the nation failed to provide the flight training program which would have placed a younger generation in the cockpits of Air Force planes today. As General Spaatz has said, the nation brushed off "a whole generation of air-minded teenagers" who were next in line to fill the flying boots of our World War II veterans. Lacking that group of youngsters, the veterans have had to pay the price.

If it could be said that we had at last learned the hard lesson of inadequate airpower, then it could be argued that this sacrifice by the veterans of another war had not been in vain. But such is not the case. Our air-power program continues to be stretched out beyond all semblance of a calculated risk. If the challenge of another Korea arises tomorrow or in the near future, chances are that the Air Force veteran of World War II again will be called upon to go to war and again pay the price of inexcusable inadequacy in our airpower effort. Our past mistakes as a nation have been bad enough. Their continued repetition can end only in national suicide. With this in mind, Air Force Association will continue to attack these mistakes, knowing from hard experience that there can be no "sit-down" in the fight for adequate airpower.—END

of one navigator the new requirement was three. An entire new technique had to be developed—without errors, loss of life, or accidents. Arnold's comment was an understatement.

It is not unusual for an RB-36 mission to take off from Travis late Tuesday, fly to Anchorage, Alaska, with a side trip over the North Pole, thence to Montreal, New York, Detroit, Chicago, St. Louis, Fort Worth, Los Angeles, continue out over the Pacific Ocean for a thousand miles, and then return to its base on Thursday morning. The flight would be made between thirty and forty thousand feet altitude but to the crew it would be a routine training mission — all in the day's work.

Aerial reconnaissance is a lonely and dangerous business. Arnold's assigned mission is to collect photo, weather, and electronic data simultaneously. The fourteen giant cameras, housed in the photo compartment (a part of the bomb bay before conversion), can take approximately twenty-eight hundred pictures without reloading the camera magazines. This does not include the cameras that photograph the radar scope every few seconds. Over enemy territory these usually operate on a continuous basis.

Aerial photography is the quickest way to get up-to-date, accurate and detailed information about the enemy. The fourteen camera stations taking vertical and oblique photography make it possible for the skilled photo-interpreters to get information on the enemy's strength and disposition, offensive and defensive installations, identification and production of industries, strike damage assessments, corrections for maps, etc. And they give the bomber strike team a photograph of their targets. If the strike is to be at night or in bad weather, radar photos are used.

During the mission the reconnaissance airplane is a flying weather station, collecting information when reporting sources such as ships, neutral nations and belligerent nations are not readily available to the Air Force's forecasters. And weather along the various routes must be observed so that a striking force will have the advantages of using the best altitudes and winds.

When a reconnaissance airplane penetrates into enemy territory, it goes in alone, penetrates deep, and comes home alone. Unlike the bomber formations that depend upon their concentrated firepower for protection, the RB-36 must protect itself. It's a lonely life.—END

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THE Kidde visual smoke detector offers new advantages in fire protection for aircraft. It is a small, compact, light-weight detector which cannot give false alarms.

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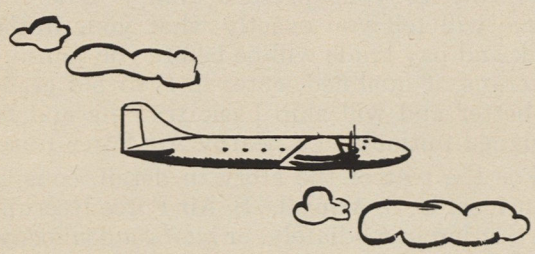

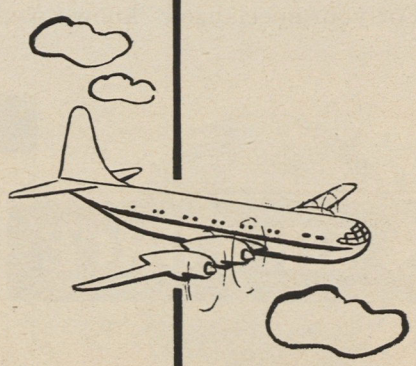

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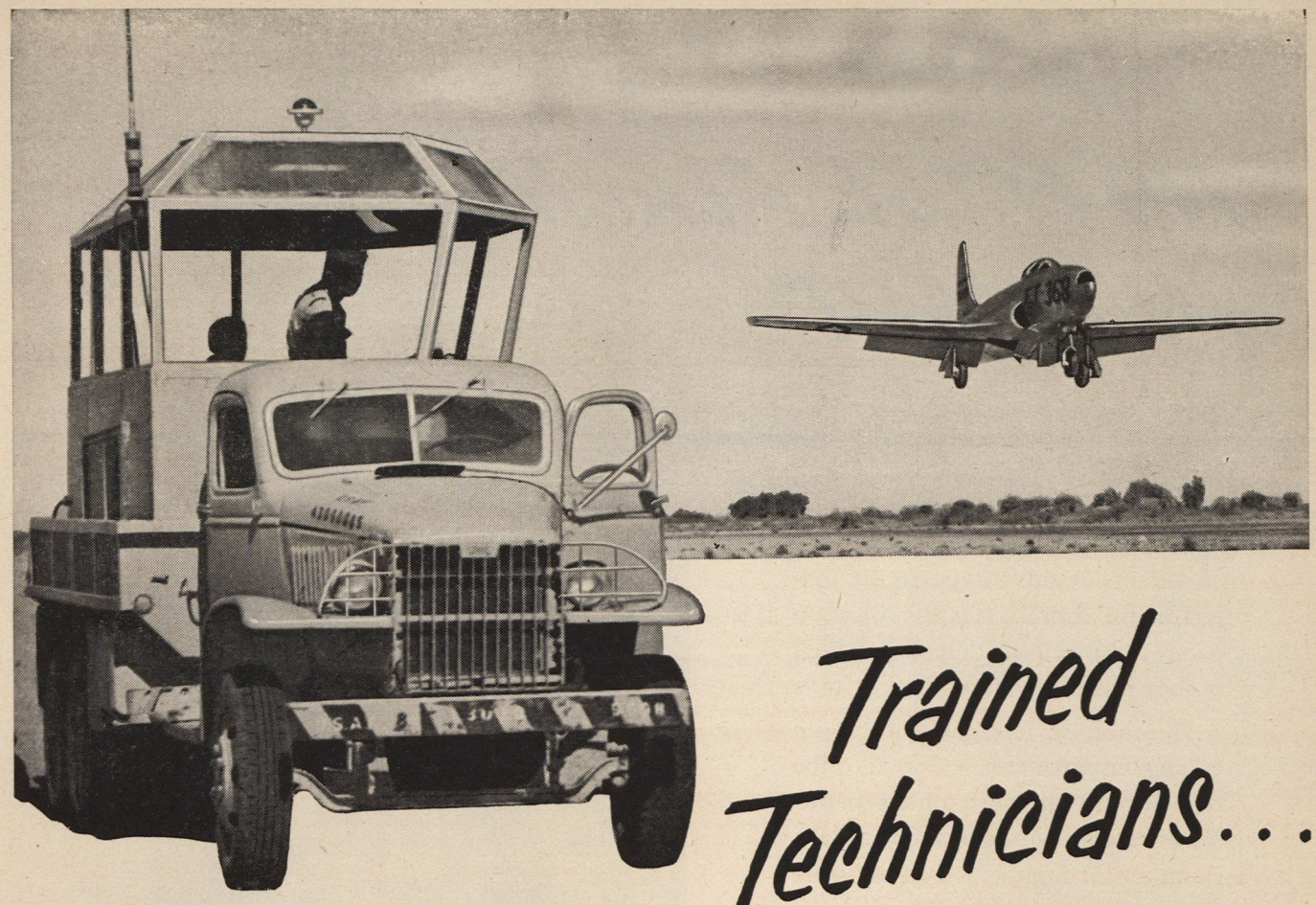

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AFA Squadrons Lend Helping Hand To Air Force Recruiting Drive

Baltimore Squadron of Maryland Wing Turns in Particularly Outstanding Job. St. Paul, Minneapolis Units Shine

April 19-26 was Air Force Recruiting Week throughout the nation. The drive was sponsored by the National Retail Dry Goods Association, with more than 5,000 of its member stores participating. Displays in store windows and information booths in lobbies highlighted the effort. Main goal of the drive was to spur recruiting of pilot and observer cadets and members of the Women's Air Force, both of which are in short supply at the present time.

AFA was invited by Air Force officials to assist in this vital campaign wherever an AFA wing or squadron existed. Many squadrons responded immediately to the call to help meet critical personnel needs of the Air Force.

In St. Paul and Minneapolis, the local squadron learned that several stores were purchasing display materials for their windows, but that other stores couldn't afford the materials. The AFA squadron helped with the purchase of the needed display materials.

The biggest helping hand reported to date by an AFA unit was that of the Maryland Wing and its Baltimore Squadron. The entire week was officially dedicated to the Air Force. The Air Research and Development Command made available various items of equipment for display. Hecht's, a department store chain, featured Air Force exhibits and displays in all of its store windows. Maryland AFA'ers arranged for a one-hour television show over Station WAAM-TV, which featured the Air Force orchestra and ceremonial troops. According to reports from wing and squadron commanders Charles Purcell and John Warner, AF enlistments were boosted throughout the area as a result of this effort.

SQUADRON OF THE MONTH

Baltimore Squadron

Baltimore, Maryland

CITED FOR

outstanding participation in the observance of Air Force Recruiting Week, April 19-26, contributing to critical personnel needs of the Air Force, and in so doing, contributing to strengthening the defense of the nation. The Maryland Wing is cited for its efforts.

Key figures in AF Recruiting Week in Baltimore (from left) Charles Purcell, AFA Wing CO; Major Mervin Stevens, Air Force Recruiting; and Nick Campofreda, WAAM-TV.

Chicago Squadron 41 official explains AFA to prospective member during showing of Republic Studio's motion picture, "Wild Blue Yonder."

Four New Squadrons

Applications for charter of four new squadrons have been received at National Headquarters during the past month, adding strength to AFA's nationwide network of local units. Today's headlines dramatize the need for and importance of AFA squadrons, for it is through their activities and the pages of AIR FORCE Magazine that AFA can best deliver to the American people the message of airpower.

The new squadrons, and the cities in which they are located, are: Albuquerque (New Mexico), Broadmoor (Colorado Springs, Colo.), Galesburg (Illinois), and West Suburban (Oak Park, Illinois).

Credit for the organization of the Albuquerque Squadron goes primarily to John H. Crawford, assistant to Regional VP Thomas D. Campbell. Richard M. Krannawitter, 610 First National Bank Bldg., Albuquerque, was elected commander at the charter meeting, which was attended by a number of civic and military dignitaries, including AFA Director Dr. W. R. Lovelace, VP T. D. Campbell, Brig. Gen. F. E. Glantzberg, Kirtland AFB, and Dr. John Parker. The principal speaker was Maj. Gen. John S. Mills, Special Weapons Command of SAC.

Pre-organizational efforts for both the Galesburg and West Suburban Squadrons were coordinated by Illinois Wing

The Air Force Orchestra, led by W/O Fred Keptner, played to video audience during AF Recruiting Week in Baltimore.

AF Ceremonial Troops performed on huge outdoor stage for WAAM television cameras during one-hour Recruiting show.

This is AFA

The Air Force Association is an independent non-military, airpower organization with no personal, political or commercial axes to grind; established and incorporated as a non-profit corporation February 4, 1946.

Active Members are men and women honorably discharged from military service who have been assigned or attached to the US Air Force or its predecessor services, or who are currently enrolled in the Air Force Reserve or Air National Guard. **Service Members** (non-voting, non-office holding) are men and women currently assigned or attached to the US Air Force. **Associates** (non-voting, non-office holding) are men and women not eligible for Active or Service Membership who have demonstrated an interest in furthering AFA's aims and purposes, or in proper development and maintenance of US airpower.

ITS OBJECTIVES

To preserve and foster the spirit of fellowship among former and present members of the Air Force.

To assist in obtaining and maintaining adequate airpower for national security and world peace.

To keep AFA members and the public at large abreast of developments in the field of aviation.

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HAROLD C. STUART, President

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Organizational Director: Ralph Whitener
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National, Regional, Wing, Group and Squadron AFA officials recently attended a Saturday night social of the 410 Wing, RCAF Association, Windsor, Ontario. William Donaldson (third from right, front row) is President of the 410 Wing.

Commander Morry Worshill. The Galesburg application for charter was signed by twenty-two persons, and Ivan E. Harrison, 1274 Florence Ave., Galesburg, was elected commander of the squadron.

The West Suburban Squadron, at its charter meeting, elected Wallace B. Natchke, 1170 Park Ave., Oak Park, Illinois, as commander. There were twenty signatures on the charter.

Charter of the Broadmoor Squadron was the culmination of the efforts of Regional VP Wm. Thayer Tutt, and Colorado Wing Commander Paul Potter. The application for charter was signed by twenty-seven members, and Richard F. Love, 1511 E. Boulder St., Colorado Springs, was elected commander.

Indiana Meeting

On Sunday, June 8, 1952, at 2 p.m., an important meeting will be held at the Central YMCA, 310 N. Illinois St., Indianapolis, Indiana. Purpose of the meeting is to elect a wing commander, and to formulate ideas on forming additional squadrons within the state, as well as determining the needs of the present squadrons.

Regional Vice-President Frank W. Ward will be the principal speaker. He will outline the importance of squadrons, and the need for a state wing organization.

Glenn D. Sanderson (center), Battle Creek Squadron CO, presents letters of commendation to squadron members Frederick Chantry and Chester Clute for work on the convention.

New officers of AFA's San Juan, Puerto Rico, Squadron (from left) Dr. Rodrigo Corrada and Jose Rivera, Councilmen; James Gonzalez, Vice Commander; John H. Garcia, Commander; Michael Cooney, Secretary; and Carlos Maymi, Councilman. Delegates to the 1951 national convention will recall the hospitality of the seven-man AFA delegation from Puerto Rico in plugging P. R. for a convention.

Mitchel, N. Y., new Squadron officers (l to r, front) Edgar Zimont, Ralph Marsh, Vincent Roscoe; (rear) John Lenane, Oliver Bird and Fred Hecht.

Capt. Erwin Cooper, former Cuyahoga Founders Squadron Commander, Cleveland, is honored by present Commander Edward Plecko at recent meeting of Squadron. Seated at the speakers table (from left) Don Wilson, Secretary; Milton Hahn, Treasurer; Kenneth Vetter, Group Commander; Wm. L. Birch, Wing Commander.

The meeting is being sponsored by the South Bend Squadron, AFA, and the chairman is Irvin Duddleson, P. O. Box 806, South Bend. All interested AFA'ers in Indiana are urged to contact Duddleson, and to attend the meeting.

First Air Education Program a Success

The Chicago Group of the Air Force Association recently opened its Youth Air Education program by being hosts to a sizeable group of children, with their parents, on a tour of nearby O'Hare Field.

Much of the credit for the success of this first tour was due to the excellent cooperation of Lt. R. Fischman, Base PIO. Leroy S. Kwiatt is chairman of the Group's Air Education Committee. He was assisted on the project by Charles Bess, James Farrell and John Waters. The program was begun under the leadership of George Anderl, while he was commander of the group.

Wilson Heads N. Y. Unit

Gill Robb Wilson, well-known aviation writer and analyst, was recently elected Commander of the Manhattan AFA Squadron, New York City. Wilson has been active in AFA affairs for many years. His biggest job with AFA was chairman of the 1948 national convention, held in New York City and highlighted by the famous "Operation Wing Ding" in Madison Square Garden. He has also served as chairman of AFA's national public relations committee.

Wilson was an aviation writer for the *New York Herald Tribune* for many years, and was a war correspondent during World War II. He is now managing editor of Flying Magazine.

AFA members interested in participating in the activities of the Manhattan Squadron should contact Wilson at Flying Magazine, 366 Madison Avenue, New York City.

RESERVE YOUR ROOM EARLY FOR THE AFA CONVENTION AND REUNION

DETROIT, MICHIGAN—AUGUST 28-31

Seven Detroit hotels have been reserved for use by delegates and guests to AFA's sixth annual national convention. Since the convention is being held over Labor Day week end, hotel rooms should be reserved as early as possible. AFA will not operate a housing bureau for the convention. All room requests must be forwarded by the applicant directly to the hotel of first choice. When the hotel of first choice has confirmed all rooms allocated to AFA, the request will be automatically forwarded to the hotel of second choice. Please use the official form below when requesting rooms.

DETROIT HOTELS RESERVED FOR AFA CONVENTION

HOTELS	RATES: Single	Double	Twin	Ex Cots
Sheraton-Cadillac	$8.00	$11.00	$12.50	$3.00
Statler	8.00	11.00	12.50	3.00
Detroit-Leland	6.00	8.50	9.00	2.50
Fort Shelby	5.50	8.00	9.00	3.00
Tuller	4.50	7.00	9.00	2.00
Wolverine	4.25	6.50	8.75	2.00
Detroiter	4.00	6.50	8.25	2.00

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HOTEL ROOM RESERVATION REQUEST
August 28-29-30-31, 1952

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NAME (MR. _____

ADDRESS _____

CITY _____ STATE _____

ARRIVAL DATE _____ HOUR _____

DEPARTURE DATE _____ HOUR _____

NAME OF PERSON(S) SHARING ROOM:

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MAIL DIRECTLY TO:
Reservations Manager
(Name of hotel of first choice)
Detroit, Michigan
(Please list three choices of hotels)

CHOICE: HOTEL DESIRED:

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TYPE ROOM DESIRED

☐ Single ☐ Double ☐ Twin

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☐ Suite—Number of Bedrooms _____

Desired rate per day: $_____*

*Room available at rate nearest that requested will be assigned.

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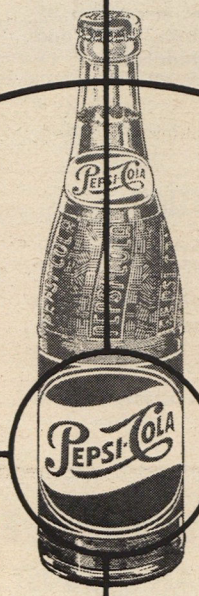

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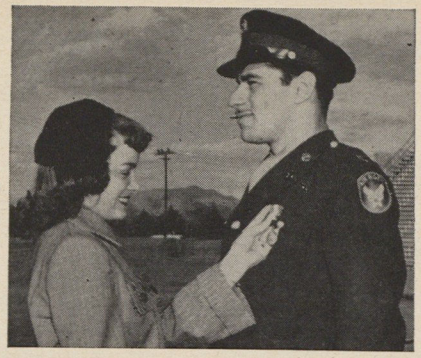

Betty Jo Johnson, Queen of the Military Ball at New Mexico College of A & M, presents AFA's ROTC Silver Medal to Cadet Daniel P. Svilar.

Forty delegates, representing eleven colleges and universities, attended the recent Southwest Regional Conclave of the Arnold Air Society at Dallas, Tex.

A unit of AF ROTC Cadets of the University of California at Los Angeles utilize the facilities of Western Air Lines for maintenance and overhaul training.

The Joseph E. Lake Squadron of the Arnold Air Society was recently activated at DePauw University. Indiana U's James E. Carrell Squadron, AAS, officiated.

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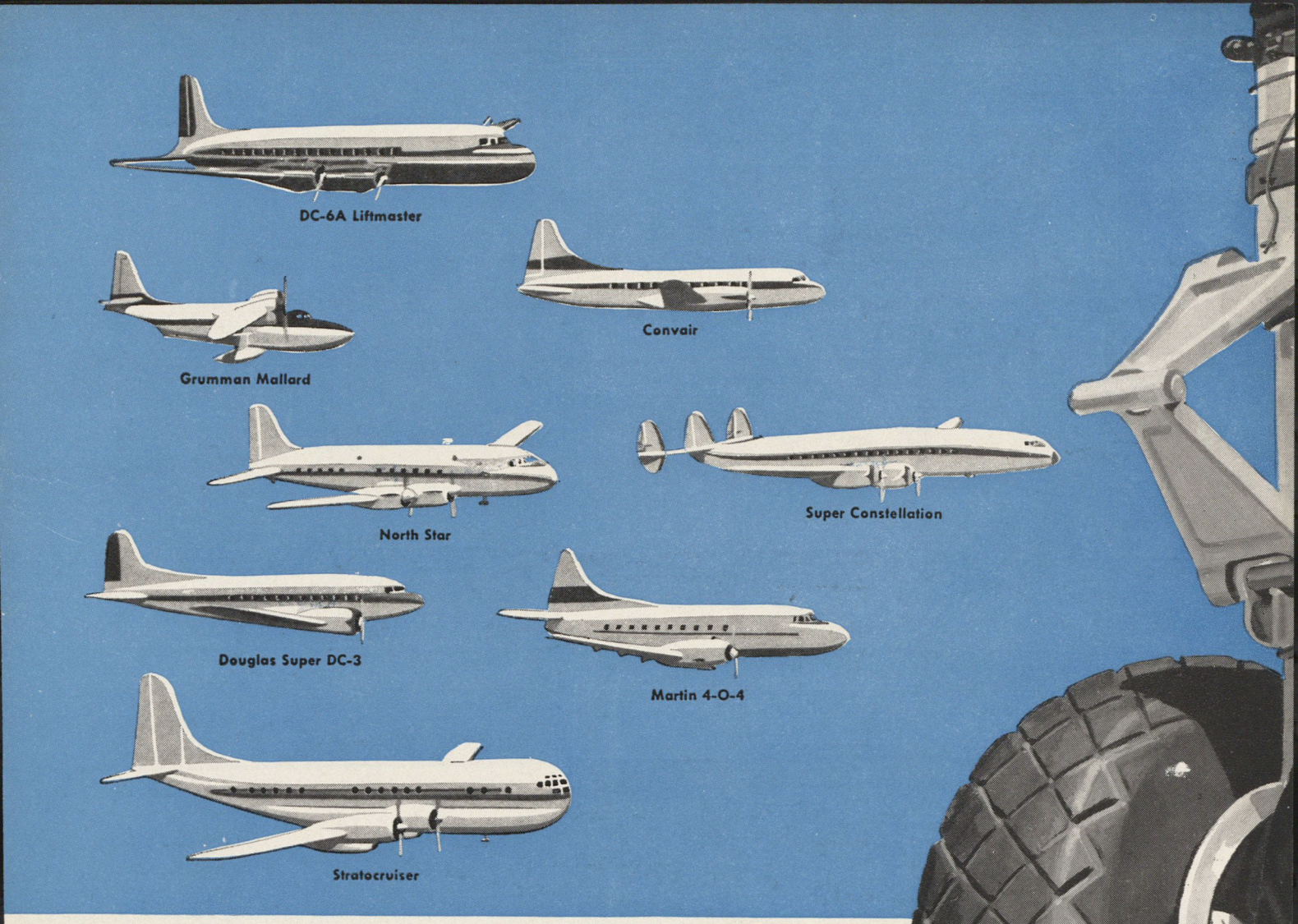

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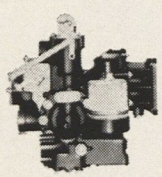
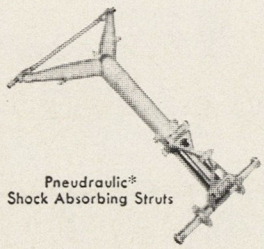
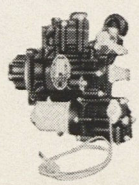


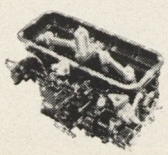
Fuel Metering Unit for jet engines



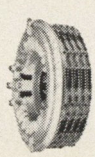
Pneudraulic* Shock Absorbing Struts



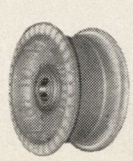
Speed-Density Fuel Metering Unit



Stromberg* Injection Carburetors



Segmented Rotor Brakes



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