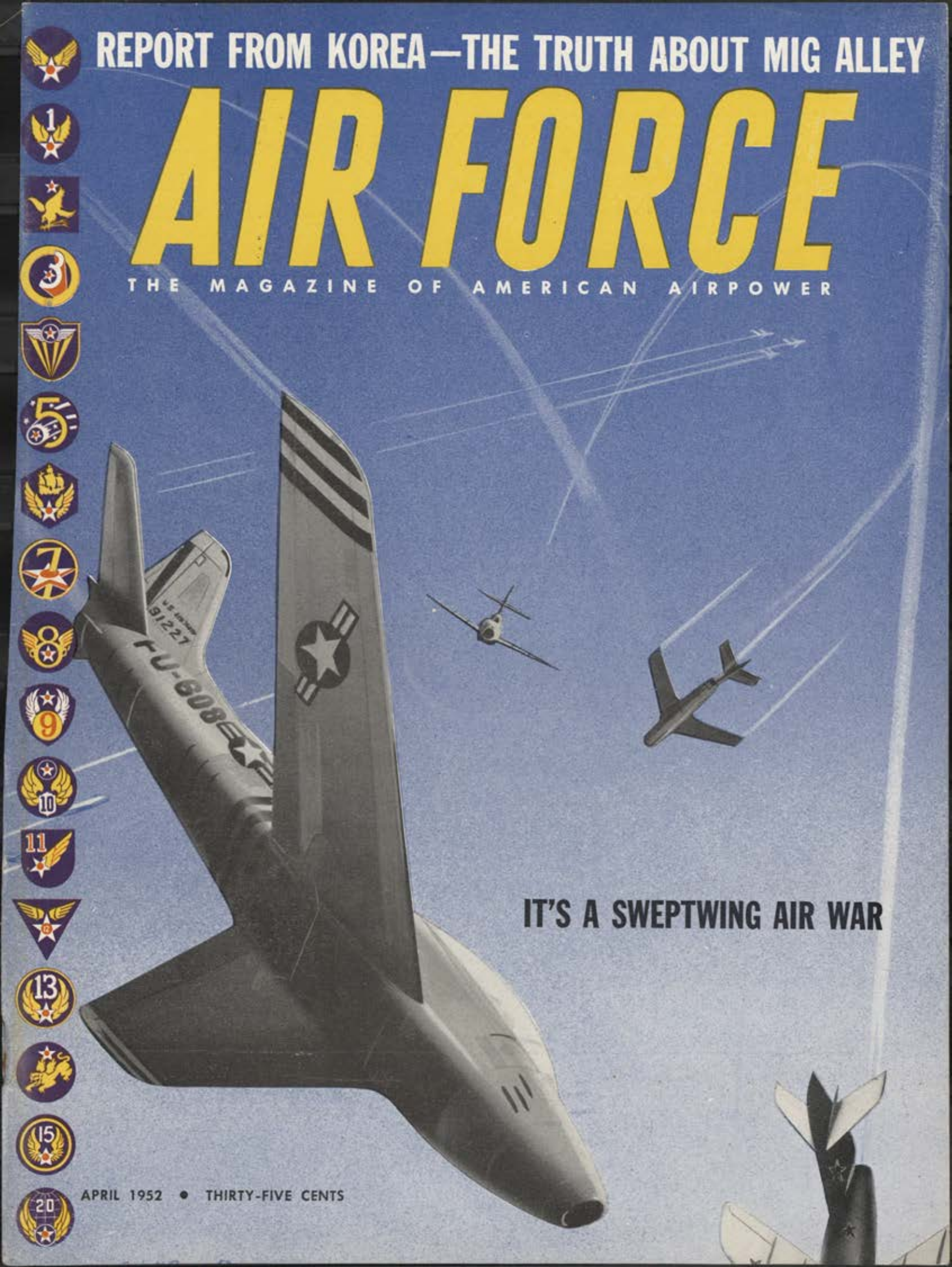
REPORT FROM KOREA—THE TRUTH ABOUT MIG ALLEY

AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER



IT'S A SWEPTWING AIR WAR

APRIL 1952 • THIRTY-FIVE CENTS

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 Chance Vought F7U-3 "Cutlass", jet fighter for the Navy.

HAMILTON STANDARD
EAST HARTFORD CONNECTICUT
UNITED AIRCRAFT CORPORATION

PROPELLERS ★ STARTERS ★ AIR-CONDITIONERS ★ FUEL CONTROLS ★ AUXILIARY DRIVES ★ HYDRAULIC PUMPS

The C-97, as tanker, refuels the B-47; also jet fighters.

Here, it paradrops vital supplies "up front."

Flies bulldozers, road rollers, howitzers 300 mph.

Flying hospital speeds wounded to U. S.

Quick-change star of the Air Force

The Boeing C-97—already the most versatile transport in service—has qualified for another job: the supplying of forward areas. Recent Air Force tests have proved that the big Boeing can handle such heavy forward-area equipment as 155-mm. howitzers, bulldozers, road rollers—even helicopters! Lighter equipment can be paradropped to the same areas.

This unique versatility makes the Stratofreighter virtually a one-plane aerial transport force. It is convertible from one type to another in a matter of hours, so that a single fleet of C-97's equals in usefulness several fleets of less versatile craft.

Suppose vital cargo is needed in a hurry, half a globe away: each C-97 can rush up to 68,500 pounds of freight there at over 300 miles an hour. Next comes a call for aerial refueling. Huge tanks are raised into the plane, a flying boom is attached, and presto, the only cargo-tanker capable of refueling jet fighters and bombers is on its way—adding strategic range to air power!

These same tankers convert readily into transports that carry 130 combat soldiers. Another quick conversion and the giant Boeing becomes the best hospital ship in the air—unique for its speed, capacity and pressurized cabins.

Other advantages of the C-97's versatility: maintenance and crew training are simplified; and it pays its way in *both* directions. As a freighter, the C-97 flies cargo from the United States to Japan and to Europe, makes the return trip as a hospital ship or personnel carrier.

Boeing design made the C-97's the most versatile, most useful transports in service. Boeing production facilities turn them out in volume. This is the same design-and-manufacturing teamwork that produced great fleets of rugged B-17 Flying Fortresses and B-29 Superforts during the last war and, later, the B-50 and the six-jet B-47 Stratojet bomber.

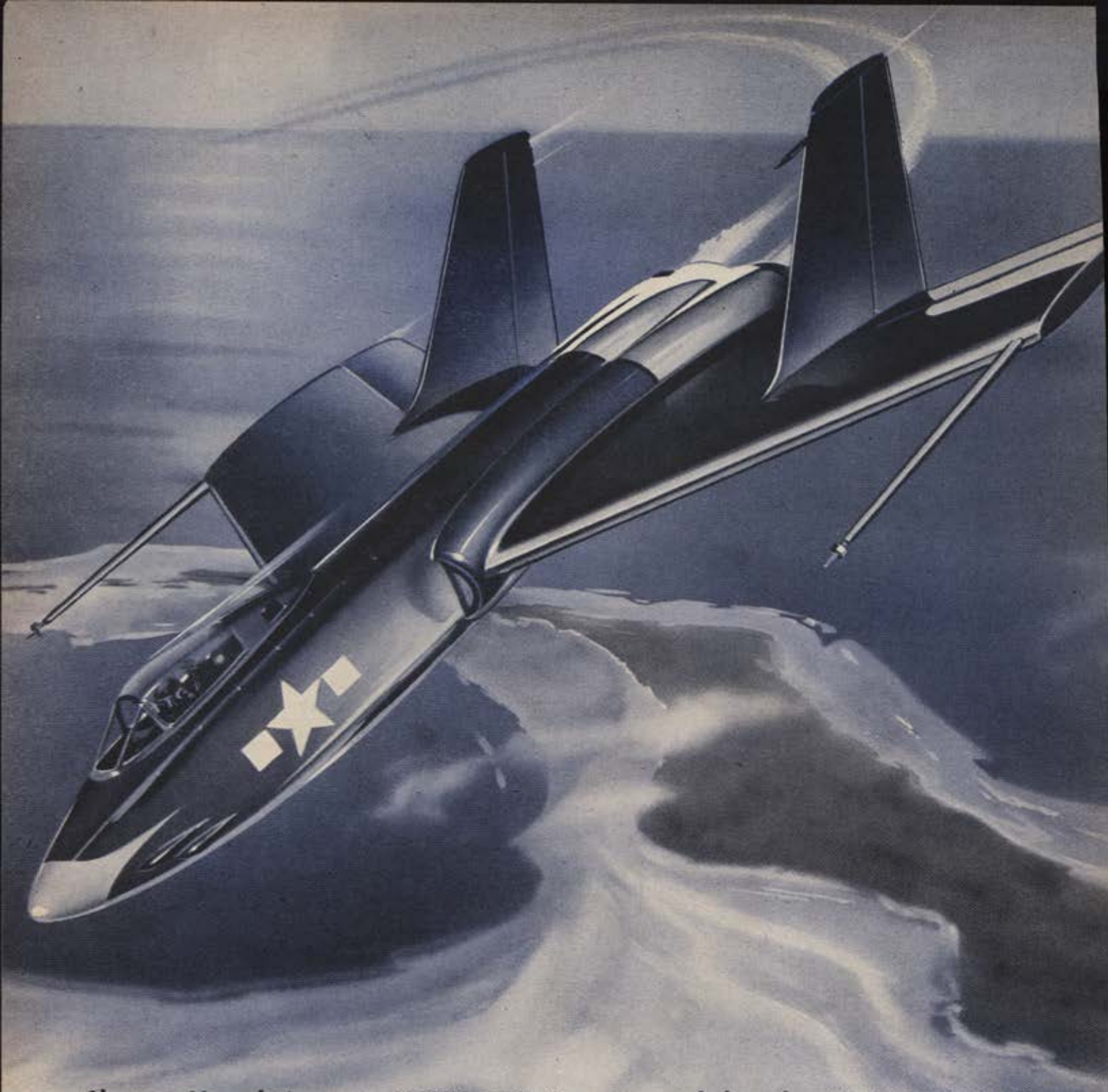
For the Air Force, Boeing builds the

B-47 STRATOJETS B-50 SUPERFORTRESSES C-97 STRATOFREIGHTERS

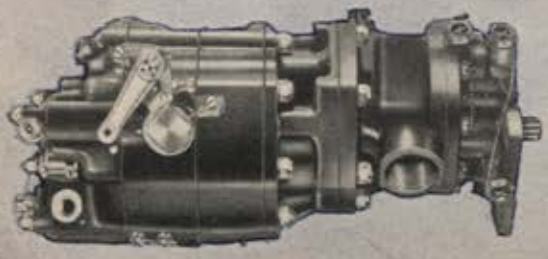
and is now starting production on the B-52 Stratofortress 8-jet heavy bomber.

BOEING

STRATOFREIGHTER



Chance-Vought's new NAVY F7U is powered by the WESTINGHOUSE J-34 Jet Engine. Turbine Control by HOLLEY.



HOLLEY
Carburetor Co.
DETROIT 4, MICHIGAN

FOR HALF A CENTURY—ORIGINAL EQUIPMENT MANUFACTURERS FOR THE AUTOMOTIVE INDUSTRY

AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

VOL. 35, No. 4

APRIL 1952

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.

FEATURES

DEPARTMENTS

THE COVER

The fighting in MIG Alley goes far beyond box scores and numbers of planes shot down. It's what the F-86s and MIG-15s set out to accomplish and what they do accomplish that really counts. On this month's cover, artist Charles deM. Barnes shows the present seven-to-one ratio of MIGs to Sabres. One sobering thought is that we know we have our first string in Korea but we can't be sure what team the Reds are using—their first or their fourth.

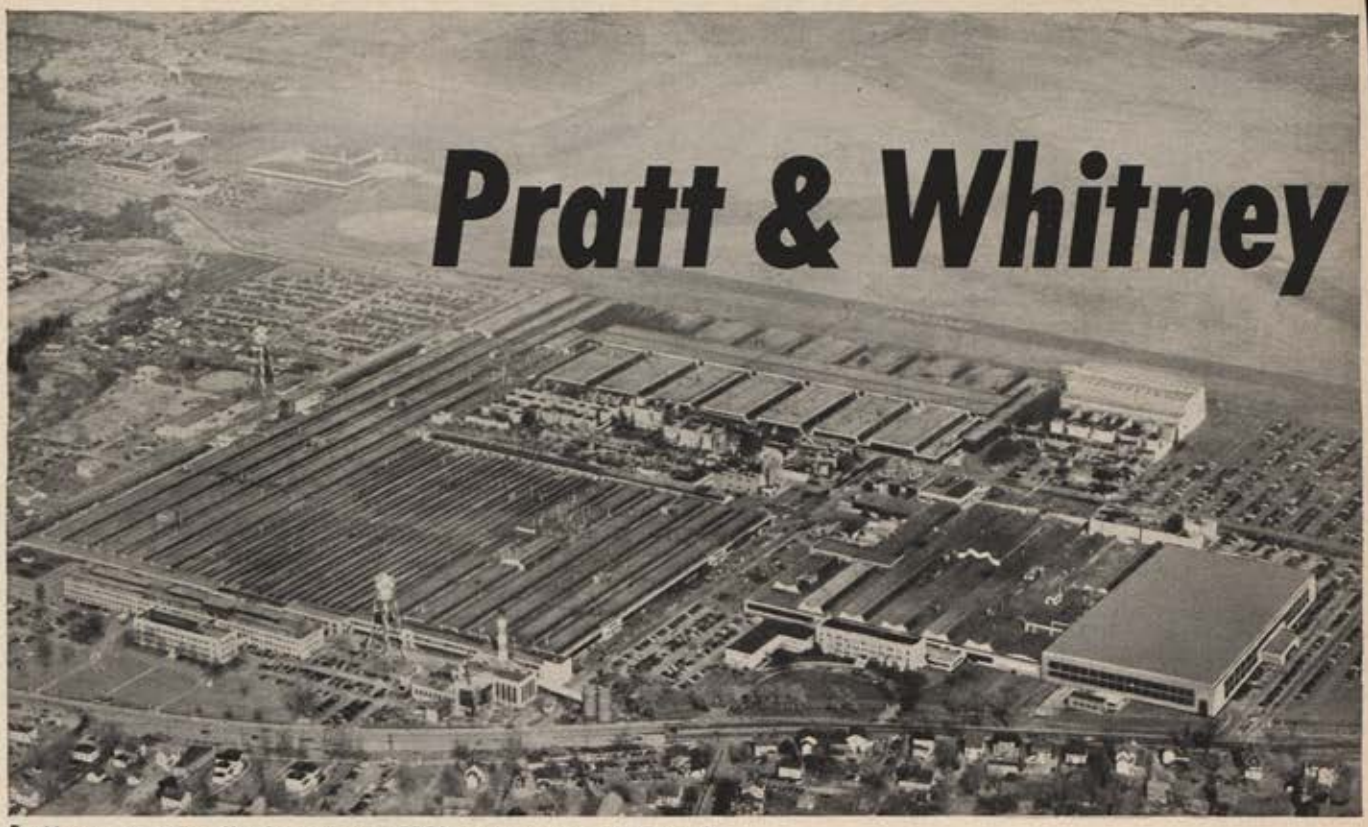
Read CAN WE WIN IN MIG ALLEY?—page 23

AIR FORCE STAFF

JAMES H. STRAUBEL, Editor and Publishing Director
JOHN F. LOOSBROCK, Managing Editor — WILLIAM A. DEAN, Art Director
JAKE CULPEPPER, Associate Editor — RALPH V. WHITENER, Associate Editor
RICHARD M. SKINNER, Assistant Editor — HELENA REDMOND, Contributing Editor
DAVID SHAWE, West Coast Editor

SANFORD A. WOLF, Advertising Director

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.



1. *Main plant at East Hartford, showing 1952 plant expansion at far right.*

2. *New North Haven plant, now under construction.*

3. *Reactivated government-owned plant at Southington.*

4. *Leased plant at Meriden.*

Aircraft Mobilizes!

More hard work lies ahead, but we are winning the battle to gain all-out production

IN THE months that followed the outbreak of war in Korea, Pratt & Whitney Aircraft has had to meet and solve an almost unbroken series of problems in expanding its production capacity to meet urgent requirements of National Defense.

These requirements called both for tremendous expansion in the production of existing piston and jet engines, and putting into large-scale production new and advanced jet engines of our own design.

In some of these cases we have had to work out manufacturing techniques unlike any we have ever used before. More of everything has been needed. We needed more floor space, more manpower, more materials and more machine tools. All of these things have been increasingly difficult to get.

But here is what has been done.

Within the last 12 months we have made provisions for almost 1,000,000 square feet of added company-owned manufacturing space. Our main plant in East Hartford will be larger by almost a third when we have expanded and occupied the present Hamilton Standard plant next door, and we are well along on the construction of a 500,000 square-foot plant at North Haven. In addition we have reactivated a large government-owned plant of more than 500,000 square feet at Southington, and leased a sizable plant at Meriden as well as several other smaller buildings. This will bring our total manufacturing space, excluding test cells and office areas, to about three and a half million square feet. Our employment has steadily gone up from 18,000 to some 26,000 people.

Throughout this period of readjustment, of tooling up, of new construction and of moving whole departments, we have somehow kept production rolling—and expanding. Beyond this, of course, we have made provision for additional output, both by expanding our system of subcontracting and by licensing Ford, Chrysler and Nash to build our engines.

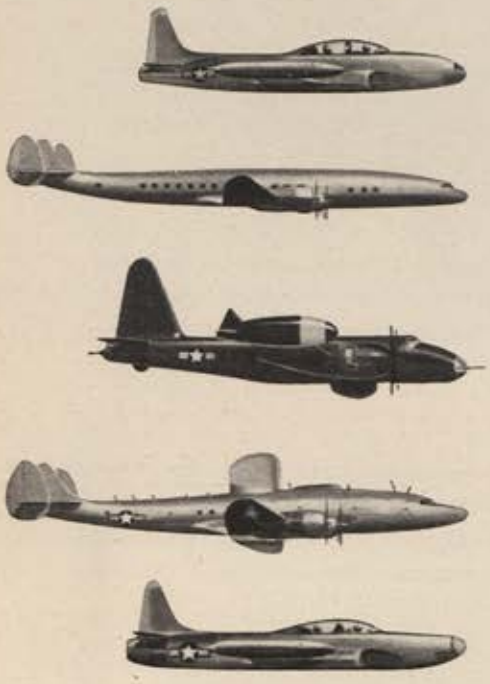
There is still much to be done—but we are trying as hard as we know how to live up to our responsibilities to the defense effort.

Pratt & Whitney Aircraft

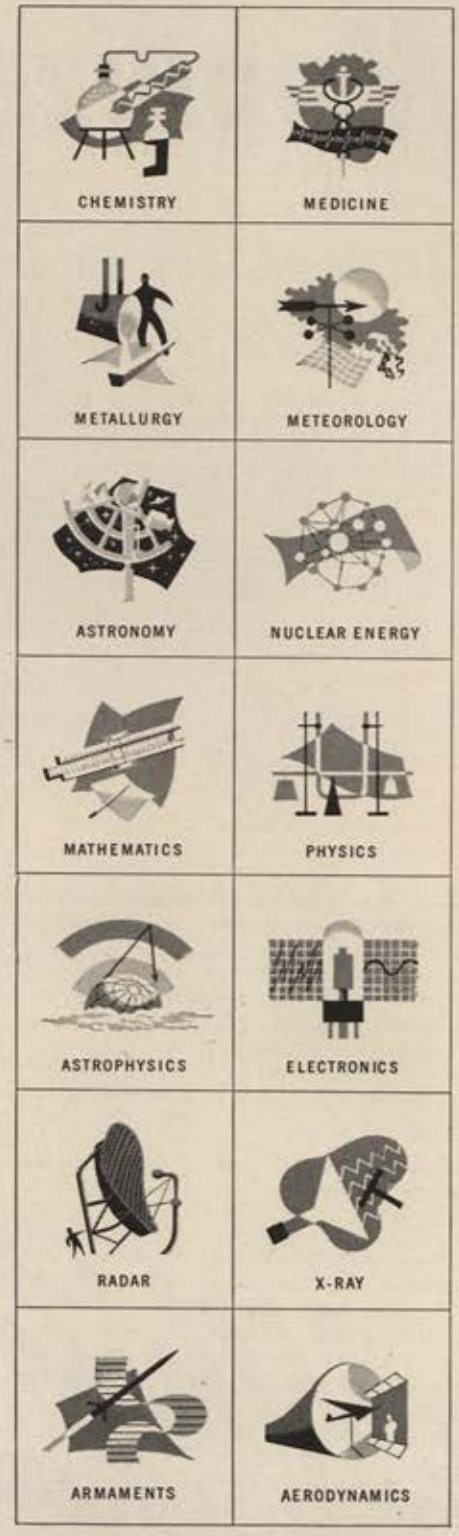
ONE OF THE FOUR DIVISIONS OF
UNITED AIRCRAFT CORPORATION

MAIN OFFICE AND PLANT: EAST HARTFORD, CONNECTICUT • BRANCH PLANTS: NORTH HAVEN, SOUTHINGTON AND MERIDEN

Leadership demands constant achievement



T-33 JET TRAINER
SUPER CONSTELLATION
P2V NEPTUNE
MILITARY CONSTELLATION
F-94 STARFIRE



Nearly every science known to man ...

insures dependability and advanced design in Lockheed planes

AIRCRAFT DESIGNING and construction are *precise* sciences. That's why Lockheed Engineering has more departments than a big university.

Lockheed's several thousand scientist-engineers work on more than 150 major projects—to build the utmost *precision* and *dependability* into Lockheed aircraft.

LOCKHEED'S ENGINEERS must have all the right answers for each vital part of every airplane. Will it stand heat, cold, tropical damp, corrosion, sand, dust, stress, strain, torque—and exactly how much? Can it be made lighter, stronger, smaller, simpler, more economical, better in any way? If the right metal doesn't exist, Lockheed scientists develop one. If a new machine is needed, Lockheed engineers invent one. There's always a new problem, because Lockheed is always looking for a better method—always building better aircraft.

TRAINING FOR SCIENTIST-ENGINEERS
For information about Lockheed's on-job training, write: Engineering Section, Employment Dept., Lockheed, Burbank, Calif.

Lockheed

Aircraft Corporation

BURBANK, CALIFORNIA, AND MARIETTA, GEORGIA

Look to Lockheed for Leadership

AIR MAIL

New Member

Gentlemen: I'm writing to commend your fine magazine. I joined AFA in November 1951 and have enjoyed reading all copies of AIR FORCE since then. I want, particularly, to commend your recent article "The Gap in Our Air Strategy" (February 1952), one of the most informative and awakening pieces I have ever read. This article brilliantly emphasizes the lack of perhaps the most important phase of both strategic and tactical air warfare, and all I can hope for is that those in a position to correct this fault have also read the article.

Robert Stanley Moore
Baltimore, Md.

• *We hope so too—The Editors.*

A Spade Is a Spade

Gentlemen: Congratulations on "The Gap in Our Air Strategy" in your February issue.

Now you are getting down to cases on the fundamental fallacy in our whole outlook and military procedure. As a matter of fact, you would and should go much farther.

"We are missing the boat in psychological war." Right. And WHY? Because the Communist high command knows we will not use airpower, and because their intelligence is probably better informed about what our future moves will be than our own field commanders are.

You say, "The Voice of America fails to mention airpower." Right. The Voice is a tragic joke to the advertising business. Here in America we have the most competent advertising and public relations men in the world, yet they are tied to a post—like our B-36s.

Our air strategy and our military strategy are being dictated on the basis of fear. Left-wing writers are daily selling the American people on our inadequacy—and on the fear that Russia will overwhelm us in the air. Now they tell us that the B-36 is obsolete—and that our jets are second-rate. They "prove" this on the basis of Korea—where the Communists are laying down the rules to suit their equipment and purposes—and our field commanders are being forced to play the game their way.

In the years since the war, AFA has been a potent force in selling America airpower. But our efforts are now being vitiated by so-called high-level strategy. Our air strategists and our military leaders have been forced to subordinate their honest judgment to political pressure or lose their jobs.

General O'Donnell was obviously muzzled on his return from Korea—and the same "experts" on high policy levels who lost China for us and got us into the Korean mess are still calling the turns.

The real facts on Korea are appalling. We can double the actual casualty figures because the men who are killed in ground and operational accidents are not "officially dead" in the sense that they are casualties. Now the terrible ground attrition is moving into the air —and it is going to get worse.

It is time that we in AFA took active steps to do something about it. We are still civilians—and free Americans. We realize that field commanders, and officers on active duty, cannot tell the real facts or they would be sacked. But every American has the right of free speech, and now is the time we should exercise it as a group.

I hope your February article is the opening gun of the campaign. This may be the opportunity AFA has been waiting for to become something more than a social organization of veterans who meet periodically to fan the breeze. If we meet this issue head on, we will render a real service to America.

Tom McHale, Adv. Mgr.
Dallas Chamber of Commerce
Dallas, Tex.

Illusion?

Gentlemen: I have a few questions about "The Atomic Illusion" by Ramsay Potts in your February issue.

I fail to understand why Mr. Potts thinks that as soon as Russia has as many atomic bombs as she calculates will destroy us, our doom will be sealed almost immediately.

He is right in saying we should not base our decisions on illusion, but how are we to know what is illusion and what isn't?

Leonard W. Rockwell
Middletown, Ohio

• *We feel, and hope our readers do too, that nothing that appears in* AIR FORCE *Magazine is "illusion." The author of "The Atomic Illusion" takes a realistic view of Russian ambitions when he says the Soviets may strike when they have "enough" A-bombs—The Editors.*

Sixth Anniversary

Gentlemen: Thought you might like to see a copy of this fine editorial from the Santa Monica *Evening Outlook* of February 7, 1952, congratulating AFA on its sixth anniversary:

"Six years old this week is an organization which has done more than any other private agency since the war to

make Americans air conscious—the Air Force Association.

"Typical of the alertness and enthusiasm which propels this national organization is our own Santa Monica squadron, the first to organize in air-minded Southern California.

"That the AFA is as effective in its present goal as its members were in smashing Hitler and Tojo is seen in the official adoption of a 143-group Air Force program by the Pentagon. But the fact that this is still a paper program leaves a big job still undone—one that could be entrusted in no better hands than the Air Force Association."

Bert D. Lynn
Regional Vice President
Sherman Oaks, Calif.

• *Many thanks—The Editors.*

No Such Reg

Gentlemen: At a recent Air Reserve meeting our training officer quoted from an article in your magazine which listed four ways a Reserve officer could get a discharge from the reserve. Our unit's regular personnel know of no such regulation, and I am interested in securing it. Could you advise me of the number and date of this regulation and where I could obtain a copy?

Capt. Latham L. Thigpen, Jr.
Roanoke, Va.

• *Certain AF Reserve officers not on EAD are permitted to apply for resignation under provisions recommended to ConAC in USAF policy guidance letter. But no numbered AF reg, as such, exists —The Editors.*

Congressional Approval

Gentlemen: I am more and more impressed with the high caliber of the articles in AIR FORCE Magazine. You are doing the AF a great service and I am sure that much of the present Congressional approval of the AF is attributable to your efforts.

Lt. Col. S. D. Kelsey
Air Command and Staff School
Maxwell AFB, Ala.

Saucers Fly Again

Gentlemen: Recent reports of "flying saucers" sighted in Korea by B-29 crews prompt me to write an attempted explanation of this circumstance. I'm no authority but before World War II and during the war I flew many thousands of miles as a passenger in various types of aircraft.

During certain times of the year when static electricity is pronounced, as when a storm is near, St. Elmo's fire takes on weird shapes—both on the wing tips and even some distance away from the plane. I have seen this light take the form of circles, tear drops, and even comets' tails. If air currents are turbulent, it seems as though the fire speeds ahead of the plane. I have observed this both during the summer and winter.

With the exception of the "saucer" incident in New Mexico several years ago, no one has reported any definite shape or continuity to what was seen, so I am wondering if those more learned than I see any merit in my explanation.

John Kocourek, Jr.
St. Paul, Minn.

• *Seems to be no end to theories about the what and why of flying saucers. We're always glad to share them with our readers—The Editors.*

Required Reading

Gentlemen: The National War College has selected as required reading for a course beginning in March the following article: "How Strong is Russia's A-Bomb Fleet?", by William S. Friedman, from your February 1951 issue.

F. E. Fitzgerald, Librarian
The National War College
Washington 25, D. C.

• *A fitting tribute to "Blimp" Friedman, Technical Editor of this magazine for several years. He was killed last June in an F-94 demonstration flight—The Editors.*

Career Guidance

Gentlemen: I have just finished my January issue of AIR FORCE and am very pleased with the article on Reserve Officer Promotions, which is helpful to me as career guidance supervisor for a Wing Headquarters.

S/Sgt. James M. Turner
APO 925, San Francisco, Calif.

• *We try to please—The Editors.*

No Slur Intended

Gentlemen: The article "A Look at the Records" in your March issue is fine but failure to mention the 3d Air Reserve District, which is responsible for conducting the survey of Reservists in Texas and New Mexico, is disheartening to my staff. We're now interviewing 3,000 Reservists in San Antonio and 5,000 in Houston and will conduct briefings for the nation-wide survey. We will appreciate your giving credit to this new Headquarters in the future for its part in this important program.

Col. Edgar E. Glenn
Commanding Officer
3d Air Reserve District
Austin, Tex.

• *Our apologies to Colonel Glenn and his hard-working cohorts. We got so wound up telling the story of how the program worked that we simply didn't do justice to the individuals responsible for the success of the Reserve survey. Moreover, we've discovered that Colonel Glenn and his people are now using the Navy, the Army, and the US Post Office in the Reserve inventory. At Lubbock, Tex., the Navy lent its reserve training center for survey headquarters, at Houston the Army converted part of its new ORC Armory for survey use, and Texas postal clerks put their shoulder to the wheel to help find addresses of "lost" Reservists—The Editors.*

Some Jobs Demand *a Specialist*

When you want the answer to an important problem in medicine, you naturally turn to a specialist... a man whose talent and experience set him apart as the authority in that line. It's much the same in any field. Your selection of the instruments and accessories for your planes is an example. The name Eclipse-Pioneer automatically comes to mind. Eclipse-Pioneer has been a leader since aviation was in its infancy; more than 1,000 of its employees have been with Eclipse-Pioneer for over 10 years — many of these for more than 20 years; many of its engineers are top-ranking men in this field. As a result, Eclipse-Pioneer has consistently demonstrated its ability to design and manufacture to civil and military specifications. Take advantage of this great team... for experimental or operational equipment, in development or mass production quantities, call on Eclipse-Pioneer.

ECLIPSE-PIONEER DIVISION OF

TETERBORO, NEW JERSEY

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

Bendix

AVIATION CORPORATION

Seven tons of wallop

Air Mail Special!

Air drops of heavy equipment like this field gun—shown leaving a Fairchild C-119 Packet—have gone a long way toward revolutionizing warfare.

But when you revolutionize war by transporting guns, tanks and trucks by air, you want to be mighty sure your airplane takes aboard *exactly the right amount of fuel* to fit in with proper flight planning.

Not more than you need—that would be useless weight. And definitely not less!

Helping to make sure ground crews do get exactly the right amount into the C-119's tanks are highly dependable Honeywell *electronic* fuel gauges. Because of Honeywell's high research, engineering and material standards, Honeywell electronic fuel gauges have the highest degree of accuracy.

This is only one of many Honeywell products now in use by the aviation industry. We expect the list to grow longer in future years. Because automatic controls are so important to aviation progress. And Honeywell has been the leader in *controls* for more than 60 years.

Aeronautical Division
Minneapolis-Honeywell • Minneapolis 13, Minn.

MINNEAPOLIS **Honeywell**

Aeronautical Controls

AIRPOWER IN THE NEWS

VOL. 35, NO. 4 WASHINGTON, D. C. APRIL 1952

FRENCH AIRCRAFT INDUSTRY, aided by $5.2 million worth of American machine tools, is nearly ready to start quantity production of a new jet fighter. The plane, "Mystere," MD452, has proved superior in some ways to the Korean-tested American Sabre, Mutual Security Agency has stated.

RAY W. IRELAND, former National Director and Illinois Wing Commander of AFA, has been appointed by Commerce Secretary Sawyer to be Acting Administrator of the Defense Air Transportation Administration, succeeding Paul Butler. Ireland, on leave from United Airlines, will head a group to study the mobilization of Civil Air Transportation facilities for defense. . . Dr. Theodore von Karman, chairman of Scientific Advisory Board to Chief of Staff, USAF, for past seven years, has been named chairman of the recently organized NATO Advisory Group for Aeronautical Research and Development.

NAVY Bureau of Aeronautics announced recently the completion of initial tests on new and more powerful jet engine to power its latest fighter aircraft. Engine is advanced version of J-48 Turbo-Wasp built by Pratt & Whitney. New J-48 passed its pre-flight tests and is scheduled for immediate flight test. It will be in production this fall. . . One-man helicopter under development by Army Ordnance Corps weighs about 300 pounds, can be folded into a 5x5x14 foot container for aerial drops. Designed for air evacuation, supply and observation duties, the 'copter has top speed of eighty mph, carries fuel supply for ninety-minute flights.

NEW AIR FORCE to train crews for combat assignments will be established at Randolph AFB, Tex., under ATRC. Crew Training Air Force, to be commanded by Maj. Gen. Julius K. Lacey, is being formed to take over the many advanced courses designed to qualify flying personnel in use of aircraft as combat weapons. CTAF will have following bases under its command: Luke AFB, Ariz., and Nellis AFB, Nev., for fighter-bomber escort training; Moody AFB, Ga., Tyndall AFB, Fla., and Perrin AFB, Tex., for fighter-interceptor training; and Wichita AFB, Kan., Pinecastle AFB, Fla., and Randolph AFB, Tex., for medium bombardment training. . . AF Special Weapons Command, Kirtland AFB, N. M., will become part of Air Research and Development Command and will operate as AF Special Weapons Center . . . AF's new indoctrination center at Parks AFB, Calif., is scheduled to open sometime in April. . . AF has removed its air mission from Argentina after receipt of formal, thirty-day notice of contract termination from Argentine government.

NOMINATION of Col. Robert J. Benford, USAF (MC), as Associate Editor of "The US Armed Forces Medical Journal," was recently announced by Surgeon General Armstrong. Benford was formerly Air Surgeon, ARDC, Baltimore, Md. . . Col. Edward P. Mechling has been named commander of newly-established AF Armament Center at Eglin AFB, Fla. . . Maj. Ed Kandell, chief of National Guard Bureau's information office, has been assigned to the 314th Air Division of FEAF. . . Vern Haugland of AP's Washington staff has replaced the late James J. Strebig as aviation reporter. . . Brig. Gen. Pierpont M. Hamilton, Medal of Honor winner who has been serving as senior USAF representative on the Military Facilities negotiating group in Paris, will be assigned to Hq. USAF.

AIR MATERIEL COMMAND, by reclaiming silica gel recovers six months' supply for fifty-five percent of cost of same amount of new silica gel. Estimated

4,900,000 pounds recovered yearly save about $698,000. This process also saves 1,000,000 pounds of sulphuric acid, used in making new silica gel but not required in recovery process. . . AF's new five-piece fatigues will be tested in Far East this spring. . . About 250 additional civilian employees will be added to Lackland AFB working force by May 1 as replacements for military personnel, as part of base's economy and manpower conservation program.

EXTENSION of tours up to ninety days is now authorized for USAFE personnel who have adopted children while overseas and who need additional time to secure entry visas for the children into US. Extensions for more than ninety days must be approved by Hq. USAF. . . AF has revised its policy with reference to photographing classified military equipment in airplane crashes not on government property. Outside military installations, legal authority of AF is limited to withholding consent for such action. . . Use of civilian schools for specialized training of AF personnel will be discontinued by late August or early September. . . Air Pictorial Service's new television unit -- 4891st TV Sq. (Mobile) -- was activated February 1.

AERONAUTICAL RATING of Aircraft Observer (Electronics Countermeasure) and flying status are now authorized for officers who have completed course numbers 78880, 78881, or 7888X at Keesler AFB or with SAC. . . In AF's recently overhauled annual physical examination program, following persons are required to take physicals on their birthday schedules: officers and airmen on flying or parachute status, officers and airmen forty years of age or older, airmen involved in control tower or ground approach duties. . . Medical air evacuation of American servicemen from Far East was lowest in January since start of Korean war. During month, MATS planes airlifted 1,418 casualties and military patients to US.

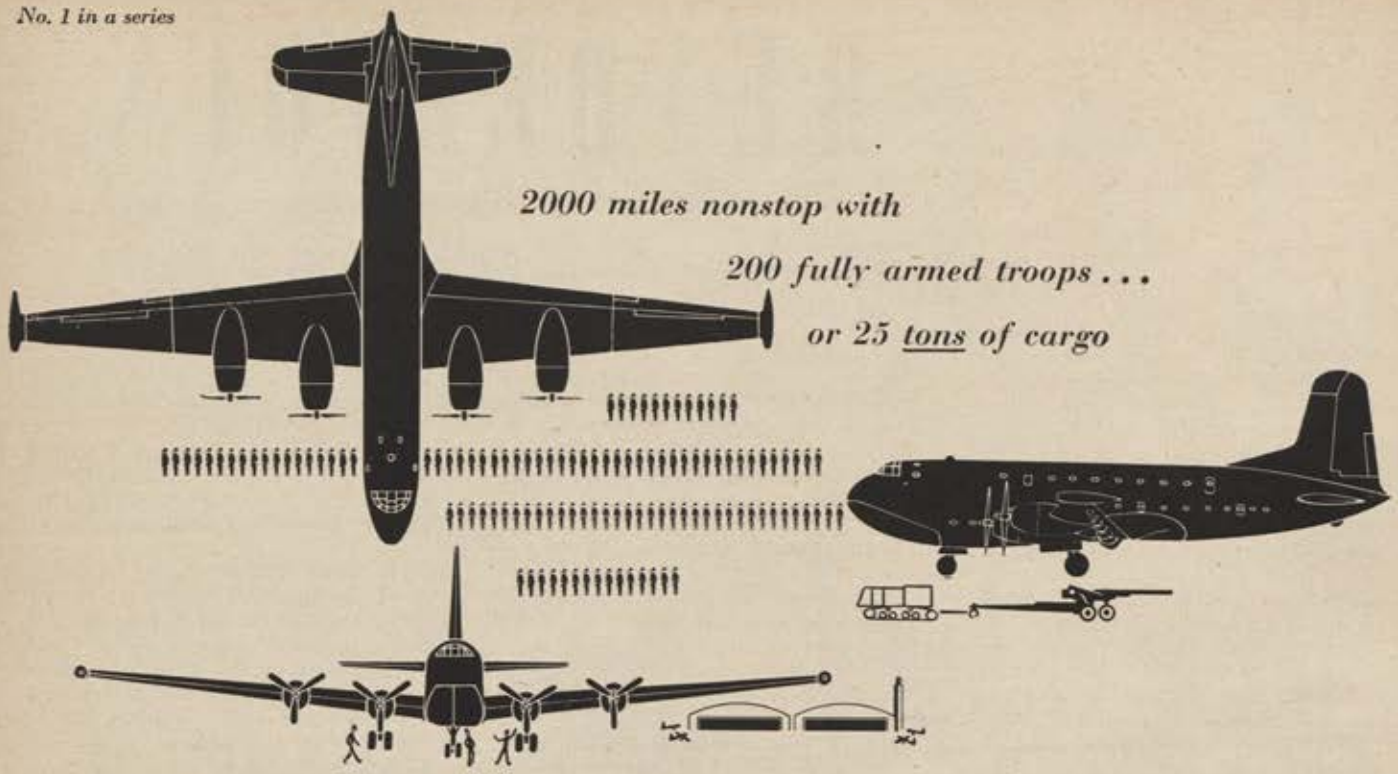
CONTRACT for production engineering and tooling for production of twin-jet fighter airplane has been signed by USAF with McDonnell Aircraft Corp., St. Louis. . . AF will purchase number of F-86E Sabrejet fighters being manufactured by Canadair, Ltd., of Montreal. . . Contract for prototype production of new high performance interceptor aircraft has been awarded Convair by USAF. . . USAF recently delivered first Boeing Stratojet to Tucson, Ariz., for modification. . . The 100-passenger Britannia airliner, nearing completion at Filton, England, is due for tests this summer.

AIRCRAFT INDUSTRY by end of 1952 should be nation's second largest user of manufacturing manpower, with total employment of about 750,000. Greatest long range threat to aircraft production is engineering shortage. Annual aircraft payroll exceeds $2,500,000,000.

CONSTRUCTION of a $50,000,000 jet aircraft engine assembly and test plant at Romulus, Mich., to be built for the Navy under supervision of Ford Motor Company, will get underway this month. . . RCAF Lancasters from two Maritime Squadrons based at Greenwood, Nova Scotia, participated in Navy's recent Exercise Convex III, which involved control and protection of shipping, with air, surface, and submarine units participating . . . Special seat capsule to enable pilots and crewmen of supersonic planes of tomorrow to catapult themselves to safety has been developed by Goodyear Aircraft Corp. under Navy contract.

THIRD annual Armed Forces Day will be observed on Saturday, May 17. . . The All-Woman's Transcontinental Air Race this year will be from Santa Ana, Calif., to Teterboro, N. J., July 4-9.

No. 1 in a series



2000 miles nonstop with

200 fully armed troops . . .

or 25 tons of cargo

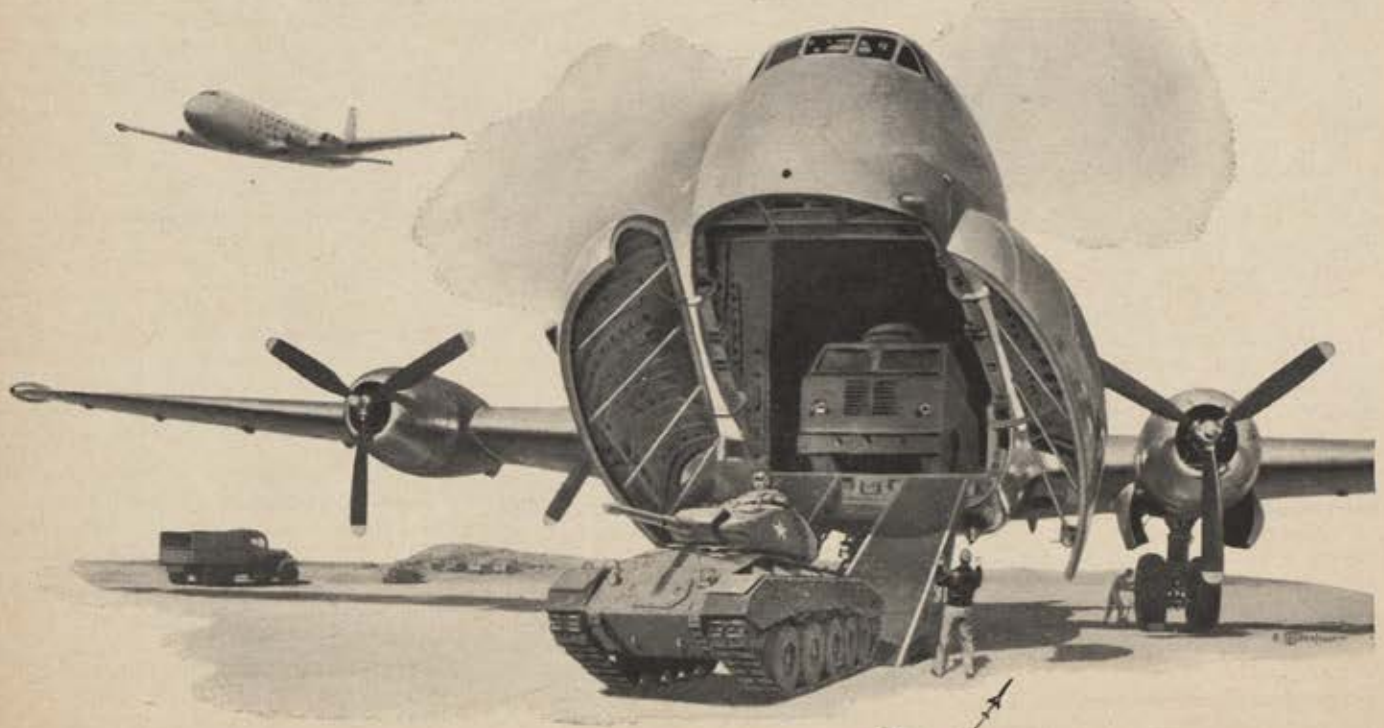
—the Douglas C-124 Globemaster!

Most versatile troop and cargo carrier in the air today, the Douglas Globemaster gives our Armed Forces new mobility in either attack or defense.

Designed to take off at a gross weight of more than 87 tons, the Globemaster II —in flight tests—exceeded planned capacity by nearly 18 tons. This aerial giant can lift 94% of all types of military vehicles fully assembled . . . tanks, bulldozers, huge cranes and loaded trucks.

A single C-124 can transport 200 completely equipped troops across the Atlantic and land with generous fuel reserves. When used as an airborne hospital, it can accommodate 127 litter patients . . . plus all of the necessary doctors, nurses and attendants.

Performance of the C-124 Globemaster is another example of Douglas leadership in aviation. Building planes that can be mass-produced to fly *faster and farther with a bigger payload* is always the basic rule of Douglas design.



Depend on *DOUGLAS* First in Aviation

RENDEZVOUS

Where the Gang gets together

LOOKING FOR SOMEONE? ANY ANNOUNCEMENTS TO MAKE? WRITE RENDEZVOUS AND RENDEZVOUS READERS WILL WRITE YOU.

DOCTOR IN THE GANG?: Does anyone know the address of former medical officer Capt. E. Lombardo, stationed at Sheppard Field Regional Hospital in 1944 and 1945? Last heard of practicing in New York City. I'm also looking for Ben MacMan, stationed at Keesler Field the latter part of 1945. *Jack Hansen, 212 West Madison, Owensville, Mo.*

LOOKING FOR JOHN F. ALLEN, 19014063: We graduated from Pre-Glider School, Pittsburg, Kan. Last saw him in May '44 at Glider Training Base, Lubbock, Tex. His home is near Boise, Idaho. Anybody seen him? *Donald F. Allen, 2208 Eucalyptus Ave., Long Beach 6, Calif.*

BUCHAREST SCHOOL HOUSE: Does anyone know the address of Marty Roth, 15th AF flier and POW in Bucharest camp in 1944? *William B. Bristor, 2502 Steele Rd., Baltimore 9, Md.*

MAJ. WENDELL PHILLIPS: Does anyone know the home address of Maj. Wendell Phillips, A.C., who was at Foster Field, Victoria, Tex., in 1942? *Dorothy Jacobi, 409½ S. Taylor, Gainesville, Tex.*

MISSING MEN: Would like to locate the following men: Robert J. McLean, O-748734; S. A. Wilson, T-12486; Robert M. Thompson, O-699693; Vernon L. Allen, 19201125; James Midkiff, 13062-810; and Howard L. Allen, 19168830. *Henry D. Meyer, Jr., Box 5159, Met. Sta., Los Angeles 55, Calif.*

"SATAN'S LADY" CREW CHIEF: Does a unit history exist of the 306th Bomb Group (H), 8th AF, or the 369th (Fitin' Bitin') Sqdn? I'm also trying to locate former T/Sgt. Harry Tzipowitz, crew chief of my old B-17, "Satan's Lady," which flew 103 combat missions before becoming war weary. *Capt. Loy F. Peterson, AF Contract Adm., AiResearch Manufacturing Co., 9851 Sepulveda Blvd., Los Angeles 45, Calif.*

REUNIONS

24TH TROOP CARRIER SQUADRON: Wish all officers and EM of the 24th Troop Carrier Sqdn., 89th Troop Carrier Gp. at Bergstrom Field, Austin, Tex., would get in touch with me. Object: Big Reunion! *Sterling O. Lyons, 1008 W. 11th St., Austin, Tex.*

325TH FIGHTER GROUP REUNION: Former members of the 325th, including 317th, 318th, and 319th Sqdns. (Checkertail Clan), will hold their sixth reunion of the tenth anniversary of the Group's activation, August 1-3, 1952, at Providence, R. I. Everyone urged to write for details, news bulletins, and a brand new, short history of the Group. *A. T. Frye, L. E. Oldham, 104 Market Ave., So. Canton, Ohio, Committee Co-Chairmen.*

HUMP PILOTS REUNION: Pilots and crews who flew the Hump in World War II—seventh annual reunion at Memphis, Tenn., Sat., March 29. Make your own reservations at Hotel Peabody. Further details from *Jimmy Noe, 5726 39th Ave., Hyattsville, Md.*

8TH SERVICE GROUP REUNION: Some former 8th Service Gp. men held a reunion at Hartford, Conn., Feb. 17 to celebrate the tenth anniversary of their sailing from the US and made plans to meet again in New York City the weekend of June 28-29. Give the word to men from the 11th Service Sqdn., 482d Service Sqdn., 15th Signal, Hq. and Hq., or any other units of the 8th. *Hank Weishar, Chairman, 77-42 Main St., Flushing, N. Y.*

UNIT HISTORIES

339TH FIGHTER GROUP: Anybody know if there ever was a group history for the 339th Fighter Group or the 504th Squadron? Is so where can I buy one? *H. W. Gleason, Jr., P. O. Box #3, Charlottesville, Va.*

368TH FIGHTER GROUP: I would like to know if the 368th Fighter Gp. ever published a unit history, and if so, where I may obtain one. *Albert C. Kunze, Jr., 2324 Cronemeyer Ave., McKeesport, Pa.*

373D FIGHTER-BOMBER GROUP: Anyone know if a history of the 373d Fighter-Bomber Gp., 19th Tactical Air Command, has even been published? *T/Sgt. Ewald A. Koch, 132d Maint. Sqdn., Don AFB, Bangor, Me.*

2ND AND 301ST BOMB GROUPS: Any Rendezvous readers know about unit histories for the 2nd Bomb Group, 96th Sqdn., and 301st Bomb Group, 32nd Sqdn? *Edward C. Dreyer, 121 DeKalb Ave., Brooklyn 1, N. Y.*

96TH BOMB WING: In recent Rendezvous columns there have been inquiries about unit histories for the 466th and 458th Bomb Groups, 8th AF. I was a member of the 467th Group, which with the above two made up the 96th Wing. Three or four years ago Allan Healy, then at 1104 Greenwood St., Evanston, Ill., edited a history of my group. I suggest he be contacted for further information. And since I'm interested in locating some of my buddies from Rackheath, I'd like to hear from anyone assigned to the 467th between D-Day and March 1945. *Carl E. Epting, Jr. 119 W. Earle St., Greenville, S. C.*

40TH BOMB GROUP: Before the 40th Bomb Group (VH) left Tinian for the US in October 1945, a unit history was in the making. Anyone know if it was ever finished, by the 45th Sqdn., 40th Group, or 58th Wing, and if so where available? Also, has a reunion of the 40th ever been announced? *Chester B. Gaugh, 5348 Crittenden Ave., Indianapolis 20, Ind.*

92D BOMB GROUP (H): Would like to know if the 92d Bomb Gp. (H), 8th AAF, has ever published a group history. *Joseph Alusick, 1866 Bluker St., Ridgewood 37, N. Y.*

97TH BOMB GROUP: If there is a history of the 97th Bomb Gp., 15th AAF, Italy, where can I obtain a copy? *T/Sgt. William H. McDole, 146th Supply Sqdn., George AFB, Calif.*

305TH BOMB GROUP: I was in the 365th Sqdn. of the 8th AF's 305th Bomb Group (H) during the war and would like any literature pertaining to this unit. *Charles Kaufman, 1525 Amherst Ave., West Los Angeles 25, Calif.*

308TH BOMB GROUP: Has the 308th Bomb Gp., 14th Air Force, ever published a unit history? I'm also interested in locating a unit history of the 14th Air Force. *Samuel M. Eppley, 7114 Amherst Ave., University City 5, Mo.*

308TH BOMBER GROUP: A patient of ours, whose son was killed in the war, would like to know if there is a history of the 308th. *Miss Verna Tobias, Chief Librarian, V.A. Hospital, Wilmington 5, Del.*

459TH BOMB GROUP: Can you tell me if the 459th Bomb Group (H), 15th Air Force, or the 758th Bomb Squadron (H), ever had a unit history published? *James J. Fitzgerald, 5772 Farmbrook, Detroit 24, Mich.*

463D BOMB GROUP: Where can I apply for membership in the 463d Bomb Gp. Association? Would also like to know where I can get a history of this Group. *Joseph L. Ialacci, 62 N. Delsea Dr., Vineland, N. J.*

Around the world
ALLISON JET ENGINES
have accumulated more than
1,300,000 hours in the air

an unsurpassed record of experience covering every condition of training, alert and combat

GM GENERAL MOTORS

Allison DIVISION OF GENERAL MOTORS, INDIANAPOLIS, INDIANA

Builders of J35 Axial, J33 Centrifugal Flow Turbo-Jet Engines, T38 and T40 Turbo-Prop Engines

Selected FOR FAST JET AIRCRAFT

THE LEAR VERTICAL GYRO INDICATOR approaches the ultimate in design simplicity for flight attitude indicators. The unique Pitch-Bank Erection System reduces turn-error to a minimum, and the fast, automatic initial erection requires no caging or attention from the pilot. Its large spread presentation permits quick, easy readings, so vital in today's high performance aircraft.

NOW IN QUANTITY PRODUCTION, it is but one of many LEAR Gyro instrument products resulting from close customer coordination and the skilled application of the most advanced principles of design, engineering and precision manufacturing.

Type B-1 indicator used with type K-4 control.

THE LEAR VERTICAL GYRO INDICATOR SYSTEM has been developed by LEAR, INC. in co-ordination with the **USAF** and has been selected for many of the high-speed jet aircraft now under construction.

LEAR LEADERSHIP in the electronics and electro-mechanical field is reflected in the superior equipment used in today's advanced engine, airframe, and missile construction.

LEAR INC., GRAND RAPIDS, MICHIGAN
Lear-Romec Div., Elyria, Ohio

Electro-mechanical actuator control and servo systems
Pumps and radar pressurization equipment * Autopilots
and gyro instruments * Electric motors * Aircraft radio

PEOPLE

In The Air News

Gen. Hoyt S. Vandenberg will continue as AF Chief of Staff at least until June 30, 1953, when he will be eligible to retire with thirty years' service. His reappointment was good news to those who had watched his adroit maneuvering of the Joint Chiefs of Staff for approval of the AF buildup. At the same time Generals Curtis LeMay and Nathan Twining also swapped jobs.

Lt. Gen. James H. Doolittle heads a new three-man Presidential commission to study ways of relieving congestion at airports near large cities. The appointment of the AFA Director and Shell Oil vice president followed the third air crash in two months at Elizabeth, N. J. CAA's Charles Horne and Jerome Hunsaker of NACA assist him.

Gen. Joseph T. McNarney (USAF, Ret.) has been elected president of Consolidated Vultee, succeeding LaMotte T. Cohu who became vice chairman of the board when both took on their new duties April 1. General McNarney, who is fifty-eight, retired January 31, 1952, after thirty-five years of military service. He had been special advisor to the Defense Secretary and on a UN job.

John Moore, fisherman and guide, and last surviving eyewitness of the Wright Brothers' first flight, died February 28, at his home on Collington Island, near Kitty Hawk, N. C. He was sixty-five. He was seventeen the day he helped Orville and Wilbur Wright face their flimsy craft into a thirty mph wind and launch history's first powered flight.

SELECTIVE MOBILIZATION

IS THE ANSWER!

As a result of this magazine's attack last month on unrealistic defense spending, Congressional groups prepare to investigate the airpower scandal

LAST MONTH in this magazine we urged broad Congressional inquiry into the airpower stretch-out provided for in the Administration's defense budget for fiscal year 1953.

Now Senator Lyndon Johnson (Democrat, from Texas) has announced that his Preparedness Subcommittee will investigate the effects of the stretch-out "upon America's airpower position." Earlier, Senator Joseph O'Mahoney (Democrat, from Wyoming) had stated that the budget inquiry of the Joint Appropriations-Armed Forces Subcommittee which he heads would be primarily concerned with the airpower question.

These actions are encouraging, and we hope that more Congressional groups will be stimulated to press the subject further.

For, as we pointed out last month, neither Congress nor the public has been given a realistic appraisal of the airpower dilemma. We said then that the 143 group Air Force could be achieved by the critical security date of July 1, 1954, without increasing the current defense budget figure and without disrupting the civilian economy, *IF* the proper priorities were placed on military goods. These priorities must be based on first-things-first. Thus, the key to the 1953 budget must be a realistic re-evaluation of the military requirement.

If Congressional investigators will pursue this line of attack and demand that the Defense Department come up with military, and not political, answers to their questions, they will learn that airpower is not receiving the production priorities consistent with its military responsibilities, while surface forces receive priorities far out of line with their military obligations.

Such an investigation will reveal that, while we have finally broken away from an arbitrary dollar-for-dollar allocation of funds among the three military services, we continue to allocate critical machine tools on an arbitrary tool-for-tool basis.

This important point was brought out forcibly in recent hearings of a one-man Senate Subcommittee formed by Senator Blair Moody (Democrat, from Michigan), who is to be congratulated for high public service in getting at the very core of our preparedness problem.

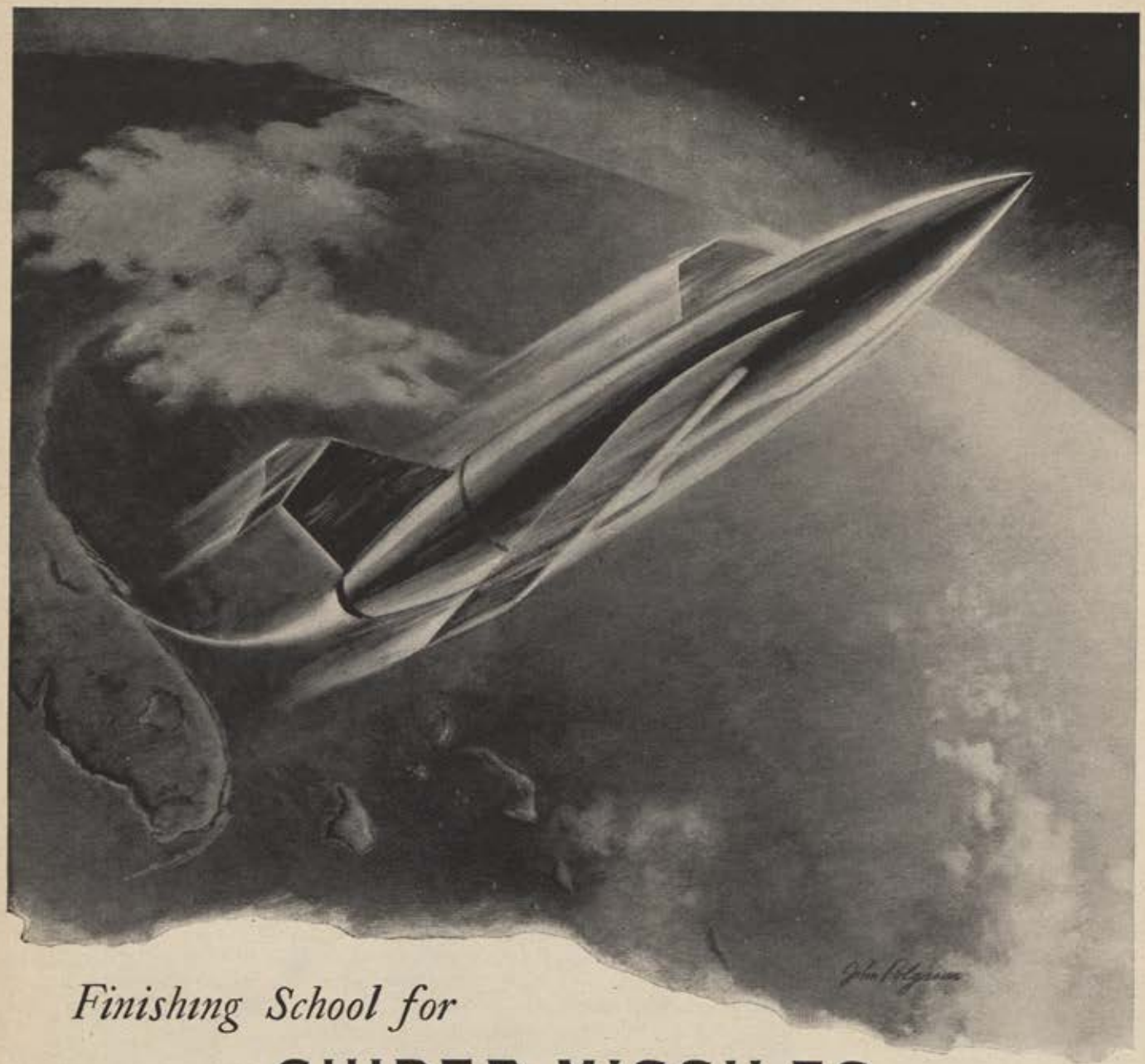
IN his examination of the machine tool industry—"heart and soul of the defense program"—Senator Moody questioned Lt. Gen. K. B. Wolfe, now president of the Oerlikon Tool and Arms Corporation of America, who, as former Deputy Chief of Staff for Materiel of the Air Force, had a major role in planning airpower procurement programs. Previous testimony had claimed that original Air Force production schedules had to be stretched out because they were "unrealistic."

General Wolfe disagreed.

The Air Force schedules, he explained, were realistic enough if the Air Force could assume it would receive the necessary priorities for machine tools and materials. And it had assumed just that. Why? Let General Wolfe explain it, as he did to the Committee.

"We assume that, under the urgency of the situation as it developed by the operations in the Korean war, it was most essential to build up the Air Force as quickly as possible.

"We presumed we would get high priorities for



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

Builders of Dependable Aircraft Since 1909

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

DEVELOPERS AND MANUFACTURERS OF: Navy P5M-1 Marlin seaplanes • Air Force B-57A Canberra night intruder bombers • Air Force B-61 Matador pilotless bombers • Navy P4M-1 Mercator patrol planes • Navy KDM-1 Plover target drones • Navy Viking high-altitude research rockets • Air Force XB-51 developmental tactical bomber • Martin airliners • Guided missiles • Electronic fire control & radar systems • **LEADERS IN** Building Air Power to Guard the Peace, Air Transport to Serve It.

INFORMATION on positions at NORTHROP

Northrop Aircraft, Inc. is engaged in the most absorbing work of a long career devoted to scientific and engineering development, as well as aircraft production. This includes new, long-range projects of the utmost importance and interest. 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... STRESS ENGINEERS... 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

U.S. Air Force Northrop Scorpion F-89s are guarding America's boundaries in ever-increasing numbers. The Scorpion is designed and built by the engineers and craftsmen who produced the deadly Black Widow P-61 of World War II fame.

NORTHROP AIRCRAFT, INC.
HAWTHORNE, CALIFORNIA

PIONEER BUILDERS OF NIGHT AND ALL WEATHER FIGHTERS

BAS

aircraft equipment. It is my own personal feeling that the modern day airplane requires a great percentage of special design machine tool equipment. We felt we could get that, and we felt we should get it, on a high priority.

"It is my own personal feeling that the experience of World War II indicated that aircraft would be the first thing in a war, and would take the first casualties. The first losses would be on Air Force equipment. That was borne out by the actual operations in Korea. The Air Force was in first.

"We assumed, then, in our planning, that we would get these high priorities. We passed that information to our manufacturers. They came up with what we felt, at that time, were realistic schedules under those conditions."

UNFORTUNATELY, however, the Air Force did not receive the priorities it had expected. As General Wolfe put it, the Air Force lacked machine tools because of "the change of priorities in machine tools and the allocation of materials and machine tools to other products." The necessary tools, he explained, "could have been built in time had we been given the priorities that we assumed we were entitled to and could get." Thus, we begin to see that Air Force production schedules were unrealistic only after the priorities on which they were based had been removed. And yet, with no reference at all to priorities, Administration spokesmen have insisted that it was these "unrealistic schedules" which forced adoption of the stretched-out program.

Testifying before the same subcommittee, Harold Boyer, Chairman of the Aircraft Production Board, and Roswell L. Gilpatric, Undersecretary of the Air Force, brought the problem up-to-date. Pointing out that machine tools still were the key to the defense production effort, Mr. Boyer said, "Of course, you realize that the Air Force gets only a certain percentage of the tools as they become available, and that is right across the board. . . . It has been worked out according to a formula. The Air Force gets approximately thirty-five percent to thirty-seven percent of the tools of any given category in any given month. . . . That formula is determined by the Munitions Board."

SENATOR Moody asked, "Do you mean to say that there is no rating of urgency as between an aircraft priority and a naval priority or army priority?"

Mr. Boyer's reply made it clear that such urgency ratings were lacking, as was first revealed by this magazine last month. And a detailed explanation of the problem came a few days later during Mr. Gilpatric's testimony.

Reporting that only twelve of the 256 "most important" military procurement programs had been given a rating of urgency by the JCS, Mr. Gilpatric was asked how the Chiefs rated the others in allocating materials. He replied:

"Actually, the Joint Chiefs were unable to agree on any system. Finally they just tossed a coin, and the Air Force won. We therefore picked the first item on the list. I believe the Army had second choice, and the Navy third. Then the sequence continued with the Air Force getting its second choice as number four, the Army getting number five, etc."

IN making up the top list of twelve items, said Mr. Gilpatric, the Air Force gave as its four highest priorities, two airplane development jobs, an electronics project, and an engine job for equal priorities on the same list. He added that the Army selected ammunition items, and the Navy picked minesweepers, aircraft, and engine programs.

Thus, in the defense program today, airpower's highest priority projects are not rated above minesweepers in the division of critical material. And Mr. Gilpatric touched on an incongruous result of this policy, also revealed by this magazine last month, when he said:

"We felt that our entire combat-item program should have taken precedence over some Army and Navy items which are primarily for war emergency reserves.

"For instance, the F-84 has no real priority at all because it is farther down on the list."

Mr. Boyer also let Senator Moody know what the answer should be.

"It might be well," he said, "if you are as ardent an air supporter as I am, to consider taking some of those tools and putting them where they belong, in the Air Force end of the program, and letting the relative urgency of the others drop back a little bit."

THIS definitive procedure is the key to the program recommended by the Air Force Association. We defined it thus—

"The alternative . . . is to re-evaluate the military requirement and adjust it to a realistic first-things-first basis, then apply the proper priorities and the proper controls to the nation's resources and manpower. In this manner the true military requirement can be achieved by the 1954 target date without disrupting the civilian economy, without undue drain on our resources, and without increasing the size of the defense budget.

"So far the choice has seemed to be limited mobilization or total mobilization. The answer is to be found, however, in selective mobilization, geared to first things first — an alternative which Congress has not been permitted to consider."

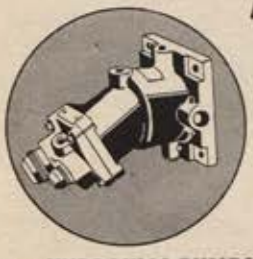
If an alert Congress will continue to pursue these issues, as Senator Moody has pursued them, it can put an end to our coin-tossing preparedness policy and, through priority-minded "selective mobilization," give the taxpayer the defense program he deserves.—END

Stratos SUPERCHARGERS · *Stratos* COOLING PACKAGES

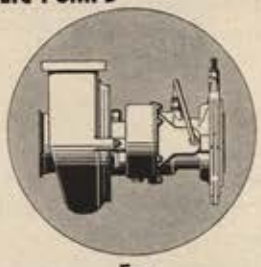
AND NOW IN PRODUCTION

Stratos AIR-TURBINE DRIVES

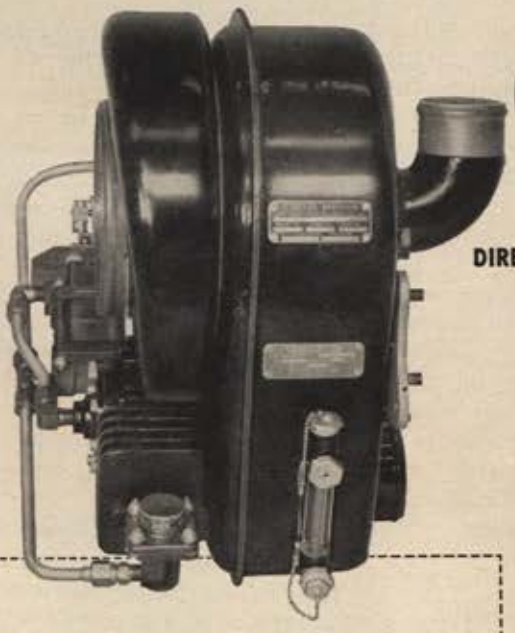
For **ALTERNATORS AND GENERATORS**



For **HYDRAULIC PUMPS**

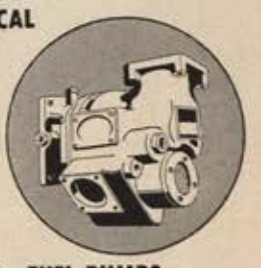


For **JET ENGINE STARTERS**



Typical Stratos Air Turbine Drive. Rated at 15 h.p. for driving aircraft alternator. Stratos *Constant Speed* feature assures constant output frequency under all operating conditions and loads. Built-in fan provides ground cooling for turbine and alternator.

For **DIRECT MECHANICAL ACTUATORS**



For **FUEL PUMPS**

- **Afterburner**
- **Inflight Refueling**
- **Booster**

For **HIGH PRESSURE AIR COMPRESSORS**

Operating on bleed air, Stratos air turbine accessory drives have been designed for flexibility of installation and to meet a wide variety of aircraft power requirements. The reliability and long service life features of Stratos Cabin Superchargers and Air Cycle Refrigeration Packages have been incorporated in this new line of versatile Stratos Air Turbine Drives for aircraft.

Stratos Air Turbine Drives maintain *constant speed* under *all* load and operating conditions. They offer the aircraft designer a new power source which is outstanding for its light weight, compactness and suitability to a wide range of tasks. Stratos engineers are prepared to adapt and modify current Stratos designs to meet the *specific* requirements of *specific* installations.

For information on this and other Stratos equipment, write:

Stratos DIVISION

FAIRCHILD ENGINE & AIRPLANE CORP.

Main Office and Plant: Farmingdale, Long Island, N. Y. • West Coast Office: 1307 Westwood Blvd., Los Angeles 24, Calif.
Fairchild Aircraft Division, Hagerstown, Md. • Fairchild Engine and Guided Missiles Divisions, Farmingdale, N.Y.

HOW DO WE STACK UP?

Reports on the fighting in MIG Alley have ranged from a bland optimism based on a box score that is overwhelmingly in our favor to a sour pessimism that lauds the MIG-15 as a vastly superior fighter to our F-86. As usual, the facts lie somewhere in between.

- Only a sweptwing plane can survive in MIG Alley's transonic war.
- For months to come, the F-86 will be the only United Nations plane capable of slugging it out with the MIG.
- Lack of planes prevents us from exploiting MIG Alley as a training ground.
- Meanwhile, the Reds train hundreds of pilots there in transonic war.
- Above 30,000 feet the MIG is the better flying machine, but the Sabre is the better fighting machine at any altitude.
- MIG cannon are more destructive than our .50s but fire too slowly.
- We need fast firing cannon if we are to keep up in the armament race.
- MIGs have succeeded in halting daylight B-29 operations, but Reds have demonstrated no night fighter capability.
- Reds have failed in their first bid for aerial supremacy, but indications are that they may soon try again—with better weapons which they now have.
- Our fight against overwhelming odds is encouraging but realistic evaluation allows little consolation for the future.

CAN WE WIN IN MIG ALLEY?

THE AUTHOR

Robert Hotz, shown here on a recent trip to Korea from which this article resulted, is an old hand at aviation writing. After a prewar stint with *The Milwaukee Journal*, Bob served in World War II with the 14th Air Force in China and wrote for the wartime version of AIR FORCE Magazine. Following the war he joined the staff of "Aviation Week," where he became news editor. He now is employed by a leading aircraft manufacturer, and makes his home in Simsbury, Connecticut.

Sabres catch them by surprise. The Communist air force is now weaving two distinct patterns into the battle of MIG Alley. One is aimed at training large numbers of pilots in the new science of transonic fighting and in the techniques of destroying high-altitude bombers. The other is an effort of rapidly increasing intensity to challenge American air superiority over Korea or anywhere else that red and white starred planes might meet again.

The advent of the jet engine put all major nations off to a fresh start in the postwar race for the increased power that furnishes the key factor of speed in military aircraft. It is now obvious that the Russians took full advantage of this fresh start to pull abreast of the established air-power nations in jet development and surpass them in production of the new jet power plants.

Because of the increased speeds made possible by jet power, a similar fresh start was required for pilot training in the tricky transonic speed range—just below and just above the speed of sound. This speed varies with altitude, from 760 mph at sea level to 660 mph above 30,000 feet. In this transonic range the turn-of-the-century theories of the German professor Ernest Mach become a reality, strong enough to rip a rugged aircraft apart with the careless ease of a small boy tearing the wings off a fly. It takes a special skill to fly and fight "on the Mach."

General Hoyt S. Vandenberg, USAF chief of staff, observed after his trip to Korea, "What is momentarily discouraging to us about the performance of the MIG is its demonstrated ability to operate at speeds in excess of the speed of sound."

Although the Sabre was not specifically designed to go beyond high sub-sonic speeds, the basic excellence of its North American design and its extremely rugged construction have enabled USAF pilots to push it beyond its theoretical limitations and to follow the MIGs into the speed of sound in the furious pace of MIG Alley. However, both the MIG and the F-86 can come apart when not properly piloted at transonic speeds. Occasionally a Sabre pilot will report a MIG shedding bits and pieces in an uncontrolled dive when the Sabre hasn't fired a shot. The verdict—another green pilot learning his final, fatal lesson from Professor Mach. One day two Sabre pilots were hard pressed by a pair of MIGs on their tails. The F-86 pilots were pushing their mounts as far as they would go and gingerly turned as sharply as they dared. The MIG pilots tried to rack around tighter to cut off the Sabres and came apart in the twinkling of an eye.

Sighting is another tough problem at the speed and altitude to which combat has soared over Korea. In the sparkling blue emptiness above 30,000 feet, the human eye plays strange tricks. Vision is excellent when you're looking down but tricky and unreliable when you look up or straight ahead. A flash of sun on a banking wing may betray the presence of enemy fighters fifty miles away but often you see nothing more until the MIGs are barreling in with cannon firing. The swivel-necked fighter pilot has to look more sharply and more often than ever before to spot attackers. At jet speeds the sky can fill with enemy fighters in the turn of a head and a fatal attack can come from a quarter the pilot has mentally cleared just a second earlier.

Closing speeds of more than 1,200 miles an hour for formations approaching head-on often make it impossible for either MIG or Sabre formations to spot the enemy until they are flying through his formation. Then there is no time for anything but a frantic split-second scramble to avoid collisions.

The contrail level—that variable altitude belt where water vapor discharged by engines crystallizes into

Ground crews are doing a superb job of repairing battle-damaged Sabres, working under difficult conditions at the far end of an 8,000-mile supply line.

icy white plumes—is an important factor in high altitude jet warfare. When a jet formation is spewing contrail it is visible at long distances and its maneuvers can be followed easily. Since the contrail level varies daily and both Sabres and MIGs must climb through it to reach fighting altitude, the game of hide-and-seek "in the cons" is an important part of MIG Alley tactics.

The Communists have seized the opportunity to train hundreds of pilots in the new problems of transonic jet fighting. Because there are fewer Sabres, fewer American pilots are getting this vital training. Again the Russians are building up numerical superiority, although the qualitative average of their pilots is much lower than that of our veterans.

"The cycle of their training program is obvious to us," says Col. Ben Preston, who commands the 4th Fighter Group. "They bring in a bunch of new boys and for several days they stay up high—about 5,000 feet above wherever we are flying—and stooge around, flying back and forth over MIG Alley. Many days you can count up to twenty flights of from twelve to twenty MIGs each, waving and flashing around in the sunlight like a school of minnows. They get a good look at the 86s and their instructors try to teach them how to fly formation. When the new boys appear, their formations are ragged. MIGs are strung out all over the sky.

"After a while they catch on and begin to hold their formations together. Then we know they will feel like fighting soon. One day the instructors will begin to 'bounce' us—coming down in a firing pass and pulling up in a chandelle, knowing we can't catch them in a climb at that altitude. The main formation of MIGs sits up above and watches the 'heroes' at work. Pretty soon the whole formation begins to come down in small groups, bouncing off us and climbing away like a bunch of yo-yos on a string. Then we know it won't be long before they are ready for graduation exercises.

"When the new MIG pilots are ready to graduate they come out in force, positioned all over the sky to catch the 86s no matter which way we turn. When we show up the MIGs come barreling down and we have some rough fights. We usually get some MIGs but we get shot up too.

"We usually catch some MIGs alone during these melees—guys who couldn't hang on to their wingmen or formations when the 'bouncing' began. The stray wingmen are usually easy meat, but sometimes the lone wolf is an instructor who has lost his pupil in the melee. Then you really get a fight. Some of these instructors are mighty fine pilots—as good as I've ever seen. They will fight you all the way from 40,000 feet down to the deck and match you every trick in the book until you are both low on fuel and are glad to break off and go home.

"The MIG pilots who survive these tussles are apparently given a diploma and shipped out somewhere. Pretty soon a new bunch appears strung all over the sky and the cycle starts all over again."

Col. "Gabby" Gabreski, commanding the 51st, is an expert on Luftwaffe technique and recognizes the MIGs practicing standard anti-bomber tactics developed by the Germans against B-17 formations during World War II.

"The MIGs will come in formations ranging from eight line-abreast to a big V of twenty-four all firing at once to get the effect of a shotgun blast at a slow-flying bird," says Gabby. "They are definitely practicing anti-bomber tactics with ground controlled interception. They

(Continued on page 60)

OLD GOONIES NEVER DIE

THE OLD C-47 goonie birds are still going strong with the 315th Air Division (Combat Cargo), flown by USAF, Greek, and Siamese crews. They drop surrender leaflets on the enemy, haul front line supplies, and are the only transports that can get into many front line strips to haul out wounded troops. I flew with the 21st Troop Carrier Squadron into a strip north of the Thirty-eighth Parallel where the approach began descending into a mess of 4,000-foot mountains with no field in sight.

The pilot continued the letdown into the mountains in a one needle width turn that followed the curve of the main ridge. Just as we got around 180 degrees, the field appeared ahead in a big sandy bed of a river flanked by 2,000-foot hills. We cleared a 1,000-foot ridge just off the end of the field, skidded in a rudder turn to align with the runway and then slid down the slope onto a 3,000-foot gravel strip. If you used aileron for that turn, the low wing would hook a tree. The goonie bird behind us did—not much damage.

Only twenty wounded men can be carried out by each C-47 because they have to top a 500-foot ridge at the other end of the runway and then continue in a climbing turn between the mountains until they are clear at 5,000 feet. Capt. D. M. Love, of Pittsburg, Kan., who operates the medical holding facility at the field, often speculated what would happen if a C-47 lost an engine on take-off with a load of his patients. One day a Greek pilot did lose his port engine that way. He did a shallow 180 within the narrow oval of the valley and landed downwind safely—a feat or rare airmanship. —R.H.

THE 'OLD PROS' OF MIG ALLEY

The big scores against the MIGs are being rolled up by the small group of seasoned veterans who are also training the kids in the skills of supersonic flying and aerial combat over North Korea

Maj. George A. Davis, Jr., who downed 11 MIGs.

AS LONG AS Sabres are flown, pilots will talk of Maj. George A. Davis, Jr., of Lubbock, Tex., and his spectacular career in MIG Alley. George was a quiet, unassuming fellow of thirty-one with gun-barrel blue eyes, hollow cheeks, and straight, coal black hair, slightly streaked with gray. He spoke softly with a West Texas twang and usually was quietly sipping a Coca Cola in a corner of SWIG Alley, the 4th's ramshackle officers' club atop a red gumbo hill, while his squadron mates roistered on stronger fuel and roared the Ballad of MIG Alley:

"Get out of here with that BOOM BOOM BOOM, and don't come back no mo'." (See pg. 60.)

George Davis looked more like a settled husband and father than one of the top gunners in the Air Force and the leading jet ace of the Korean war, but he qualified on all three counts. He was also the kind of quiet leader whose personal qualities stiffen a squadron the way carbon toughens steel. He had been flying jets since 1946, when he joined the first USAF all-jet fighter group after shooting down seven Jap planes in the Pacific. During the early postwar years he flew a Lockheed F-80 in acrobatic shows all over the country and, like many other competent fighter pilots, became obsessed with improving his gunnery. George seldom flew a jet without firing its guns, and he spent many hours firing at ground targets and towed aerial sleeves. To those who saw him shoot from a Sabre during his last Air Force gunnery meet at Las Vegas, Nev., his performance in Korea came as no surprise.

In his first seventeen days of fighting in MIG Alley, George destroyed twelve Red planes, including nine MIGs and three TU-2 bombers. Gunnery was the answer. When George got within shooting distance he seldom missed. Twice he shot down four Red planes in a single day. In one attack on Red bombers, heavily escorted by MIG jets, he shot down three bombers and a MIG with a single Sabre load of ammunition. It was in this fight, after knocking down three twin-engine bombers, that George, his fuel dangerously low, turned back to answer his wingman's call for help. After knocking a MIG off his wingman's tail, George had just fifty gallons of fuel left to get home. He was recommended for a Distinguished Service Cross for this performance but it had not yet been awarded when he was killed.

When the 4th scored its greatest victory in MIG Alley last December, knocking down thirteen MIGs in one day, George Davis accounted for four of them. He knocked down two in the morning, and after lunch led his flight back to MIG Alley. Spotting a MIG formation, George maneuvered his flight behind the unwary Red pilots, who were still carrying wing tanks, and held his fire until the Sabres were only 800 feet from the MIG tailpipes. When George gave the order to fire, five MIGs went down in the first blast.

When the three squadron commanders of the 4th, Davis, "Bones" Marshall, and Dick Creighton, all became aces about the same time they all volunteered to stay on as long as necessary because they knew how desperately short the 5th Air Force was on combat-wise F-86 leaders, who could shepherd the young pilots around MIG Alley. All three were married and had families back home.

Early in February, George shot down two more MIG-15s to break all jet combat records. His score then stood at eighteen planes—seven Japs and eleven MIG-15s. In that same February fight, George and his wingman, Lt. William Littlefield, of Louisville, Ky., broke away from their squadron to tackle ten MIG-15s. They had made a firing pass through the MIGs and were out in front of them when cannon fire hit George Davis's plane, knocking it out of control. His squadron mates saw it crash and burn deep in enemy territory. No parachute was seen.

Among the other "old pros" who are the backbone of the Sabre groups are:

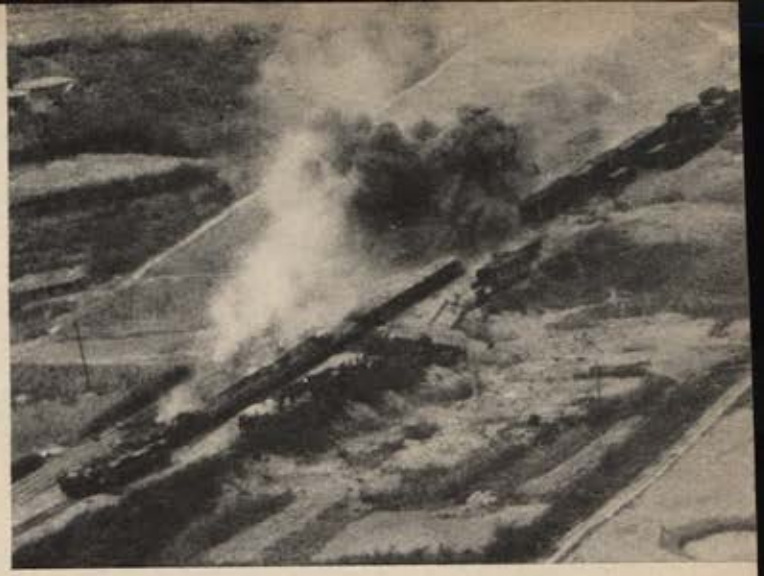
Col. Francis Gabreski, leading ace of the European theater in World War II and favorite son of Oil City, Pa. "Gabby" is now thirty-two, with a family of four children and is chasing MIGs as commander of the 51st Fighter Wing. "Gabby" is already well on his way to becoming a jet ace having added four and a half red stars to the thirty-one swastikas that marked his score over the Luftwaffe.

A specialty of the house is bridge-busting. Thunderjet pilots, expert railsplitters, do much of the close work. But when a bridge is knocked out, the Reds work like ants to repair the span, using primitive methods to sidestep engineering problems. The wooden cribs look like matchstick houses but can support new rails.

WITH THE RAILSPLITTERS

Rail cuts make short rations for the Reds who are getting frantic in their effort to keep supply lines open to the front

THAT OPERATION Strangle, the interdiction effort in Korea, is hurting the Communist effort is perhaps best proved by the desperate lengths to which the enemy goes to keep his supply lines in operation. Red flak in North Korea has more than doubled. More and more trucks are used to supplant lost rail tonnage. Nearly 300,000 people are engaged in a vast rail repair effort. Strangle has now become a race between UN airpower and Red flak and repair crews. And the Reds use every trick in the book. Photo recon showed that a bombed rail bridge at Sonchon had not been repaired, yet an RB-26 pilot saw a locomotive chugging over it. Closer reconnaissance revealed a pre-fab bridge hid-



The Reds' supply situation becomes obvious when their trains dare the full fury of UN airpower. Supply trains are favorite targets. This one, full of rice, was trapped and left burning.

den in a rail cut. Each night a portable crane lifted it into place. Another favorite ruse is to spread straw over a section of track to fake a rail cut. Underwater bridges are used to get trucks across rivers. Dummy locomotives invite attack. The Commies will shuttle a train over as little as three miles of good track and go the rest of the way in trucks. Recently a rice train tried a desperate daylight run. F-80s had a field day, bombing the tracks at either end of the train and strafing the stalled locomotives. A second mission hit the boxcars which spilled rice when bombed. By mid-morning the Reds had moved in automatic flak to harass the attackers. By afternoon a convoy of trucks had assembled and coolies darted in and out of the burning cars in a frantic attempt to salvage the precious rice. Trucks have taken such a beating that Red salvage crews cut up burned-out trucks with acetylene torches and load the usable parts on empty northbound convoys. The Reds are now operating a patchwork transport system improvised to meet the daily challenge of air attacks. But in spite of Red ingenuity and the frenzied attempts of the Communists to slow down the interdiction toll, Strangle is working so well that Lt. Gen. O. P. Weyland, Commanding General of FEAF says it will continue indefinitely.—END

One of the tricks the Chinese use is covering stretches of track with straw to make the rails look broken. But such deception is quickly spotted by close recon, and more B-26s and more 500-pound bombs make sure the line really is cut. The roadbed at left was originally double-track width.

Rails and bridges are top targets but UN planes also go after the people trying to patch up the damage. About 300,000 North Koreans are now trying frantically to keep the lines open.

B-29s from Japan and Okinawa, forced by MIGs to bomb at night, use radar to seek out key rail bridges and marshalling yards. The Superforts also keep chopping up North Korean airfields.

Five-hundred-pounders under the wings and racks of .50 caliber ammo make the F-80 Shooting Stars potent railsplitters. Navy night-fighters also help choke off enemy supply lines.

F-51s carry their share of the Strangle load too. The piston-driven fighters of the last war are still doing a bang-up job. At right, in another example of Red trickery, the Communists have covered a bridge with straw and protruding timber to make the overpass look as if it'd been bombed out.

Top all-time ace is Maj. Richard I. Bong, Medal of Honor winner who had forty air victories with the 5th AAF during World War II. He was killed in an F-80 crash, August 6, 1945, in Los Angeles.

Another 5th AAF pilot and Medal of Honor winner was Maj. Thomas B. McGuire who racked up thirty-eight aerial victories in the Pacific before he was killed over Leyte in the Philippines in 1945.

Col. Francis S. Gabreski, now piloting a Sabre in Korea, has fattened his World War II record (as a Lt. Col. in the 8th AAF) of thirty-one air victories and 2½ on the ground with 4½ MIGs in Korea.

Capt. Robert Johnson scored twenty-eight air victories while with the 8th AAF in Europe during World War II. Now with Republic Aviation Co., he's a past president of the Air Force Association.

NO PICTURE AVAILABLE

Col. Charles H. MacDonald, who became an ace with the 5th AAF in the Pacific during the last war, racked up twenty-seven aerial victories over the Japs. He's now on active duty with the AF.

Col. John C. Meyer, who now has a pair of MIGs to his credit in Korea, knocked down twenty-four enemy planes while with the 8th AAF last war, and also bagged thirteen other ones on the ground.

Maj. George E. Preddy, 8th AAF pilot in the last war, accumulated 25.83 air victories and five more on the ground before being killed while on a combat mission over Germany on Christmas Day, 1944.

Only World War I ace on today's top list is Capt. Eddie Rickenbacker, Medal of Honor winner who scored twenty-five victories with the famed 94th Pursuit. Capt. Eddie now heads Eastern Airlines.

MORE ABOUT ACES

These are the faces of aces—the men from three wars who have racked up the top scores in aerial combat with the enemy. AIR FORCE salutes them all.

THE FIGHTER jockeys who scout the sky for enemy planes aren't the only heroes of aerial warfare, but they're the most colorful. From the buzzing Spads and de Havillands of World War I to the flashing P-38s and Mustangs of the last war and the sweptwing Sabres over MIG Alley, fighters have waged the spectacular air-to-air battles that make their pilots aces or casualties—or sometimes both.

The way to become an ace varies. In World War I, for instance, balloons counted. During the last war Air Forces in the ETO counted aircraft destroyed on the ground as well as in the air, while in the Pacific only planes destroyed in the air counted. And in Korea, pilots are credited with all planes destroyed, but only those shot down in aerial combat count toward becoming an ace.

The term "ace," while not an official AF title, has been used for thirty-odd years to describe pilots with five or more aerial victories. In compiling the names of the top aces of all times, AIR FORCE Magazine has used the AF's official listing. ETO figures came from final reports of the Fighter Victory Credits Board, 8th Fighter Command, 8th AAF, and Pacific figures were compiled by Hq. 5th AAF who used all existing records in their tabulation.—END

Now a colonel in the AF, Walker M. Mahurin fought in two theaters during the last war. His combined 5th AAF and 8th AAF total of air victories came to 20.75 enemy planes. He has 3½ MIGs.

Capt. Ray S. Wetmore, another 8th AAF pilot in the last war, had 22.59 air victories to his credit in Europe. He was killed in an aircraft accident near Otis AFB, Mass., on February 14, 1951.

Col. David C. Schilling, 8th AAF pilot during World War II, was credited with 22½ aerial victories and 10½ more enemy planes on the ground. Still with the AF, he won the Harmon Trophy in '51.

Col. Neel E. Kearby flew with the 5th AAF during World War II. He racked up twenty-two aerial victories over the Japanese before the enemy got him. He was killed in action on March 5, 1944.

Another 5th AAF fighter pilot from the last war with twenty-two air victories was Maj. Jay T. Robbins, who's now a Lieutenant Colonel with Hq., Air Defense Command, Colorado Springs, Colo.

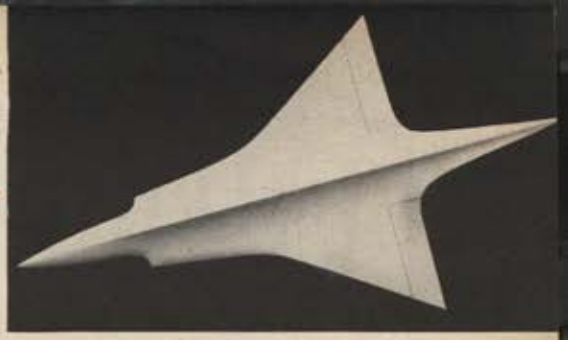
Capt. Fred J. Christensen, Jr. was an 8th AAF fighter pilot during World War II. He accumulated 21½ aerial victories during his ETO tour. He's not on active duty with the Air Force at this time.

Maj. George A. Davis, Jr., recently reported missing in action in Korea, supplemented his 5th AAF record of seven planes from the last war with eleven MIGs and three bombers downed in Korea.

Newest jet ace in Korea is Maj. William T. Whisner, Jr., who has added 5½ MIGs to his 15½ air victories from World War II with the 8th AAF. He also destroyed three enemy planes on the ground.

Water-Based Planes Go Supersonic

The 'blended hull' design may open the door for unlimited expansion of Navy aviation. Navy airmen are enthusiastic



A model of the supersonic, blended hull configuration has a delta wing.

Flying model of XP5Y-1 was used to test hydrodynamic characteristics.

A development that may give the Navy a new hole card in the airpower poker game was the topic of discussion at meetings of top Navy and Marine Corps airmen in Washington last month. The meetings were called to explore possible application of the so-called "blended hull" configuration, a new approach to aerodynamics that promises to give the water-based plane a new lease on life by giving it a supersonic capability.

Fighter circles within the Navy are extremely enthusiastic about the development, and other BuAer people are becoming more and more interested in the potential of the new design in the field of strategic bombardment.

Research into a new approach to water-based aircraft has been going on for more than a decade, sparked by Consolidated Vultee under the guiding hand of engineer Ernest G. Stout. But the whole project got a boost during the past year when several obstacles to further progress were overcome. These recent developments indicate, according to Navy planners, that the military characteristics of land-based aircraft can be met with water-based planes in the not too distant future. It is even intimated that "blended-hull" planes now in the planning stage will be able to operate equally well from land, water, or snow. The implications of that are obvious.

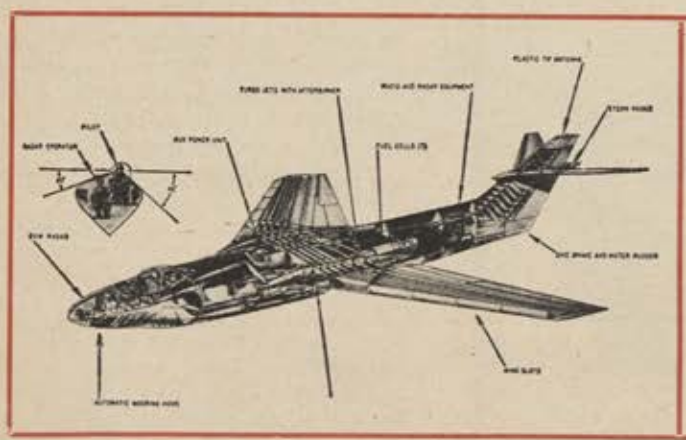
With high-performance water-based planes no longer subject to the design limitations imposed by carrier specifications, and with the Navy air force no longer limited in size by the number of modern aircraft carriers available to it, the door would seem to open to the Navy for unlimited aviation expansion.

Basically, the blended hull development has been the result of an imaginative new approach to an old problem. For many years, seaplane research and design were influenced more by the naval architects than by the aerodynamicists. The results were seaplanes which performed very well in the water but which were somewhat less than satisfactory in the air, especially when speed and maneuverability were part of the requirement. Obviously a basic change in design had to be considered or flying boats would continue to lose ground in the face of competition from modern, high-speed, land-based aircraft. This was particularly true in the military field where speed and maneuverability are of the utmost importance.

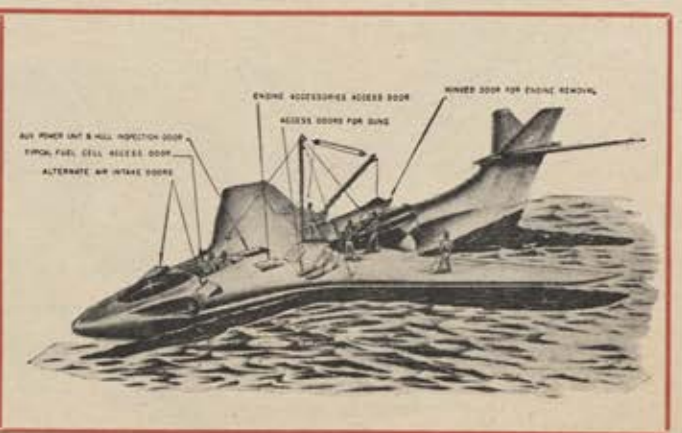
The blended hull concept attacks the problem from the other angle—instead of designing a boat that would fly, it aimed at designing an airplane that would fly extremely well and then making it seaworthy.

One of the first steps along the way was the Convair P5Y-1, a high speed, turbo-prop seaplane designed for the Navy. An experimental, radio-controlled model of this plane was used in testing hydrodynamic characteristics.

Jet propulsion gave the new concept another kick in the tail. In the past it had been necessary to build flying-boat hulls a considerable height above the water line to keep propeller tips out of the water and to keep spray out of the engine. Once in the air, the bulky hulls were good for nothing but to add weight and drag. Jet engines, on the other hand, made it possible to reduce hull depth and take advantage of the new aerodynamic concept. A combination of the new power system with the new aerodynamic approach



Blended hull configuration provides adequate space inside fighter-bomber version of the transonic aircraft.



Artist's sketch shows handling and maintenance facilities for attack version of a transonic, water-based plane.

UNIFICATION NOTE

The major who had flown 100 carrier missions

THE AIR WAR in Korea is run by the Joint Operations Center in Seoul where Army, Navy, Marine, and Air Force representatives plan daily operations. You don't hear much inter-service bickering on the working level. On the 4th Fighter Wing's scoreboard of MIG killers you'll find the name of Navy Lt. Cmdr. Paul Pugh who shot down a MIG-15 while flying a Sabre on a combat tour with the Air Force. And on the casualty list of the USS Essex you'll find the name of Maj. Francis McCollom, USAF. Major McCollom was a Mustang pilot in World War II and had been flying F-94 all-weather jet fighters at Maguire AFB when he was picked for a tour of duty with the Navy as an exchange pilot. He joined VF-172, a Banshee twin-jet outfit at Jacksonville, Fla., and went to sea with the squadron aboard the Essex last summer when she sailed for Korea.

Major McCollom quickly impressed his squadron mates with his flying skill, agile mind, and easy humor. I met him aboard the Essex just three days before he was killed, but it was easy to see he was one of the most popular and respected officers in the wardroom. Like many a sailor he took up the hobby of building model ships. He was full of talk on the small boats of the Pacific peoples and the oddities of heraldry which he planned to put into a book some day. He had been in combat with his Navy squadron since August flying combat air patrols, dive-bombing enemy flak batteries, and strafing and bombing along the Korean railroads.

Just two days after I came aboard, he made his 100th combat landing aboard the Essex. As is the custom a fancy cake had been baked to celebrate the occasion, and his Navy friends planned a party the next night in the wardroom with the traditional cake-cutting. That afternoon he escorted a Banshee photo plane that was taking pictures of a battered railroad running across the mountainous spine of the Korean peninsula. Returning safely, Major McCollom dropped down to strafe a radar station on a ridge near Wonsan harbor. From above, the photo pilot saw him make the run. Suddenly a great streak of flame enveloped Major McCollom's Banshee, and it plunged into the ridge and exploded.

There was no party in the wardroom that night. In his cabin, an unfinished model of a South Seas catamaran lay on the desk next to an unfinished letter to his wife and daughters in Jacksonville. On a hook above, his Air Force blue cap with silver insignia rocked gently with the rolling of the ship.

—ROBERT HOTZ

allowed Convair to begin experiments on a succession of models known as the "Skate Project," which has resulted in seven or more distinct configurations. But then a brand new problem appeared—keeping the water out of the jet scoops. This difficulty evidently has been satisfactorily solved.

At the same time, Convair was delving into the possibility of the delta wing to arrive at desirable characteristics in the supersonic speed ranges. It was only natural that Convair engineers would combine the delta wing configuration with the blended hull concept. Wind tunnel models of this configuration have indicated that the desired aerodynamic cleanness and performance are obtainable.

In any case, Convair experiments have convinced Navy enthusiasts that there are no inherent reasons why a water-based fighter or bomber cannot be designed to do anything that a more conventional land-based aircraft can do. Which, of course, opens the door to all kinds of complications and speculations.

For example, what would the development of the water-based fighter do to the whole Navy concept of carrier warfare? Might it not make more sense, from the Navy's point of view, to pour the money now scheduled to be spent on possibly ten super-carriers into the new development, or couldn't water-based bombers, serviced perhaps by submarines, eliminate the need for expensive and vulnerable overseas bases from which we now must be expected to do a high proportion of our strategic bombardment?

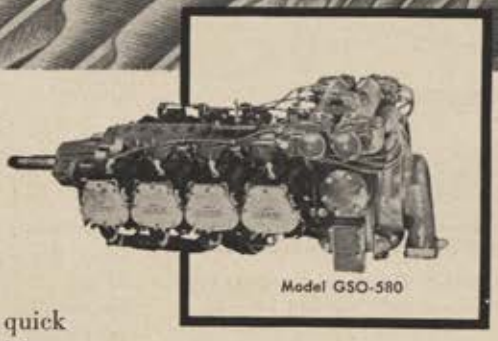
In an earlier issue of this magazine, when this problem was laid open to discussion for the first time, the article on water-based warplanes concluded with a statement by Maj. Alexander P. de Seversky:

"In the final analysis," he said, "it does not make any difference whether an airplane rises from water, land, or from a catapault. The important thing is what it is designed to do after it becomes airborne. If it carries attack to the strategic enemy installations and is capable of sustaining an air battle, then such a plane belongs to the Air Force.

"If on the other hand," Major de Seversky went on, "it is designed purely for the purpose of enhancing the efficiency of ships and naval task forces, then the plane is part and parcel of the Navy."

The super-carrier program already has taken the edge off the Major's statement, and the Navy's blended hull enthusiasts are quite prepared to knock it into a cocked hat.—END

There's a new "beat" in this eagle's heart



Model GSO-580

A versatile aircraft engine with reserve power for quick take-offs, military hedge-hopping, more lift! *Geared* for smoother operation; "*opposed*" *design* for practical compactness; *supercharged* for greater power; the only 400-horsepower air-cooled engine being produced! That's the unique power plant now available through Lycoming research and precision production.

Whether you require air-cooled power for aircraft or ground applications—or whether your need is precision machining, product development, or high-volume production—Lycoming offers extensive facilities and well-rounded experience. Long famous for its aircraft engines, Lycoming also meets the most exacting and diverse requirements in many fields, both military and industrial.

Whatever your problem—look to Lycoming!

To put more "thrust" in aircraft calls for an engine with ready reserve power. Now, with a new "heart"—400-horse size—

Lycoming precision production gives extra power for peak performance.

AIR-COOLED ENGINES FOR AIRCRAFT AND INDUSTRIAL USES • PRECISION-AND-VOLUME-MACHINE PARTS • GRAY-IRON CASTINGS • STEEL-PLATE FABRICATION

LOOK TO LYCOMING FOR RESEARCH FOR PRECISION PRODUCTION

LYCOMING-SPENCER DIVISION, WILLIAMSPORT, PA.
BRIDGEPORT-LYCOMING DIVISION, STRATFORD, CONN.

AVCO MANUFACTURING CORPORATION

ARMY AVIATION

Directing Artillery to Directing Traffic

Though unarmed and limited in range, the Army's light planes are proving mighty handy where the ground fighting is thickest

Army aviation thus far is conspicuous for two negative characteristics. Its aircraft are unarmed, and are not designed for long-range flight. The arms limitation means that Army aircraft can neither fight in the air nor attack from the air. Because of its short range, Army aviation confines itself to the ground fighting zone of a given theater.

Within these limitations Army aviation has found plenty of use for light fixed-wing planes and helicopters. It has two principal missions—reconnaissance and logistical. In its look-and-see role, Army aviation performs scouting missions over enemy lines, directs artillery fire, carries commanders around the battlefield, and serves as aerial traffic cops, directing and controlling the movement of men and vehicles on the ground. In its logistical function, it begins to duplicate the work of the Air Force, carrying troops and supplies, although thus far on a limited basis. Army aircraft evacuate casualties, fly emergency supplies to isolated units, lay wire, help establish control points for artillery fire control and engineer topographical surveys, and serve as VHF relay points.

To perform these tasks the Army now has some 1,600 light fixed-wing aircraft and helicopters. The number is increasing as more aircraft come off the production lines and as the number of Army units increases.

Ten years ago light planes were used solely in artillery battalions for fire direction. But during World War II and since, many more uses have been found. The number of jobs has increased until today there are twenty-six planes and helicopters assigned to each infantry division plus an increasing number for non-divisional units. Here's the breakdown:

Used in the US for light cargo and training is the sturdy Cessna LC-126.

Cessna's rugged two-placer, the L-19 Bird Dog, gets a constant workout.

Army Aviation in the Infantry Division

Unit	2-place fixed-wing	Multi-place fixed-wing	Utility Helicopter
Div Hq Co	1	2	3
Div Sig Co			2
Div Combat Engr Bn			1
Regt Hq Co (3 per div)	3		3
Div Arty Hq Btry	1	1	1
FA Bns (4 per div)	8		
Totals	13	3	10

L-17s, Ryan Navions, were among the earlier liaison planes the Army had.

Army Aviation in Non-Divisional Units

Unit	2-Pl. Fxd. Wg.	Multi-Pl. Fxd. Wg.	Utility Copter	Cargo Copter
Army Hq & Hq Co	2	6		
Corps Hq & Hq Co	3	3	2	
Engr Combat Gp Hq			2	
Engr Combat Bn			1	
Engr Topo Bn	1		3	
Inf Regt	1		1	
FA Gp	2			
FA Bn (all types)	2			
Corps Arty Hq Btry	2	1		
Sig Bn Corps	2		3	
Sig Bn Opn	5		3	
Armd Regt Lt Hq Co	2			
Armd Recon Bn	2			
Armd Tk Bn (Hv)	1			
Ord Aeft Maint Co		1		
Trans Helicopter Co			2	21
Med Air Evac Unit				5

The Army (like the Marines) stresses that its pilots are soldiers first (infantry, artillery, engineers, etc.) and pilots second. There is no commission-to-retirement plan for pilots, with the possible exception of warrant officer-pilots in the new transportation helicopter companies. This policy means that Army pilots get normal tours of non-flying ground duty in their own arms or branches as well as assignments in which flying is part of their duties.

Right now the Army has some 1,500 or more light planes and helicopter pilots and is trying to encourage more young officers to volunteer for flight training.

The Air Force trains Army pilots at San Marcos AFB in Texas although there is pressure within the Army for the establishment of its own basic flying school. Once a fledgling flier has finished the basic course he goes to the Artillery School, Fort Sill, Okla., for advance training and tactical instruction.—END

Most used Army 'copter in Korea is the Bell H-13D, for two casualties.

Piasecki's fifteen-place H-21s are just coming off production lines.

Scheduled for use in Korea, Sikorsky H-19s will carry eight litter patients.

NEW NORTH AMERICAN SABREJET INTERCEPTOR, THE U. S. AIR FORCE'S F-86D, POWERED BY A G-E JET.

THE FASTEST TEN YEARS IN HISTORY

Builder of the first U. S. jet engine, General Electric reports on latest developments since 1942

Ten years ago next week, America's first aircraft jet engine was put on test at a General Electric plant in Lynn, Mass. Six months later, jet-powered flight became a reality in America when the Bell P-59 Airacomet, powered by two of these G-E engines, took off at Muroc, Cal., and flew over 400 miles per hour. Fast? Yes—but less than ten years later, combat pilots battle at the speed of sound!

In World War II, military leaders had given jet flight a top priority because they believed the maximum limit on speed for a propeller-driven airplane had almost been reached. The only answer was a new kind of power plant. So the Army Air Corps asked American industry to build a jet engine, based on an English design. General Electric, chiefly because of its half century of experience in designing and building industrial steam turbines and aircraft turbosuperchargers, was logically chosen to do the job.

Now, ten years later, a fighter pilot can fly almost twice as fast as he could in 1942. That's because today's jet engines are 8 times more powerful than the 1942 model! Even more powerful jet engines are moving from General Electric drafting boards to mock-up stage.

LONG EXPERIENCE with steam turbines and aircraft turbosuperchargers prompted the Army Air Corps to turn to General Electric for the first U. S. jet engine. G.E.'s Dr. Sanford A. Moss (shown on right with Lt. Gen. "Jimmy" Doolittle) fathered the turbosupercharger, which made high-altitude bombing possible in World War II.

You can put your confidence in—

GENERAL ELECTRIC

TURN THE PAGE FOR LATEST NEWS OF JET PROPULSION IN AMERICA

G-E JET ENGINES POWER ALL THESE MODERN AIR FORCE PLANES

Convair B-36, intercontinental bomber (6 piston engines, 4 jets)

North American F-86 "Sabre," combat-proved fighter

Boeing B-47 "Stratojet," fastest known bomber

North American B-45 "Tornado," first operational jet bomber

Republic XF-91, high-speed interceptor

Martin XB-51, ground-support bomber

North American F-86D, fast-climbing interceptor

GENERAL ELECTRIC

FORERUNNER of the modern jet engine, the General Electric turbosupercharger was developed in cooperation with the Army Air Corps and test flown in September, 1919.

RESEARCH and creative engineering help maintain G-E jet leadership. Here, technicians prepare to test compressor for radical new jet engine.

FASTER, FARTHER, HIGHER

Engines designed and developed by General Electric have powered more planes, set more records, flown more hours than all other U. S. jet engines combined.

Leader in jet engine design and development back in 1942, General Electric has stayed out in front. It has done so by constantly looking ahead to the future demands of the military and the aircraft builders.

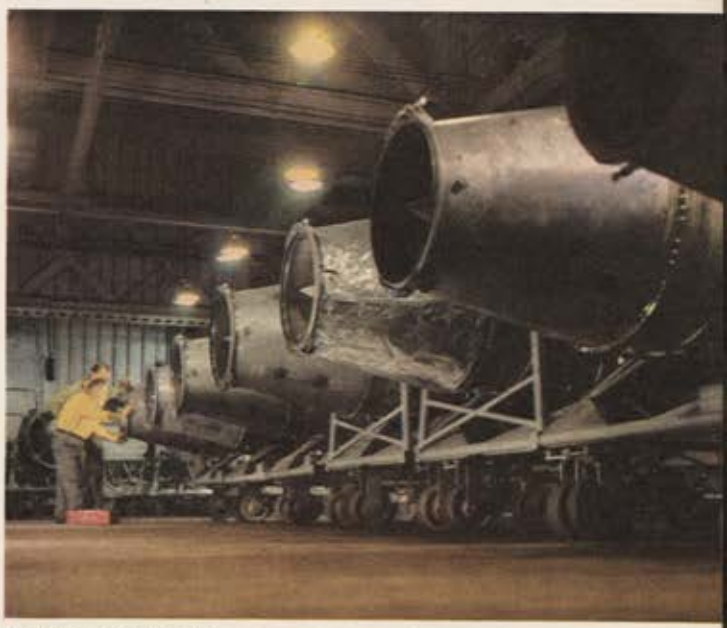
Pilots always want more speed. So G-E engineers developed a better jet engine that propels a plane at more than *12 miles a minute!* They always want more distance. G.E. made its engines lighter, reduced their fuel consumption and thereby helped to multiply jet aircraft range six times. Yet today's G-E jet engines cost less for the power they produce than their 1942 ancestors.

There is no let up in the pace. Even as you read this, G.E.'s atomic research is being combined with its jet-engine experience. Its engineers are now hard at work designing an atomic aircraft engine for the Air Force.

You can put your confidence in—

GENERAL ELECTRIC

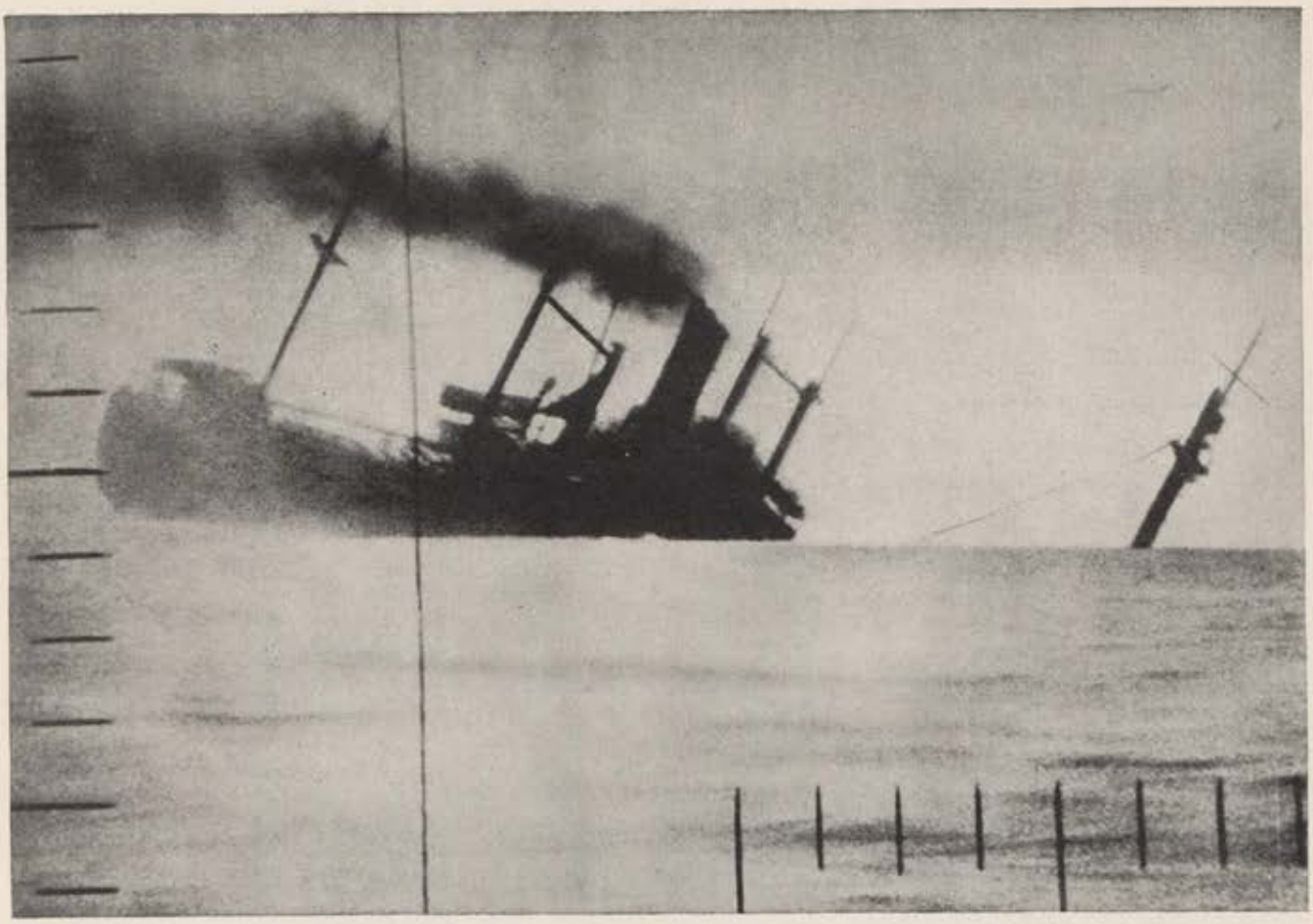
230-1



MASS PRODUCTION of jets is a reality at two big G-E plants. Exact output is a military secret, but jets are being produced at an unprecedented rate.

WORLDWIDE SERVICE organization, unequalled in the industry, helps keep G-E jets (shown here on Convair B-36 intercontinental bomber) operating at peak efficiency.

THRUST or "push" of G-E jet is increased by afterburner, shown on the top engine. Pilot can climb faster, gets greater bursts of speed in combat.



What it takes to score a hit!

Steel, 2,423 lbs. | Explosives, 600 lbs. | Gauges, 300 | Parts, 4,000 | Skilled Man-hours, 3,000

A torpedo must have the accuracy of a stopwatch... the blast of a blockbuster to score a hit like the one shown above. Like all modern weapons, its effectiveness depends upon the technical *skill* and *speed* of its makers.

American Machine & Foundry is pleased to make its contribution to the Torpedo Branch, Navy Bureau of Ordnance. Along with hundreds of other companies, we are doing our best to produce our share of "hits".

Above figures are given with due regard to security.

AMERICAN MACHINE & FOUNDRY COMPANY

Executive Offices, 511 Fifth Avenue, New York 17, N. Y.

AMF does it better—automatically!

AMF

CREATORS AND PRODUCERS OF ELECTRONIC AND MECHANICAL EQUIPMENT

FOR THE ARMED SERVICES: Radar antennae and drive units • automatic loaders for Army and Navy weapons • elevating and azimuth mechanisms • cooling fans for Army tanks • airplane parts • mobile ovens • electronic training devices • naval ordnance • rolled and welded steel products • shell components • silver-zinc batteries • special military projects.

FOR INDUSTRY: Tobacco processing equipment, cigarette and cigar machinery • AMF and Union bakery equipment • automatic pinspotters, bowling equipment and supplies • DeWalt power saws • Lowerator dispensers • Oakes continuous mixers • stitching machines • Wahlstrom chucks • Roadmaster bicycles • Cleve-Weld tire rims • Junior velocipedes.

AN AIR FORCE GOES FROM BROOKLYN

From weekend training with light bombers to being one of the proudest outfits in SAC is the story of the 106th, which took the switch to B-29s in stride

Loading the lower aft turret of a Superfort is all in a day's work.

By David Shawe

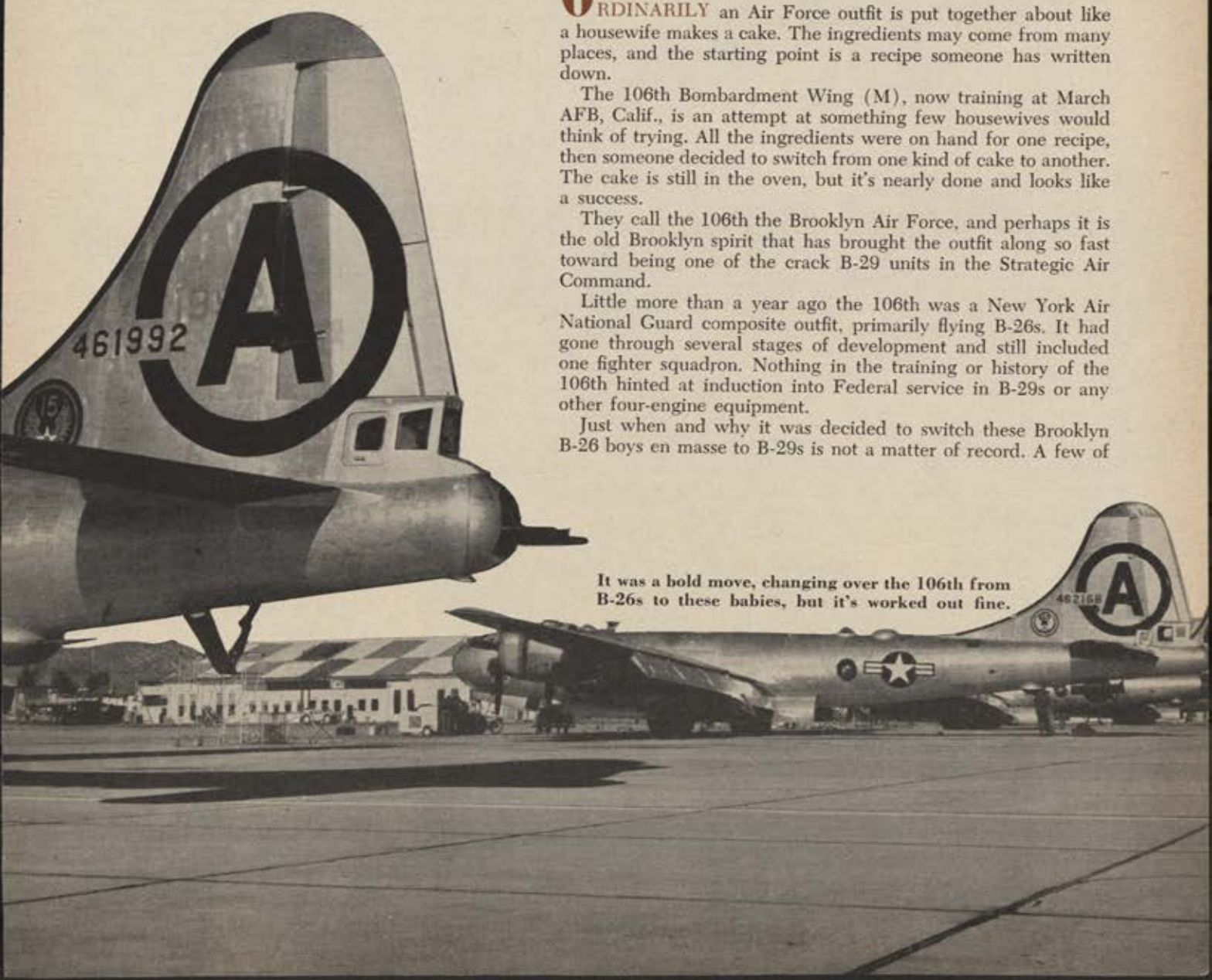
ORDINARILY an Air Force outfit is put together about like a housewife makes a cake. The ingredients may come from many places, and the starting point is a recipe someone has written down.

The 106th Bombardment Wing (M), now training at March AFB, Calif., is an attempt at something few housewives would think of trying. All the ingredients were on hand for one recipe, then someone decided to switch from one kind of cake to another. The cake is still in the oven, but it's nearly done and looks like a success.

They call the 106th the Brooklyn Air Force, and perhaps it is the old Brooklyn spirit that has brought the outfit along so fast toward being one of the crack B-29 units in the Strategic Air Command.

Little more than a year ago the 106th was a New York Air National Guard composite outfit, primarily flying B-26s. It had gone through several stages of development and still included one fighter squadron. Nothing in the training or history of the 106th hinted at induction into Federal service in B-29s or any other four-engine equipment.

Just when and why it was decided to switch these Brooklyn B-26 boys en masse to B-29s is not a matter of record. A few of



It was a bold move, changing over the 106th from B-26s to these babies, but it's worked out fine.

the pilots and crewmen had picked up some four-engine time during the war, and there was even a scattering of men with B-29 experience, but you couldn't have mustered one complete, experienced 29 crew out of the lot. It was not a question of training an occasional man to balance up the wing, but of training every man in the wing in new concepts and new skills. It was a bold and unusual move, but it has worked.

There was some frantic activity in Brooklyn during January and February 1951, between the 106th's alert and its mass move to California. Official notifications went to all officers and airmen assigned to units at both Floyd Bennett Naval Air Station and at the White Plains Armory. Training unit assemblies were scheduled for each weekend to accomplish as much administrative work as possible before induction. National Guard records had to be switched to official Air Force forms. Physical examinations had to be given to all members of the Wing. Hardship cases had to be reviewed.

In all, only two officers and thirteen airmen were transferred to unalerted National Guard units under the provisions of deferment regulations, and only eleven officers and twenty-three airmen were separated for physical disabilities.

One of the biggest jobs after the 106th was alerted was an intensive recruiting campaign to bring up the Wing to authorized strength and to balance out needed technical skills. The recruiting was highly successful, and when the Wing officially reported for duty on March 1, 1951, it was at seventy-six percent of officer strength and seventy-nine percent enlisted strength. There were still gaps in the technical skills, of course, particularly in view of the switch to B-29s.

While the Wing was being readied for active service, and before any decision had been announced on the type of assignment, several conferences were held between representatives of SAC, the 12th Air Division, March AFB, and the 106th Wing. A roster of personnel by MOS was furnished to SAC, along with a complete analysis of pilot personnel showing total hours, type aircraft flown, and civilian backgrounds. The Wing Commander reported in some detail the training activities of the 106th and its postwar predecessor units, including three summer encampments.

When the boys from Brooklyn arrived at March AFB, they were in

One thing for sure—the B-26s had smaller areas to be scrubbed clean.

How to pre-flight a tail gun was just one of the new techniques the boys from Flatbush had to pick up at March AFB.

better shape than a bunch of fresh inductees, but there were similar problems as far as B-29s were concerned. The Wing's assets were a good staff organization, thorough knowledge of its manpower capabilities, a competent understanding of aircraft, and high morale. The job was to develop, from this starting point, B-29 crews able to hold their own with any in the Air Force.

First, the 106th shook out enough pilots and airmen for fourteen nucleus crews. These went to B-29 Combat Crew Training School at Randolph AFB. Crews consisted of two pilots and two airmen (gunners) each. They were a well-rounded bunch and certainly as well qualified for B-29 transition as any group the Air Force could have brought up from light bombers. There had been plenty of screening during the B-26 days back in Brooklyn. Pilots generally were not accepted into the Guard without a minimum of 1,000 multi-engine hours, some had been flying with the airlines after the war, and all of them had kept in shape with a minimum of 130 hours a year in B-26s. Airmen selected for CCTS were for the most part seasoned veterans with some four-engine experience.

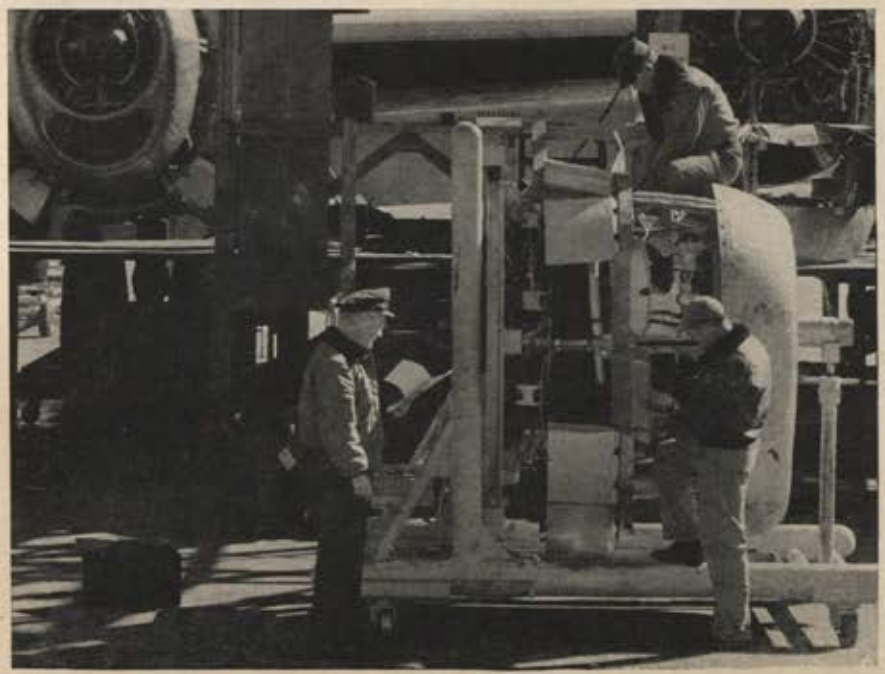
At Randolph, these original crews put in four months and logged about 100 hours in B-29s. All pilots came out as Aircraft Commanders, and all crews returned intact to March to work together in integrated crew training, which is still going on.

Meanwhile, other specialists got their B-29 indoctrination in other places. Some of the officers went to the "1037" schools at Mather and Ellington AFBs and came back to March trained for three-headed jobs as bombardier-navigator-radar operators. This course, incidentally, can take as long as ten months for an officer without much previous training, so obviously the 106th had to be balanced up with 1037's who had already been through the pipeline but

Top forward turrets have appetites like unfed PFCs. A few months on the job made experts of men like this sergeant.

It was "dem Bums" back in Brooklyn but out at March Field it's "dem bombs" and spring training takes on a new and entirely different connotation.

In many ways changing over an existing wing from one type of duty to another has made for harder work than forming a new wing from names and MOSs picked out of an IBM machine, particularly when B-29s were in short supply and critical MOSs were more urgently needed in Korea than in a training squadron.



who had not grown up in Brooklyn.

The next essential man on the B-29 "strike team," the flight engineer, had to go to Chanute AFB to learn his trade. The difference between a B-26 and a B-29 is so great that a lot of foreigners were brought into the outfit as flight engineers rather than try to fill out every crew from the original Brooklyn bunch. Even so, enough of the old crew chiefs went through Chanute to maintain the Brooklyn flavor.

Radio operators went to Scott AFB to learn procedure and basic maintenance. Actually, since this function was not highly developed in the Air National Guard's B-26s, a good many of the 106th's present radio operators have come in through the pipeline and relatively few are from the original New York outfit.

Aircraft maintenance on the line at March is handled within the Wing itself by a group of former Brooklyn boys plus mechanics who were switched to the 106th by March AFB or who were piped in from other sources.

Support squadrons, authorized just after the 106th was alerted, and basically organized even before the Wing arrived on the West Coast, have been built to full strength and efficiency during the past year. They include such squadrons as Food Service, Air Police, Motor Vehicle, Communications, Air Installations, and Supply and Maintenance.

Over the past year some, but by no means all, of the Brooklyn flavor and reputation has been squeezed from the 106th Bombardment Wing. A completely new squadron, the 135th, has been added from "outside" sources. The old Wing Commander is now in Korea picking up operational experience while his job is held by a highly regarded returnee from FEAF, by men from CCTS, and even by officers fresh from West Point and Annapolis via service schools.

Despite the dilution, the Brooklyn name and pride remain strong. The 106th has tackled its problems with a community spirit characteristic in Brooklynites and Texans. It has earned the respect of SAC and of the 15th Air Force (even discounting the fact that Maj. Gen. Emmett O'Donnell of the 15th is a Brooklyn product himself), and it is ready to move on into combat preparedness—or even into newer and faster equipment like the B-47—with the same spirit and efficiency which has brought the whole outfit up in less than a year from a weekend light bomber outfit to a proud and impressive component of our Strategic Air Command.—END

100 Gilfillan Tech Reps GO with Gilfillan GCA Radar

ANYWHERE IN THE WORLD is home base for these 100 factory-trained radar experts.

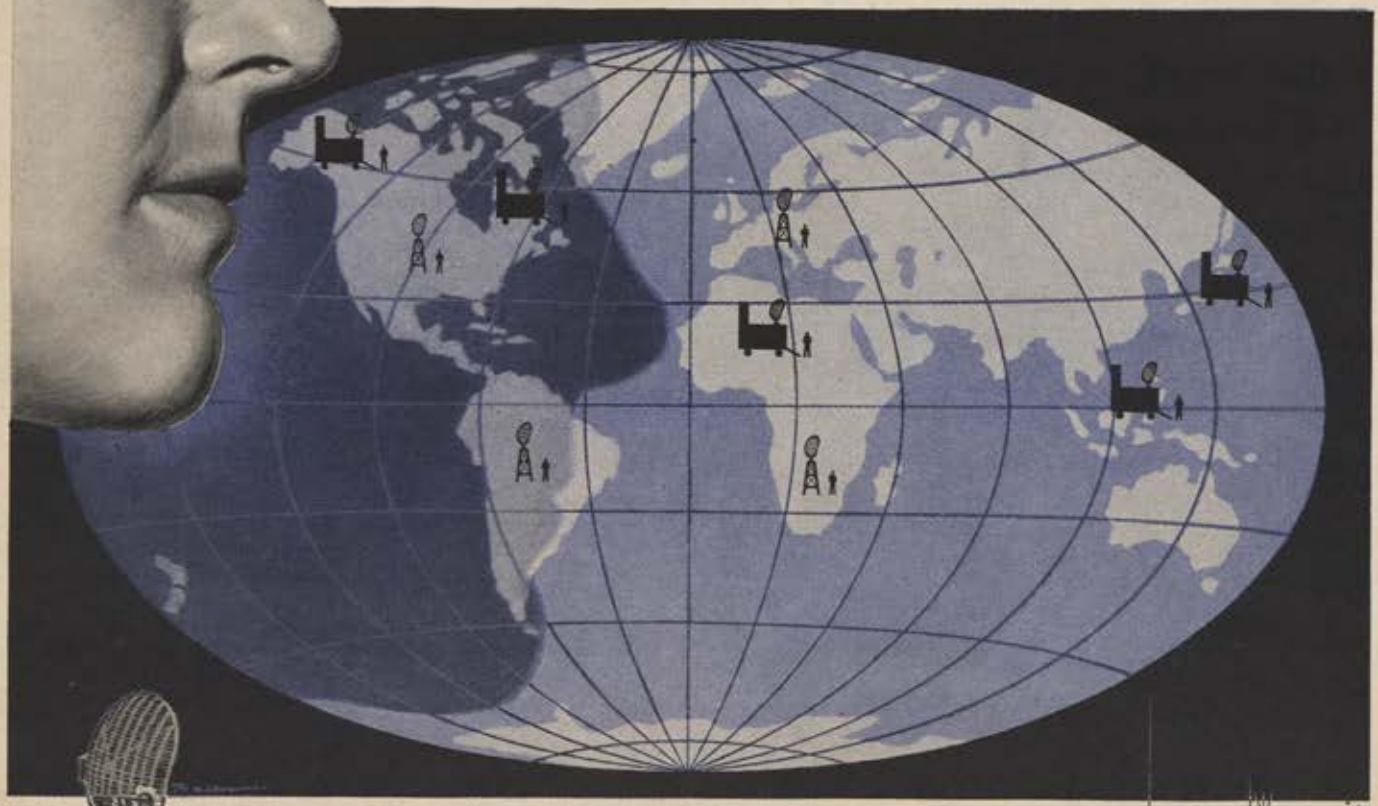
MILITARY BASES...in Europe, North America, the Far East...they worked around-the-clock at the Berlin Airlift...they're "up front" in Korea.

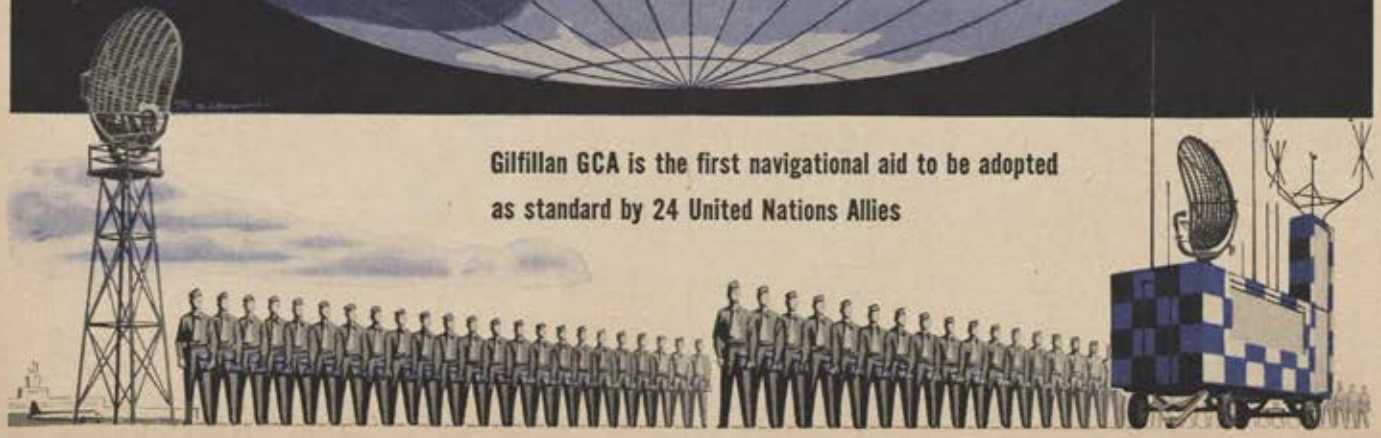
CIVILIAN FIELDS...from Paris to Johannesburg—from New York to California.

Wherever you find Gilfillan GCA for landing aircraft in bad weather, Gilfillan tech reps are available...to install GCA, supervise "on the job" training, provide complete service and maintenance on GCA and other complex radar systems.

Such radar "follow through" is S.O.P. at Gilfillan, developers and producers of GCA for the USAF, USN, CAA, USMC.

Gilfillan
Los Angeles





Gilfillan GCA is the first navigational aid to be adopted as standard by 24 United Nations Allies

TECH TALK

By Richard Skinner

Keeping a jump ahead of skyrocketing prices and astronomical taxes are two new altimeters, expected to clock altitudes from twenty-five to ninety-five miles up. Both are under development by ARDC engineers. The first, for use between 150,000 and 300,000 feet, is based on a Pirani type gauge. Heat radiated from a cathode element to a sensitive plate in a glass tube does the job, since the higher you go, the less dense the air. And the less dense the air, the less heat transmitted. In the other, designed for altitudes between 300,000 and 500,000 feet, an electrically heated filament bombards a positively charged grid with electrons, ionizing gas particles surrounding the grid. These ions are attracted to a negative plate, creating a flow of current. The ratio of plate current to grid current is proportional to the gas pressure in a glass tube that continuously samples the air. This can be converted to a dial reading in feet. Ordinary altimeters of the sealed aneroid type operate up to 150,000 feet, but above 80,000 feet must be bolstered with a servo system.

Because rocket fuels evaporate faster than last week's paycheck at the corner supermarket, planes using rocket propellant can't be fueled until just before take-off. This would make it tough to keep rocket interceptors ready for action against a rapidly approaching enemy. A Republic mobile refueling system which may solve this puzzler consists of a truck with a 900-gallon tank built like a giant thermos bottle to hold liquid oxygen at minus 300° for many hours. A second tank holds 700 gallons of water-alcohol mixture, and nitrogen bottles are stored elsewhere on the rig.

With the first de Havilland Comets scheduled to appear May 1 on BOAC's London-Johannesburg run, a new version of the four-jet British airliner has appeared, for delivery in 1954. Axial flow Rolls Royce Avons replace the centrifugal flow Ghosts used on the present models, and will give the Comet Twos thirty percent more thrust and 750 miles greater range. The Comet Ones cruise at 500 mph and have a range of 1,500 miles.

First public showing recently of a new point-contact transistor, tiny germanium amplifier that bids fair to set the electronics industry on its ear, points to the day when the wrist watch radio comes out of the comic strip and into common usage. A transistor lacks the heated filament operating in a vacuum found in electron tubes. Instead, electrons are harnessed in a piece of solid matter no larger than a kernel of corn. The germanium and three tiny wires which act as terminals are embedded in a thermosetting resin that acts as a virtually indestructible casing. Germanium is a semi-conductor, a substance that can be made to conduct a current well in one direction and poorly in the opposite. RCA engineers, who are developing the new transistor, emphasize that the tiny amplifiers will not replace vacuum tubes any more than radio replaced the phonograph. But a whole new batch of electronic gadgets are predicted when transistors are fully refined: compact, portable, electronic computers; vestpocket, personal radios; battery-less, watch-sized radio receivers that may operate on power furnished by the heat of the human body; and radio receivers and transmitters smaller than today's telephones. Transistors, which will be shock resistant, unaffected by dampness, and able to operate at temperatures as low as liquid air (minus 180°), were first announced by Bell Telephone Laboratories in 1948.

HOW *Modern* IS CANADAIR?

Equipped to meet any challenge in aircraft production . . . Canadair's machine shops, foundry, assembly and engineering departments are on a par in modern conception with any plant in the world.

The most advanced production methods are in operation . . . senior personnel have been drawn from the best sources throughout the globe . . . millions have been invested in the latest equipment . . . all meeting today's exacting demands of aircraft manufacture.

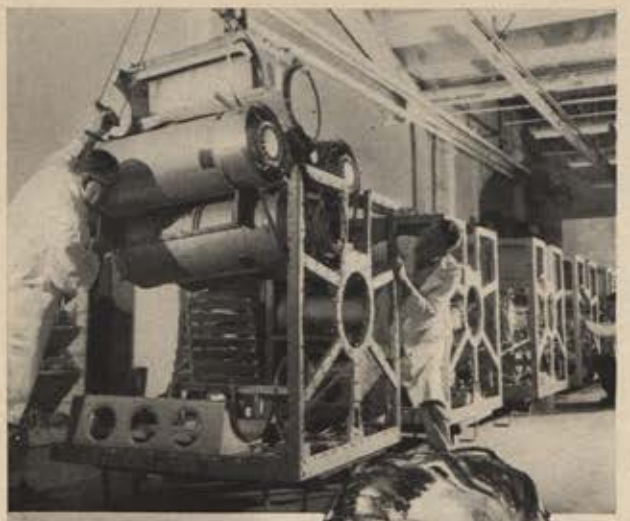
Here Canadair has produced many 4-engine airliners, is producing F-86* Sabre jets and preparing for quantity production of jet and conventional engine trainers . . . *Canadair is as modern as the planes she builds.*

*Made under license from North American Aviation Inc.

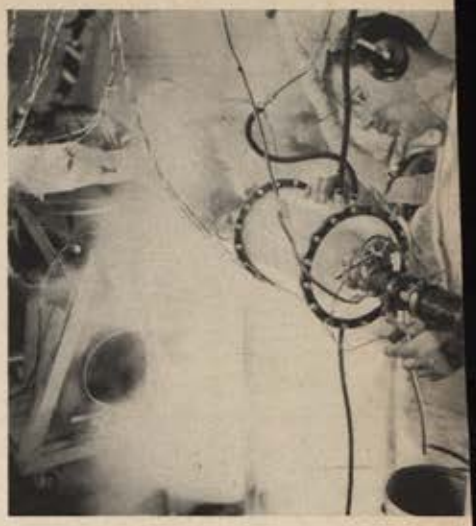
Canadair
LIMITED, MONTREAL, CANADA

A subsidiary of
ELECTRIC BOAT COMPANY
New York, N.Y. — Washington, D.C. — Groton, Conn. — Bayonne, N.J.

CA52-7UST



MANUFACTURING
Among the more than 700 products manufactured at AiResearch is a portable gas turbine ground heater. Most powerful heater for its size ever developed, it was designed to heat up Air Force planes and equipment in the Arctic. One unit produces 4,000,000 btu's per hour at —65 degrees F.



Ability of AiRese

...in the design and man

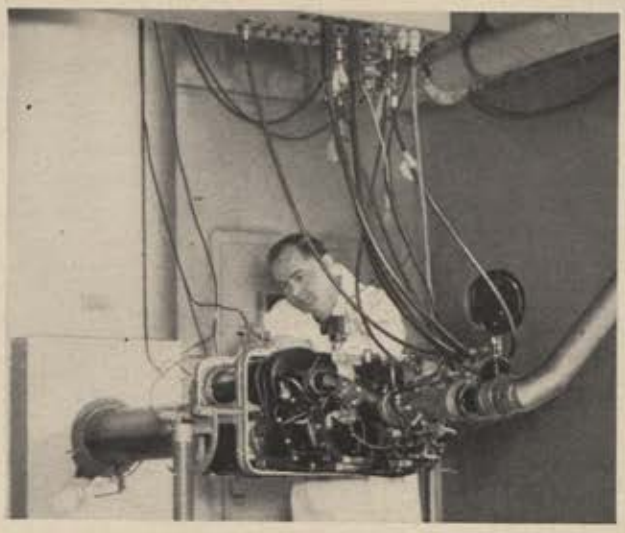
Would you like to work with us? *Qualified engineers, scientists and skilled craftsmen are needed now at AiResearch. Write for details on a better job with this progressive firm. Address your letter to: AiResearch Manufacturing Co., Los Angeles 45, California.*

DESIGNE

Air Turbine Refrigeration

Gas Turbines

RESEARCH *Long range research policies have made the AiResearch Manufacturing Company a recognized industrial leader in many fields. Current lab facilities include 12 major research divisions, equipped to perform countless tests. Pictured at left under test is a moisture control unit for cabin air conditioning.*



QUALITY *Complete production testing facilities, combined with years of experience in proving equipment before delivery, have built the AiResearch reputation for quality. Shown here is a small gas turbine engine in the 100 hp class, one of the many "firsts" pioneered by AiResearch engineers and craftsmen.*

arch to achieve "the impossible"

ufacture of specialized aircraft accessories has made this company a world leader!

Twin targets at AiResearch, since this company entered business in 1939, have been how to make possible: (1) flight at *higher altitude;* (2) flight at *higher speed.*

This has meant design, testing and manufacturing in unexplored fields. The major effort has been to control and utilize patterns of air flow, air density, air pressure and air temperature as they affect high altitude, high speed flight.

The company now employs more than 4500 engineers, technicians and skilled craftsmen in modern plants in Los Angeles and Phoenix.

These plants are equipped with complete up-to-date manufacturing facilities. In them are being produced over 700 different accessory products. All were developed and proven in the company's research laboratories, the most complete of their kind in existence.

Today every type of high speed, high altitude airplane of U. S. design is equipped with AiResearch products. Only AiResearch can supply all the integrated system components for cabin pressurization and air conditioning and lightweight pneumatic power for aircraft.

TODAY *AiResearch concentrates on helping to make America's commercial transports and military fighting planes the best in the world.*

TOMORROW *this proven ability will be available to meet new problems in the advance of aeronautics and in other fields of industrial enterprise.*

AiResearch Manufacturing Company

A DIVISION OF THE GARRETT CORPORATION

LOS ANGELES 45, CALIFORNIA

AND MANUFACTURER OF AIRCRAFT EQUIPMENT IN THESE MAJOR CATEGORIES

Electric Actuators | Heat Transfer Equipment | Cabin Superchargers | Pneumatic Power Units | Electronic Controls | Cabin Pressure Controls | Temperature Controls

TECHNIQUE

Baby Jet for Light Planes

Flying farmers, business executives, and others with their own light planes may soon become jet jockeys after tests have been completed on this "baby jet" being developed by Northrop. With a calculated thrust of 340 pounds (the J-47s in Sabrejets have 5,200), the Centriflow is expected to jazz up small planes to around the 300 mph class. Above, a Northrop Aeronautical Institute engineering student takes a close look at one of the jet's inner burners. The engine has four of these combustion chambers. Installed parallel to the engine axis, they permit a powerful, compact structure that is still lightweight (172 pounds for the whole unit). The Centriflow, now being ground tested in a special bed, will shortly be installed in a Ryan Navion to check its flight behavior. There are no immediate plans for production or sale. The engine, just over sixty-seven inches long, has a over-all diameter of twenty-six inches and a thirteen-inch air scoop entry. Students at the Northrop Institute built this engine and two earlier models to gain practical knowledge in advance courses of powerplant design.

The Wings You Love to Touch

Filling in dimples on the wings of Stratojets partway along the production line becomes a simple matter when workers use 3M Sealer EC-967, a product of Minnesota Mining and Manufacturing Co. The smoother, applied as a paste, sets to a tough but flexible solid that fills in depressions left by bolt heads. After curing, the sealer is trimmed to a smooth, flush surface. It withstands water, oil, fuel, and outside weathering.

Ready for a Fast Get-away

You don't have to wait long for an ice-free windshield when you're in the driver's seat of an F-89. Speedy de-icing is a must for Northrop's Scorpions, first AF planes to be designed as all-weather interceptors. Scorpions have gone through a series of cold weather tests at the Climatic Hangar at Eglin AFB, Fla., where technicians manufacture fair weather or foul. De-icing systems were checked at temperatures from twenty degrees below zero to minus fifty. Further cold weather evaluation tests are scheduled to be made at an Alaskan base.

Double Duty at FEAF X-Ray Shop

Patients and aircraft parts get identical X-ray treatment at the FEAMCOM hospital, in Japan. S/Sgt. William Horner, radiological technician, has decided he'd rather work with parts like this propeller nose section than with people. The parts don't wiggle around, he says, and don't have to be told to "hold it." Certain aircraft parts, from FEAMCOM shops, are X-rayed as a safety measure. Imperfections in some newly made or reclaimed castings quickly show up on the X-ray plates. The technique is old hat in stateside factories but a new twist to operations at this Far Eastern hospital.

Spring Fashion Note

Lighter and safer chutes are in the offing. ARDC's newly developed automatic-opening parachute weighs in at twenty-two pounds, twenty percent lighter than present models. It can be set to pop at a given altitude or after a specified time and can also be opened manually. Virtually free of oscillation, the chute has a very low opening shock.

Convair's Delta

Scheduled for early delivery to NACA for further tests, Convair's high speed research plane climbs during USAF tests at Edwards AFB, Calif. An afterburner bolsters the J-33 engine on the XF-92A.

Air Conditioning

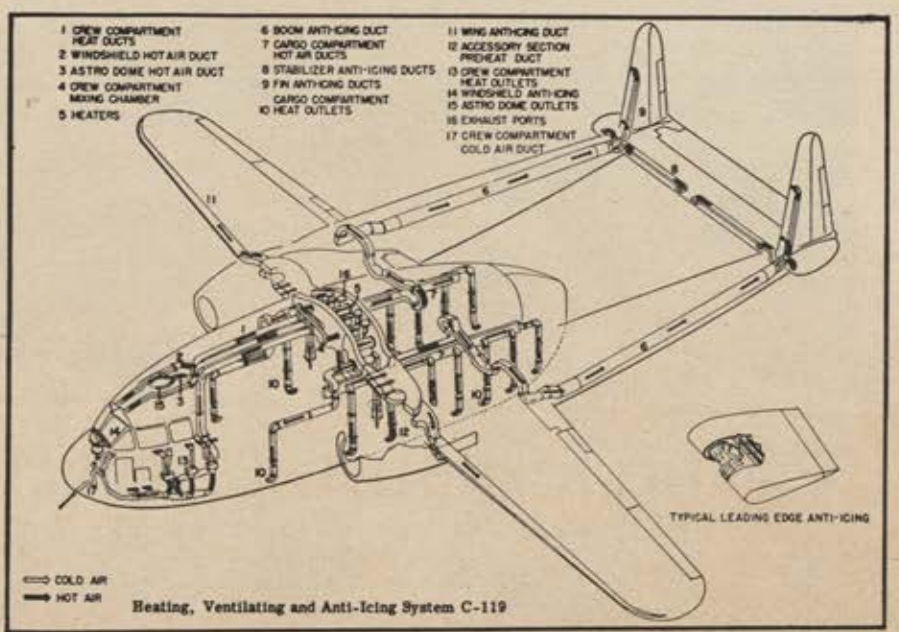
With eight heating units putting out enough heat to warm twenty five-room houses, keeping ice off the wings of C-119s or off the passengers inside is no problem. In flight, air is rammed into a leading edge scoop in each wing. Ducts carry heated air to the wings, crew and cargo compartments, and through the booms to the tail. Warm air blown between double thicknesses of cockpit glass assures clear vision.

Modernized Fleet

The last B-36 to get jet engine pods added beneath its wings stands ready for its delivery flight to SAC, winding up a modification program that has turned a fleet of B-36B's into modernized D's. Addition of the four J-47 jets gives the Convair intercontinental bombers 42,000 hp, or more than 435 mph eight miles up.

Feathering a Nest

A powerplant installer draws last minute trim lines on a nest of baffle rings at the Fairchild Aircraft Division, Hagerstown, Md. When installed on engine mounts, the stainless steel rings look like collars around the powerful twin-3,500 hp Pratt & Whitney engines of the C-119 Flying Boxcar. The practical purpose of the baffle rings is to form a fire seal between the engines' combustible forward section and the maze of fuel and oil lines which lead in and out of the rear of the engine.

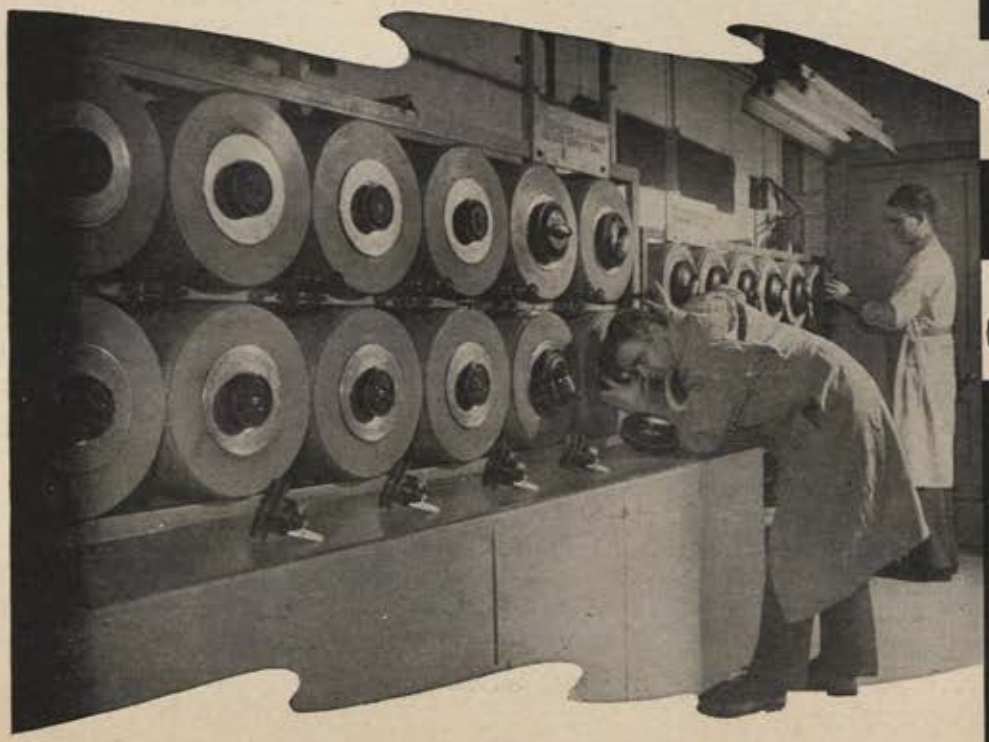


Heating, Ventilating and Anti-Icing System C-119

PAC PRESSURIZATION & TEMPERATURE CONTROL UNITS....

Are Known by the Company They Keep!

- Air Materiel Command
- Aviation Supply Office
- Avro of Canada
- Bell Aircraft
- Boeing
- Brooks & Perkins
- Canadair
- Convair
- Dalmo-Victor
- Douglas
- General Electric
- Godfrey Engineering Co. Ltd.
- Hamilton Standard
- Lockheed
- McDonnel Aircraft
- North American
- Northrop
- Solar
- Stratos Division
- Temco



PACIFIC AIRMOTIVE CORPORATION

MANUFACTURING DIVISION

From Jennies to Jets since 1928

PAC

ENGINE OVERHAUL

PAC's engine and accessory overhaul shops have been servicing airlines, corporations and private customers for 24 years.

AIRFRAME OVERHAUL

PAC's 24 year dependable service record is unequaled. With over one million sq. ft. and thirty depts. to serve commercial and military aircraft.

MANUFACTURING

Specialized personnel and facilities for engineering and development of Pressurization and Temperature Control Equipment. Standard equipment on 90% of all jet aircraft.

PARTS—SALES & SERVICE

Distributors for the leading aircraft parts manufacturers for 24 years — servicing customers all over the world.

PACIFIC AIRMOTIVE CORP.

BURBANK, CALIF.

Other operating divisions at...
Chino & Oakland, Calif.
Seattle, Wash.
Kansas City, Kan. & Linden, N.J.

Mobilization News

NO CHANGE is AF policy for release of Organized AFR and ANG airmen is scheduled at present time although Hq. USAF has told field commanders "more rigorous application" of existing policy is desired. Under present policy, these airmen may be released if they have less than six months to serve and are excess to immediate local requirements. . . More than 650,000 new veterans -- those with service since June 27, '50 -- have been discharged from active duty.

GENERAL GUIDES for establishing eligibility for return of FEAF personnel are: Fighter pilots - completion of 100 missions. Bomber crews - completion of fifty missions. Transport crews - completion of 750 flying hours, or one year. In practice, fighter pilots have been returning with from eighty to 120 missions completed. Bomber crews have averaged just under fifty missions. Transport crews generally have completed full 750 hours, or one year.

NINETEEN-YEAR-OLDS may now apply for Aviation Cadet training. Airmen in basic training will get career counselling in pilot and observer fields and may apply for cadet training at indoctrination centers. . . AF wants up to 5,000 Cadet applicants each thirty days. Four month processing period formerly required of civilians desiring to enter AF flying training directly has been reduced to maximum of four weeks.

AF RESERVISTS, who are WW II vets, may hold any Reserve assignment when released from present active service without obligating themselves for further extended active duty other than authorized under existing law. Under present law, AF WW II vets who have served on active duty during Korean war will not be recalled again without their consent except in time of war or national emergency declared by Congress. This applies to all Organized, Volunteer, or Inactive Reservists who have twelve months of active service between December 7, '41, and September 2, '45.

QUOTAS for AF Officer Candidate school will be roughly doubled beginning with class entering in June. Present classes are running about 300.

NATION-WIDE SURVEY of estimated 295,000 Reserve officers and airmen announced in this magazine last month will get under way in near future. Twenty-five traveling teams will handle most interviewing by personal contact in the one-year program. Those residing in relatively isolated areas will be contacted by mail.

MOST of 7,151 AF-ROTC students graduating from college this spring are expected to receive six-week summer camp training before entering active duty. . . No plans exist for recalling the five ANG wings remaining under state control. . . An estimated 10,000 ANG officers and airmen will take part in two-week field training exercises this summer. . . Twenty-five of the 175 dentists to be inducted during May will go to USAF. . . The 4,188 officer members of Inactive Air Reserve will soon be allowed to apply for EAD.

USAF SURVEY conducted among Reserve Forces personnel recalled since Korea revealed: about sixty-seven percent of officers and fifty-two percent of airmen report they used their previous military experience and training "all, most, or about half the time," in present assignment; about sixty-five percent of officers would accept Regular commission, fifty percent stipulated a grade requirement, but fifteen percent said they would take Regular appointment in any grade; of recallees since Korea, eighty-one

percent of officers and thirty-three percent of airmen had some college training; average age of officers was thirty, and airmen twenty-five.

OPERATION of AF-ROTC will be transferred from ConAC to Air University, Maxwell AFB, Ala., effective August 1. Transfer will bring under one command complementary missions of Air University and AF ROTC. . . Rated personnel in CAP now totals 15,399, of whom 13,429 are pilots and 1,970, observers.

RESERVE OFFICERS voluntarily serving on EAD under AF service statements at time of Korea may return to civilian life on expiration of these contracts. These officers may remain on EAD by signing voluntary indefinite statements. Reservists who already have completed tours under their service statements and are currently serving under involuntarily extended tours may separate or (1) volunteer to continue AD for indefinite period, (2) volunteer to continue AD until completion of present expansion period (twenty-one months). About 7,500 officers are affected by this ruling. . . Recalled Reserve forces officers who have received temporary promotions while on AD are currently reverting to their permanent component grades upon relief from EAD.

AIRMEN serving under an enlistment for indefinite period have been advised to withhold resignations until they have completed four years in their indefinite enlistments.

ACTION is being taken to increase assigned strengths of existing WAF overseas squadrons to level comparable to WAF squadrons in ZI. (About fifty WAFs per month will be shipped from major ZI commands to WAF overseas squadrons.) First group will be selected for shipment in May or June. Requirement of one year of military service (prior to overseas shipment) remains in effect.

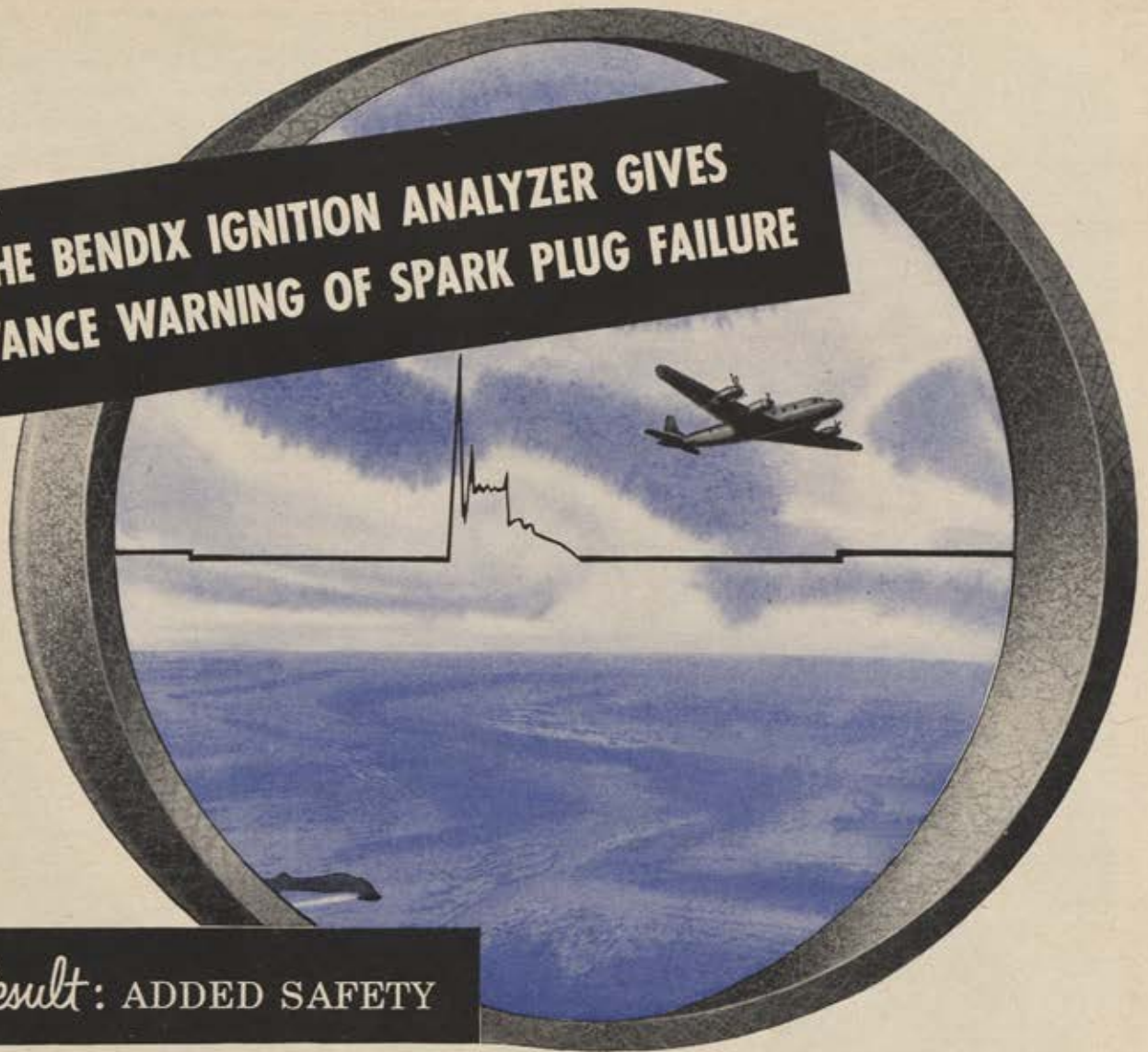
FLYING will be resumed this summer in AF Reserve training program. After July 1, AF Reserve Training centers located in about twenty states will begin to receive transport, bombardment, and fighter-type aircraft, as well as training planes. In general, the 1952-53 flying program for AF Reserve will be similar to that followed during 1949-51.

165,000 Reserves and Air Guardsmen -- 56,000 officers and 109,000 airmen -- have been called to EAD since start of Korean war. Seventy-eight percent of AF officers in Korea are non-Regulars; eighty-two percent of all active service officers are non-Regulars. . . On Dec. 1, 1951, AF officers and airmen totaled 897,366. . . Pentagon population now totals 32,000, of whom approximately seventy percent are civilians.

PAYMENT of $200,000,000 dividend to some five million holders of NSLI policies began last month. VA dividend goes to those having policies on which they paid premiums for three months or more between 1951 and 1952 anniversary dates. Policy-holders wishing to receive the new dividend in cash must so notify VA. . . Total of 280 veterans of World Wars I and II are now serving in 82d Congress.

BLOOD COLLECTIONS for twenty-fifth week of Armed Forces Blood Donor program totaled 79,194 pints of whole blood. During week of February 25-March 2, program surpassed weekly goal of 75,000 pints. Weekly quota was established to meet requirement for about 3,000,000 pints by June 30. Total collected through March 2 was 1,593,804 pints.

THE BENDIX IGNITION ANALYZER GIVES ADVANCE WARNING OF SPARK PLUG FAILURE



Result: ADDED SAFETY

THE POINT OF NO RETURN BECOMES A POINT OF ASSURANCE

The Bendix Ignition Analyzer actually *foresees the future* by predicting the remaining life of spark plugs. With the Ignition Voltage Control the operator can determine the present efficiency of all spark plugs and put the finger on any weakness in the system—even though it has not yet affected the operation. If the control reveals impending trouble, corrective action may be taken *before* material harm takes place. With an airborne installation of the Ignition Analyzer, the test can be made before an over-water flight reaches the point of no return. By viewing the wave forms on the face of the 'scope and comparing with known patterns, the operator can quickly make the *right* choice . . . to return without mishap, to operate at reduced power and prevent complete engine failure or to continue safely at cruising speed.

So, for maximum safety and operating efficiency it pays to make provisions for installation of a Bendix Ignition Analyzer on all your aircraft.

Detailed information available on request.

Costs Less—Does More

The Bendix Ignition Analyzer is available for either airborne or portable-airborne installations. It can be used with either high or low tension magneto or battery ignition. It is the ignition analyzer that can predict spark plug failure before it occurs . . . make an efficient check of more than one spark plug at a time and do so on a large, easy to read screen . . . yet it costs less than comparable analyzers.

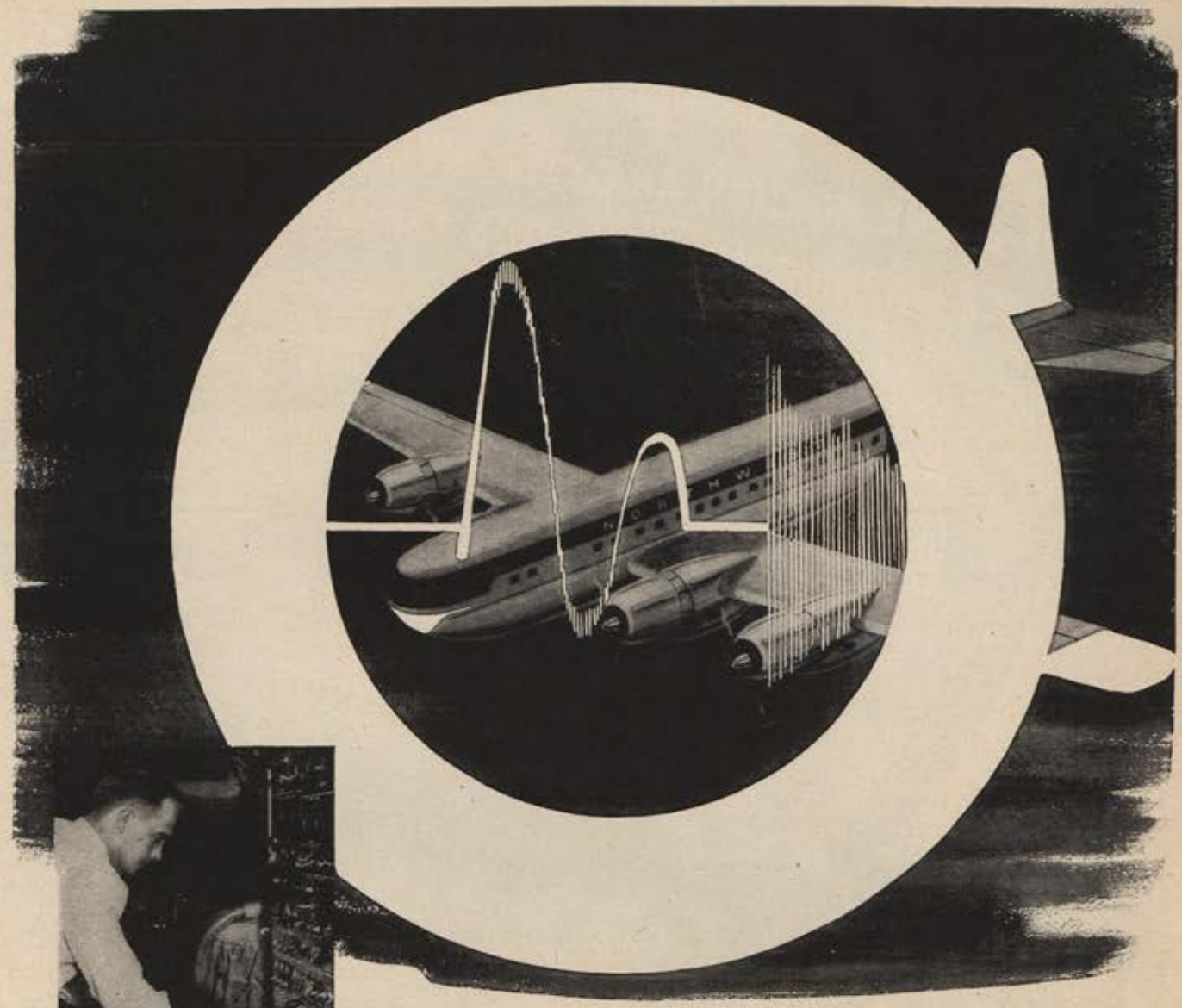
Bendix

SCINTILLA MAGNETO DIVISION OF
SIDNEY, NEW YORK

Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

FACTORY BRANCH OFFICES: 117 E. Providencia Avenue, Burbank, California • Stephenson Building, 6560 Cass Avenue, Detroit 2, Michigan
Brouwer Building, 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California



Saving Ground Time in Mid-air . . . with the Sperry *Engine Analyzer*

► Now Northwest Airlines saves ground time in mid-air! With the Sperry Engine Analyzer installed on all Northwest Airlines' Stratocruisers, flight engineers can get a continuous visual analysis of each engine's performance *while in flight*. Graph-like patterns on the Analyzer scope locate and identify irregularities in power plant operation.

► Upon landing, flight log information directs maintenance crews immediately to those parts that require servicing . . . avoids prolonged engine running on the ground.

Result: Northwest Stratocruisers spend more time in the air—less time on the ground.

► Sperry's Engine Analyzer is the first complete instrument provided for aircraft to isolate detailed engine difficulties. This instrument pays for itself in a matter of months. Aside from saving ground maintenance time, it also enables the flight engineer to maintain proper operating techniques at all times . . . prevents unnecessary component replacements.

► The Sperry Engine Analyzer reflects this company's many years of experience in the precision manufacture of instruments designed to aid aviation.

SPERRY ENGINE ANALYZER IS MANUFACTURED AND LICENSED UNDER JOHN F. LINDBERG, JR. PAT. NO. 2518427. OTHER U. S. AND FOREIGN PATENTS PENDING.

SPERRY *GYROSCOPE COMPANY*

DIVISION OF THE SPERRY CORPORATION

GREAT NECK, NEW YORK • CLEVELAND • NEW ORLEANS • BROOKLYN • LOS ANGELES • SAN FRANCISCO • SEATTLE

IN CANADA – SPERRY GYROSCOPE COMPANY OF CANADA, LIMITED, MONTREAL, QUEBEC

Electronic Flight Simulators for New Safety in Flight

Military and airline pilots and crews are now being trained more thoroughly than ever before . . . as the result of Curtiss-Wright "firsts" in Electronic Flight Simulation.

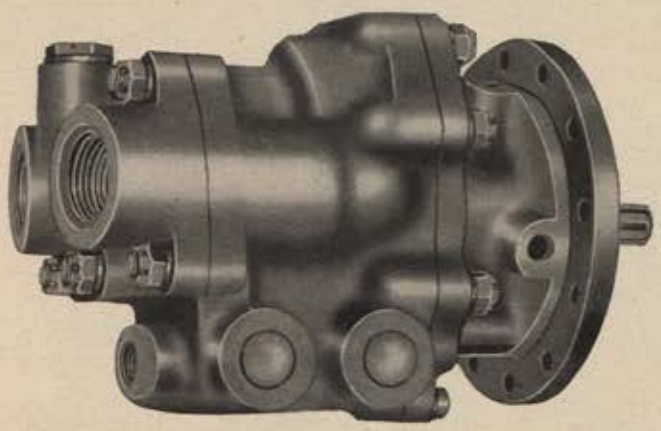
By realistically reproducing the in-flight characteristics of actual aircraft, Curtiss-Wright Flight Simulators permit problems . . . too dangerous to create in the air . . . to be practiced over and over again on the ground until coordinated response to emergencies becomes automatic.

ELECTRONICS DIVISION

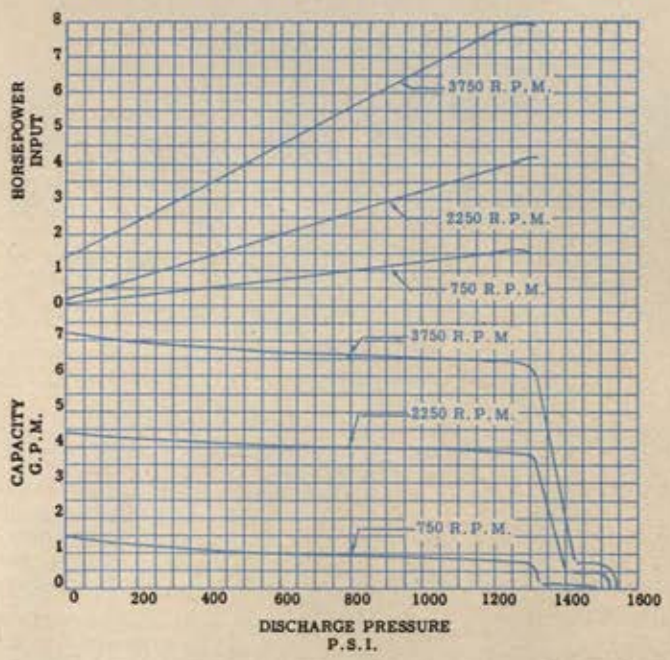
CURTISS-WRIGHT

CORPORATION • CARLSTADT, N. J.

SIX BIG REASONS for using Pesco unloading hydraulic gear pumps:



Capacity: 2 g. p. m. @ 1500 r. p. m. @ 1250 p. s. i. Maximum operating pressure 1500 p. s. i. Weight: 8.9 lbs. approx.



This chart shows performance characteristics of Pesco Unloading Pump. Write for detailed engineering drawings and performance data.

1. Fewer parts

2. Easier to recondition

3. Longer service between overhaul periods

4. Lighter weight

5. Lower initial cost

6. Lower maintenance costs

The Pesco *Unloading* Hydraulic Gear Pump is the most economical and dependable pump built for applications where a variable volume of hydraulic fluid is required. This Pesco pump automatically adjusts flow of fluid to increasing and decreasing demands of the hydraulic system. It incorporates a main and a pilot pump as well as unloading and relief valves in one unit. And it's "pressure loaded"—Pesco's exclusive, patented design principle that assures extremely high operating efficiencies over a long, trouble-free pump life because it *automatically* compensates for wear. For the complete story write today.

engineering Pesco production

PRODUCTS DIVISION

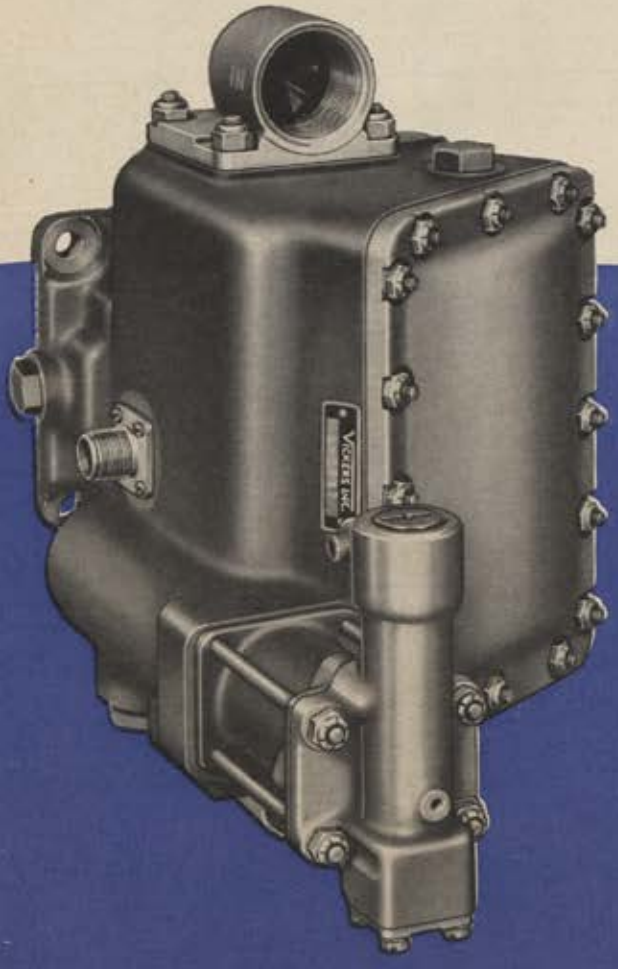
BORG-WARNER CORPORATION

24700 NORTH MILES ROAD BEDFORD, OHIO

NEW

VICKERS

EDV* PUMP



*Electrically Depressurized Variable

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.

AUTOMATICALLY DEPRESSURIZES

entire hydraulic system when demand ceases

AUTOMATICALLY RESTORES

system pressure at instant demand reoccurs

VICKERS Incorporated • 1526 OAKMAN BLVD., DETROIT 32, MICH.

DIVISION OF THE SPERRY CORPORATION

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

MIG ALLEY—CONTINUED

out of their Manchurian sanctuary and they failed to stop the air attacks on their supply lines. The Sabre fighter is now so effective that the fighter-bombers are again hitting the railroads north of the Chongchon River in MIG Alley itself. This is an area they avoided since the MIGs came out in force last fall.

But there are many signs that the Communists may soon try again—and with better weapons. New, improved types of Red jet fighters have been sighted in MIG Alley. The count of MIGs in Manchuria continues to increase and the pool of trained Red pilots is steadily rising despite combat losses. The performance of the MIG-15 as an aircraft and the performance of its pilots in flying and gunnery have improved noticeably through the winter. Thus, while paying tribute to the Sabres and their pilots, both the old pros and the eager kids, who are holding the line in MIG Alley, we can take little consolation for the future.

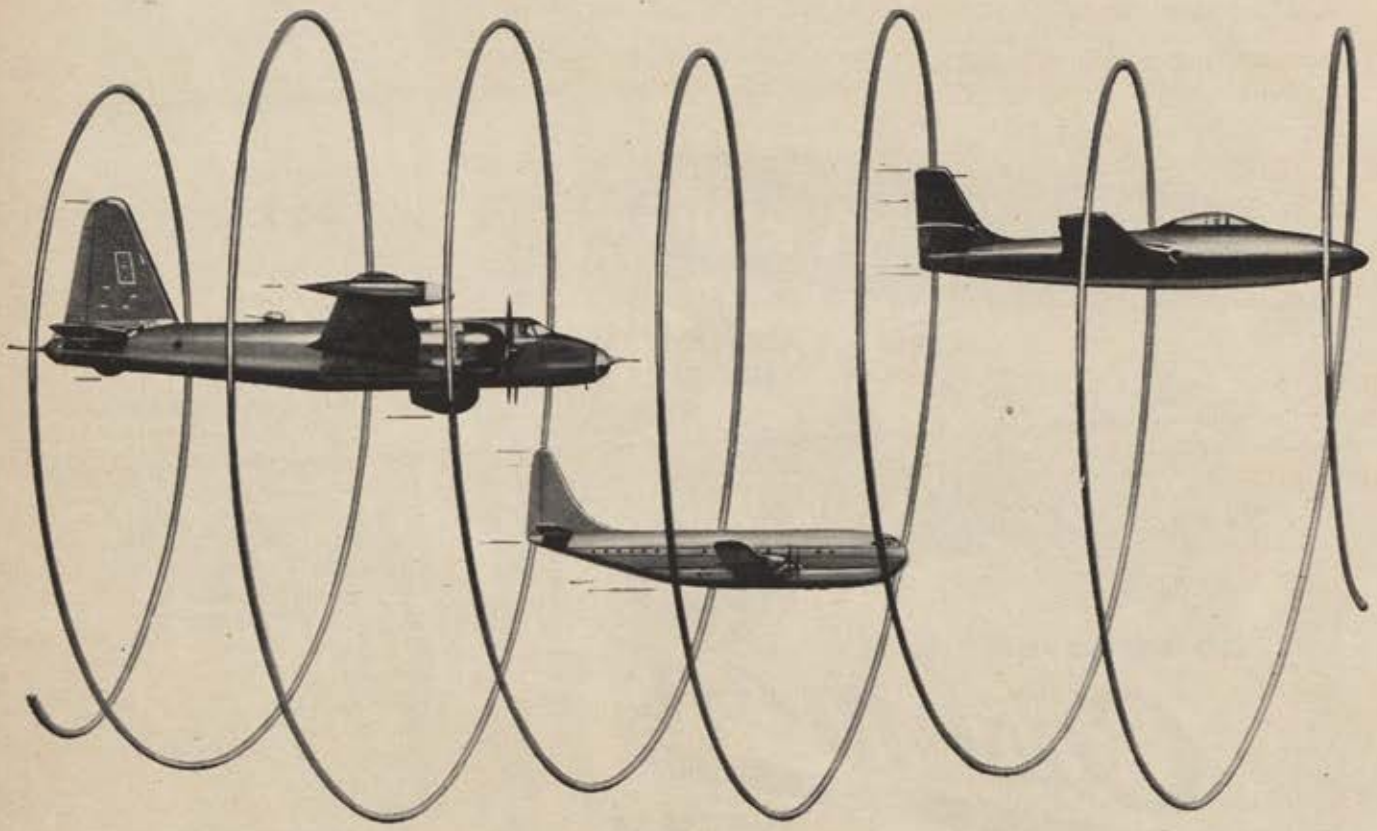
And the Sabres are still badly outnumbered.—END

ACROSS THE NATION

● **The Air Force's need for volunteers, especially for applicants for aviation cadet and pilot and observer training, for WAFs, and for airmen technicians, will be featured during the week of April 19-26 in the windows of hundreds of retail merchants across the nation. The drive is being sponsored as a public service by the National Retail Dry Goods Association.**

CREDITS:
Cover by Charles deM. Barnes; page 30, photo of Dr. von Karman courtesy of Dr. Hugh L. Dryden, Director of NACA; page 31, diagrams by Watson Holley; pages 38 and 60, sketches by Sgt. Mort Rosenfeld.

NO BLIND SPOTS
NO FALSE ALARMS



New **KIDDE** Continuous Detector Warns of Fire in **3** Seconds!

The secret of the new Kidde Fire Detector is in the ceramic insulation of the two small Inconel conductor wires. Encased in a thin-wall Inconel tube, they form the continuous fire-sensing element that encircles the power plant.

At normal temperatures, the ceramic resists the flow of current between conductor wires. Fire rapidly lowers the resistance of the ceramic, permits a flow of current, thus actuating the alarm.

When the fire is out, the resistance of the ceramic is restored and the alarm shuts off. No manual operation is necessary for resetting. The complete detecting system can be readily tested in flight by depressing a test switch on the instrument panel.

Write today for full information about Kidde's latest development in aircraft fire detection.

- **INDICATES "FIRE OUT" IN 15 SECONDS**
- **RESETS AUTOMATICALLY**

Kidde

Walter Kidde & Company, Inc.,
412 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

ROGER becomes ROMEO

IT USED to be "Roger, over and out," but now it's "Roger" that's over and out. The old A-Able, B-Baker, C-Charlie phonetic alphabet of the last war has been scuttled in favor of a new one designed for world-wide use in air-ground voice communications.

The new pronouncing alphabet, developed by the International Civil Aviation Organization, went into effect at all internationally used airport control towers April 1. Its eventual adoption in US domestic operations is expected.

Roger wasn't the only casualty. There's no more Uncle Sugar, and in fact, only one word—Victor—remains intact from the World War II list. The others in the ICAO alphabet were chosen because they're universally recognized and can be pronounced with much the same sound in all languages. That wasn't the case with the old set (a Frenchman would have said something like "dzeeg" for "jig"). Foxtrot, Tango, and Whiskey all make more sense to foreigners than the old words did.

THE NEW ALPHABET

A	Alfa	
B	Bravo	Brah' voe
C	Coca	
D	Delta	
E	Echo	
F	Foxtrot	
G	Golf	
H	Hotel	
I	India	
J	Juliett	Jool ee yet'
K	Kilo	Kee' loe
L	Lima	Lee' mah
M	Metro	Met' roe
N	Nectar	
O	Oscar	
P	Papa	Pop' a
Q	Quebec	Kay beck'
R	Romeo	
S	Sierra	
T	Tango	
U	Union	
V	Victor	
W	Whiskey	
X	Extra	
Y	Yankee	
Z	Zulu	

THE TWO WORLD WARS

	WW II	WW I
A	Able	Able
B	Baker	Boy
C	Charlie	Cast
D	Dog	Duck
E	Easy	Easy
F	Fox	Fox
G	George	George
H	How	Have
I	Item	Item
J	Jig	Jig
K	King	King
L	Love	Love
M	Mike	Mike
N	Nan	Nan
O	Oboe	Opal
P	Peter	Pup
Q	Queen	Quack
R	Roger	Rash
S	Sugar	Sale
T	Tare	Tare
U	Uncle	Unit
V	Victor	Vice
W	William	Watch
X	X-Ray	X-Ray
Y	Yoke	Yoke
Z	Zebra	Zed

An old-fashioned dollar's worth! Compare the fares!

Basic one-way fares on United have gone up only about 4½% since 1941—much less than first-class surface fares! Here are some examples of how they now compare!

	First-class rail plus lower berth	First-class DC-6 Mainliner	SAVING BY FLYING UNITED
CHICAGO-NEW YORK	$49.79	$44.10	$5.69
PHILADELPHIA-DETROIT	$35.51	$26.85	$8.66
NEW YORK-SAN FRANCISCO	$144.45	$175.85	No tips aloft, and United's fares include meals so you still save.
LOS ANGELES-SEATTLE	$59.41	$63.55	

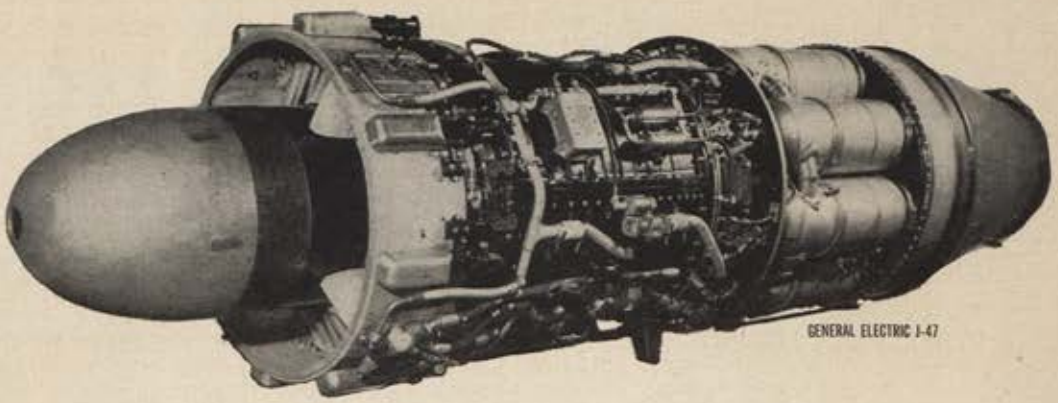
Tax not included in above fares.

Not only are United fares almost as low as 1941, in contrast to most products and services, but the quality and speed of Mainliner transportation have greatly improved. Today you enjoy 300-mile-an-hour speed in 4-engine DC-6 Mainliners, with pressurized cabins for your comfort at high altitudes. You benefit from all-season schedule dependability. And your comfort and enjoyment are further enhanced by superior food and service. You still get an old-fashioned dollar's worth, *and then some!* Every dollar you spend on United Air Lines buys more than ever before!

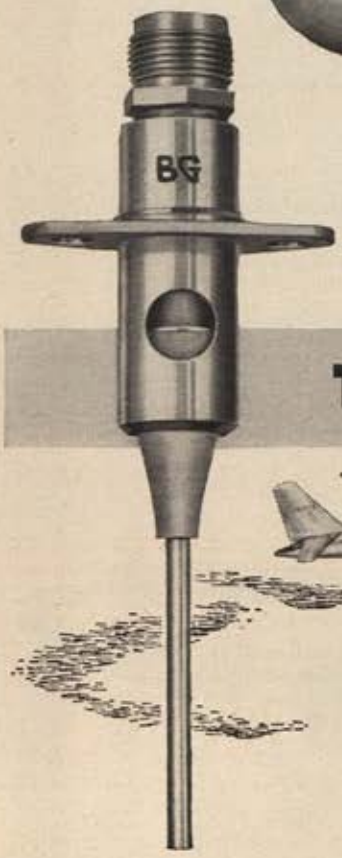
UNITED AIR LINES

ONE OF THE SCHEDULED AIRLINES OF THE U. S.

PASSENGERS • MAIL • EXPRESS
FREIGHT • AIR PARCEL POST



GENERAL ELECTRIC J-47



Our Armed Forces Rely on...

TURBO-JET IGNITERS BY BG

BOEING B-47

Meeting the specific requirements of jet engine manufacturers and the Armed Services, BG igniters are in use in many U.S.A.F. turbo jet aircraft.

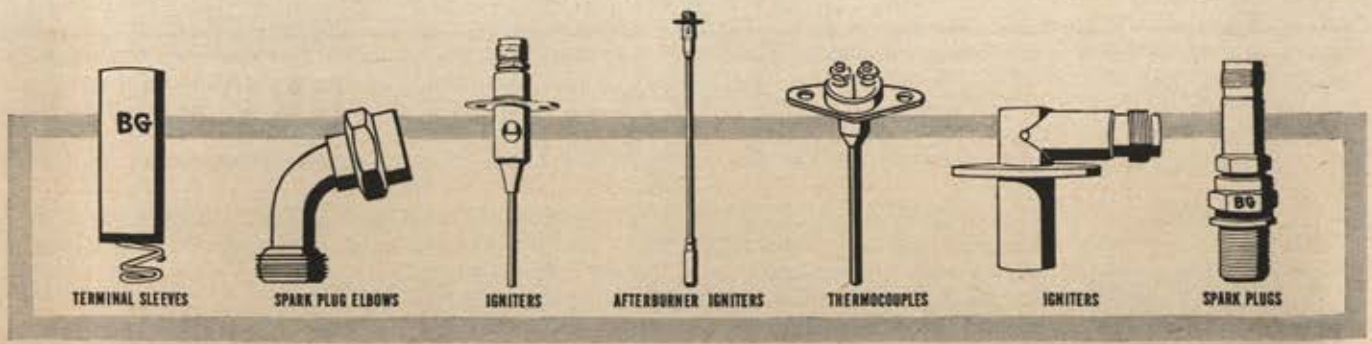
Maintaining maximum performance and durability as well as accessibility so important for economical maintenance, BG igniters are the choice of major turbo jet engine manufacturers.

Giving exceptional performance under the most rugged combat conditions, BG igniters are preferred by maintenance and engineering personnel in the jet engine field.

•

For information on this and other BG products, write:

THE BG CORPORATION
136 WEST 52nd STREET, NEW YORK 19, N. Y.



TERMINAL SLEEVES | SPARK PLUG ELBOWS | IGNITERS | AFTERBURNER IGNITERS | THERMOCOUPLES | IGNITERS | SPARK PLUGS

Letter from CANADA

The unpublicized Canadian defense effort

OTTAWA

I RECENTLY noted an Associated Press dispatch which caused a good deal of comment up here, and which I am afraid created a most inaccurate impression among readers in the US. The story was about F-86E fighters of two of our squadrons which were being moved to the United Kingdom aboard the Canadian aircraft carrier HMCS Magnificent. The aircraft had been flown to the US to be cocooned for the ocean crossing and were loaded aboard the carrier at Norfolk. The AP story referred to them as having been "donated to the RCAF under US Mutual Defence Aid Pact." Actually, they were built in Montreal by Canadair Ltd., a Canadian company, and built with money that came from Canadian taxpayers. Canada is the *only* signatory to the North Atlantic Treaty which is not, and never has been, on the US armament dole.

On the contrary, we have supplied $200,000,000 worth of military equipment to Europe and have volunteered $65,000,000 more. To October 31, 1951, in financial terms we contributed: $72,636,064 for Canada's 25th Brigade in Korea; $12,000,000 for the 27th Brigade sent to Germany; $8,951,334 for the RCAF participation in the Korean airlift; $6,639,803 for our destroyer contribution to United Nations naval forces.

I must admit to some annoyance on reading the AP story, which I gather was the result of a desk man somewhere just assuming that the aircraft must have been given to Canada by the US. However, what annoyed me more, and what is a source of worry to me, is the unhappy fact that many of your people do not know Canada as they should, and certainly do not know what we have done in the last two wars and what we are doing right now in terms of western defence. I will not say that every Canadian knows as much about the US as he should, but we certainly do know the terrific job that you did during the last war, and are doing now, to preserve our way of life. However, we feel that we are pulling our weight, too, and I am sure you will agree that it would further understanding between our two nations if this fact could be more generally recognized in the US.

In the prewar era, the one thing which made the British so unpopular throughout the world, even among English-speaking peoples, was their superior attitude—the Lords of Creation pose. It shouldn't be news when I say the loud-mouthed boasting of certain of your nationals doesn't go down well with other nations, particularly in these days when there is a resurgence of nationalism everywhere. Canadians have been rather envious of the American attitude of world champion of everything—that anything American is the biggest and best in the world. It rather amuses us now to see you getting a taste of your own medicine when the Russians claim to be "first and foremost" in everything.

That was all very well while the USA was isolationist. It was little skin off our backs while we were an outpost of Empire and before we began to take an independent role in world affairs. Now that the USA has a global outlook and world responsibilities, it would seem to me high time she learned about those who live next door.

How many people in the US, for instance, know that we have a pretty lusty young aircraft industry here in Canada, which, during the last war, produced 16,448 military aircraft, overhauled and repaired 6,539, and which employed at peak 120,000 workers? This was the effort of an industry which in 1939 had orders on hand for less than 200 machines and which employed about 1,000 people.

Right now our aircraft industry is turning out Canadian-built F-86E Sabres, produced under agreement with North American Aviation, and for the use of the RCAF. It is also producing the CF-100 all-weather, long-range jet fighter, equipped with a Canadian designed and built jet engine, the Orenda. Rolls-Royce is to produce in Canada the Nene jet engine, to be used in the Canadian-built T-33 jet trainer. De Havilland Aircraft of Canada is producing the Chipmunk trainer, in use as a reserve trainer by the RCAF, and also the Beaver, used in the US as well as Canada.

We have made our initial contributions to the eleven-squadron Air Division which we are to supply to the Integrated Force commander in Europe, and we have two Army Brigades overseas, one in Korea and one in Europe. The RCAF has had a squadron of four-engine transports flying the Korean airlift between McChord AFB, Wash., and Japan since July 27, 1950. It has carried thousands of US troops, including wounded, in addition to equipment and supplies. We are training aircrews for Great Britain Norway, Denmark, the Netherlands, Belgium, France, and Italy in Canada, as part of our contribution to collective security under NATO. This aircrew training programme will be built up to a point where we shall be training about 1,400 from abroad each year. All this is being done on a volunteer system, and not by draft.

I hope you will accept this as it is meant, not as an attempt to boast about our efforts, for we realize full well that by comparison with you we are a small nation, and that our efforts cannot match yours in scope. Rather, I hope that my remarks will be taken as an effort to show that we realize our responsibilities and that we are doing our level best to carry our full share of the common burden.

AFA has a battle on its hands, I know, to get the airpower idea across to the American people. I have also never really thought of the RCAF Association as being in any way the custodian of public culture. On the other hand, I do think our two Associations could very well promote better knowledge of one another. Canadians are saturated with American literature and American entertainment, and therefore, I believe, have a better knowledge of life in the US than Americans do of us. So it would follow that the main responsibility is yours. Fortunately, you also have better means than we do for spreading information. But, let me emphasize, if there is *anything* which you feel we may effectively do to enlighten our own people regarding the USA, we are ready, willing and anxious.

Lloyd Jenkins
Executive Assistant
Royal Canadian Air Force Association

AFA, RCAFA Leaders Swap Ideas As Canadians Visit Washington

Officials of the two groups propose 4-point program to spur the common cause of airpower

AFA was honored recently when three national officers of its Canadian counterpart, the RCAF Association, visited Washington. Air Vice Marshal A. L. Morfee, President, Lloyd Jenkins, Executive Assistant, and Robert McCartney, Secretary, made the trip to take a look at AFA operations and discuss ways the two organizations can work together in supporting airpower for international security. Col. F. A. Pillet, USAF Air Attache to Canada, piloted the B-17 which brought the Canadians to Washington.

A highlight of the RCAFA visit was an off-the-record briefing in the Pentagon by Col. Noel Parrish, Special Assistant to the Vice Chief of Staff, USAF. Afterward more than twenty military and AFA officials attended a reception at the Hotel Statler. At the gathering were Gen. Carl A. Spaatz, AFA Director; Air Vice Marshal Hugh Campbell, Chairman of the Canadian Joint Staff; Air Commodore W. E. Bennet, RCAF Air Attache to the US; and Brig. Gen. Robert Condon, Chief of the National Organizations Branch of OSD.

AFA officials outlined a four-point program for closer affiliation of the two associations. The proposal, to be considered by the Boards of both organizations before adoption, calls for:

- Mutual recognition of membership by both associations at meetings, functions, and special occasions when members of one group visit the country of its counterpart across the border.
- Fostering better relationships between the units of each association, with an exchange of rosters and unit officers' names.
- Exchange of publications, with AFA providing a copy of AIR FORCE for each RCAFA unit, and the Canadians sending copies of ROUNDEL, official RCAF publication, to each AFA unit on a ninety-day trial basis.
- Forming an International Defense Information Committee, to consider defense matters of interest to both countries. Each association would form its own committee. Joint meetings, held from time to time, would be presided over by a chairman from the association of the nation in which a particular meeting took place.

The RCAFA members were invited to the next AFA national convention, in Detroit August 28-31, as another opportunity of letting the two groups get better acquainted.

Two of the RCAF Association officials who recently visited AFA Headquarters were Air Vice Marshal A. L. Morfee (right) Nat'l President, and Lloyd Jenkins, Exec. Ass't.

First Overseas Charter

The first AFA Squadron overseas to apply for a charter is Tokyo Squadron No. 1. Sixty members signed the charter application, just received at National Headquarters. Organization of the unit was sparked by Lt. George I. Alberts, former AFA leader from Worcester, Mass., who was recalled to active duty shortly after Korea.

AFA President Harold Stuart spoke to the organizing group during his trip to Japan and Korea last fall.

Lt. George A. Clark, FEAF Hq., was elected Commander of the Tokyo unit. Since a majority of the squadron's officers are on active duty, the unit has been designated a "Service" Squadron.

Officers named to assist Lieutenant Clark include Thomas E. Bowers, Vice Commander; Jack E. Bartlett, Second Vice Commander; Charles Bell, Secretary; Harry Rand, Corresponding Secre-

AFA Director Dr. Jerome H. Meyer (left) welcomes Republic motion picture star Forrest Tucker to Dayton during showing of "Wild Blue Yonder," story of B-29s in World War II.

Chicago Group Commander George Anderl (left) and Vice Commander Cameron Orr seem well pleased with selection of Donna Kime as "Miss B-29" during "Wild Blue Yonder."

Trained Technicians...

ARE CLEARED TO COME IN!

Special skills expertly maintain the global operations of our expanding United States Air Force. It is special skills of trained craftsmen, behind the flying skills, that keep our modern air power aloft to defend our nation.

Men with training as former specialists in any Service . . . or non-veterans with special technical talents . . . are needed *now* to support our ever-growing air might. Radio, radar and other communications specialists, weather, armament, automotive maintenance, medical technicians and many technical skills are urgently needed . . . now . . . today!

For your specialized "know-how," your Air Force offers greater opportunities for advancement, security and a rewarding sense of an important job well done.

Here, briefly is the story: If qualified, you can enter the Air Force in an attractive grade, according to your present ability. The Air Force will tell you exactly what your initial rank and pay grade will be before you join-up. Veterans, if qualified, enter in their old grade or better and will skip basic training and be assigned initially to a nearby Air Force Base.

For the rest of the story in detail, consult your local U. S. Army-U. S. Air Force Recruiting Station immediately, or *mail coupon today!*

U.S. AIR FORCE

MAIL COUPON TODAY *for Full Information*

AIRMAN PROCUREMENT
Headquarters, U. S. Air Force, Washington 25, D. C.

Please send me details about U. S. Air Force specialists.

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

SPECIALTY_____

tary; and George Alberts, Frank Low, and Gene Briggs, Councilmen. Clark's address is Hq. FEAF, Box 601, APO 925, c/o PM, San Francisco.

Joint Meeting in Florida

More than sixty AFA members and their guests attended a recent joint meeting of the Tampa and St. Petersburg Squadrons at the Officers' Club at MacDill AFB, with dinner in a private room. Jerome Waterman, department store executive and vice president of the Southeast Region of AFA, introduced Base Commander Col. B. H. Merchant who welcomed the dinner guests and offered AFA the cooperation of the entire base. He stressed the importance of AFA in putting the needs and problems of airpower before the public. Commanders of the Tampa and St. Petersburg Squadrons, Don Underberg and John Most, spoke on AFA objectives and need for new members.

With the cooperation of a Tampa night club, Waterman arranged for a floor show as part of the after-dinner entertainment. The airmen especially enjoyed "modestly dressed" dancing girls from Havana. Then two AF films, "Jet Test" and "Thunder from the Skies," were shown to the more than 150 people at that part of the program.

Airman of the Month

Members of the Providence and Cranston, R. I., Squadrons were hosts recently, for the third time, to an "Airman of the Month" from Otis AFB, Bedford, Mass. This month's top airman was Cpl. Flavie Anthony Moon, Jr., of Erwin, Tenn., now assigned to the 33d Maintenance Sqdn., 33d Fighter-Interceptor Wing. Corporal Moon was guest of the Sheraton-Biltmore Hotel while in Providence, and the manager of Loews State Theater was host to the airman during the first-run motion picture "Quo Vadis." The "Airman of the Month" program was originated in that area by William Hadley, AFA Vice President for the New England Region.

William Ivans (right), holder of the world's high-altitude record for gliders, describes his all-metal glider to Ed Kranch, San Diego Squadron CO, following recent speech to the unit.

N.Y. 'Copter Campaign

For the past two years, AFA's First Brooklyn Squadron has been campaigning for helicopter service for Brooklyn. Many issues of "Air Scoop," the Squadron's monthly publication, have called for such service, and letters have gone out to the president of N. Y. Airways and the Commissioner of Marine and Aviation for NYC, outlining the Squadron's views. The Brooklyn postmaster

Baltimore AFA'ers get a close-up of the heart of television, the camera, during recent tour of Baltimore TV Station WAAM, now carrying a 13-week show for the AFA Squadron. Looking over camera are (from left) Meir Wilensky, Squadron Secretary; J. Kilian, WAAM; John Warner, Squadron CO; and W. Cahan, WAAM.

Furlough or weekend pass...

ARRIVE SOONER STAY LONGER ... GO AMERICAN

• WHEN A LEAVE calls for travel, be sure to call American! Gain extra days for pleasure ordinarily lost to slow-moving surface transports. In addition, when you travel American Airlines, you go by famous DC-6 or Convair Flagships with comfortable pressurized cabins. Make your reservations now. You'll be surprised how little Flagship travel can cost... how much more time you can enjoy at your destination.

Serving the Leading Cities of the United States, Mexico and Canada

AMERICAN AIRLINES INC.

AMERICA'S LEADING AIRLINE

Captain Lewis L. Millett Medal of Honor

When his Infantry company was pinned down by heavy fire near Soam-Ni, Korea, Captain Millett charged alone into the enemy positions, throwing grenades, and clubbing and bayoneting the enemy. Inspired by his example, the attacking unit routed the Reds, who fled in wild disorder.

"It's an uphill struggle," says Captain Millett, "to build a working peace. Unfortunately, the only argument aggressors respect is *strength*. Fortunately we've learned this lesson in time.

"*You* can help build our strength—the defense-line of peace—by buying United States Defense Bonds. Every Bond is a declaration to the world—especially to would-be aggressors—that we aim to insure peace.

"I think a secure peace is worth working for. If you think so, too, buy U. S. Defense Bonds now!"

★ ★ ★

Remember that when you're buying bonds for national defense, you're also building a personal reserve of cash savings. Remember, too, that if you don't save *regularly*, you generally don't save at all. Money you take home usually is money spent. So sign up today in the Payroll Savings Plan where you work, or the Bond-A-Month Plan where you bank. For your country's security, and your own, buy United States Defense Bonds now! .

Peace is for the strong... Buy U. S. Defense Bonds now!

The U.S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.

replied to such a letter that he favors the move and is recommending that space be provided atop the Federal Building for landing the 'copters. The Squadron, headed by Arthur C. Wegman, has also written CAB in Washington, requesting approval of the service.

Also in N. Y., a dinner highlighted the program for installation of officers for the LaGuardia Airport Squadron. The meeting was held at the Academy of Aeronautics, of which former Wing Commander Casey Jones is president. Walt Hartung was succeeded as Commander by Robert Sitterly. Eddie Carnine prepared the meal.

Operation Flat Car

AFA's Chicago Group Council played an important part in the Civil Defense project called "Operation Flat Car," recently staged on the Windy City's lake front. Members of the five AFA Squadron's comprising the Group controlled all traffic, landing, parking, and take-offs of aircraft flying in medical supplies from all parts of Illinois. At Meigs Field the supplies were loaded on waiting trucks and delivered to hospitals throughout the city. The operation was conducted on an emergency basis, assuming all normal communications had been knocked out by an enemy. Walkie-talkie radios, teletype machines, and signal lights were the only devices used after the "bombing" of Chicago.

About 2,500 state volunteers participated in the project and hundreds of planes were used. Aircraft from downstate areas brought supplies into five terminals outside Chicago where they were transferred to CAP and private planes for the final leg of the flight to Meigs. The Chicago Group and its Squadrons received many commendations from Chicago and state officials for their efficient handling of the air phase of the operation.

Morry Worshill of 2054 Hood Ave., Chicago 24, phone Edgewater 4-1137, announces that the Illinois Wing will hold its annual convention on May 18. Worshill is Commander of the Wing in Illinois.

AF ROTC Cadet Robert Walls (right) is congratulated by ROTC officials Maj. Ord Fink (center) and Lt. Thomas Seebo upon being elected to head the AAS Sqdn. at Okla. A&M.

Ohio AFA Activities

Ohio's active Wing Commander, William Lee Birch, recently made a flying trip to National Headquarters to discuss plans for a stepped-up AFA Associate drive in the Buckeye State. Squadron leaders wishing to be read in on these plans can contact him at 16135 Euclid Ave., East Cleveland, 12.

Larry G. Hastings, Toledo Squadron Commander, has aired plans for an AFA campaign to be broadcast by Toledo radio stations as part of their public service program. The Toledo Squadron is busy with plans for the Ohio Wing Convention, May 18. Ohio AFA'ers may contact Hastings at 3855 Lockwood Ave., Toledo, 12. Phone GA. 1961, ext. 237. Plans are also going ahead toward the acquisition of a squadron clubhouse.—END

Members of the Arnold Air Society drill team at Ball State Teachers College, Muncie, Indiana, look over the nine trophies their team won during past two years of drill competition with Army ROTC teams, becoming the midwest champs.

Follow the Leader

AIR FORCE

Wouldn't you like YOUR OWN copy of *AIR FORCE* Magazine in the mail each month?

KEEP POSTED ON AIRPOWER... READ *AIR FORCE*

The Magazine of Military Aviation leads the field. AIR FORCE is complete, it's timely, it's reliable. It's read from cover to cover, from the Pentagon to Patagonia. Clip the coupon and send it in today. Join the thousands who are . . .

FOLLOWING THE LEADER

● ***DON'T DELAY . . . CLIP TODAY***

SUBSCRIPTION FORM 4-52

YES! I'd like to receive AIR FORCE Magazine every month. Please start my subscription with the next issue. I am enclosing ☐ check ☐ money order for $4 for a year's subscription to The Magazine of American Airpower.

☐ new subscription ☐ renewal

AIR FORCE MAGAZINE 1424 K St., N.W., Washington 5, D. C.

NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

Pin-pointed for its target...

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

Another FIRST for the Air Force and Convair

CONVAIR'S TURBOPROP AIRCRAFT make aviation history—XP-81, America's 1st turboprop fighter... Allison Convair-Turboliner, nation's 1st turboprop transport... P5Y, world's 1st water-base turboprop plane. And now, the turboprop T-29!

America's most experienced manufacturer of turboprop aircraft will build the first turbo-powered training planes for the U.S. Air Force. Already the producer of the Air Force's most advanced multi-place trainer, Convair now is further fortifying our air power by making an even more modern turboprop "flying classroom" for navigator-bombardiers. Training missions in turboprop T-29's will give the closest possible simulation of tactical problems.

Turboprop T-29's, like all Convair projects, were developed through engineering that aims at the maximum, the Nth degree of air power... *the Nth Power!*

ENGINEERING TO THE *Nth* POWER

TURBOPROP T-29

IN THE AIR IT'S CONVAIR

Consolidated Vultee Aircraft Corporation • San Diego & Pomona, California • Fort Worth & Daingerfield, Texas

☆ ☆ CONVAIR IS ADDING ANOTHER 1¼ MILLION SQUARE FEET OF FLOOR AREA TO ITS PLANT FACILITIES...MAKING A TOTAL OF MOR THAN 9 MILLION SQUARE FEET DEVOTED TO RESEARCH AND PRODUCTION PROJECTS FOR AIRCRAFT, GUIDED MISSILES AND ELECTRONICS