

# AIR FORCE



USAF SHARPENS ITS SABRE

*In This Issue:*

Two Exclusive Reports on Two Strategic Air Forces—Russia's and Ours!

**FEBRUARY, 1951**

Performance Points to Pesco First!

## 12 times around the world ... non-stop

That's a tough trip for any piece of equipment . . . particularly for a fuel pump that must operate continuously, with only gasoline for lubrication, and under varying conditions of altitude, temperature and sudden pressure changes.

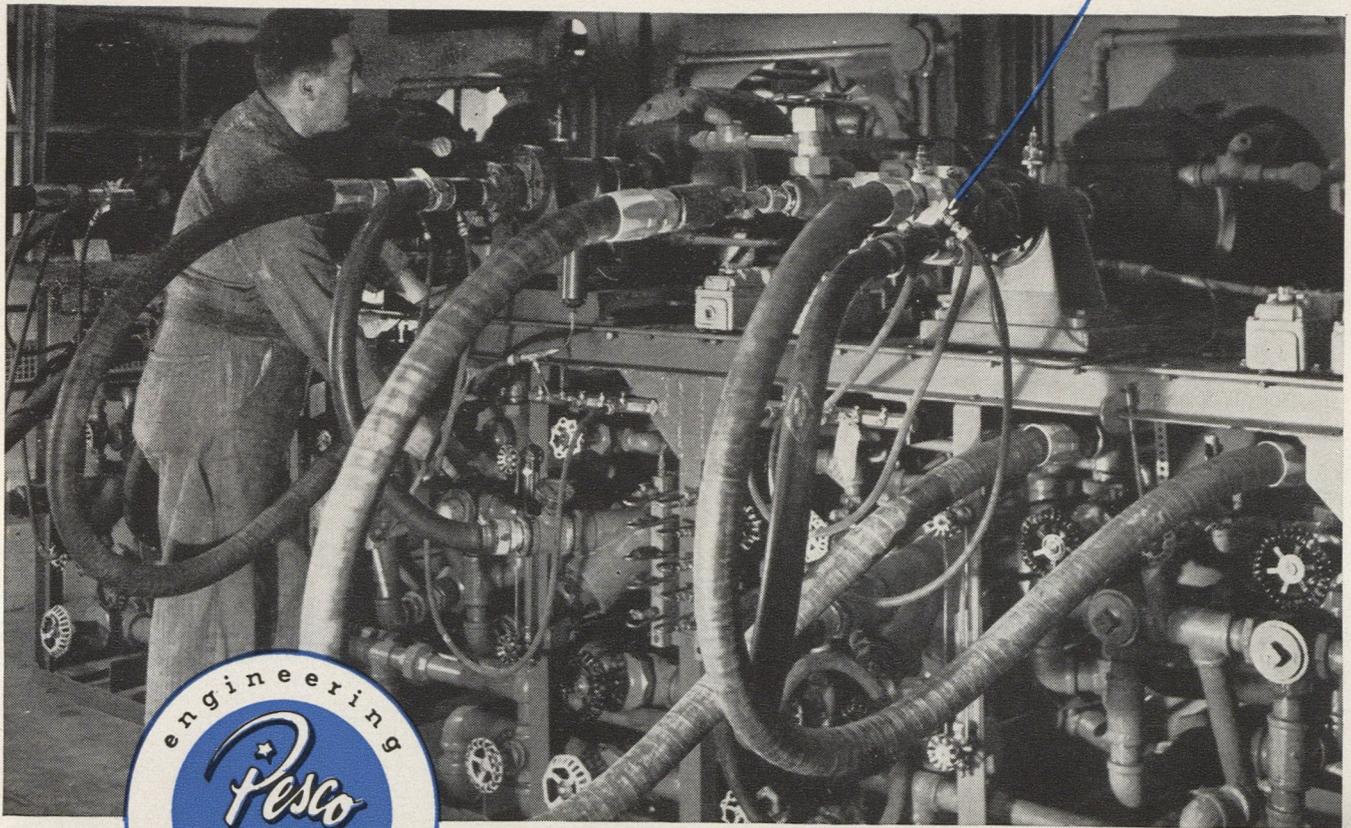
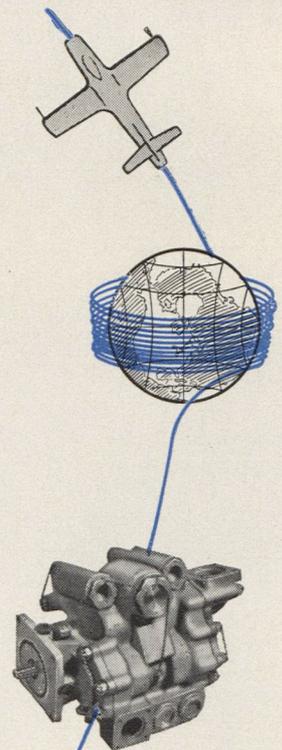
But that's exactly the kind of "flight" Pesco fuel pumps take on our endurance test bench "plane". Every conceivable operating condition is simulated on the 500-hour, continuous test run at speeds equivalent to 600 miles per hour or better.

This is just one of the many tests to which Pesco engineers subject our fuel pumps to make certain they will not fail when human lives are depending on them.

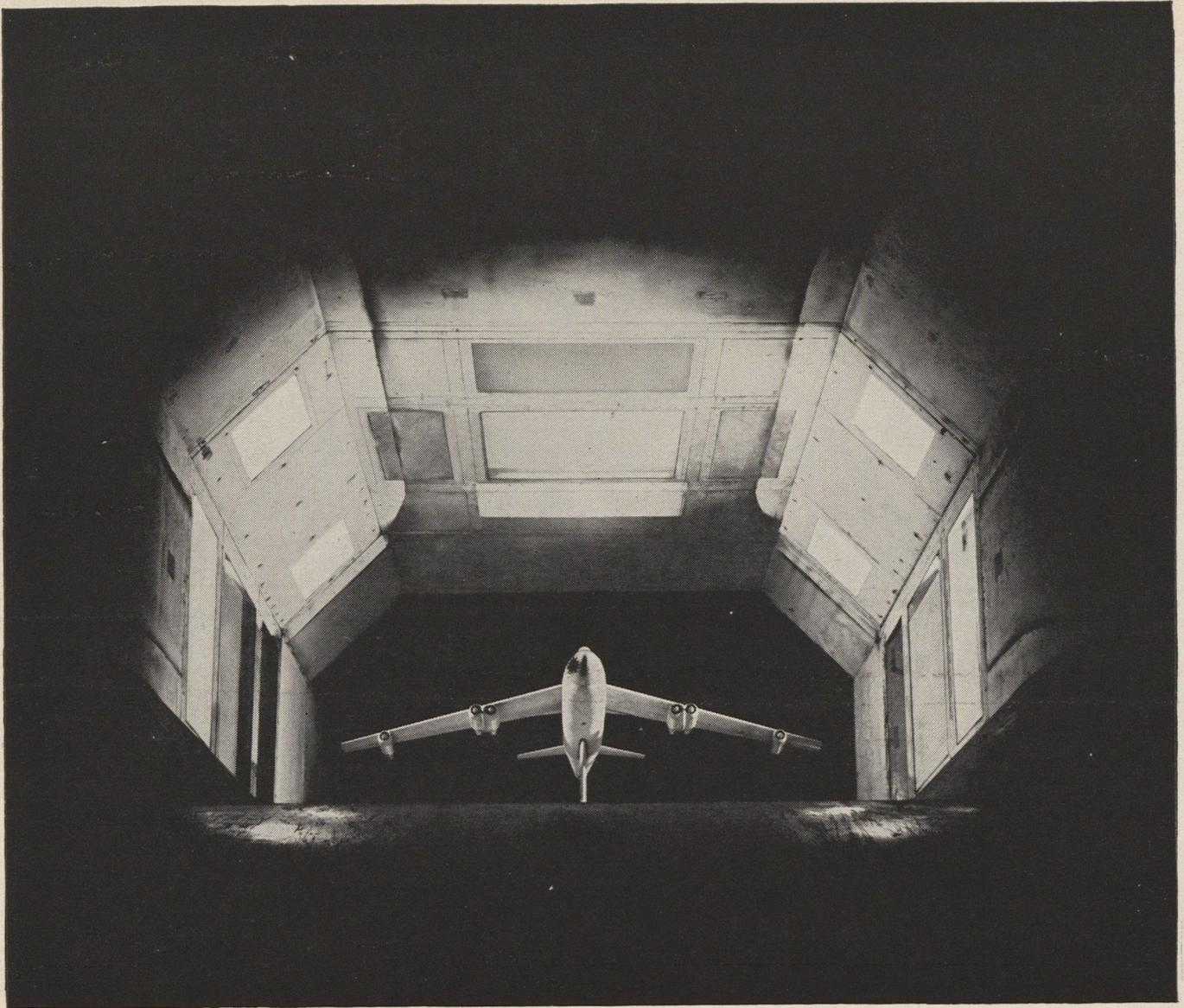
This kind of constant research and testing has enabled Pesco engineers to develop aircraft equipment and accessories so good that they have long been accepted as standard for both military and commercial planes.

Pesco research methods and precision manufacturing can produce products for you that will help your aircraft . . . reciprocating or jet . . . to operate more efficiently, more safely, over a longer period of time. Why not get the full story? Write today.

This plumber's nightmare is Pesco's endurance test bench for aircraft fuel pumps. Two 50-hp. and three variable-speed drives, with separate controls for each, and separate 165-gallon fuel tanks that can be pressurized or evacuated as desired, make it possible to simulate any kind of flight condition.



**BORG-WARNER CORPORATION**  
24700 NORTH MILES ROAD  
BEDFORD, OHIO



## *Gateway of the winds*

This is the "throat" of the great wind tunnel in Boeing's aerodynamic laboratories. Through it, forced by giant fans, blow winds of ten times gale force—winds moving at the speed of sound!

The Boeing wind tunnel is already the only one of its size, speed and capacity owned by a single aircraft manufacturer. Now being substantially expanded, its improved aerodynamic research facilities will open a new field of precision testing on advanced-type

aircraft at trans-sonic and super-sonic speeds.

Delicate instruments record every detail as scale models react to varying air velocities in the tunnel throat. Structural strains are accurately calculated. Yaw and flutter are translated into lines on a moving graph. If there is a question about any part of the plane's design, the answer shows up here.

The wind tunnel is but one example of the unique research facilities

available to Boeing's more than 3000 engineers.

Technical genius at the great Seattle plant has the finest of equipment at its finger tips. And neither equipment nor engineering know-how are limited to the field of aeronautics. The company's achievements in experimental research cover the whole broad range of technological development. When an engineering problem is put up to Boeing, you can count on results.

*Among Boeing's facilities for research and development are Acoustical, Aerodynamic, Armament, Electrical, Electronic, Flight Test, Hydraulic, Mechanical Equipment, Metallurgical, Physical Research, Propulsion, and Structural Test Laboratories, as well as the Boeing Wind Tunnel.*

# **BOEING**



## How they measure "Panther-Juice"

The Grumman F9F "Panther"—the first jet-powered carrier plane to strike at an enemy—is one of 10 types of jet aircraft now measuring fuel by the Honeywell Electronic Fuel Indicating System.

This photograph shows how the F9F's wingtip fuel tanks are refilled—using a long hose and portable ladder, since the wings fold up on shipboard.

And millions of air-miles show how *dependably accurate* the Honeywell system is—how much *more accurate* than systems that measure by volume instead of by weight.

That's due partly to a sound basic principle. Partly to excellent engineering. Partly to specialized application of every installation. *All three* are essential to superior performance. And you *get* all three on every job Honeywell does.

Minneapolis-Honeywell, Minneapolis 8, Minn.

MINNEAPOLIS  
**Honeywell**  
*Aeronautical Controls*

# AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

CONTENTS

FEBRUARY, 1951 VOL. 34, No. 2

## 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, and to perpetuate the identity and group solidarity of wartime Air Force units large and small.

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, and to stimulate community interest in Air Force activities and installations.

## ITS OFFICERS AND DIRECTORS

**ROBERT S. JOHNSON**, President

**Regional Vice Presidents:** Edward R. Tufts (New England); George Hardy (Central East); Merle Else (North Central); Warren DeBrown (Northeast); Jerome Waterman (Southeast); Thomas Campbell (Northwest); Thomas Baker (South Central); Dr. John Biggerstaf (Midwest); James McCusker (Rocky Mountain); Ray Ireland (Great Lakes); William Hensley (Southwest); Thomas Stack (Far West). **Secretary**, Julian B. Rosenthal, **Treasurer**, Benjamin Brinton.

**CARL A. SPAATZ**, Chairman of the Board

**Directors:** Edward P. Curtis, James H. Doolittle, John P. Edmondson, Meryll Frost, B. E. (Shorty) Fulton, Frank O'D. Hunter, Arthur Kelly, Thomas G. Lanphier, Jr., Roy Leffingwell, Randall Leopold, Dr. W. R. Lovelace, Dr. Paul Potter, Robert Proctor, Mary Gill Rice, C. R. Smith, James Stewart.

## FEATURES

FIRST TURBO TRANSPORT.....	4
SORTIES BY SERVICES.....	12
AFA'S 1951 REUNION!.....	16
KIDS TAKE RED CROSS COURSES.....	18
OUR 'CHUTES ARE DRAGGING.....	22
HOW STRONG IS RUSSIA'S A-BOMB FLEET William S. Friedman	25
PLANS WITHOUT PLANES.....Ned Root	30
PICTURE REPORT FROM KOREA.....	34
1950's TOP TECHNICALITIES.....	36

## DEPARTMENTS

AIR MAIL.....	6	TECH TALK.....	20
AIRPOWER IN THE NEWS....	9	MOBILIZATION NEWS.....	40
SHOOTING THE BREEZE.....	14	AIRMAN'S BOOKSHELF.....	44
AFA NEWS.....	47		



## THE COVER

The Sabres winging across the Korean sky are seen on this month's cover through the silhouette of the old twin Mustang. Combat tested for the first time, the F-86 came off with flying honors. The new swept wing fighter bested its MIG counterpart in each encounter. Their performance has been a bright spot in an otherwise dismal month.

SEE "PICTURE REPORT FROM KOREA" PAGE 34

## AIR FORCE STAFF

**JAMES H. STRAUBEL**, Editor and Publishing Director

**NED ROOT**, Managing Editor

**ROBERT FLEISHER**, Ass't Managing Editor

**JAKE CULPEPPER**, Associate Editor

**WILLIAM A. DEAN**, Art Director

**HELENA REDMOND**, Contributing Editor

**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: 380 Lexington Avenue, New York 17, N. Y., Murray Hill 9-3317. Sanford A. Wolf, Advertising Manager, Western Area Advertising Manager: David Shawe, 3974 Wilshire Boulevard, Los Angeles 5, Calif., Dunkirk 3-8976. **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:** Membership in the Air Force Association, \$4.00 per year, \$2.50 of which is for 1 year subscription to AIR FORCE. Subscription rate to non-members, \$4.00. Single copy, 35 cents. **REGISTRATION:** Trade-mark registered by the Air Force Association, Copyright, 1951, by the Air Force Association. All rights reserved under Pan-American Copyright Convention. 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.



The Convair Turboliner, powered by two Allison 2750 hp. turboprop engines, makes its initial takeoff from San Diego field.

# FIRST TURBO TRANSPORT

The United States now has a turboprop transport—the Convair Turboliner, powered by two 2750-hp. Allison 501 turboprop engines. First flight of the new plane was made in San Diego December 29th. It lasted 15 minutes and was without particular incident. Takeoff was made effortlessly at the end of a 3000 foot run and crew members reported the cabin to be singularly quiet and free of vibration during the short hop. The nagging fact that England has four turboprop transport types, one of them (the Vickers “Vicount”) already on a scheduled commercial run between London and Paris, dampened the enthusiasm of the California event only slightly.

Top speed of the turboliner is 350 mph; it cruises at 310. Gross weight is 41,790 lbs. and maximum range is between 1200 and 1600 depending on the type of fuel used.

The Allison turboprop engines produce more than twice as much power for each pound of weight as reciprocating engines now powering transport aircraft. Each engine weighs approximately 1250 pounds. Thus power-to-weight ratio of more than two to one compares with an approximate ratio of one to one in present military and commercial transports.

The 501 turboprop engines are the commercial version of the T38 turboprop engine developed by Allison under the sponsorship of the U. S. Bureau of Aeronautics. They are the first U. S. turboprop engines to pass a military flight clearance test and are the first turboprop engines to power a U. S. commercial transport in the air.

A single shaft connects the multi-stage axial compressor and the four-stage turbine in the model 501. This shaft is rotated at very high speeds by exhaust gases from eight combustion chambers pushing against the blades

of the turbine wheels. This rotating shaft not only operates engine accessories and the compressor but drives a four-bladed Aeroproducts propeller for the primary propulsive thrust of the engine. Approximately ten per cent additional thrust is obtained from the unused exhaust gas escaping from the tail pipe.

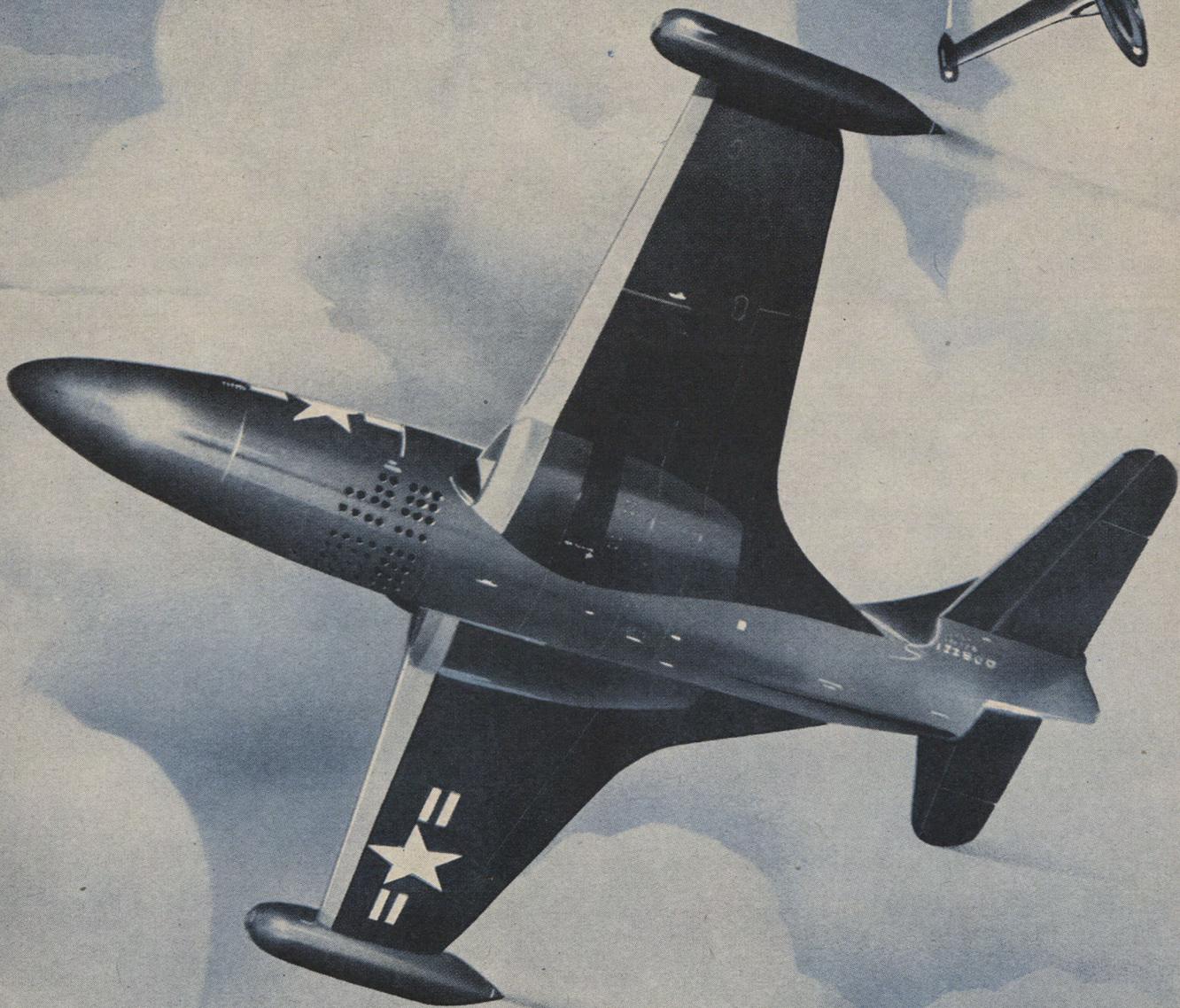
The turboliner's fuselage is pressurized with three compartments for crew, passengers, and cargo. Length of the fuselage is 74 feet 8 inches, and the diameter is 9 feet 5 inches.

A spacious flight deck patterned after the pilot-designed Convair-Liner compartment is provided in the Turboliner. Directly in front of the pilot is the main instrument panel. Another panel with dual flight instruments is located in front of the co-pilot. Separating the two main panels is a center panel on which engine instruments are mounted. The pilot's enclosure includes Nesa glass for windshields which can be heated electrically for anti-icing.

The Turboliner airfoil is a combination of three N.A.C.A. laminar-flow sections, giving optimum performance and stalling characteristics. The primary wing bending structure consists of a box beam bounded by a front and rear spar located at 18 percent and 55 percent, respectively, throughout both the center and outer panels.

The spars are Wagner beams, using 75 ST aluminum-alloy webs, zee-stiffeners, and machined 75 ST spar caps. Bulkheads are spaced at approximately 24-inch intervals to shape the structure and to distribute air.

Pressurization is accomplished with a centrifugal air compressor located in the right wing. The compressor is driven by hydraulic motors. Fresh air enters a scoop located under the wing, and is compressed in a unit located in the wing. Ducts deliver the compressed air to the cabin.



**The Aircraft: Grumman F9F-5 Panther.**

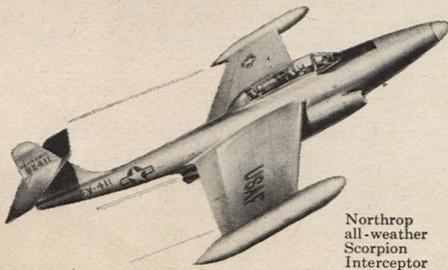
**The Engine: Pratt & Whitney Aircraft J-48 Jet**

**The Fuel System: Holley Turbine Control**

**HOLLEY**  
*Carburetor Co.*

FOR HALF A CENTURY—ORIGINAL EQUIPMENT MANUFACTURERS FOR THE AUTOMOTIVE AND AIRCRAFT INDUSTRIES

**get** A FRESH START  
IN AVIATION!



Northrop  
all-weather  
Scorpion  
Interceptor

**begin** WITH ALL THE ODDS  
IN YOUR FAVOR!

It is the trained man who succeeds—in civilian or military life. Why risk your future for lack of specialized training? Take advantage of your educational rights under the G. I. Bill and prepare NOW for a secure future in the nation's number one essential industry—Aviation. Part-time employment while training is available for many students.

**YOU MUST ACT NOW**

Educational benefits under the G. I. Bill are soon coming to an end. Veterans must act quickly to obtain training under the G. I. Bill. The decision you make now can secure your future. If you lose this opportunity, it is gone forever!

**ENTRUST YOUR TRAINING  
TO NORTHROP**

Northrop Aeronautical Institute is a division of Northrop Aircraft, Inc., the world-famous aeronautical manufacturing and research firm. You can safely entrust the preparation of your future career in Aeronautical Engineering or Aircraft & Engine Mechanics to the expert guidance of experienced Northrop instructors.

**SPECIAL MILITARY INFORMATION**

If you foresee the possibility of returning to military service, you can plan NOW to improve your rank. Be sure to send for special information entitled, "Career Opportunities and Military Preferences for NAI Students and Graduates." It describes numerous advantages to you—if you become a Northrop student—based on the fact that Northrop Aeronautical Institute is an "Accredited Higher Institution," and is so recognized by the U.S. Air Force and U.S. Navy. For example, Northrop engineering graduates are qualified educationally to become Air Force Cadets, candidates in the Air Force Officer Candidate School, or Naval Aviation Cadets.



**Northrop**  
Aeronautical Institute

1545 E. Broadway, Hawthorne  
Los Angeles County, Calif.

**SEND FOR COMPLETE  
INFORMATION TODAY**

**NORTHROP AERONAUTICAL INSTITUTE**

1545 E. Broadway, Hawthorne, Los Angeles County, Cal.

Please send me immediately the Northrop catalog, special military information and employment data, and schedule of starting dates of classes. I am interested in:

- Aeronautical Engineering  
 Aircraft & Engine Mechanics

Name \_\_\_\_\_ Age \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Check one:  Veteran  Non-Veteran

**AIR MAIL**

**It's a question of figures**

*Gentlemen:* A glance at the mathematics employed in the article "We Are Not Helpless" in the November issue of AIR FORCE Magazine, leaves the impression that the effect of more powerful bombs will not be too great. For example, it says that a bomb eight times as powerful would only have twice the radius of destruction. But how about the people who live in the area of total destruction? The formula for computing the area of a circle is  $\pi R^2$ . A circle with a one mile radius has an area of 3.14 square miles. A circle of two miles radius has an area of 12.4 square miles. In other words, although the radius itself is only doubled, the area in which the people live is increased four times.

Ben Shupack  
Malverne, L. I., N. Y.

**Bouquets**

*Gentlemen:* I wish to inform you that the entire portion of the June 1950 issue of the AIR FORCE Magazine pertaining to Research and Development was the subject of discussion for the Sophomore AFROTC students of this University.

Capt. Oliver W. Little  
Purdue University

*Gentlemen:* A local subscriber to your magazine, Dr. J. W. Standeven, has called our attention to the article, "We Are Not Helpless," in your November issue. Doctor Standeven and I are agreed that the article would be of great interest and value to our subscribers. It is the best article written on the atom bomb that we have read. Because it is written in language understandable to the average layman we are requesting your permission to use the article in our next issue.

John L. Rigg  
The Oakland Acorn  
Oakland, Iowa

\*Permission granted.

*Gentlemen:* One of the problems scheduled for study by student committees at the Army War College is that of Tactical Air Support. The interview with General Clark, appearing in the December 1950 issue of AIR FORCE, pages 24 and 25, is deemed of such importance to the study of this problem, that we would like to locally reproduce copies of this interview for issue to each of the students concerned.

James A. Bassett, Librarian  
Army War College  
Fort Leavenworth, Kansas

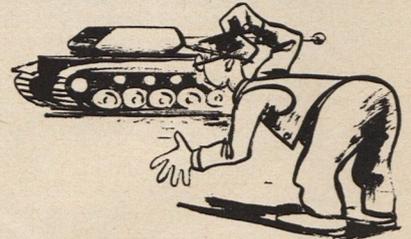
*Gentlemen:* A new year is here, and I hope it brings peace to all of us. The January issue of AIR FORCE Maga-

zine gives us an idea of airpower and its many great uses in time of peace and war. "One Way Out" in the January edition is an example. I have been reading AIR FORCE Magazine for two years and find that it has the best in news features for an Air Force vet. The story on "Survival Under Atomic Attack," also in the January issue, is written so clearly that even a child could understand it. Best of luck for a happy editorial new year.

John J. Allen  
W. Roxbury, Mass.

**T'anks**

*Gentlemen:* I suggest that your caption writer brush up on his identification of armored vehicles. Unless I'm badly mistaken, the tank on center right of



page 31 of the November issue ("I Gu Mo Ney") is either an American M-26 medium (the so-called "Pershing") or the M-46 (the so-called "Patton"). Difference would be in the rear, the M-46 being about 42 inches longer, as I recall, to accommodate the 810-horsepower Continental, and having an extra rear idler for the longer track. The Commies may have had it in Chinju, but I'll bet that tank has a "Made in USA" label. Hope you don't mind these comments from an old paddle-foot, but at any rate 42 months service with the Parachute Troops gives me at least a slight connection with the Air Force.

Morton N. Katz  
Hartford, Conn.

*Gentlemen:* I sure hope the fighter-bomber boys know their recognition better than your caption writer. Did our planes knock out the M-26 tank on page 31? (Nov. '50). I wouldn't bring up an obvious error on a small detail if it weren't for the fact that recognition is so vital in a tactical AF.

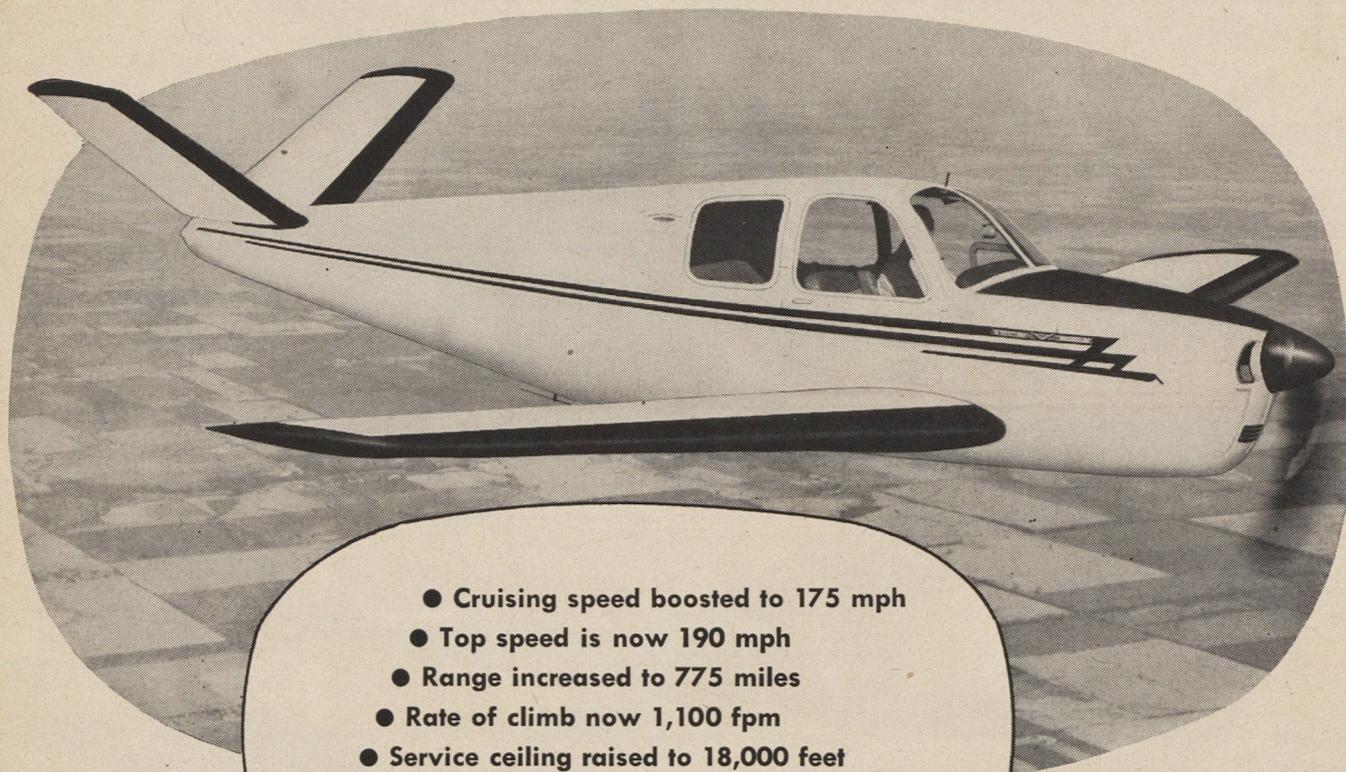
Don Gibbons  
Chicago, Ill.

*Gentlemen:* Reference is made to the November issue of AIR FORCE Magazine. The tank pictured on page 31 above the caption, "Another Communist tank that never made it out of Chinju" is an M-46 General Patton. I trust this tank was disabled by enemy ground fire.

Lt. Harry B. Smith  
APO 633, N. Y.

*Every single* performance feature *improved*

**...that's the Beechcraft Bonanza for '51**



- Cruising speed boosted to 175 mph
- Top speed is now 190 mph
- Range increased to 775 miles
- Rate of climb now 1,100 fpm
- Service ceiling raised to 18,000 feet
- Fuel economy now 19.9 miles per gallon
- Take-off rating now 205 hp. at 2,600 rpm

**And so on**—through innumerable refinements! The results give you higher, more efficient performance levels in all important categories. The new all-over paint design is now standard. And inside the roomy four-place cabin you'll find new color styling. Front seats with more "ease" built in. Two-position rear seat with head rests. Increased ventilation. Choice of smart upholstery. There's a new Beechcraft metal propeller, and

Lear VHF radio receiver, transmitter, and low frequency receiver, too. Safety and ruggedness? That's an *old* story to this sturdy plane! See your Beechcraft distributor for *all* the facts on this great, new Model C35. Or write on your company letterhead to Beech Aircraft Corporation, Wichita, Kansas, U.S.A. Scores of improvements, plus the Bonanza's famous qualities tested by more than 2,600 now in service, make it *the* buy for '51!



**Beechcraft**  
**BONANZA**

**BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS**



**RIGHT** for the Executive Aircraft...

**RIGHT** for the Jet Fighter... *Sperry*

**ZERO** reader

► The versatility and adaptability of the Sperry Zero Reader\* are shown by its use on the supersonic all-weather jets of the U. S. Air Force . . . including the Northrop F-89, North American F-86D and the Lockheed F-94.

► The Zero Reader performs for jet fighters the same job it does for commercial and executive aircraft such as the Beechcraft and Douglas DC-3—simplifying flying, navigating and making manual approaches for pilots.

► The Zero Reader tells the pilot

directly on a simple two-element indicator how to move the controls so as to fly the correct flight path with ease and precision. It combines the type of information usually supplied by the gyro-horizon, directional gyro, magnetic compass, sensitive altimeter and cross pointer meter.

► Developed by Sperry with the cooperation and encouragement of All-Weather Flying Division, USAF and the Air Transport Association . . . the Zero Reader is another step in the attainment of all-weather operations.

\*TRADE MARK, PAT. PENDING

**SPERRY** *GYROSCOPE COMPANY*

DIVISION OF THE SPERRY CORPORATION, GREAT NECK, NEW YORK • CLEVELAND • NEW ORLEANS • NEW YORK • LOS ANGELES • SAN FRANCISCO • SEATTLE

# AIRPOWER IN THE NEWS

VOL. 34, NO. 2

WASHINGTON, D. C.

FEBRUARY, 1951

ACTIVATION PLANS have been announced by USAF for following installations: San Marcos AFB, San Marcos, Tex.; Amarillo Airport, Tex.; Big Spring Airport, Tex.; Burlington Airport, Vt.; Camp Wolters, Mineral Wells, Tex.; Duluth Airport, Minn.; Geiger Field, Spokane, Wash.; Lockbourne AFB, Columbus, O.; McGhee-Tyson Airport, Knoxville, Tenn.; Niagara Falls Municipal Airport, N. Y.; Oxnard Airport, Calif.; Paine Field, Everett, Wash.; Suffolk County Airport, Westhampton, N. Y.; and Truax Field, Madison, Wisc. . . Graham Aviation Co. of Butler, Penna., will operate basic pilot training school at Greenville AFB, Miss. . . Columbus AFB, Columbus, Miss., has been reopened as a basic flight school.

NAVAL AND MARINE CORPS AIR FACILITIES to be reactivated during first half of '51 are: Naval Air Facility, Brunswick, Me.; Naval Auxiliary Air Station, Sanford, Fla.; Naval Auxiliary Air Station, Kingsville, Tex.; Marine Corps Air Facility, Santa Ana, Calif.

CIVILIAN FIRMS OR INDIVIDUALS interested in obtaining future contracts to operate basic pilot training schools will be required to propose a suitable training station in their bids as well as providing for instruction, administration and housekeeping staffs.

A BROADENED ENLISTMENT PROCUREMENT PROGRAM offering enlistment in any grade through master sergeant to all prior service personnel qualifying through military or civilian experience has been announced by USAF.

700 CAREER AIRMEN will receive temporary appointments as Warrant Officers Junior Grade, effective March 15. The action will bring AF warrant officer strength to 2600.

OPPORTUNITIES for direct appointment as commissioned officers in ANG are open to qualified civilians and enlisted members of the Air Guard. Applicants for original appointment as second lieutenants must be at least 21 years old and not have reached their 30th birthday, and have six months or more service within past two years in either USAF, AF Organized Reserve or ANG. Commissions in grades based on age, education and experience are open to medical officers, dentists, veterinarians and specialists in fields of armaments, communications and weather, without previous military experience.

185 VACANCIES exist for Regular and Reserve officers to serve as Air Force ROTC instructors during the 1951-52 academic year at 106 universities and colleges. Applications may be submitted by qualified personnel through normal channels to major air commands.

314TH TROOP CARRIER WING has been awarded Presidential Unit Citation for its recent service in the Korea airlift. . . Total AF casualties in Korea through December 28 are 308.

A NEW MODEL BOEING C-97 Stratofreighter, which can be utilized as a Flying Boom type aerial refueling tanker or in its normal capacity as a 300-mile-an-hour troop and cargo transport, has been revealed by Boeing and USAF. . . USAF has contracted for turboprop version of Douglas C-124 "Globemaster II". . . A newer and more rugged landing gear will be installed on the giant XC-99, world's largest operational airplane, as a result of recent tests run by Kelly AFB.

(Continued on page 10)

# AIRPOWER IN THE NEWS CONTINUED

SALES OF PERSONAL AIRCRAFT IN 1950 EXCEEDED THOSE OF PRECEDING YEAR, Joseph T. Geuting, Jr., manager of Personal Aircraft Council of AIA, has announced. . . . An American Magazine survey of its 2,600,000 reader-families revealed that one out of every four correspondents who made business trip in past year used a plane. . . . America's first turboprop transport--the Convair-Turboliner-- made its initial flight in San Diego on December 29.

COLLIER AVIATION TROPHY has been presented to William P. Lear by President Truman for "outstanding achievement in development and production of Lear F-5 automatic pilot and automatic approach control coupler system, which makes possible safe landing of jet aircraft regardless of extreme weather or visibility conditions." . . . The Daniel and Florence Guggenheim Aviation Safety Center has been established at Cornell University by the Daniel and Florence Guggenheim Foundation. Its purpose is to foster improvement of aviation safety through research, education, training, and dissemination of safety studies to the industry and of air safety information to general public.

PAUL J. FRIZZELL has been elected vice-president of Fairchild Engine & Airplane Corp., Hagerstown, Md. . . . Ralph J. Cordiner, of New York, has been named president of General Electric Company to succeed Charles E. Wilson, recently-named chairman of new Defense Mobilization Board.

A BILL EXTENDING PUBLIC LAW 16 rehabilitation training to many veterans disabled since fighting started in Korea has been signed by Mr. Truman. . . . Plan for paying second dividend on National Service Life Insurance policies is nearly complete and is expected to be announced within a few days.

AIR FORCE AIDE SOCIETY raised \$401,148 during first nine months of 1950. The figure exceeds the society's quota for the period by \$83,387, according to a report of its membership campaign last month.

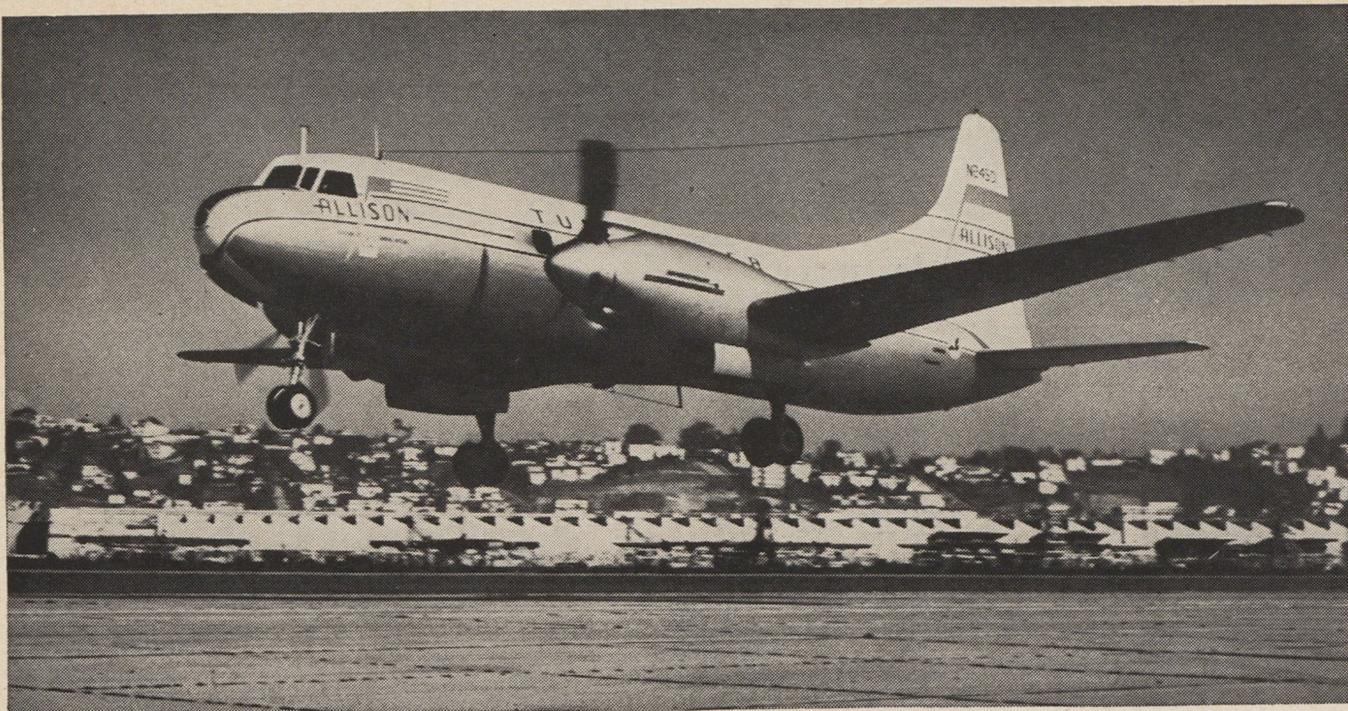
A FULL MILITARY REVIEW at Maxwell AF Base last month honored Maj. Gen. Orvil A. Anderson, former commandant of Air War College, Air University, upon his retirement after more than 33 years' service.

SERVICE PERSONNEL now have until 180 days after return from the combat zone before they need take any action about federal income tax, whether to file returns or make payments. . . . Public Law 814, 81st Congress, exempts enlisted men from paying income tax on compensation for any month or part thereof during service in combat zone.

AIRMEN lucky enough to be assigned to SAC's headquarters in Omaha may soon be living in streamlined barracks with most of comforts of home. The three-story steel and glass structures with private rooms for two, Venetian blinds, twin beds, "ample closet space," and steam heat still are in blueprint stage.

BRIG GEN. S. R. BRETNALL, former director of research and development at AMC, Wright-Patterson AF Base has been named project chief of the B-47 jet bomber production program. . . . Marguerite Heron, familiar Wright Field figure, has resigned after 32 years of writing most of AMC's top officers' speeches, arranging ceremonies in which outstanding men received their decorations, and serving as a personal file cabinet for information about anything that ever happened at Wright Field.

CLEVELAND'S FOURTH ANNUAL NATIONAL MODEL PLANE EXHIBIT CONTEST will be held on February 24, according to Dr. Edward R. Sharp, managing director of NACA and director of Contest. Plans reveal that each club in U. S. will be invited to send its best entry.



# Allison Powers FIRST FLIGHT of First Turbo-Prop Transport

**T**HE first U.S. turbine transport is now a reality and is under test. It was made possible through the private enterprise and initiative of the Allison Division of General Motors. First flight was completed December 29, 1950 with an Allison-owned Convair Turbo-Liner equipped with two Allison "501" Turbo-Prop engines.

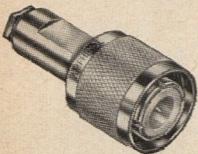
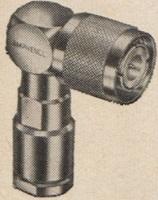
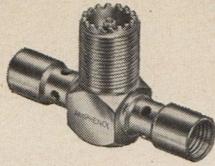
This investment in the future of Turbo-Prop power is the result of Allison determination to speed the development of turbine transports in this country. The Allison "501" Turbo-Prop engines, developed under sponsorship of the U.S. Navy, are the most advanced Turbo-Prop engines in the U.S. today. They lead the world in high power for their low weight. They will make possible smoother, more economical transports to carry increased loads of passengers and freight.

Allison will prove these advantages in an extended flight test program on the Turbo-Liner. The results—to be made available to the military services, aircraft manufacturers and commercial air lines—will prove the safe and dependable operation of Turbo-Prop power.

Thus the United States will continue its world leadership in transport aircraft.



Builders of the Famous J33  
Centrifugal Flow and J35 Axial Flow Turbo-Jets  
Now Serving the Military Everywhere.



# 6 of 17 NEW

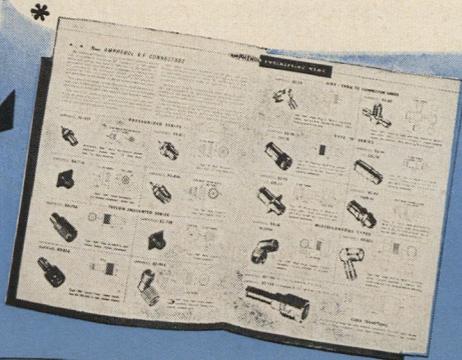
## AMPHENOL

### RF CONNECTORS

Illustrated here are 6 of the 17 new Amphenol RF Connectors which are featured in the current issue of \*AMPHENOL ENGINEERING NEWS.

Among the 17 new connectors in the "UHF" series are 2 cable-to-connector fittings and one right angle adaptor, which has a lower V.S.W.R. than previously available, also a type "HN" angle plug approximately 40% lighter than the usual adaptor-plug combination. Of particular interest are five new connectors; Teflon insulated for lowest possible dielectric losses and satisfactory operation up to temperatures as high as 500° F. Also added to the line are 4 new pressurized panel receptacles and new Wright Field modified type "N" plugs, jacks, panel jacks and bulkhead panel jacks.

Don't miss the Volume 3, No. 10 issue of AMPHENOL ENGINEERING NEWS for complete descriptions and data on these new Amphenol RF Connectors.



\* Amphenol Engineering News brings you in this issue complete information on these 17 new RF Connectors, providing specifications and dimensional data preliminary to cataloging. Request this issue of Amphenol Engineering News.

## AMPHENOL

AMERICAN PHENOLIC CORPORATION  
1830 SO. 54TH AVENUE • CHICAGO 50, ILLINOIS

## A Congressman Speaks...



"... last summer our ground forces in Korea begged for tactical air support which in plain words is nothing more than close air support for ground troops. It was the Navy and the Marines who furnished this close air support and the reason they did not furnish more was because they were short of carriers, due to the fact the carriers were in moth balls..."

Rep. James E. Van Zandt  
House of Representatives  
Jan. 17, 1951 (Congressional Record, page 420)

## What Mr. Van Zandt Didn't Know...



From June 25, 1950 to December 1, 1950 the U S Naval Arm and the U S Marines combined flew a total of approximately 17,000 ground support sorties...

... during that same period the United States Air Force flew a total of approximately 40,000 ground support sorties.

For the purpose of accuracy the Air Force Association respectfully suggests to the distinguished congressman from Pennsylvania that he find occasion as quickly as possible to correct the erroneous impression he has created.

See MEXICO during American's

Fiesta Fare  
Season



**SAVE 50% OF YOUR RETURN FARE!**

ANY SEASON'S a good season to visit Mexico, the year 'round vacation spot. But, American's Fiesta Fare Seasons are the best times of all to visit this tropical playland. For during these periods (March 15th thru May 31st, and Sept. 15th thru Dec. 15th), you save 50% of your return trip fare...in many cases enough to cover most other expenses! A generous 15-day round-trip limit is provided.

**AMERICAN AIRLINES** INC.

AMERICA'S LEADING AIRLINE

# SHOOTING

## Returns Of The Day

As an organization we're five years old this month, and feel fifty if we feel a day.

It seems all of a half century ago that two million of us were fresh out of the Air Force, returning to old jobs or looking for new ones, getting "adjusted" to something known as civilian life. The war-planes we left behind, more than 150,000 of them at air bases around the world, were being bulldozed into the sea or put to the torch as surplus commodities of a peacetime nation. At the Pentagon, that February of 1946, the master plan called for a spanking new Air Force "organized broadly into 70 groups".

This February of 1951 the adjustment is back to military life. Virtually the entire organized Air Reserve and Air Guard and many additional thousands of Air Force veterans are being called to active duty to help build up an Air Force which should have been built up long since in a normal manner with non-veterans, but which has never been permitted even 70-group strength. The alert has been sounded for planes and more planes from production lines long since weakened by start-and-stop planning. And Russian superiority in arms is sufficiently great that time may now be working against us.

In this atmosphere we observe our fifth birthday.

We've passed through some lean years, as has the Air Force, with our troop basis indefinite and our budget lacking. Now membership has solidified and the bills are being paid. We have our fingers in many activities, and we can show an enviable record of accomplishment.

Air Force Association—from its birth date to the present—has fought for a steady and controlled buildup of our armed strength to prevent the military shortages which stare us in the face today. This thought should encourage continued support of AFA's objectives.

The need for a strong Air Force Association has never been greater.

Let there be no mistake: The current buildup of the regular Air Force to 95 groups in itself hardly



# THE BREEZE

organization bill (HR 8889), and was dropped from the bill only after fervent appeals to the House Armed Services Committee by Secretary Finletter and General Vandenberg.

Considerations such as these tend to subdue celebration of our fifth anniversary as an airpower organization. They should, however, stimulate renewed interest in AFA and what it stands for, and renewed activity on the part of both individual members and units of AFA.

The job is clear: to keep up to date on the issues affecting airpower development through careful reading of AIR FORCE and close contact with AFA's national headquarters; to peer behind the daily headlines and question antiairpower statements; to encourage similar scrutiny on the part of others; to spread the airpower word within your own sphere of influence wherever you are and wherever you go; to serve as AFA's local contacts in mobilizing public opinion to the end that our defense effort may be shaped into a sound and efficient long range program.

That mobilization will be long range seems assured. And this should give perspective to the AFA member who might question continued AFA activity on the basis that we'll all be in uniform anyway. Short of an all-out war, we won't all be in, and our AFA program must envisage the possibilities of partial as well as all-out mobilization, of a semi-military existence for many years to come. We cannot, on the first impact of this new defense effort, allow the AFA organization to be weakened. To counteract what might result from wholesale recall to duty of AFA members, we must plan now to keep our local squadrons active through increased participation of AFA's disabled members, women's auxiliaries and Associates. And always we must remember to keep current our memberships in AFA, regardless of our military status; membership is our strength.

The job we set out to do in February of 1946 is equally big and equally challenging in February of 1951. And it must be done.—JHS

justifies relaxation of effort on the part of the airpower supporter. Everything military is being built up in this period of confusion. Nine billion more for ground soldiers. Another two billion for Navy vessels, and a super-carrier for atomic bombing. The skids are greased. Everything slips through these days with hardly a question asked.

The trend toward surface strength, reported previously on these pages, continues to thrive under the impact of the Korean experience. There is a general reluctance to come to grips with the prospect of war with Russia itself. Perspective is lacking. A true airpower concept becomes lost in the shuffle, submerged in the niceties of a balanced force doctrine.

In the public press and on the floor of Congress, evaluations of the Air Force effort in Korea often have been in ignorance of or without regard to the facts. The Van Zandt and David Lawrences seldom if ever bother to retract their statements, and an unsuspecting press spreads their utterances without qualification. The Navy League's campaign against strategic bombing proceeds at a stepped-up tempo. A House committee announces an investigation of the use of tactical aviation in Korea in a manner that assumes, at the outset, guilt on the part of the Air Force. A British correspondent disputes Air Force casualty figures in Korea without checking details of how the figures are compiled, and another question mark is hung over the Air Force combat effort. A respected science reporter, in a notable book on the H-bomb, goes beyond his realm into the field of military application, and heralds the passing of strategic airpower. The list is long and the issues broad.

Consider, for example, that a House committee last month proposed to strip the Air Force of its medical, quartermaster, engineer, chaplain and judge advocate departments and transfer them back to the Army. This proposal actually was written into an Air Force re-

Superior  
Performance

plus **ADVANTAGES** of  
**STANDARDIZATION**



DOUGLAS DC-4



LOCKHEED CONSTELLATION



CONSOLIDATED VULTEE CONVAIR 240

that's why

**PAN AMERICAN**  
**WORLD AIRWAYS**

Uses

**VICKERS**

**HYDRAULIC EQUIPMENT**

Pan American World Airways derives a double advantage from the use of Vickers Hydraulics; first, it has the best aircraft hydraulic equipment available; second, it obtains the many benefits of standardization.

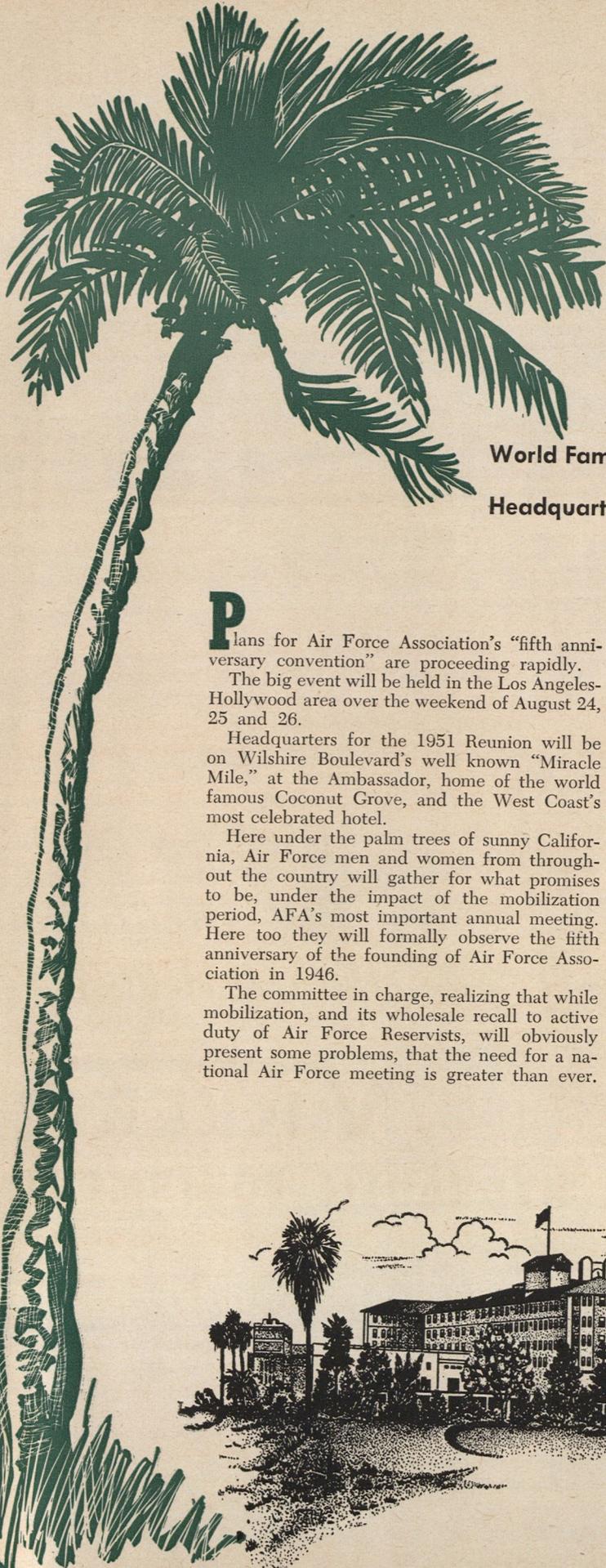
Vickers Hydraulic Equipment has proved by hundreds of thousands of hours in the air its claims of longer life, greater dependability, better performance and lower maintenance.

The interchangeability resulting from standardization means a smaller and more flexible inventory of spare parts. It minimizes the number of test and inspection fixtures. It makes for quicker and easier training of maintenance personnel through the need for familiarization with fewer products.

Ask for Bulletin 49-53 describing Vickers Hydraulic Equipment for Aircraft.

**VICKERS** Incorporated  
DIVISION OF THE SPERRY CORPORATION  
1428 OAKMAN BLVD.  
Detroit 32, Michigan

ENGINEERS AND BUILDERS OF OIL  
HYDRAULIC EQUIPMENT SINCE 1921



# AFA's 1951 REUNION!

World Famous Ambassador Hotel Selected as  
Headquarters for California Convention

**P**lans for Air Force Association's "fifth anniversary convention" are proceeding rapidly.

The big event will be held in the Los Angeles-Hollywood area over the weekend of August 24, 25 and 26.

Headquarters for the 1951 Reunion will be on Wilshire Boulevard's well known "Miracle Mile," at the Ambassador, home of the world famous Coconut Grove, and the West Coast's most celebrated hotel.

Here under the palm trees of sunny California, Air Force men and women from throughout the country will gather for what promises to be, under the impact of the mobilization period, AFA's most important annual meeting. Here too they will formally observe the fifth anniversary of the founding of Air Force Association in 1946.

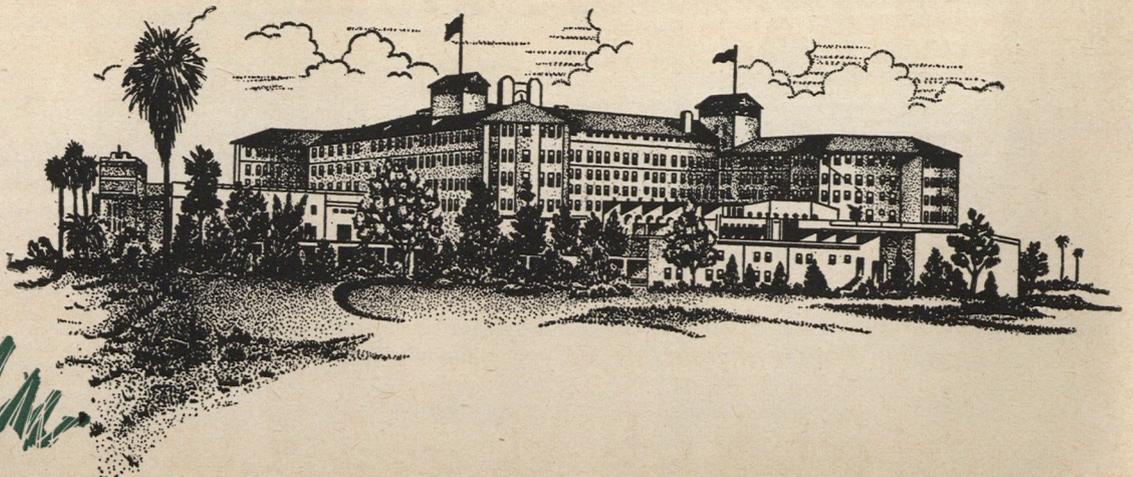
The committee in charge, realizing that while mobilization, and its wholesale recall to active duty of Air Force Reservists, will obviously present some problems, that the need for a national Air Force meeting is greater than ever.

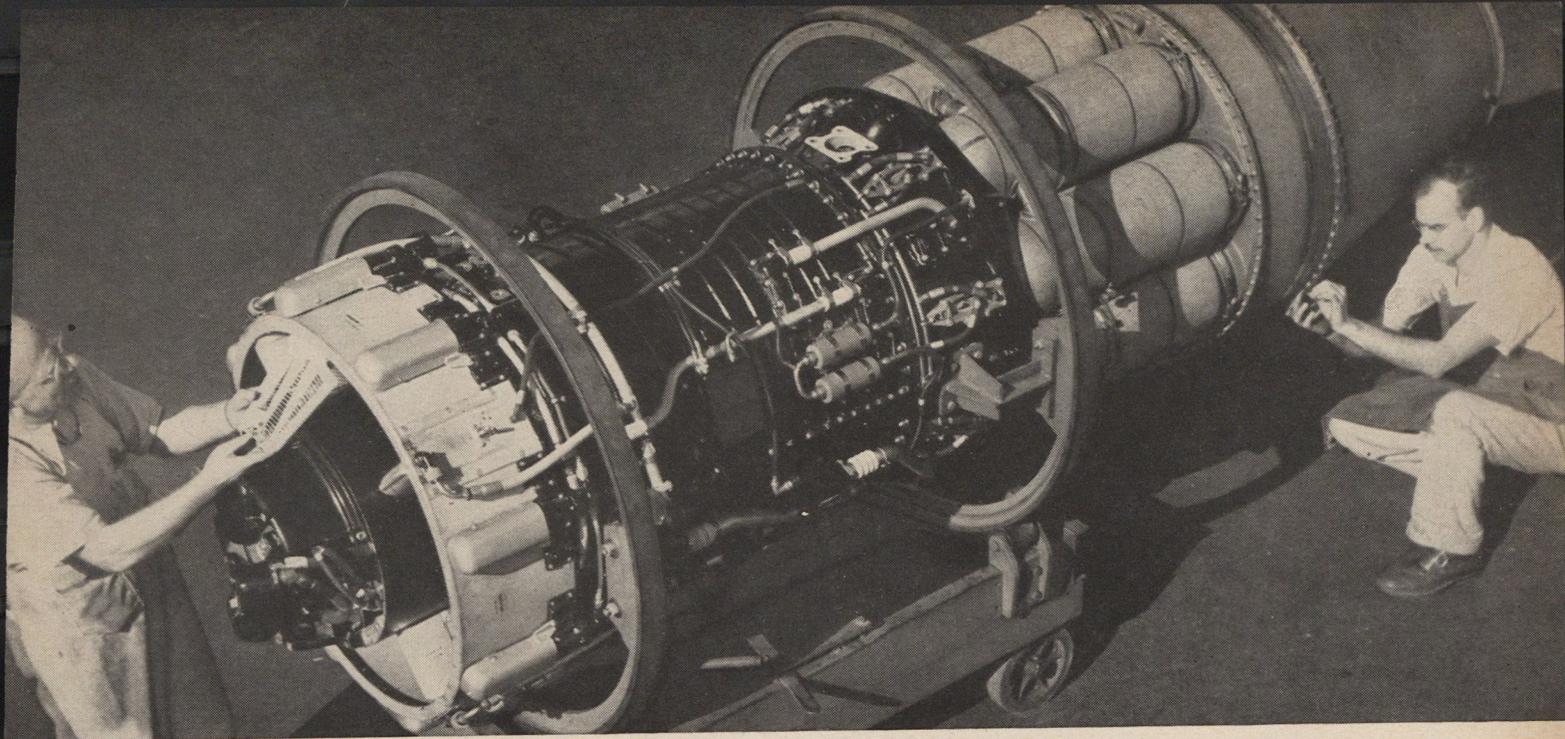
Some way or other, in uniform or out, the Air Force gang will get together in California in 1951—that's the basis for current planning.

In urging AFA members to prepare far in advance for "Los Angeles in '51", rather than wait until it is too late, the Committee suggests, in the tempo of the old song hit, that it is better to plan for the convention and cancel out, if necessary, than never to have planned at all.

The convention program now taking shape calls for several events of national importance, highlighted by forum meetings on leading air-power issues of the day. And while a serious note will obviously prevail, increased interest in reunions and wartime outfits is also expected, and all the popular events of past conventions will be held.

Each forthcoming issue of AIR FORCE will carry a major announcement regarding the 1951 convention. Readers are urged to keep pace with the program as it develops, and to plan their attendance at the convention *now*.





Latest production model of G-E J47 to be installed in USAF planes is J47-23. Unaugmented, it packs more power into the standard J47 frame size. Air Force has not yet released thrust but has indicated it is in excess

of 5200 pounds. Anti-icing, opposite polarity ignition, and a new compressor having higher efficiency, greater airflow, are main features of -23.

**IN THE NEWS**

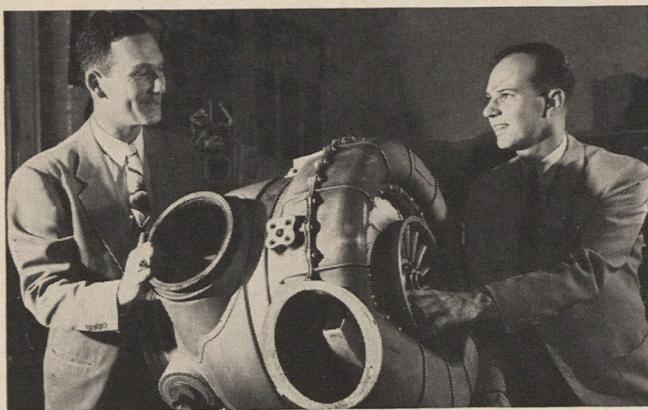
**NEW ENGINE**

**NEW TURBO**

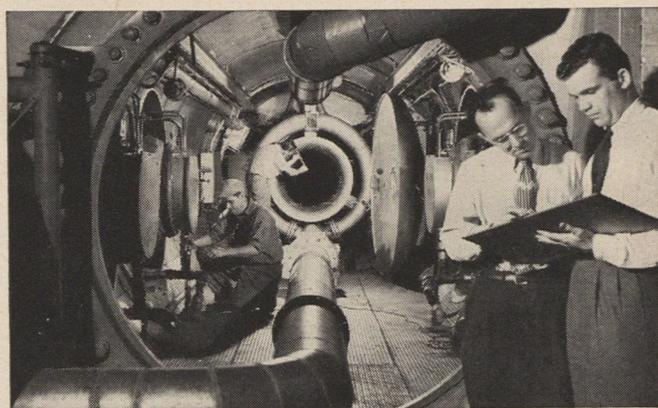
**NEW LAB**

As specialists in every type of aircraft gas turbine, General Electric offers you a complete line of powerful propulsion units. Turbojets, turboprops, turbosuperchargers for piston engines are available to suit your specific needs. Forty-five years of experience are your assurance of quality and dependability.

For aircraft powerplants that keep ahead of the times, call your General Electric aviation specialist or write Apparatus Department, General Electric Company, Schenectady 5, New York.



New turbosupercharger promises longer ranges, heavier payloads to today's transport aircraft through greater power, lower fuel consumption, and greater simplicity. Now on test with Pratt and Whitney R-4360-C engine, it can be adapted to any engine of similar size.



Full scale compressor test stand in new Aircraft Gas Turbine Laboratory at Lynn, Mass. can run tests simulating altitudes up to 70,000 feet, temperatures to  $\pm 100\text{F}$ . The lab, newly opened, is dedicated to memory of Dr. Sanford Moss, early pioneer in aviation.

**AIRCRAFT GAS TURBINES**

**GENERAL**  **ELECTRIC**



College girls, too, get Red Cross first aid training. The ones above are from Los Angeles.



This High School ROTC group in Phoenix, Ariz., gives emergency aid at all school events and at local disasters.



Phoenix, Ariz., has gone all out in first aid preparedness. Above, a police officer instructs school kids.

# Kids Take Red Cross Courses

Look to the youth of America to provide a substantial proportion of the 20,000,000 thoroughly trained first aid technicians who will be needed for home front service in the event of an atomic war. And look to the American Red Cross to put forth its greatest effort in its 69-year-old history to get this job done, and to cooperate with Civil Defense on other disaster programs.

The National Securities Resources Board, which has been responsible for much of the Civil Defense planning undertaken to date, requested the Red Cross to undertake the vast first aid training program—a program which is expected to reach deep into every community and into all levels of community life.

Red Cross Chapters from coast to coast whose first aid programs had, in many cases, been moth-balled, dusted off the old techniques, modernized them in terms of possible future needs in an atomic war and went to work. Schools and colleges came in for special attention and because their resources and the number of trained instructors currently available were limited, a general priority system had to be set up.

First to get intensive training will be certain teachers and prospective teachers since they will then, in turn, be able to instruct others. Second priority goes to college and high school seniors and out-of-school youths who face early induction into the armed services. These people must be trained early this year, before they graduate or are drafted. All other students are to be given training commensurate with their age level.

Schools throughout the country are cooperating fully. As long ago as last fall the distribution of first aid manuals increased 400% in the midwest; in Los Angeles, every pupil from the 7th through the 12th grade will attend first aid courses during the current school year, and so it goes around the country.



For the first time in history, Chicago High School students receive Red Cross training as part of their work.



**Ready  
for take-off...**

**...to a top spot in the U.S. Air Force!**

The flight engineer of a U.S. Air Force B-29 . . . waiting the pilot's signal to return props to high pitch for take-off after engine run-up . . . is a man with power at his command. This Master Sergeant is a vital member of a flying team . . . a man who has proved his power to get on top and stay on top in a topflight job with a great Air Force.

Technical courses for flight engineers . . . available to qualified Air Force enlisted personnel . . . are typical of training in 42 Air Force career fields. *You* can have this kind of training . . . furthering your service career and paralleling civilian jobs . . . as an Airman in the U.S. Air Force.

To be ready for take-off, with power to climb . . . take to the Air Force.



**U. S.  
AIR FORCE**

**GET DETAILS AT YOUR NEAREST  
U.S. ARMY AND U.S. AIR FORCE  
RECRUITING STATION TODAY**

**Get on Top... Stay on Top... in the U.S. Air Force!**

# AIR FORCE BLUES



## IMMEDIATE DELIVERY

### BY SPECIAL ARRANGEMENT—

Members of the Air Force Association can now purchase deluxe, tailored USAF uniforms manufactured by a leading uniform company to official specifications. Order your uniforms from AFA!

Battle Jacket & Trouser	\$60.50
Coat & Trouser	\$64.75
Extra Trousers	\$22.00
Topcoat with Removable Zipper Lining	\$72.00
Cap	\$10.00
Tie	\$ 1.25

Address orders, stating size  
and quantity to:

## AIR FORCE ASSOCIATION

1424 K St., N. W.  
Washington 5, D. C.

Please Enclose Check or Money Order

# TECH TALK By Helena Redmond

Two giant hydraulic presses, capable of forming large aircraft sections from metal blanks in one operation, will be built for the Air Force by Loewy Hydropress Co. of New York. Air Materiel Command, which announced the contract, said their capacity would be over 50,000 tons, but would not release exact figures and would not say where the presses are to be located.

At present the world's largest die forging press, with a capacity 33,000 tons, is owned by Russia. It, and a 13,000 ton extrusion press, were taken over from Germany by the Russians as a part of war reparations.

Use of the presses, which are expected to be in operation within 18 months, will do much to speed up aircraft production. With them it will be possible to turn out an entire wing section at one time, eliminating the present process of riveting several smaller sections together. Effective range and payload capacity will also be increased, because greater strength and lighter weight are achieved by the closed die forging and extrusion methods of production. The process will also effect a considerable savings of vital metals.

The AF's push-button C-54, which made the first completely automatic trans-Atlantic Flight, has been to England again for specialized automatic landing tests. The experiments integrated British ground control landing systems with USAF automatic flight equipment. During all landing tests the C-54 was on automatic controls and the British ground system brought the plane down safely through zero-zero weather to within a foot and a half of the runway. The system currently used by the USAF is accurate to within about six feet of the ground. All-Weather Flying Division personnel from Wright Field who helped carry out the tests say much of the credit for the landing accuracy of the British system is due to an experimental high precision altimeter developed by the RAF. The RAF has made plans and all information on its ground control system available to the USAF, and one of the altimeters has been brought back to the United States for possible incorporation into our own aircraft equipment.

AMC Electronic Subdivision experts have provided the explanation for some peculiar looking objects which caused quite a stir after being found in a remote section of New Mexico. The 18 inch duraluminum sphere, with its plastic "flower-pot" stabilizing device, clock, and packs of radio sensitive film, had the University of Mexico's institute of meteorites puzzled for almost a month. The AF's electronics men took one look at the items and recognized them as their own devices for high altitude atmospheric research. The instruments had come from a research balloon released at Holloman AFB, Alamogordo, N. M. The explanation scotched any revival of the flying saucer rumors, but the experts are still mystified by one aspect of the whole situation. They can't figure out what became of the notice attached to all such equipment giving directions for its return.

AMC specialists who design the equipment with which the AF fights its aircraft crash fires have come up with the conclusion that the machine is not likely to replace the fireman. Intensive tests of various types of fire-fighting trucks have indicated that maneuverability is of prime importance, and no truck yet developed can get into proper fire fighting position as handily as can the human being. Although some types of trucks are all aluminum, including the ladders, sudden wind shifts have been known to blow away the quenching agent before the driver can move his bulky vehicle to a new spot. Future developments will be aimed at increasing the flow from handlines and improving the type of quenching agent. Because of the need for fighting crash fires under all weather conditions, the AF is planning a series of tests using a dry powder quenching agent in combination with a heavy foam composition that will not break.



*Evac by Air*



Flying hospitals for evacuating the wounded... swift troop transports... or giant all-purpose cargo carriers — new airplanes such as the Douglas C-118A bring new versatility to the Military Air Transport Service. The C-118A, soon to be in service, is the Air Force designation for the DC-6A *Liftmaster* — a larger version of the famous DC-6 passenger transport. Flying payloads up to 30,000 lbs. at 320 mph with a range of about 1,740 miles, the C-118A will do *one-third more work* than the C-54 at *one-third less operating cost!* Thus Douglas answers the need for a high-speed, long-range *dependable* military air transport. Meanwhile, on the drafting board and in the laboratory, Douglas engineers and research experts continue to pioneer new and more advanced aircraft in the direction of turbo-prop, jet and rocket propulsion.

Douglas Aircraft Company, Inc.

*Depend on*



WORLD'S LARGEST BUILDER OF AIRCRAFT FOR 30 YEARS → MILITARY AND COMMERCIAL TRANSPORTS  
 FIGHTERS → ATTACK PLANES → BOMBERS → GUIDED MISSILES → ELECTRONIC EQUIPMENT → RESEARCH

# Our 'Chutes Are Dragging

**A** B-47 pilot coming in for a conventional landing on a conventional runway likely as not will burn out a brand new set of brakes trying to keep from running off the end of the field. With current aircraft design as it is, there is no way to beat the excessively high landing speed of the modern jet bomber. Brakes can't do it alone and the deceleration landing parachute, though not the final answer, must be considered standard equipment, until engineers come up with a design to cut landing speed without sacrificing high performance.

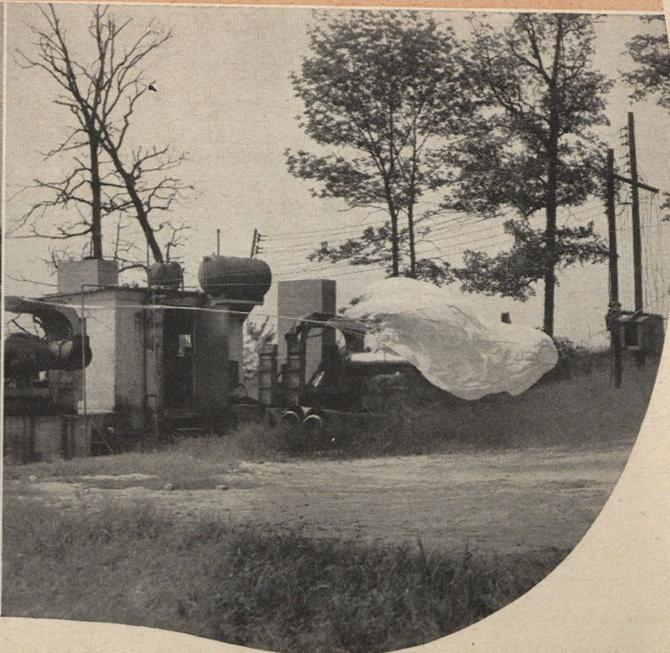
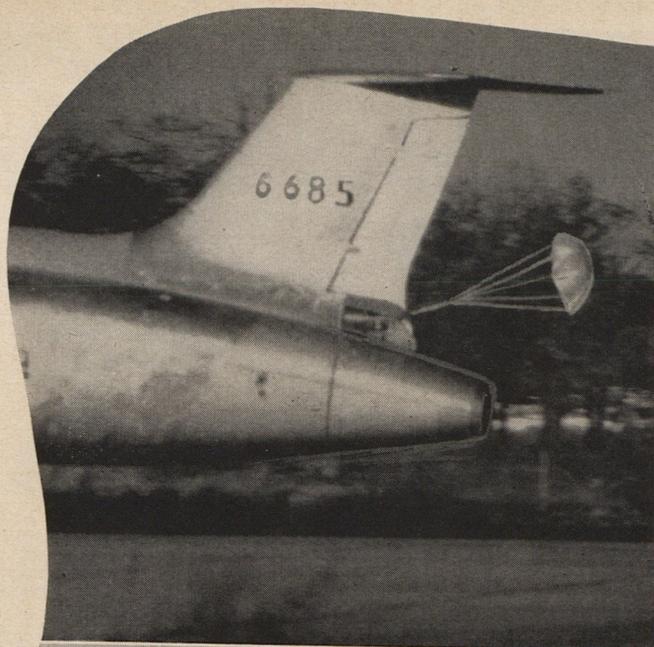
Credit for the development of the deceleration 'chute goes to a small group of experts assigned to the Parachute Branch of the AMC Engineering Division's Equipment Laboratory at Wright-Patterson AFB. Top among them is Mr. Theodor Knacke, co-inventor of the FIST ribbon type parachute.

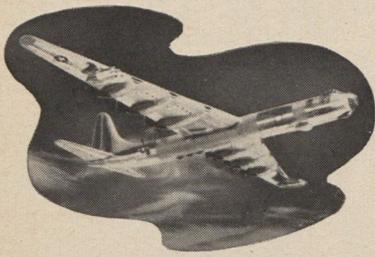
Use of this landing parachute on the B-47 cuts brake wear to a very satisfying minimum. Indeed, during an early B-47 test, the 'chute alone succeeded in bringing the plane to a full stop after the hydraulic brake line was broken.

Following its initial success on the B-47 this landing aid was adapted for use on the newer B-51. To secure data on the action of the parachute as it came into the air flow, a simulated B-51 tail section was set up in the 20-foot wind tunnel.

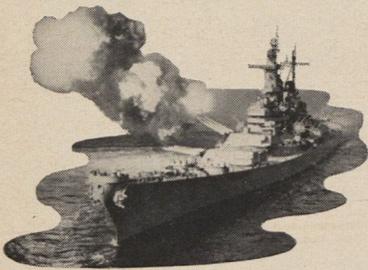
AMC's Equipment Laboratory has also utilized a wingless airplane and a captive jet engine for research in its parachute development program.

Sequence, left, shows operation of the FIST ribbon-type deceleration parachute. Below, a captive jet checks 'chute's heat resistance.





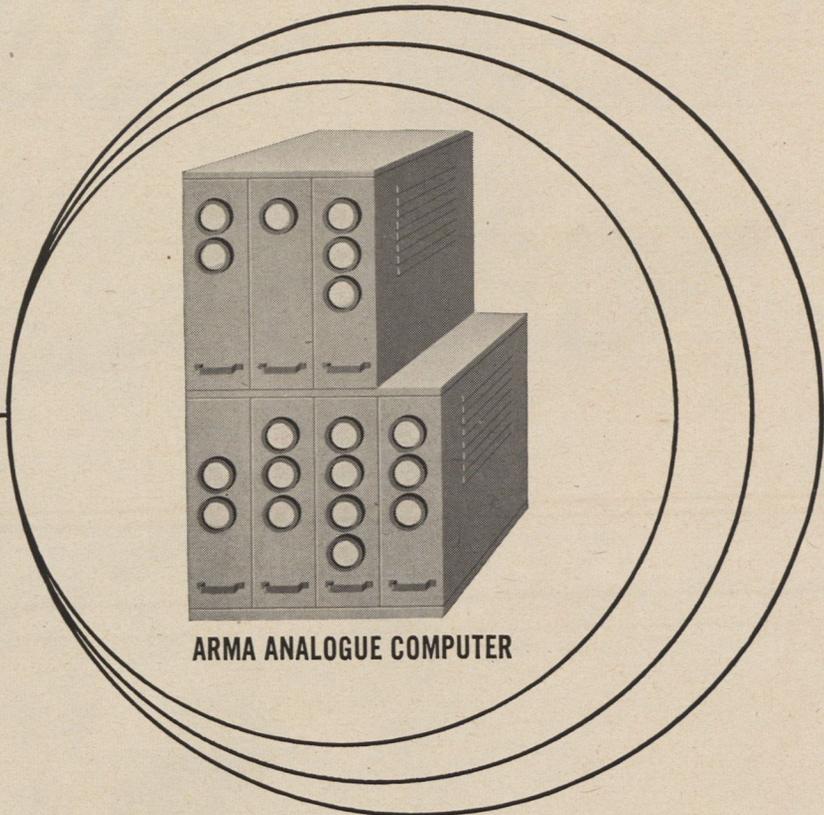
**IN THE AIR**



**ON THE SEA**



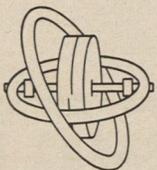
**YES, AND EVEN UNDER THE SEA**



**ARMA ANALOGUE COMPUTER**

The *Analogue Computer* has long held a high place in Arma's work in such specialized fields as automatic gun-laying and torpedo-data computing for the U.S. Navy. Its present wider application to the needs of the other Services stems largely from accelerated post-war engineering at Arma, which resulted in miniaturizing its components and at the same time making them interchangeable and more accurate.

By this Arma development, the *Analogue Computer* has reached a new level of importance as a contributing factor in the high accuracy of American arms. It is typical of many things developed by Arma engineers to aid in making America safe against those who wish to destroy it.



QUALITY **ARMA** PRECISION  
INSTRUMENT

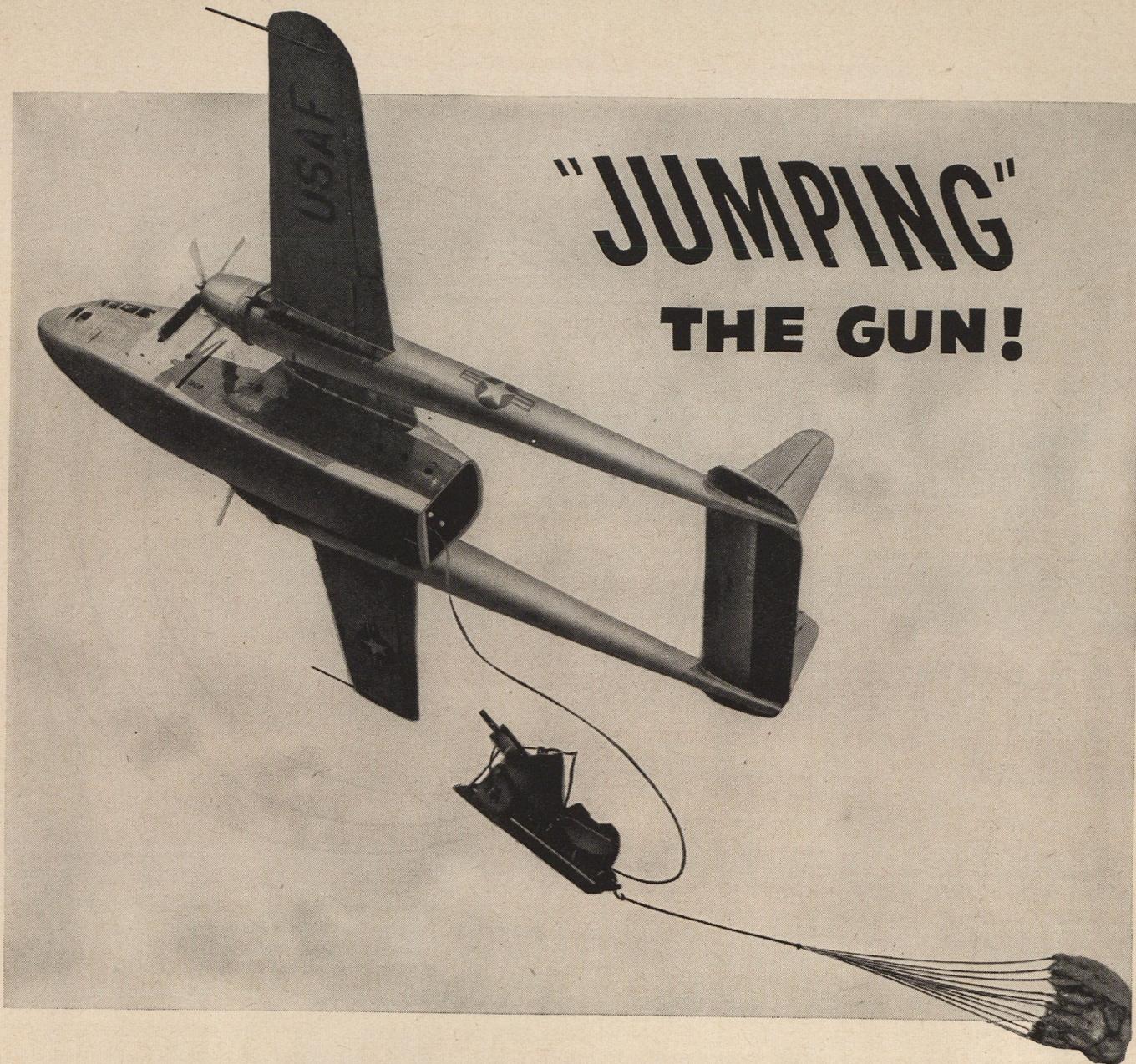
**ARMA CORPORATION**

254 36th STREET, BROOKLYN 32, N. Y.

**SUBSIDIARY OF AMERICAN BOSCH CORPORATION**

**PRINCIPAL PRODUCTS**

Gyroscopic Compasses • Gunfire Control Systems • Stabilizing Devices • Automatic Control Switchboards • Electrical & Electronic Equip. • Electrical Computers • Airborne Instrumentation • Navigational & Plotting Instruments • Mechanical Computers • Servo Mechanisms



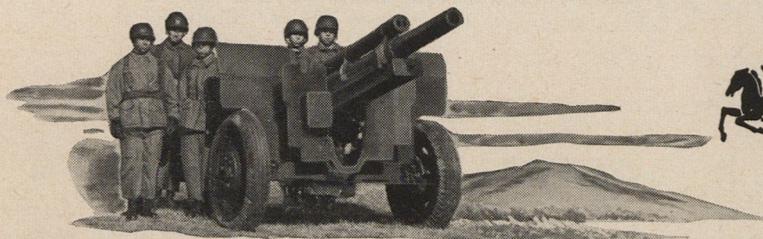
# "JUMPING" THE GUN!

In a little more time than it will take you to read these paragraphs, this 105mm gun will have cradled comfortably to earth...ready for instant action. And in little more time than that, its gun crew...will have instantly needed firepower.

The dependable C-119 Packet is the post-war high-point of Fairchild re-

search and development in the field of all-purpose transports. Only aircraft specially designed to do the job, could do it to such maximum advantage.

Packets, specially engineered and ruggedly constructed to meet the needs of our unified air and ground forces, are proving themselves in varied military operations throughout the world.



ENGINE AND AIRPLANE CORPORATION  
**FAIRCHILD**

*Aircraft Division*

HAGERSTOWN, MARYLAND

Other Divisions: Fairchild-NEPA Division, Oak Ridge, Tenn. • Fairchild Engine Division, Guided Missiles Division, Al-Fin Division, and Stratos Division, Farmingdale, N.Y.



# HOW STRONG IS RUSSIA'S A-BOMB FLEET?

By William S. Friedman

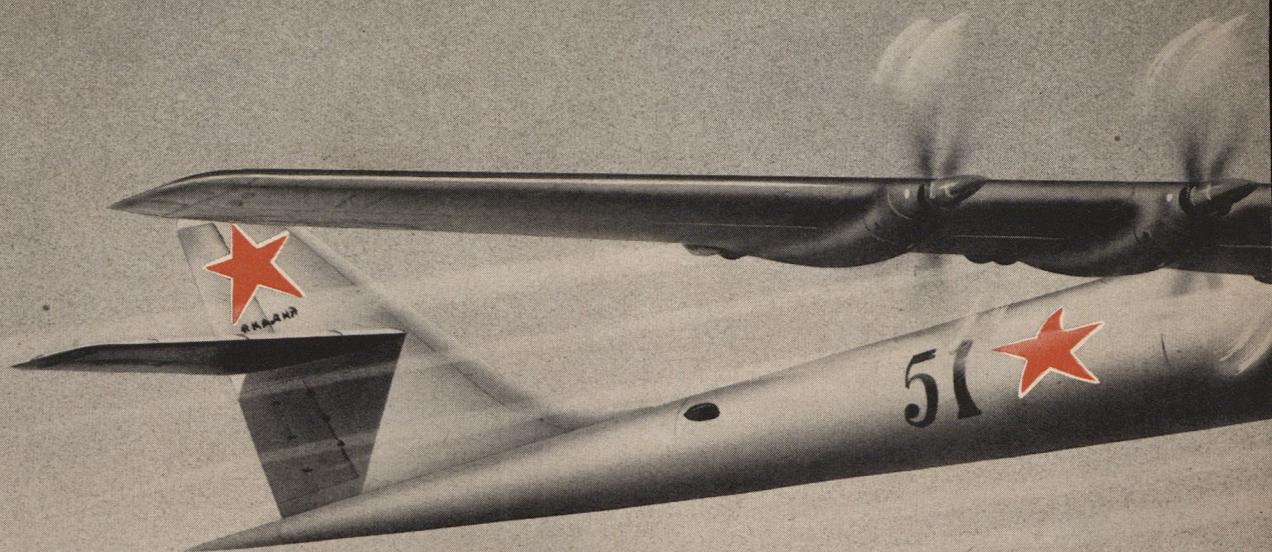
Having overcome our precious A-bomb monopoly, Russia is now striving to gain superiority over the US in the means of delivering it. Here is a startling report on her progress. It is indeed a sober warning for us to give full attention to the development of our own strategic air forces

**I**t should come as a surprise to no one that Russia is forging a powerful strategic air force complete with B-36 class intercontinental atomic bombers.

And yet, I am continually amazed and disheartened, even among aviation people who should know better, at the tendency to underestimate the Russian potential in the realm of strategic airpower. I am disheartened because it is just the sort of closed mind thinking the masters of the Kremlin seek to encourage.

True, we have been warned from rather high levels that the USSR might be able to hit us where it hurts with atomic bombs, but usually these warnings have been couched in so many qualifications that we hurriedly reduce the threat in terms of one-way "suicide" missions and outmoded B-29 type medium-ranged bombers.

This is not an attempt to scare up interest in the possi-



**Reliable reports from Europe indicate that Russia's Long Distance Flying Command will soon have a Red version of our B-36**

bilities of aerial invasion by Russian flying saucers, or anything of that sort, but it is a sincere effort on my part to pass on to the reader information which has come my way from a number of independent European observers whose trustworthiness and integrity and aviation knowledge I will personally vouch for. Their individual reports have been accumulated by me over a period of many months and evaluated one against the other until definite patterns have

emerged. The information comes from private civilian sources and I have no idea what the official military appraisal of it might be, though I suspect it would not accuse me of conservatism. My own experience, in Air Force intelligence during wartime and as an aviation writer these past 20 years, has given me faith in just such private sources as these.

To begin with, published statements in this country leave the impression that

we popularly estimate the current strength of Russian B-29 type bombers at considerably less than 1000, and I seem to recall estimates as low as 300. My informants in Europe have repeatedly reported far more strategic class bombers than this in actual use by the Soviet Air Fleet's ADD (Long Distance Flying Command), and I have received reliable estimates as high as 3500. It is universally recognized by these sources that the Russian copies of our B-29 have been raised to the B-50 level of performance through improvements of natural evolution. And I might add, they agree generally that Russia is or soon will be getting considerable extra range out of her B-50 types through in-flight refueling.

Of even greater concern perhaps is



### THE "RUSSIAN B-36"

Here is an artist's conception of the Russian intercontinental bomber now reported in the prototype stage. The fuselage is similar to the US Republic Rainbow, but half again as long. Both wing and tail surfaces are swept at an angle between 35 and 45 degrees, equivalent to our smaller B-47. Ship is reportedly powered by six turboprop engines of between 8,000 and 14,000 hp. each. Top speed is around 700 mph. Estimated range: 10,000 miles.

*C. de M. Barmer '51*

that these same sources report the development of what a Communist publication in Europe has referred to as Russia's "answer to the Capitalists' intercontinental atomic bomb threat, the B-36." Russia, I am convinced, has not only overcome our over-estimated and short-lived monopoly in A-bombs, but has created and is rapidly developing an equivalent means of delivering it.

My reports state that the "Russian B-36" (the exact Soviet designation has not been clarified to my satisfaction) is currently in the prototype stage, and is scheduled to make its first flight test sometime within the next three months. Ordinarily, by our standards, this would mean production models in from three to five years after the first flight test. The Russians, however, depend less on

hand tooling, more on sheer manpower. We can expect them to have a production model of their modernized B-36 class bomber at least by 1954, which would be equivalent to the projected delivery schedule for an advanced, swept-back-wing version of our own B-36.

This development of a B-36 class bomber is a natural step on the part of the Soviet High Command and should not come as a shock to the reader. Indeed, if there is any surprise in this outline of a beefy Red Strategic Air Force in being and abuilding, it should be in the fact that it has taken Russia this long.

This is the logical conclusion if you assume at the outset that the Russian High Command plans to adopt our *strategy* as well as our *instruments*. Until now, however, they have given no

indication of any such plan. Quite the contrary. The Soviet pattern of politico-military penetration is too well known to require major elaboration. Since missionary Communism is not dissimilar to a militant religion, its basic thought is to first conquer the people's minds. The technique is to penetrate first spiritually and politically, then follow with a ground army—an army with sufficient tactical airpower to be assured undisputed use of the air space over the area attacked. Until now strategic airpower has never been regarded by the Reds as a particularly useful weapon in attaining these objectives.

Why then the sudden emphasis on ADD? I am inclined to believe it is because Russian aggression is entering a new phase. We need not flatter our-

Russia's new emphasis on strategic airpower will enable Stalin to enhance his prestige at the world's conference tables, supplement his powerful land armies and to retaliate against us if we try to arrest Communism's spread



A. N. Tupolev

M. I. Gurevich

selves that Stalin is building his huge long range air fleet on an immature impulse to keep abreast of the Jones'—in this case, the US. He is building it because he now has, or soon expects to have, something for it to do. We must not lose sight of the fact that Russia has the tremendous advantage of a program—a timetable to which strategies and instruments can be and *are* carefully attuned. No need for her to build a huge Navy, for example, when the campaigns she has planned for the immediate future could not effectively employ such a force. Stalin is not bound by politics as we are in the US to keep a "balanced" military force, regardless of whether or not a good portion of that force can be used to advantage. He need build only such weapons as he plans to *use*.

If it is so then that Stalin has no intention of spending money for something he doesn't plan to use, what use does he expect to make of the rapidly

expanding ADD? I believe he plans to use the force at least three ways.

► First, Stalin's "prestige" around the world's conference tables will be immeasurably enhanced by the existence of a striking force that can bring fantastic destruction in a matter of hours to any overly belligerent conferees. The bargaining power of the ADD will be tremendous.

► Second, powerful strategic airpower will logically supplement ground power as the instrument of continued aggression—whenever the Kremlin decides it is time to strike beyond the seas.

► Third, the Russian Strategic Air Force undoubtedly would be moved into action as an instrument of retaliation should the US attempt to arrest at its *source* the spread of Communism in Europe and Asia before that program was completed.

No, the remarkable and indeed revolutionary new emphasis in Russia on strategic airpower has far greater pur-

pose than to keep abreast of our development in that field. It would be tragic if we allowed ourselves to think Uncle Joe was only following along. He has a plan—a plan that will make full use of the instrument he is now perfecting.

Actually it is a little presumptuous for the US to advertise the strategic air concept as a home-grown product. An honest search of history will reveal that the *Russians* invented the strategic bomber—the White Russians that is. Igor Sikorsky's Ilya Mourmetz Squadron of hundred-foot span four-engined machines began operations in 1914, and were the first aircraft to have either the potential payload or the range to make an impact on the tide of battle.

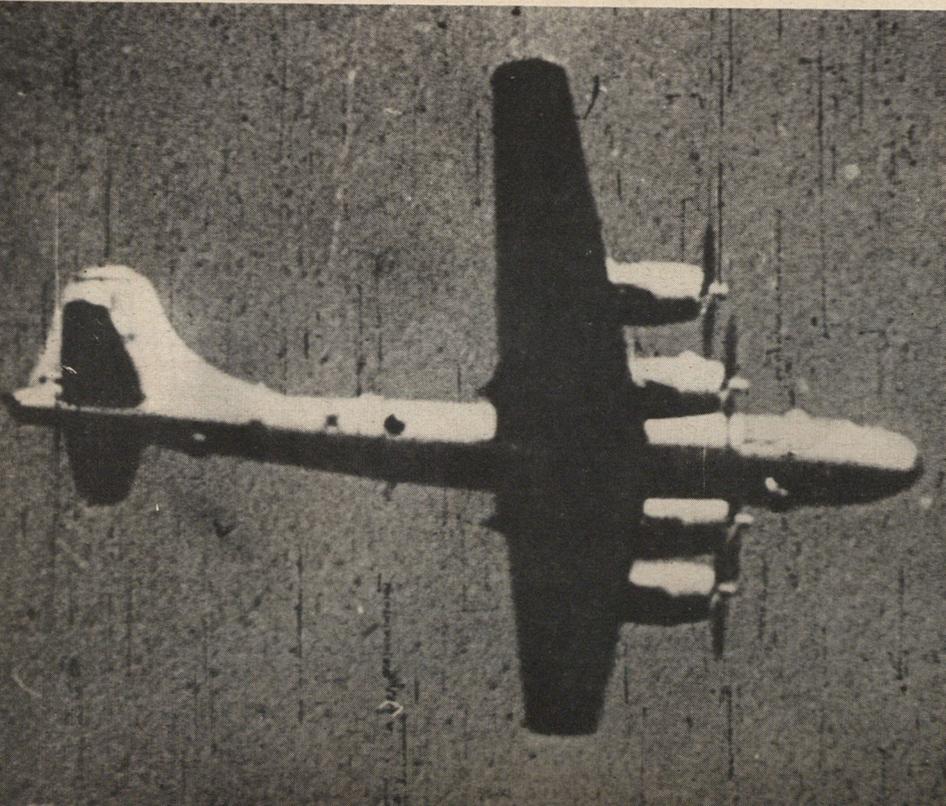
The wreckage of the Revolution completely ruined Russian aviation. Most of the crack designers left the country to immigrate to France and then to the US. It was 1922 before any attempt was made to build new aircraft in the USSR. The present aviation industry and the structure of the Soviet Air Fleet were set up by German experts—among them Junkers, Udet and, to a lesser degree, Goering—who came to Russia to build an air establishment, in the hope that the experience gained there would be of value when the time came for them to build a new Luftwaffe.

For that reason, Russian military airpower was rejuvenated under the German philosophy—the airplane was to be a form of winged cannon, an extension of artillery with greater range than any bored ordnance.

There were, however, a number of experts in Russia who followed Italy's Juliot Douhet in his concept of strategic power. In the 1920's the noted Russian explorer of polar regions, Professor I. Schmidt, described the wastes of the North Arctic as the future roadway to battle. It was partly with his encouragement that the Russian polar flights of the middle 1930's were made.

The advocates of big, long-range aircraft were few but stubborn. The leader, strangely enough, was an airplane designer, not a soldier. Professor A. N. Tupolev, the dean of Red aero engineers, in his studies with Professor Schmidt, became convinced that despite Russia's overwhelming manpower po-

This is the Soviet Air Force's copy of our B-29 Superfort. It is known popularly in the US as the Tu-4. Author believes correct Red designation is Tu-71.



tential, the strategic airplane was the Soviet key to world domination. He was joined by such flying luminaries as Mikhail Grumov and other experienced distance pilots. However, they were voices crying in the wilderness.

And yet, the romance and the public appeal of long-range aircraft never permitted the Soviet High Command to exterminate the idea, much as it was sometimes tempted. As early as 1930, the Independent Bomber Command was organized as a totally autonomous organization. The First Five Year Plan included a number of bomber designs, including the four-engined TB-3. By 1936, the Command had a fleet of about a thousand of these aircraft. Slow and cumbersome, they were not truly strategic bombers in the modern sense. In 1941 the Independent Bomber Command was relegated to support functions again.

This situation did not last long, however. By 1942 Stalin determined from war experience that the Independent Bomber Command was a necessity and despite the hardships under which Russia's airplane industry operated, a new strategic bomber, the TB-7, was produced. This machine was the brain child of Tupolev and his assistant, Polikarpov. One of these planes actually visited the US in 1942 on a diplomatic mission with the now famous Molotov as the VIP aboard. Only a limited number of the TB-7s were built. Bomb damage, plus the dire need for tactical and fighter aircraft, reverted production to smaller machines. The TB-7 was a workmanlike craft.

These bombers were placed under the command of Marshal V. Golovanov in a new organization, the aforementioned ADD. The plane's operational record was considered satisfactory, although the small size of the command prevented any real evaluation of the military potential of strategic airpower. That evaluation was to come a little later.

After the collapse of Germany, Soviet evaluation teams had the opportunity of walking among the ruins of German cities and viewing the destructive results of allied strategic bombing. They carried home to the Kremlin the first realistic view of the airplane as a major vector of destruction. For the first time in modern Russian history, the cannon's position as the Queen of Battle was in definite jeopardy. Then came the American A-bomb and with it unprecedented A-bomb information to the Kremlin, as court records unfortunately attest. A rather radical change in overall strategic thinking was coupled with the establishment, under Professor Peter Kapitza and other Soviet atomic scientists, of a target date for the production of Russia's own A-bomb.

The next pressing problem was the production of an airplane that could deliver the atomic bomb at politically important ranges.

The TB-7 obviously lacked the range for anything like intercontinental atomic operation. Tupolev had worked as early as 1943 on a successor to that B-17 class machine, but wrecked plants and other

more pressing needs had postponed the plane's construction. During the war proper, Tupolev was busy with the Tu-2 medium bomber, getting it produced and stepping up its power and performance to keep abreast of the Ju-88 series.

Our B-29 performance in the Pacific evidently had the Red high command quite worried. As a result, Tupolev dusted off the plans for his strategic bomber and had the machine in the late paper stages when several of our B-29s made forced landings in Siberia. The Soviet authorities, it will be remembered, returned our crews to us, but the airplanes remained behind.

Then came Hiroshima, and the day of decision. The A-bomb undoubtedly gave a pause to Stalin's expansion timetable. It placed the Reds in a position where they might find themselves on the defensive no matter how well their ground armies fared in the field. With the western powers in Europe within easy B-29 distance of the Red centers of production, the whole picture of political penetration, backed up by ground power and by airpower, betrayed a serious chink.

Beside the conventional system of interceptor defense, the Red Air Arm had to have a real strategic threat. Tupolev's answer to the B-29 was still paper and dreams. The B-29s were a bird in the hand, so the dean of Russian airplane designers, with 32 successful original aircraft types to his credit, had to build a "Chinese copy" of the Boeing B-29, designated by the Soviet as the Tu-71 (popularly, and I think incorrectly, known in this country as the Tu-4).

There are a number of amusing stories told of this series of events. Swedish sources, usually considered to be reliable, relate how the "grand old man of Soviet aeronautical science" first re-

jected the B-29 as a matter of professional pride. He pointed out that his own design had the benefit of later science, and could be altered if necessary to include some of the best features of the B-29. He argued with equal vigor that the B-29 had become a medium bomber in the modern sense, and that its range with load was less than the radius of action demanded by intercontinental warfare.

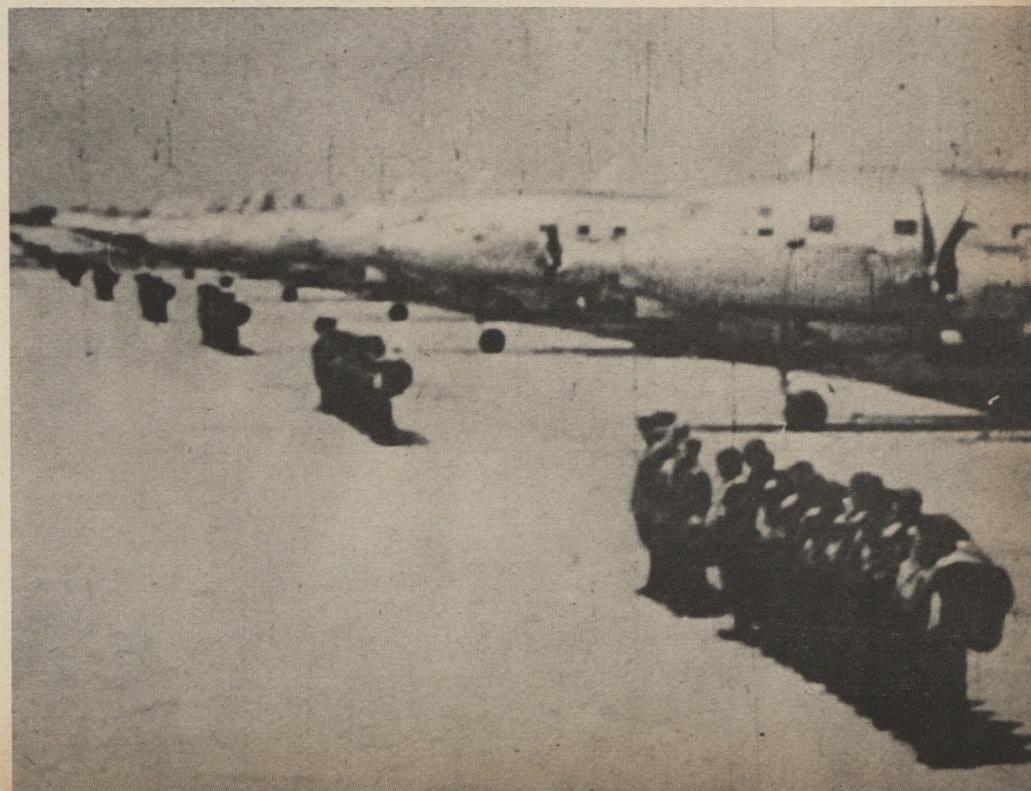
Nevertheless, the Kremlin had its way. The B-29 was rammed down Tupolev's throat, and he retaliated with his personal rejection of the design. He is reported to have continued to refer to the airplane as "Mr. Boeing's fine old aircraft" and to continue in his personal correspondence and conversation to refer to the Tu-71 designation as a "locally-produced B-29."

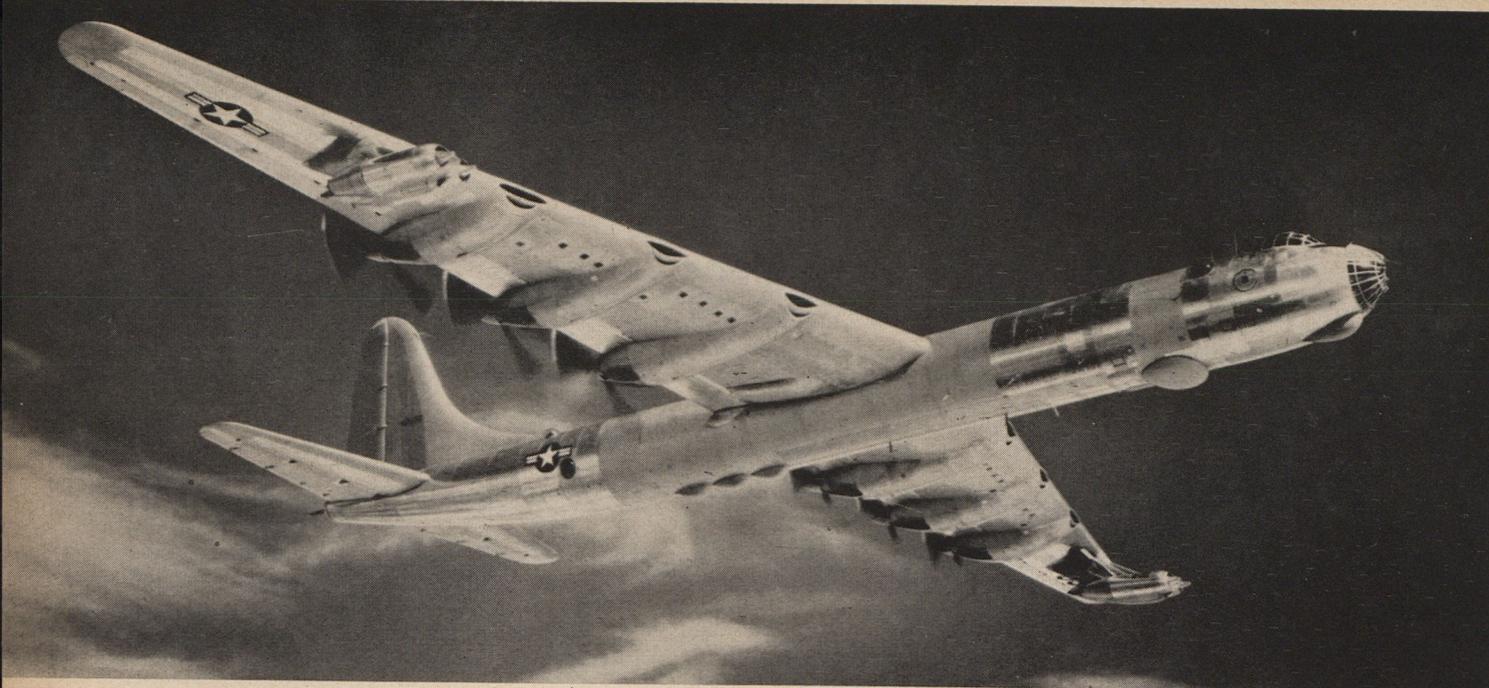
The same Swedish reports indicate that beyond actually setting up the Tu-71 production line, Tupolev had no more to do with the airplane than was absolutely necessary. The persistent effort to improve the airplane is reported to have taken place under the direction of Mikhail I. Gurevitch who, up to 1945, was the "G" on the MIG design team of Mikoyan and Gurevitch. The Tu-71 has undergone constant modification; until now its performance is reported to be about abreast with that of our Boeing B-50's.

Other reports given me by excellent sources indicate that the Russians, since 1946, have displayed great interest in the Cobham system of flight refueling, and while the inventor, Sir Alan Cobham, has steadfastly ignored Red overtures, the principles involved are sufficiently well known to permit the Russians to have developed their own system without outside aid.

A recent report coming via Belgrade  
(Continued on page 55)

**Another indication of Russia's drive to extend the reach of her air arm is the fleet of IL-12 heavy transports she has built to carry troops and supplies.**





No other plane now in production can match the capabilities of the big B-36. But are there enough to get the job done?

# PLANS WITHOUT PLANES

By Ned Root

The men of the Strategic Air Command are hand picked and beautifully trained. They have a good plan and good equipment—but that's only half the story. The rest isn't so pretty

Flying a 36 with an A-bomb is a multi-million dollar business. Eighth AF men are well aware of their heavy responsibility.



**FT. WORTH:** Carswell Air Force Base, six miles toward Weatherford, Texas, from Ft. Worth, is now headquarters for the great US Eighth Air Force. It is also the home of the B-36 intercontinental bomber, and by virtue of these two facts, it is "home" too, in a manner of speaking, for what Hap Arnold originally described as the "global concept".

Carswell, with its beautiful long white runways and its well kept grounds, is an operational base—not operational like Lackland or March or Mitchel, but operational just as Foggia, Guam and Ridgewell were operational in the last war. In another war, the Eighth's B-36 missions to Russia would begin and end right here. The power drives that once sprung from the banks of the mighty Thames would come now, in part, from the banks of Ft. Worth's sleepy little Trinity. It seemed to me on the first day of my visit here that this was a good measure of how far we'd come technologically since 1944.

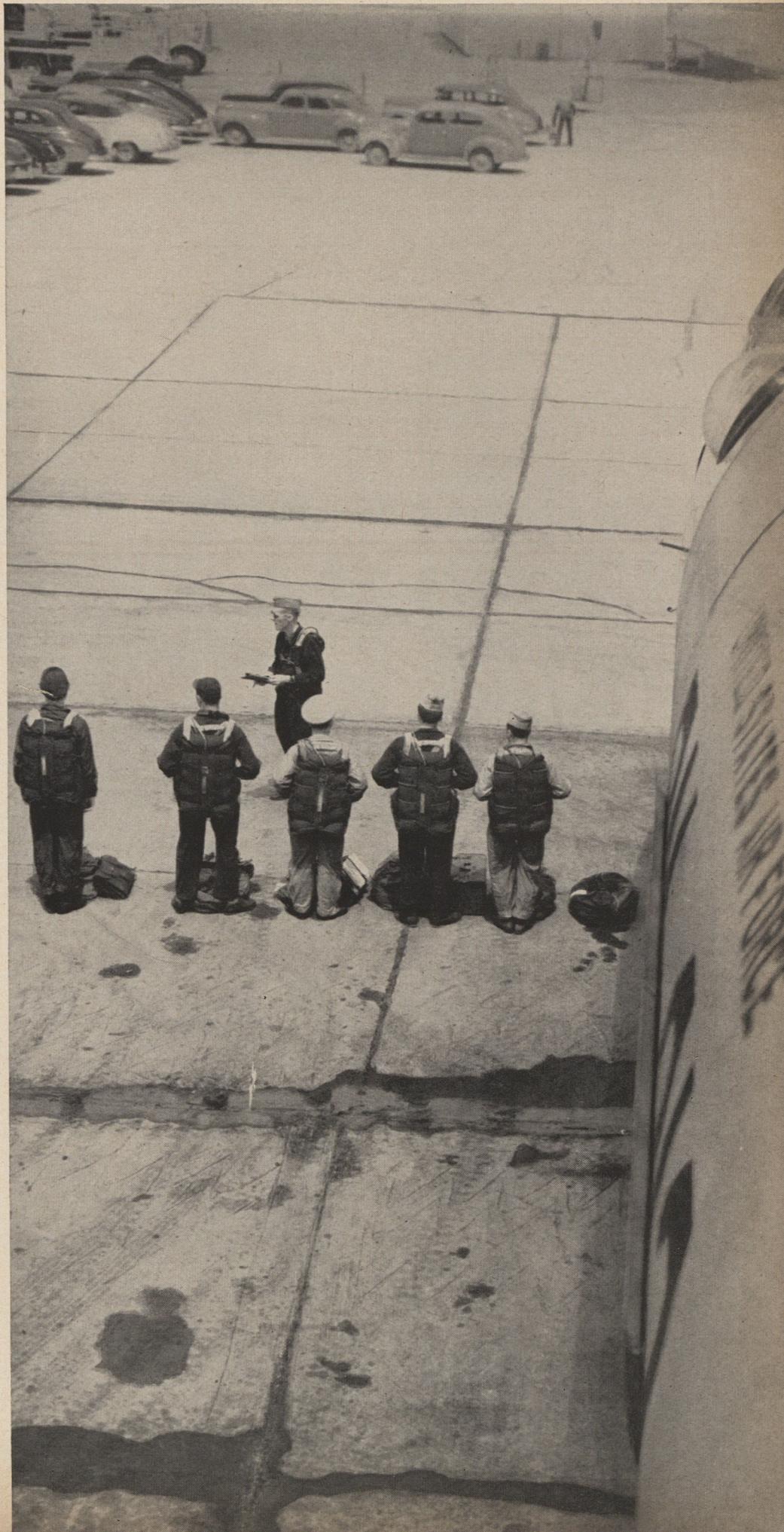
There is a strange mixture in the air at Carswell of confidence and despair; pride and inadequacy. It's a conflict that gnaws perceptibly at the consciousness of every man on the field, from Maj. Gen. Sam Anderson, the Eighth's CG, on down. It's the feeling of having a finely jeweled instrument of some sort that only runs at half speed because some of the cogs are missing. Or it's like having a prescription to make you well with no druggist to fill it. After a week here I think I know what is at the bottom of the feeling, and since a half-efficient strategic air force could be disastrous to any military program the US might undertake, I think a report on what I have observed is in high order.

By way of brief orientation, it might be well to point out first that in addition to Carswell, there are five other Eighth Air Force bases in Continental United States, and that the Eighth, in turn, is only one of three strategic air forces under Lt. Gen. Curtis LeMay's Strategic Air Command, the other two being the Fifteenth and the Second. Since I have not visited the other fields, I cannot say positively that what I have found here is indicative of a general situation throughout SAC, or even throughout the Eighth. I have visited SAC headquarters in Omaha, however, and I know that Gen. LeMay has shaped his command into such a tightly knit team that his commanders in all echelons work and think almost as one. I strongly suspect, therefore, that what I have found to be the case here at Carswell would also be true at Biggs, Limestone or March.

### WHAT HAS SAC TO BE PROUD OF?

The confidence and pride you find here stem, I think, from four basic convictions—convictions shared by every man I talked to, whether his immediate

**Before every B-36 flight the crew is carefully checked by the commander.**



task was the gratifying one of making a generator run smoothly, or the less rewarding one of writing high powered memos to Washington. The four can be summarized as follows:

### 1. TRUST IN A PRINCIPLE

The men here have a plain and honest belief in strategic bombardment as the most likely instrument of decision in any war with Russia, if it should come within the foreseeable future. They have stated this conviction before, and it is no fault of theirs that their statements have been construed by some as a cocky notion that the Air Force could win the war "overnight" and

On the other hand, the men here feel that if we are smart enough (and if there is *time* enough) to properly develop strategic airpower we may, with a little luck, win.

### 2. TRUST IN A PLAN

In Washington the confusion and bewilderment is of such proportions that one sometimes wonders if there exists anywhere an actual war plan. The quarreling and debate on simple fundamental problems often makes the likelihood seem remote.

But here in Ft. Worth there is no such question. There *is* a plan; one worked out to the finest detail, and one

he was sorry, I was about two minutes too late. I'd have to wait until the all clear. How long was that? He was sorry he didn't know. I had an *appointment* I explained. He was sorry again. Could I call the PIO and explain? No, sorry. How about my wife in town; could I phone and tell her I might be late for our luncheon date? Sorry, he said, but I wasn't sure at all by now that his sympathy was genuine. I got the distinct impression that he wished that tough guy LeMay could see him now. Probably give him another stripe. As a last resort I flashed my old AGO card with my thumb carefully underlining the Lt. Col. line. He gave me a quick look of impatient tolerance and said he was sorry, and it was about then that I decided to shut up before his "sorrow" exploded all over the place.

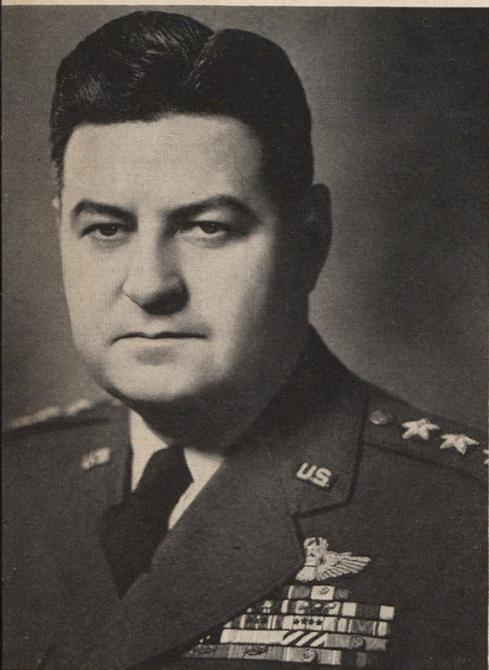
Things happened all around. Many of the wives on the field had just started to town to do their morning shopping. The first one caught on the way out was a pretty little redhead in a pale blue Plymouth coupe. She had just shown her pass at the gate and was putting it back in her purse when the alarm went off. Like a cat, the guard at the driveway sprang in front of her car to block any attempted getaway. But apparently the young lady had been through the ordeal before, for after a few feeble appeals she slumped down in her seat to rest while the cars piled up behind her.

At Carswell there is a fuel dump 50 yards from the gate, and in something less than 2 minutes after the siren, the dump was swarming with armed sentries. They moved in so quickly and so quietly I neither saw nor heard them. There was no excitement among them. They were just there, ready and waiting.

It was a cold morning, and after ten or 15 minutes, wives who had started to town with their babies began leaving their cars for the warmth of the reception house, but the tiny reception house was already crowded and there was only room for two or three. Could they *please* go on? No, the rule was inflexible even for mothers with babies, and so some of us with heaters in our cars started the engines and let a few of them sit there.

Several US mail trucks arrived from town with late Christmas gifts, but this time the mail *didn't* go through, nor did any of the dozens of commercial trucks that drove up to make routine deliveries. Several of Carswell's own chicken Colonels who lived off the base arrived for duty, but they too had to wait. For two hours nobody got on or off that base. For two hours there were no phone calls, either in or out. I wondered what would have happened if someone had tried to run the blockade, and I was relieved that no one tried—especially the little redhead in the Plymouth.

The alert, of course, was a test of base security measures—a detail of perhaps minor importance in relation to Carswell's general emergency plan. But it was a detail carried out with such precision and skill that before I ever got on the field I was confident that



SAC's Lt. Gen. LeMay



The Eighth's Maj. Gen. Anderson

"alone". They believe no such thing. What they *do* think is that no other weapon presently available to the military services offers as much promise of being able to extinguish Russia's ability to make war as does strategic bombardment. There is no other practical way, they point out, of getting at Red targets of strategic vulnerability. Most of them—the factories and refineries—are far inland, and thus not available to sea attack. And any attempt to reach them by overland march would be like pouring men down an insatiable manhole. By process of elimination, therefore, one avenue of approach is left—the air. This is quite different from saying there is no longer any need for the Army and Navy. The Navy, for example, has great responsibility in the defense of our own shores, and in keeping highly necessary sea-supply lines open. And in the final analysis it will be the army that will go in and occupy the enemy's land, and the going may be plenty rough. But none of these assignments will win a *decision* from the enemy at hand. If the US tries to beat him with ground and sea power we will certainly lose.

that can be put into instantaneous operation with nothing more than some code word like "Mickey Fin" from top side. I got caught in a little piece of that plan on the morning of my first visit. Prior to my arrival I had gone to some ends to get the proper introductions from Air Force Headquarters in Washington. I had heard that security regulations were being tightened within SAC and I didn't want to arrive on the scene unknown and without credentials. Several quite fancy letters were thus exchanged between Washington, Omaha and Ft. Worth to grease the way, as the expression goes, and when I drove up to the gate early one cold January morning I fully expected something of the VIP treatment.

What I hadn't contemplated was that my arrival would be timed almost to the split instant with the sounding of a general alert. I had just announced myself to the sergeant at the reception house beside the entrance way, and he had just begun to dial the eighth's PIO when the siren went off. He didn't even finish dialing. He put down the phone, adjusted the pistol at his side, and said

Carswell would also have a carefully worked out plan for bigger things, and that every man there would know just how he fitted in. I was soon to learn just how remarkably explicit those plans are.

One of my first questions when I finally got on the base was why, in the alert, the guards had refused to pass officers who were known to belong there? How could the planes get in the air if the crew couldn't get on the field? The answer was quick and simple. There are six B-36s in a squadron. It is likely that five would be in commission at any one time; therefore not more than one of the six crews is allowed off the field at once. The five remaining are ready around the clock, 364 days a year to move out on the given word. Carswell is an "operational" base!

There are many ways of measuring the Eighth's readiness. The "profile" missions flown by the 36s have been well publicized. A profile mission is one which simulates as carefully as is humanly possible, flying conditions that would prevail during flights to and from actual targets in Asia. The plane loading is the same, the distances are the same, the time flown in night and in daylight is the same, insofar as it is possible to contemplate, headwinds and storms are the same, everything is the same—except the explosive in the bomb bay and the destination. The profile "bombs" are usually made of concrete instead of the real McCoy, and the destination is usually some place like Salt Lake, San Francisco, Tampa, Honolulu, or, as was the case recently, London. A final touch of realism is provided by interceptor fighters which are sent up unannounced anywhere and anytime along the line to try to "shoot" the big boys down.

Profile missions are part of the Eighth's everyday training, and should war come suddenly, the B-36 men would simply draw from their secret files a "real" target folder before takeoff in substitution for the make-believe ones they use now. It has been estimated, incidentally, that SAC's target file now contains about two million items of information. It was put together from bits and pieces over long tedious months by a great number of experts. Not only have SAC's targets been identified, but they have been assigned bombing priorities. The aircrews of the 36s have studied these files until they know them as well as they know the way to Ft. Worth's famous Big Apple spare rib restaurant. They've got a plan here, and the men know they can make it work.

At this moment, however, that plan is undergoing an interesting, if perhaps minor change. Most B-36 profile flights last from 30 to 40 hours. Fatigue on such long hops has been a problem of some concern, as anyone who has ever made even an eight hour flight can imagine. The problem was aggravated by the fact that pre-flight checks and briefings often made it necessary for at least part of the crew to be on duty as much as 18 hours before takeoff. It can be imagined what kind of shape that put them in over the target area—



No this isn't a barracks bull session; it's the crew's quarters in the B-36.

the period when they should logically be at peak proficiency.

The problem was handed to the medics here who have come up with a plan that bomber pilots of World War II might find almost impossible to believe. From now on, here at Carswell, the B-36 missions *begin* 24 hours *before* takeoff. At T.O. minus 24 the crews are called together and given a general briefing on the flight. When the briefing is over they are sent directly to "Grand Hotel", a sort of health club in the grand manner where they can play cards, shoot pool, phone their wives or sweethearts, swim, or relax in any manner they choose until T. O. minus 16. At that time they are cut off completely from the outside world. No more phone calls, no more nothing except sleep, eat, exercise and a steam bath and massage. At about T. O. minus two they are given their final weather briefing and then they take off. But before they go they are given a fatigue test to see if they are up to physical snuff. The test consists

briefly of determining the airman's perceptiveness to a blinking light. The light blinks at a steadily increasing rate, and when it blinks so fast that it becomes a constant light to the viewer he gives an indication by raising his hand. If the light becomes constant at too low a rate of blinking it is a sign the airman is too tired—a bad risk, and he is unceremoniously grounded. And there's no way of kidding the machine.

On the flight line, before the crew boards the plane, the airplane commander conducts a strict "Saturday morning" type inspection. The men stand in line at attention, and the commander checks each to see that they have all their equipment and are generally prepared for the flight. And once the plane is airborne, it is the commanders responsibility to see that every member of his crew eats and sleeps on a rigid schedule. Planning eating and sleeping hours for each crewman is an integral part of preparing the flight plan, and there's no nib-  
(Continued on page 56)

B-36 crewmen await orders from the plane's commander before climbing aboard.





A crew chief's work is never done. T-Sgt. E. T. Brooks, Bowling Green, Ky., waters a battery. Brooks was an ETO fighter pilot during World War II—holds the DFC and the Air Medal with four clusters. Now he keeps his Thunderjets operational.



Cpl. Keith E. Graham, West Orange, N. J., a technician with the recently-arrived 4th Fighter-Interceptor Group, removes one of the cameras from an F-86-E Sabre just after it has returned from combat air patrol over enemy targets in northern Korea.

# PICTURE REPORT from KOREA

The men and women of our Far Eastern Air Force continue the struggle against superior enemy numbers and mid-winter ice and snow and cold

Two Sabre crew chiefs take their only break of the day over a cup of hot coffee while their planes are doing business over the Korean battlefields. Cpl. Hulin Richard, Rayne, La., and Cpl. Gilbert Singleton, Washington, D. C., make the most of their leisure. It won't last.



The pictures on these pages represent, mostly, scenes which have become a part of the everyday life of Air Force officers and airmen in Korea.

This has been a dismal month for all Americans in the battle area—a month marked by retreat, costly advance and retreat again. The enemy's superiority in manpower seems to be a never-ending thing. And the bitter cold and snows and the freezing winds which howl down the mountain passes have made survival of man and machine a problem in itself.

Under such conditions, the Air Force flies and flies—missions in direct support of our embattled troops; missions against the lengthening supply lines of the Chinese armies; and missions against whatever enemy masses can be found. And in between the sorties there is nothing but work and whatever simple relaxations can be found in a Korean winter.

Lt. Gen. George F. Stratemeyer, CG, FEAF, pins the DFC on Lt. Bonita Ruth Bonham. She is the first USAF flight nurse decorated since the war in Korea began. Lieutenant Bonham was cited for outstanding air evacuation work.





They salvaged what they could from this crashed C-119 and then they boarded up its windows, put on a new, earthbound door and opened it up for business as an officers' snack bar. On the landing strips of southern Korea, nothing ever goes to waste.



During protracted periods of snowy weather, the guys on the ground in Korea cover the wings of their ships with rice bags, above. Then, if the weather breaks, even for a few moments, they will be able to get their planes off the ground into action.



The cycle is completed on an air base in Korea. Above, an F-84 pilot vaults off the runway while another plane of the same outfit is towed to the ramp to be gassed, re-armed and checked.



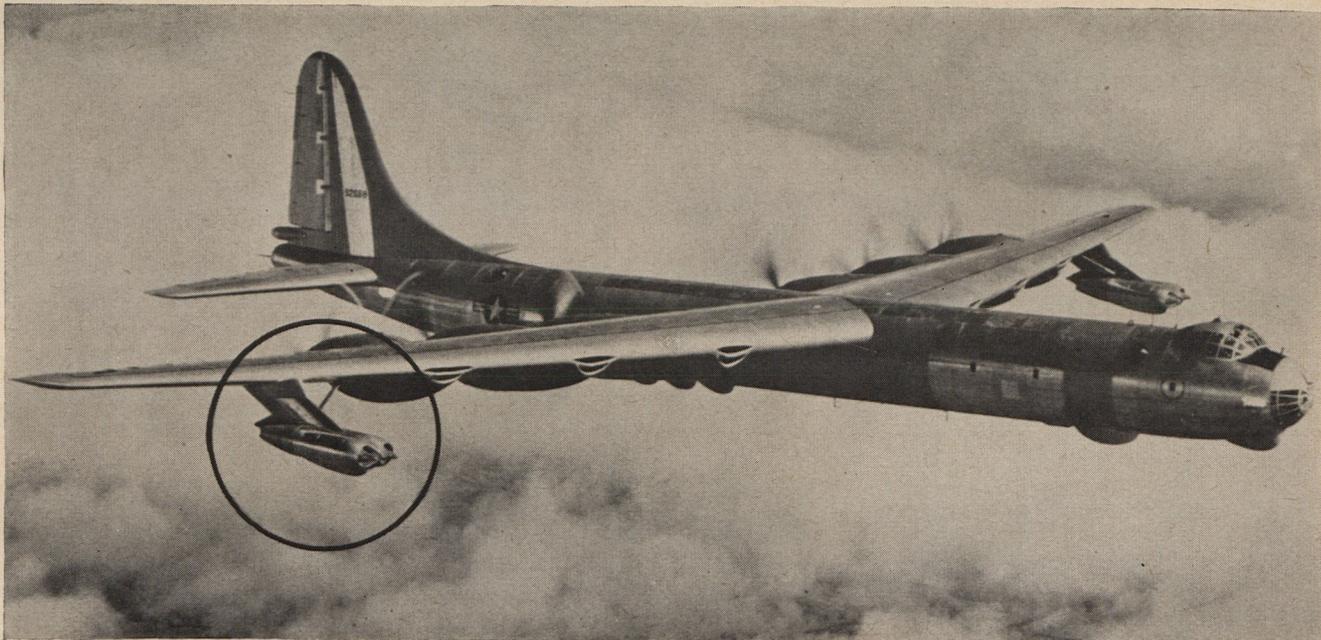
Above, Allied soldiers load napalm containers at a field in south Korea as a plane comes in for a landing in the background. Vandenberg, during Korea visit, praised bomb's effect.

A few of the one thousand Korean orphans flown from war torn Seoul to southern Korea are shown, below, in a C-54 under the care of Flight Nurse Capt. Mary Spivak, Burgam, N. C., who uses the time-tested trick of dispensing candy to keep them happy.



In this strangest of wars, Capt. Johnnie Gosnell, Borger, Texas, waves goodbye to his family, above, in southern Japan as he takes off for the battle area. What a contrast to the scene below where five American GIs carry a wounded buddy across the Seoul municipal airport just before it fell to the Reds.





The addition of two jet pods, one under each wing, give the B-36 extra speed for takeoff and over the target area.

# 1950's Top Technicalities

In a year which has emphasized the need for American technical superiority,

Wright Field experts once again pick the most important advances

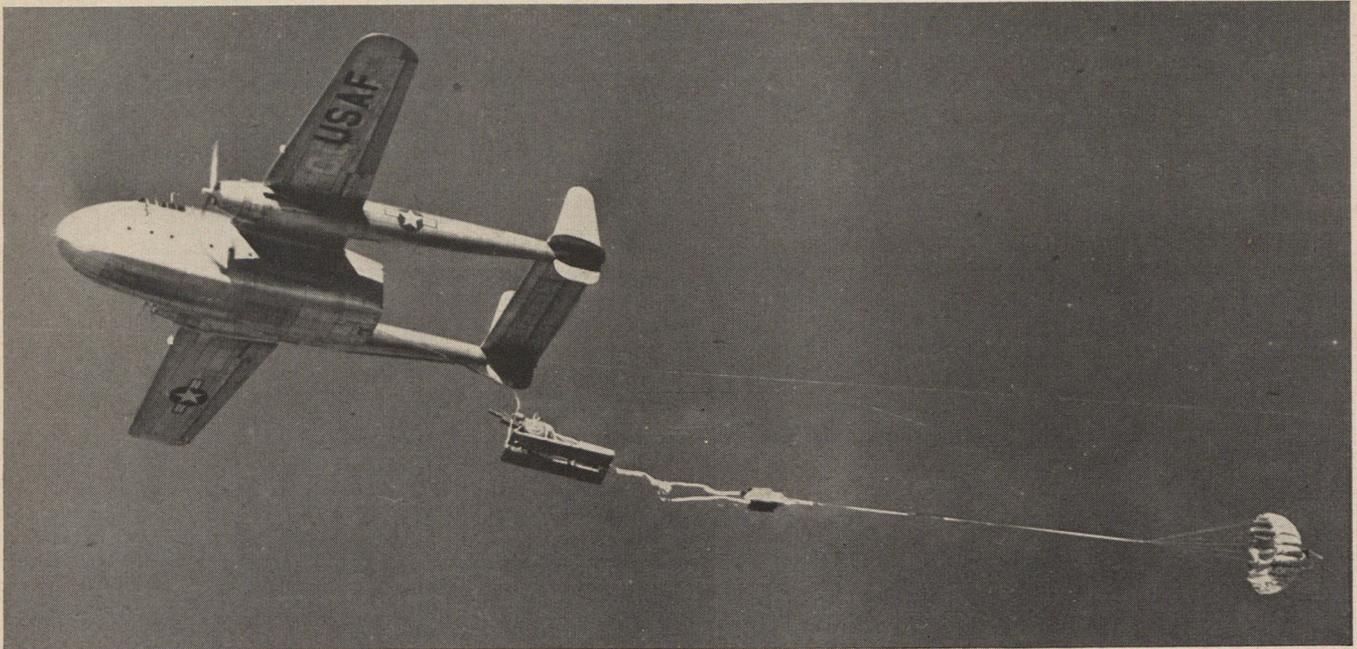


**A**gain, AIR FORCE Magazine presents military aviation's most important technical developments of the year past. For 1951, more than other years, this feature has special significance. The events of the past twelve months have established once and for all that American technical superiority is a must for our security. Since we can never hope to outnumber the Communist world on the battlefield, we must "out-invent" them in the laboratory. Technical superiority is not only our greatest hope for peace, but should war come, it will be the main road to victory.

What were aviation's technical advances in 1950? AIR FORCE again put that question to Wright Field, and top experts in the various development laboratories cited the accomplishments they considered of greatest over-all value to U.S. airpower.

AIR FORCE editors called upon Brig. Gen. Frederick R. Dent, Jr. to make the final selection of the year's "top ten". General Dent, a graduate

**Automatic timer, pre-set before take-offs, opens parachutes at safe heights after high altitude pilot bail-outs.**



Through improved techniques, the Air Force can now drop trucks, jeeps and large field pieces like the one below.

of West Point and M.I.T., a former test pilot, and commander of the 95th Bomb Wing during World War II, is now Chief of Wright Field's Engineering Division.

In making his selections for unclassified publication, General Dent was handicapped considerably by security restrictions. Many very important developments in electronics, for example, are still classified and, therefore, could not be considered for inclusion in this interview. General Dent based his final choice on the Air Force's particular needs today in terms of its own shortcomings and its relation to the current world situation. Some of those on the list, therefore, may drop into relative unimportance tomorrow because of a shift in the international situation. Others, bypassed in today's selection may become more and more important in the future.

"At present," he said, "we are engaged in a tactical ground conflict. Were it a strategic effort, evaluation might result in an entirely different group. In making these selections, however, I have tried not to lose sight of the fact that a superior strategic Air Force is the greatest guarantee of peace that this country can have.

"Our aim in AF technical development is to produce a fighting Air Force that is superior to any adversary in speed, altitude and range. It must be able to accomplish its combat missions in all kinds of weather and in darkness as well as in daylight. This objective must be achieved while relying to a minimum on those materials which might be denied to



the United States in times of emergency."

Here is the General's list based on the above considerations and the reasons for his selections.

#### JET PODS ON B-36

The addition of four J-47 jet engines to the B-36 is particularly important to USAF potential strategic strength. Engines, mounted in pairs in pods beneath each outer wing panel, are in addition to the six pusher-type reciprocating engines. Vulnerability under combat conditions is definitely related to speed, and the jet pod installations have tremendously increased the performance of the B-36—particularly in the target area.

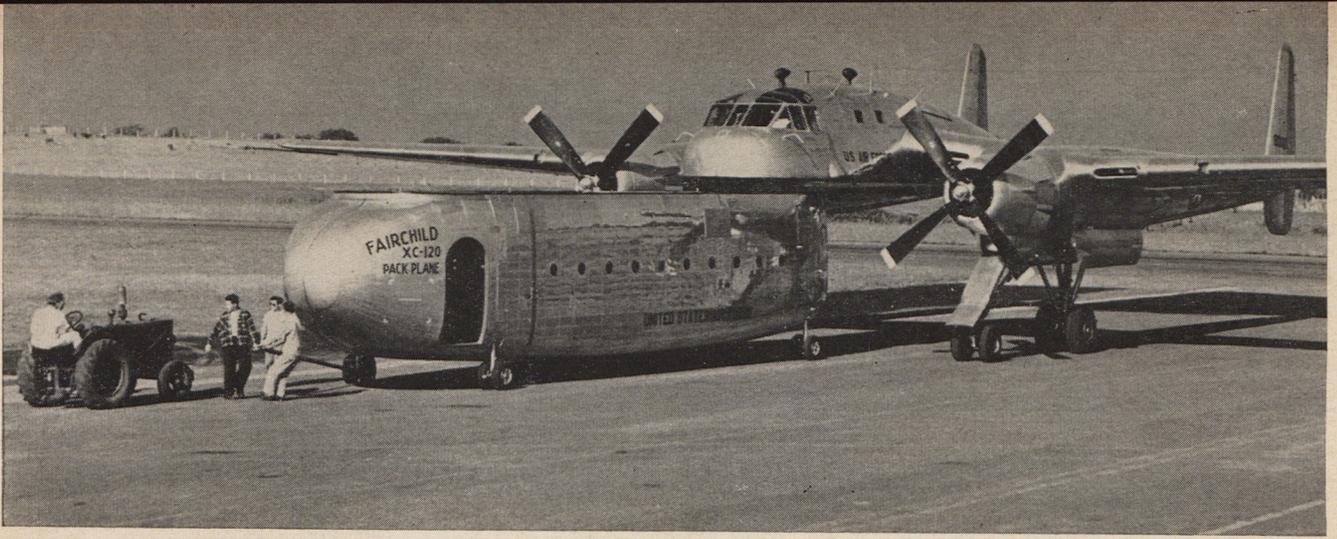
General Dent pointed out that the actual engineering involved in making this extra power available to the AF's giant bomber was relatively simple in comparison to some other technical developments, but the end result was to modernize and extend the first line life of an airplane already in the hands of our strategic striking force.

#### IMPROVEMENT IN METALS, ALLOYS, AND FABRICATION PROCESSES

The enormous improvements in jet engine performance during the past year were due in large part to the advances made in the field of materials. During the last year the Air Force progressed considerably in the development of materials that would stand up under higher temperatures. To minimize the use of critical materials, titanium has been successfully utilized in engine manufacture. New fabrication processes, such as sandwich construction, large extrusions, tapered rolled skin and skin with integral stiffeners, will all contribute to a more efficient and relatively cheaper-to-produce product.

#### HIGH ALTITUDE BAIL-OUT EQUIPMENT AND PROCEDURES

With Aircraft operating at higher altitudes and greater speeds, improved techniques for emergency escape have received special attention. The ejection seat, a development of several years ago, provided a means of emergency escape, but there still



The detachable pod represents a new idea in aircraft construction, cutting loading and unloading time to the bone.

remained the problem of assuring the survival of the individual during his descent. Such developments as the spherical visor which prevents the crash helmet and oxygen equipment from being ripped off by wind blast, and the automatic parachute opening timers which go into action at a safe altitude, and the determination of optimum procedures, assure the airman of an excellent chance of survival. In short, we have helped the airman catch up to the airplane.

#### PARACHUTE DELIVERY TECHNIQUES

New equipment and improved techniques were developed for delivering airborne supplies, vehicles and weapons to troops on the ground. With present techniques, equipment ranging from a 3,000 lb. jeep to a 18,000 lb. truck can be pulled out of a cargo plane by an extraction chute and dropped to waiting ground troops. Sixteen different items of heavy equipment are now deliverable

by air. In placing parachute delivery among the "top ten", General Dent emphasized that these improvements will enable the Air Force to give still better support to ground troops.

#### C-120

The detachable cargo pod of the C-120 is the first development of its kind, and will provide an instrument for Air Force evaluation of the possibilities inherent in this type of cargo aircraft design.

The high development of Jet Assisted Take-off (JATO) has made it possible for the modern military aircraft to use shorter runways and unimproved fields. Then, too, engines need not be designed with excessive power for normal flight.



General Dent believes that detachable pod aircraft may well find future application by commercial air cargo carriers. Time on the ground costs money, and the C-120 is the first aircraft which does not tie up the whole airplane during loading and unloading operations.

We can expect that within the next ten years we will see a number of military planes designed with detachable compartments. It is possible that a basic airplane design may serve many different requirements by the simple selection of the proper pod.

### JATO

The use of jet assisted take-off on aircraft like the B-47 has contributed greatly to the high performance of aircraft of this size. Development problems encountered were some of the year's most difficult.

In general, engines on conventional aircraft are selected to meet take-off distance requirements, and the aircraft has excessive power for normal flight conditions. With the use of JATO it is possible to install engines that are optimum for flight conditions, and obtain the additional required take-off thrust from the assisting JATO units. The value of JATO becomes obvious when we consider that take-off time is only a small portion of the total flight time of any aircraft, and should not dictate the overall power requirements.

### JP-3 FUEL

Development of JP-3 fuel answered a vital supply problem. Previous fuel, JP-1, was ideal for jet aircraft application, but the supply available from known petroleum sources was strictly limited and inadequate to meet contemplated Air Force needs. The development of JP-3 resulted in a slight compromise in airplane performance, but the quantities of this fuel that could be made available dictated the change. (See AIR FORCE, March 1950.)

### PHOTO-ELECTRIC FIRE DETECTORS

If there is anything the airman fears, it is an airplane fire. Up to 1950 fire detectors used in aircraft were generally based on measuring temperature rise, or the rate of temperature rise at certain critical points. Being essentially heat elements, they had to be physically located in the immediate region of the fire, and were unable to distinguish between fire and an overheat condition.

The photo-electric fire detector tested during 1950 can distinguish between fire and bright sunlight, and will not be energized by overheat.

In the event of overheat in a jet airplane the pilot would normally reduce power; in the event of fire he would possibly have to abandon the airplane, if the fire could not be extinguished. Because of this difference in pilot action, any development which results in accurate fire detection will result in the saving of valuable Air Force lives and equipment and easing of in-flight pilot tension.

### AUTOMATIC FLIGHT DEVELOPMENTS

So many operations of an airplane are being made automatic that we are approaching the point where the pilot merely will go along for the ride, with certain monitoring responsibilities.

The gap between the airplane and the guided missile has narrowed to such an extent during the past year that two sections at Air Materiel Command—Guided Missiles and Aircraft Projects—have now been combined into one.

We are well on our way, the General feels, to our ultimate goal of interceptors which will take off, fly to their contacts, fire their armament, return to home base, and land again without the pilot performing any other operation than that of safety observer.

These are the nine outstanding non-classified developments of 1950. As General Dent pointed out, no two people would ever agree on the ten outstanding developments of any one year. As an expression of appreciation to the thousands of individuals who have made outstanding contributions during 1950, General Dent asked AIR FORCE to leave this tenth choice to the reader. It may be one of the hundreds of developments that were considered, but not included above. It may be one that will be included in next year's list, but whose importance to date has not been fully realized.

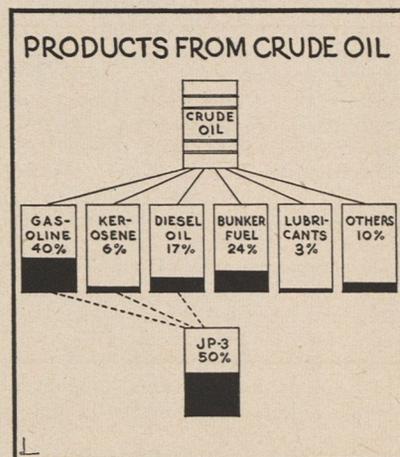
What is the outlook for the future? General Dent feels that although we can look forward to even greater developments in 1951, the biggest headache in the field of technical development is still lack of *stabilization* of research and development funds, and a serious shortage of technically trained personnel. Expansion of both the Air Force and the aeronautical industry will point up the shortage in technically trained personnel. And while the General had no fault to find with the *amount* of funds made available for research and development work, he felt that fluctuation from year to year poses a real management problem. Many de-



Brig. Gen. Frederick R. Dent, Jr.

velopment projects must necessarily extend through periods of five to ten years, and large increases in funds one year, followed by "starvation" in succeeding years, can only result in initiating projects which must subsequently be dropped for lack of funds. This situation has long been considered unhealthy for the research and development program—and uneconomical to the taxpayer. The research and development effort must be continuous, and programmed years in advance.

"I should like to point out," General Dent added, "that the amount of money required for development work is not necessarily in direct relation to the size of the Air Force. Development costs for a new piece of equipment are substantially the same regardless of whether the Air Force subsequently buys ten or ten thousand of the developed item. Funds required for development need not soar merely because the Air Force is expanded in size—but neither should they go down when the number of groups is cut."



Modern jet fuel, JP-3, is a blend of gasoline, kerosene and diesel oil.

# Bulk of Reservists and Air Guardsmen Face Recall

At least 22 ANG Wings and 21 AFTRC units are scheduled to go.

Total of 150,000 men to help bring total AF strength to million

Recall of 150,000 Air Reservists and Air National Guardsmen was undertaken last month as part of an accelerated Air Force program to bring its troop strength up to 971,000 and its group strength up to 95 or 100 "as soon as possible."

Effected in the unprecedented move will be all 21 AFTRC units, and at least 22 out of the 26 Air National Guard Wings in existence prior to Korean hostilities. Ten ANG units have already been called, leaving at least 12 more to be federalized within the immediate future. The fate of the other five Guard Wings has not yet been announced.

The bulk of recalled reservists, however, will be brought back to active duty as individuals rather than units. They will come from organized and volunteer ranks. So far, the Air Force has announced that "a major portion of mobilization assignees and designees, corollary units (either as units or as individuals) and VARTU Personnel" will be called, plus an undetermined number of unassigned reservists who are members of the Volunteer Air Reserve. Insofar as possible, organized reservists will be recalled first. Inactive reservists will be called to fill critical spaces where active reservists are not available.

At the moment, the Air Force strength is approximately 600,000. It will be brought up to 971,000 substantially as follows:

Twelve Wings of the ANG.....	20,000
21 AFTRCs .....	25,000
Units or individuals of the corollary program, plus M-Day assignees or designees and volunteer reservists .....	105,000
Enlistees and draftees (at the rate of 35,000 per month)....	221,000

Six troop Carrier Wings will be selected from the Training Center Wings and ordered to active duty with Tactical Air Command between April 1 and May 15.

The remaining 11 Troop Carrier Wings and four Light Bombardment Wings will be ordered into service between March 1 and May 1. Personnel of these 15 Wings will be utilized primarily as a pool of individuals qualified for other required assignments throughout the Air Force.

These Reserve units will be ordered to active duty for a brief period at their respective reserve training centers, where the individuals will be screened

for delay in recall in accordance with established policies of the Department of Defense. During this period members of the units will also receive physical examinations and will appear before a classification board.

Wherever practicable, both the Reserve and Air National Guard units will be ordered to active duty at their home stations temporarily.

Major Commands of the Air Force will order Corollary Unit personnel (as units or as individuals), Mobilization Assignees, and Mobilization Designees to active duty as rapidly as facilities and equipment permit and requirements dictate.

The call-up also will include a major part of the 60,000 Volunteer Reserve airmen and approximately 20,000 of the 240,000 Volunteer Reserve officers. Personnel will be selected on the basis of skill requirements determined by Air Force Headquarters.

While the list of critical MOS's is an everchanging thing, as of January 10, 1951, the occupational fields in which reservists were most badly needed in the current expansion program were, for officers:

- Electronics
- Communications
- Armament
- Finance and Auditing
- Specialized Observer (Radar, Navigator, Bombardier)
- Engineering (Civil, Mechanical, Chemical, Electrical)
- Food Service
- Personnel
- Business Management
- Procurement
- Transportation
- Intelligence and Cryptology
- Air Police
- Weather
- Mathematics
- Physics
- Languages
- Photo Interpreter

For airmen:

- Radio and Radar Maintenance
- Communications
- Aircraft and Engine Maintenance
- Armament
- Weather
- Supply
- Food Service
- Languages

Each unit or individual to be placed on orders will be notified as soon as

possible to permit the maximum opportunity for them to arrange their personal affairs. A minimum of one month's notice prior to reporting date for active service is assured, and a reservist may apply through his local unit to his numbered Air Force Headquarters for an extension. The 30-day period may be waived or shortened upon request of reservists individually called.

Under present policy all involuntarily-recalled reservists will serve on active duty for a period of 21 months. The new recall program is getting underway immediately and while no target date has been set for its completion, the Air Force will, consistent with being selective as possible, get the job done at the earliest possible date.

The problems of the individual reservist being called, and the procedures he will follow are much the same as they have been since the Korean war began. As heretofore, no over-age in grade officers will be called, although there is no age limit in any grade in the case of airmen. A reservist who feels he may not be physically qualified for active duty and who does not want to wait until he reports for duty to find out that he has been rejected, may consult a doctor at his own expense and forward the doctor's report through his unit to his numbered Air Force headquarters. As far as occupational deferments are concerned there are no established rules at the present time. As heretofore, this whole question is being left up to the individual deferment boards before which every man will have an opportunity to appear.

This recall program is to be considered a permanent thing. Changes in the gravity of the international situation are not expected to affect the plan and there is little likelihood of any recalled units being returned to inactive status. Similarly the huge buildup dooms the Air Force plan to replace non-volunteers as soon as trained replacements are available, although no announcement to that effect has yet been made.

This probably finishes the reserve program as we know it. It is unlikely that any new reserve units will be set up.

Since July of last year the Air Force has reactivated 27 Air Force bases as a complement to the now obsolete 68 group organization. It is anticipated that considerably more bases will have to be activated to accommodate the 95-100 groups. Most of the additional bases will be World War II installations reactivated, although some new sites may be built. The pace at which these bases can be reactivated will determine to some extent, the pace at which reservists will be recalled.

# Armed Services Group Investigates Reserve

**Air Force Association joins other veterans organizations in presenting constructive criticism on whole Reserve program**

The special Sub-Committee on Reserve Components of the House Armed Services Committee is now meeting under the Chairmanship of Mr. Overton Brooks of Louisiana. The purpose of this meeting, Mr. Brooks has explained, is to investigate the Reserve Components of the Armed Services especially with regard to present operations and recall problems. The ultimate goal of these hearings is to assemble sufficient facts to enable Congress to pass whatever legislation may be necessary.

In connection with the meeting, Mr. James H. Straubel, Executive Director of the Air Force Association, together with representatives of other veterans groups, presented a statement of his views on this whole question. The complete text of his statement follows:

The Air Force Association has followed with close interest the current hearing of the Subcommittee on the status of our Reserve Components, and welcomes this investigation as a timely and constructive contribution to the mobilization effort. We submit this statement to the Subcommittee in the hope that it will give added perspective to the matters at hand, especially as they relate to the Air Force and the Air Force Reservist, and with the request that these remarks become part of the official record of this hearing.

As the largest organization of Air Force veterans and Air Force Reservists in the United States, the Air Force Association is closely identified with the issues involved in this investigation. From the moment of our establishment in 1946, we have fought hard for a strong Air Force Reserve. Present leaders of the Air Force Association, including our founder, James H. Doolittle (Lt. General, USAFR), are the ranking Air Reservists in the nation. At the same time, we have a special interest in the enlisted reservist, and occupy a unique position among other reserve organizations, since the majority of our members (52%) are non-commissioned veterans of the Air Force.

We have reviewed testimony taken by the Subcommittee from representatives of other interested groups, namely, the Reserve Officers Association, the Veterans of Foreign Wars, the American Veterans of World War II, the Air Reserve Association, the National Guard Association, the Marine Corps League and the American Legion. We commend their interest in the Reserve Components, and concur generally in their estimates of the situation.

The Air Force Association has long been concerned over an Air Force Reserve program, lacking in equipment, whose mission has been indistinct, troop basis indefinite, organization incomplete, and supervision inadequate. Our national headquarters in Washington, serving as a clearing house for the complaints of Air Force Reservists, has answered a multitude of questions of the "Who, When and How Long?" variety regarding recall procedure. We readily substantiate testimony regarding the general state of confusion that has existed among reservists over both training and recall policies. With specific reference to the Air Force program, we commend the Air Reserve Association for its testimony concerning the lack of up to date records on reserve personnel to permit maximum utilization of reserve manpower—obviously a major deficiency in the program. Of equal importance, though not highlighted in the hearings thus far, is the shameful manner in which the enlisted reservist has been treated with regard to his technical skills, promotions, subsistence, and position in the program—to the obvious detriment of our Reserve strength.

And yet, with all this, we call the attention of the Subcommittee to certain basic considerations, without which it is impossible to maintain the proper perspective in an investigation of this type. We refer to the fact that the reserve problem is part and parcel of the whole vast dilemma regarding national security and international order with which the free world has been wrestling—and quite unsuccessfully—these past few years. Among some reservists and some reserve organizations we have detected a tendency to isolate reserve affairs from the overall defense structure of the country. This, we suggest, is decidedly unrealistic if not naive. The reserve training situation has been no better, nor any worse, than the situation related to overall strategy, intelligence, defense production, critical materials, and the like. Appraisal of reserve training programs must, in all fairness, be weighed in that light. Further, the Reserve Components were geared—as indeed, the regular military establishments, the Administration, the Congress and the people were geared—to all-out peace or all-out war. Under the circumstances, we could hardly expect that the reserve programs of the armed services would prove equal to the unprecedented requirements of partial mobilization to any greater degree than our regular establishments and other segments of the national defense effort have proved

equal to it. Appraisal of recall to duty procedures affecting reservists must, in all fairness, be weighed in that light.

Beyond these basic considerations, which relate to the reserve problem in general, there is, we submit, the need for greater discrimination in evaluating the reserve requirements of the separate services. The tendency to lump all reserve problems and procedures in one military basket, as implied in testimony before the Subcommittee thus far, can only result in an unrealistic appraisal of the manpower needs of the Air Force and, in somewhat lesser degree, of the Navy, due to the more highly mechanized nature of these two services. Mobilization of the Army can be approached, for the most part, in terms of trained bodies. Mobilization of the Air Force, on the other hand, must be approached in terms of complex equipment and complex skills.

Three points raised in testimony before the Subcommittee immediately come to mind. The first is an opinion advanced by Mr. Adamy of the American Veterans of World War II, namely, that it is wrong to put veterans back in uniform so long as there exists a pool of manpower which has never seen military service. In behalf of the thousands of war veterans who comprise its membership, the Air Force Association would like to subscribe to that doctrine, for the interest in equitable distribution of military service among civilians is universal. Reluctantly, however, the Air Force Association cannot subscribe to it. We recognize that the Army might well achieve its projected buildup primarily with non-veterans. The Air Force, on the other hand, with its ever increasing technical requirements, needs experienced manpower which is now available only through the recall of its reserve members. Later on, should partial mobilization continue for an extended period, non-veterans can be absorbed into the program, but in the urgency of the moment this is not in the cards and we must all face this unhappy fact.

The Subcommittee has also heard testimony in support of a program for the recall of veterans through a point system which takes into account prior military service, overseas duty and dependency factors, and which reverses, in effect, the demobilization procedure followed at the end of World War II. Again we are confronted with a quantitative, "trained body" approach to the problem. However more equitable and appealing this approach might be, it is unfortunately not applicable to the current buildup of the Air Force. This buildup must be approached in terms of specific Military Occupational Specialties, and the MOS needs of the Air Force must take precedence over equitable distribution of military duty.

The third point in question concerns

testimony to the Subcommittee, notably that of the Reserve Officers Association, supporting the so-called "integrity" of organized reserve units. It is essential, so this testimony goes, that reserve training units, when called to extended active duty, maintain their identity and serve as operational units within the regular establishment. Once again the traditional ground force approach is applied across the board to all the services. Ground units can still march off to war as a team and, within certain limitations, the team can be maintained in combat. It is also true that certain Air Force Reserve and Air National Guard units can, at the outset at least, maintain their unit integrity within the regular establishment. However, at the moment these are exceptions and not the rule. Air Force requirements, keyed to equipment, demand the utmost flexibility in the assignment of manpower. Many factors, notably cost, maintenance and technical advancement, make it virtually impossible for most reserve units to maintain standards of efficiency sufficient to qualify as full-fledged operational units, and this situation becomes more apparent as the equipment becomes more complex. Reserve troop carrier groups and Air Guard fighter groups may qualify for service as units, but if the prevailing requirement is for more groups of strategic bombers, as indeed it should be, the reservists involved will have to fill the requirements as individuals apart from any reserve units they might have trained with back in their home towns. The advantage of unit training is obvious, and the recruiting appeal of "unit integrity" is desirable, but the flexibility of the present Air Force Reserve—in reality a manpower pool rather than a unit organization—is of prime importance, and, looking ahead, one sees continued need for such flexibility. Certainly it is difficult to foresee reserve units capable of maintaining combat readiness as B-36 or B-47 outfits. Thus, "unit integrity" of the reserve in the traditional sense is not only impractical but can be a detriment to the modern Air Force.

We must never lose sight of the fact that preservation of a balanced Air Force on the basis of military requirements must come before preservation of unit integrity within the reserve program and before personal convenience of the individual reservist. There can be no compromise with military necessity when our survival as a nation is at stake.

With these standards in mind, we concentrate our criticism of the Air Force Reserve in the fact that too few Air Force reservists are as proficient in their individual Military Occupational Specialties in 1951 as they were when released from active duty with the Air Force in 1945 or 1946. This, in our opinion, is the greatest single indictment that can be raised against the program. However, in evaluating this state of affairs, we wish to challenge several relative statements made to the Subcommittee by Mr. McMullen in behalf of the Air Reserve Association.

The first of these is the Air Reserve Association's charge that there is an

"increasing lack of interest and non-participation" on the part of reserve officers and airmen in the training activities of the Air Force Reserve program. The record reveals conclusively, we believe, substantially increased participation ever since inauguration of the Air Force's five-part reserve training program a year and a half ago. This is almost too obvious to mention, for at that time the Air Reserve was at such low ebb it could only get better; it couldn't have been worse. And while this program has not been implemented to the degree desired by Air Force Association, it is nevertheless a fact that reserve participation has increased as a result of it, and has been further stimulated in recent months by the Korean crisis.

As for the interest of Air Reservists: with all the complaints, scarcities, and confusion with which the Subcommittee seems to be familiar, there has and continues to be a deep-rooted and constructive interest in training activities on the part of Air Reservists. Correspondence coming into our national headquarters in Washington, and reports from our field units, prove conclusively

**"Unit integrity" of the reserve in the traditional sense is not only impractical but can be a detriment to the Air Force."**

that the many complaints reflect interest, rather than lack of it, in the reserve program. The Reservists' continued demand for more rather than less training is evidence of this fact. Many Air Reservists, on their own time and with their own funds, and often without much regard to the benefits involved, have created and maintained reserve study units if for no other reason than a desire to "keep their hand in" the Air Force operation. These points deserve clarification for the record.

The Air Reserve Association, in testimony before the Subcommittee, also had advanced the belief that the regular Air Force establishment seriously questions "the desirability or necessity of maintaining reserve or civilian component organizations." Mr. Doyle of the Subcommittee has questioned the foundation of this grave charge. —

As the organization of Air Force veterans we feel called upon to state for the record that we have found no evidence to support this charge. It results, we believe, from misunderstanding of the problems which all of the regular establishments, and the Air Force in particular, have faced since the rapid demobilization of 1945.

With long range aerial retaliation occupying a priority position in our defense establishment by Joint Chiefs of Staff decree, the Air Force has shouldered a unique responsibility among the services, and at the same time has had neither the manpower nor the equipment in sufficient quantity to fulfill such responsibility should an all-out emergency arise. The Air Force has

been forced to adopt, in almost ruthless degree, a policy of first things first, and to concentrate on fashioning with the facilities available a relatively small but efficient regular establishment, emphasizing strategic airpower—and the wisdom of this policy should by now be quite obvious. As a result, the reserve program has suffered, just as tactical and transport aviation activities have suffered. But to conclude from this that the Air Force doesn't believe its reserves to be either desirable or necessary is as incongruous as it would be to conclude that the Air Force believes transports and fighters unnecessary and undesirable. It is true that some Air Force commanders in the field have not paid as much attention as they might have to reserve units, that within the Air Force honest differences of opinion may have arisen as to the proper role and composition of the reserve—but nowhere have we found, as implied, that the Air Force has ever questioned the basic need for a reserve organization. We ask the Subcommittee to weigh this serious charge with the greatest caution.

Furthermore, the rapid buildup of the Air Force to its prescribed strength within the 3.5 million defense structure will, by its very nature, answer any such charge as that discussed above. For it is now apparent that the Air Force will expand almost entirely through the recall of its reservists and reserve units along with the Air National Guard. This will become evident in the next few months by the recall to duty of approximately 130,000 Air Reservists and 20,000 Air Guardsmen, as announced by the Air Force on January 18, 1951.

In this connection, the Subcommittee has heard testimony regarding "the strategic importance of the organized reserves in the event of all-out mobilization." The Air Force has, we believe, now taken action which demonstrates the strategic importance of the reserves, unorganized as well as organized, in this period of partial mobilization. This action will, we suggest, also answer for the Air Force Reservist the dominating complaint question voiced in this hearing, namely, "When am I going to be called?"

In the process of doubling its 48 group strength, the Air Force will call up virtually all of its organized reservists, many of its volunteers, and virtually all of the Air National Guard units. This will, in effect, wipe out the Air Force Reserve and Air National Guard as organized civilian components.

The Subcommittee has heard testimony that, should an all-out emergency arise, the many complaints now being voiced at this hearing would be "water over the dam." We submit that, as far as the Air Force reservist is concerned, the water is already crossing the dam. To the Air Reservist, these complaints now become important only in relation to their value in fashioning a new and strengthened reserve program for the Air Force.

In the process of wiping out Air Reserve and Air Guard organizations, an

*(Continued on page 54)*

# Systems Engineering

## Guided missiles experience aids Martin in implementing this airplane design concept

Guided missiles were the first aircraft to attain supersonic speeds—the first to acquire fully automatic control—and the first to require the close design integration of components which The Glenn L. Martin Company calls *Systems Engineering*. Today, with piloted airplanes also passing the sonic barrier and being assigned increasingly difficult missions, it is essential that they, too, be designed as integrated air-borne systems, not merely as flying vehicles whose sole goal is speed.

With a background of demonstrated accomplishments on top level missiles projects and continuous growth in this field, The Glenn L. Martin Company has carried over *Systems Engineering* from its missiles experience to its airplane designing. The Martin engineering staff has been shaped and manned to provide proper emphasis on all three of the basic types of functional elements involved in the production of a modern airplane—airframe and power plant—electronic flight and navigational controls—and military armament or passenger facilities.

*Martin Systems Engineering* recognizes that the immediate problem of aeronautical engineering is not to concentrate exclusively on airframe performance, but to integrate the necessary electronic and mechanical systems into the airframe design to produce a truly effective military weapon. And, whether the weapon is a manned airplane or a guided missile, it is imperative that the complete development be so scheduled that the end product represents a completely coordinated system. There is no advantage in having an airframe ready for flight testing while the guidance system, which may necessitate airframe changes, is still a gleam in the designer's eye.

That is Martin *Systems Engineering*. That is why radar, servo-mechanism, automatic control, automatic computer and antenna experts—as well as aerodynamicists, structural engineers and electrical, hydraulic, armament and power plant installation specialists—are all part of the well-integrated engineering team. The Glenn L. Martin Company offers its customers today.

## Martin Ads Tell Air Power Story

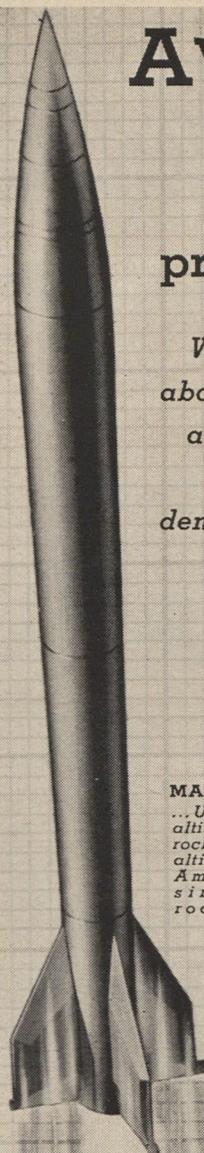
Reaching millions of informed, alert American magazine readers, Martin advertisements like this one highlight air power's important role in our country's preparedness program. And survey after survey has demonstrated that their fiction-style appearance attracts an extremely high readership.

The general public and business circles are reached through the pages of *Time*, *Newsweek* and *Business Week*. The men and women who write and edit the news are kept abreast of latest developments through *Editor & Publisher*, *American Press* and *Publisher's Auxiliary*.

# AVIATION ENGINEERING

## probes a new UNKNOWN!

*With the Martin Viking rocketing 106 miles above the Earth at 3600 m.p.h. . . with piloted aircraft passing the sonic barrier . . . man's physical limitations create new problems, demand new methods of aeronautical designing.*



### MARTIN VIKING

*... U.S. Navy high-altitude research rocket. . . holder of altitude record for American-built, single-stage rocket!*



### MARTIN KDM-1

*... U.S. Navy target drone . . . ram-jet-powered, radar tracked, radio controlled.*

## Martin AIRCRAFT

*Builders of "Dependable Aircraft Since 1909"*

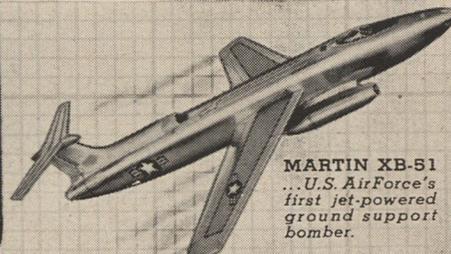


**Manufacturers of:** Military aircraft • Martin airliners • Guided missiles • Rockets • Electronic fire control and radar systems • Precision testing instruments **Developers and Licensors of:** Mareng fuel tanks (to U. S. Rubber Co.) • Marform metal-forming (to Hydropress, Inc.) • Honeycomb construction material (to U. S. Plywood Corp. and Aircraft Die Cutters) • Structural adhesives (to U. S. Plywood Corp. and Bloomingdale Rubber Co.) • Permanent fabric flame-proofing (to E. I. duPont de Nemours & Co.) • Hydraulic automotive and aircraft brake **Leaders in Building Air Power to Guard the Peace, Air Transport to Serve It.**

**MAN IS BUILT** to move at 3 m.p.h.—to see and hear for only short distances—to react in painfully slow tenths of a second—to live in an oxygen atmosphere with very narrow pressure and temperature bands. When he must fly in extreme temperatures and pressures at supersonic speeds—make decisions in thousandths of a second—bomb unseen targets, shoot down enemy invaders in zero-zero weather or sink submerged submarines—he must have the aid of mechanical and electronic senses, muscles and nerves!

To meet this challenge, Martin engineers are designing aircraft as integrated airborne systems, not merely as flying vehicles whose sole goal is speed. Whether planning a U.S. Navy Viking rocket, a jet-powered Air Force XB-51 or a modern airliner . . . Martin engineers work with all three elements of airframe and power plant, electronic flight and navigational controls, and military armament or passenger facilities. And design work is so scheduled that the end product represents a completely coordinated system. For there is no point in having an airframe ready for flight testing while the electronics system, which may alter the airframe, is still a gleam in the designer's eye.

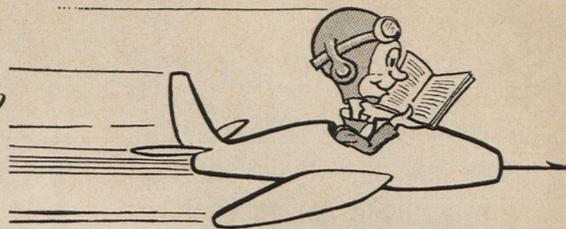
This is Martin *systems engineering*—a new beacon to pierce the blackness of the *unknown*—developed from Martin's background of far-reaching advances on top level missiles projects. This is why radar, servo-mechanism, automatic control, automatic computer and antenna experts—as well as aerodynamicists, structural engineers and electrical, hydraulic, armament and power plant installation specialists—are all part of the well-integrated engineering team Martin offers its customers today! THE GLENN L. MARTIN COMPANY, Baltimore 3, Maryland.



### MARTIN XB-51

*... U.S. Air Force's first jet-powered ground support bomber.*

# The Airman's Bookshelf



**Airpower: Key to Survival**  
by Alexander P. de Seversky  
Simon and Schuster, \$3.50

AIR POWER: KEY TO SURVIVAL by Major Alexander P. de Seversky is, in my opinion, on the "must" list of reading for every citizen of this country. Today, and probably for a long period to come, there will be serious discussions in this country concerning the type and magnitude of military forces that we must build and the strategy of the employment of those forces to best accomplish our national and military policy. The time has arrived when the American people must educate themselves in the potentialities of military power. They must know the capabilities of the nation's military forces.

This nation today faces the most critical period in its entire history. Whether we come through this period as a strong, vital and virile nation will depend upon the major decisions which are to be made by our government in the immediate months ahead of us. The problems that confront a nation in the determination of its national policy are many and complex; they cannot be hastily arrived at nor can they be founded on emotionalism. The basic and fundamental decision which must now be made is the determination of the character of our overall national military strength. We must determine whether our chances of survival demand that our major effort be directed toward the creation of pre-eminent air power with land power and sea power auxiliary thereto, or whether some other balance of those three forces is desirable.

Major Seversky's AIR POWER: KEY TO SURVIVAL discusses this subject in a dynamic manner. He presents a powerful argument that this nation could never be victorious in a war with Russia if our strategy is predicated upon the defeat of the land armies of Russia and the occupation of her land masses. He proves also that neither can naval power achieve such a victory. Seversky does not maintain that naval power is obsolete or obsolescent. He understands and argues forcibly that this nation must possess adequate naval power to meet Russia's threat on the ocean. He is also cognizant of the vital fact that the sea lanes must be kept open to insure the movement of critical materials from remote spots of the world to feed our gigantic industrial and economic establishment.

The effectiveness of air power has been materially enhanced in recent years by the development of the atomic bomb. Russia possesses that bomb. What her stockpile is we do not know. It is obvious, however, that, given time, she will have one of adequate propor-

tions to cripple our industrial establishment. She possesses the planes to carry those bombs from her bases to the critical targets in this country. As Seversky points out, no force, no matter what its size, operating either on land or water, can prevent the employment of Russian air power. It is equally obvious that no land force of Russia and her satellites can prevent the employment of our air power against the war-making potential of Russia.



MAJOR SEVERSKY

Seversky argues that it is by air power alone that we can create a powerful air defense against Russian atom bomb attacks. It is also by air power only that our forces of destruction can be directed against the economic, military and social structure of Russia. Therefore, the creation of that air power, Seversky maintains, becomes the number one objective of this nation if we are to attain our national objective of peace and have a chance for survival in the event all-out war should occur. He also points out that there is a limit to our industrial capacity. He argues that to raise and maintain an army of millions of men will put such a load on our industry as to seriously interfere with our capacity to make America pre-eminent in the air. Being second best in the air, Seversky says, means defeat, not victory.

Seversky's thesis is predicated on the fact that we can never build an army of sufficient size and military might to defeat Russia on the ground. To attempt it, he says, would be fighting the war as Russia would want it fought. We would be fighting Russia's strength with our weakness. He states that this nation has a tremendous lead over Russia technologically and industrially. This advantage, if exploited at once, will put this country in a decisive position of superi-

ority over Russia. This might, conceivably, give peace to the world for years to come. In the event war should occur for any one of numerous reasons, it would provide us with the military power to destroy the war-making potential of Russia and thereby make her impotent to wage major warfare.

There is nothing inconsistent with Seversky's theories and the necessity for maintaining a ground army adequate to meet those commitments essential to our national policy, provided these commitments do not envisage a major land war on the Eurasian land mass. It is not in conflict with the nation's requirements for a navy adequate to keep open the sea lanes of communication. Seversky does maintain, however, that these forces must be kept at an irreducible minimum consistent with their objectives. Otherwise, the industrial capacity of the nation would be inadequate to create the kind of air power we need to control the air both over this nation and that of the only enemy that can threaten our security. As Seversky points out, our economy can create, and maintain over a long period of years, an Air Force of sufficient strength to defeat Russia and to give strong protection to this nation from Russian air attack. He also emphasizes that even our vaunted economy cannot support the biggest army, the biggest navy and the biggest air force for long. As Seversky states, if that economy cracks and disintegrates, this nation is destroyed just as positively as though we were militarily defeated.

Seversky is dreadfully afraid lest the Korean War should cause people to conclude that the decision of our Joint Chiefs of Staff to place primary emphasis upon the building of a strategic air force might be unsound. He emphasizes, so forcibly, that the only reason Russia herself has not become militarily involved, either in Korea or in Western Europe, has been the realization that there existed in this country, operating from United States bases, a strategic air force ready and equipped to strike at the very heartland of the Soviet Union. Seversky pleads with the American people to realize that only through air power as our major instrument of national policy and military might can this nation fulfill its commitments with its allies and insure itself of ultimate survival. As he says, time is running out; we have already too long delayed in making this great decision.

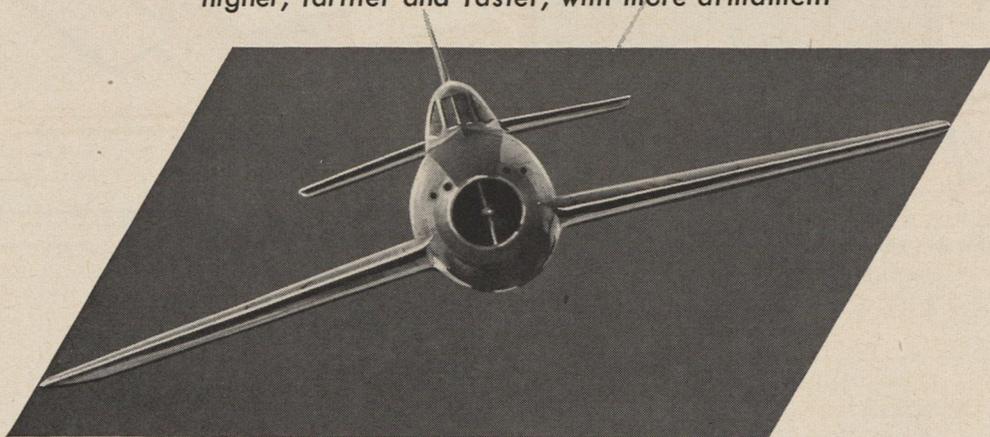
I cannot recommend too strongly that every adult citizen of this nation not only read, but study closely, the theories and principles so expertly enunciated by Seversky in his book.

Harold L. George  
Lt. Gen. USAF (Ret.)

# **VERSATILITY!** THE SWEEP-BACK **F84F**



**VERSATILITY** in speed, range, altitude and firepower, going higher, farther and faster, with more armament



**VERSATILITY** in performing any required combat mission to contact the enemy successfully and conquer him



**VERSATILITY** in design and production capabilities  
.. delivering operational aircraft faster  
and at lower cost

**REPUBLIC**  **AVIATION**



FARMINGDALE • LONG ISLAND • NEW YORK

*Makers of the Mighty Thunderbolt • Thunderjet • XF-91 • **F84F***

# Adams had a problem!



It was routine as problems go in Washington but definitely **not** routine to him. Adams wanted **ACTION**. Naturally he wrote to **HIS** organization, **AFA**.

**Result: RESULTS!**

**AS ADAMS PUT IT** "Last year I wrote to your office regarding an appointment in the USAFR. I came out of the last war as a corporal. Through your courtesy I was sent a copy of the Air Force regulations pertaining to me and other information regarding a commission. I followed your instructions and, by golly, I **MADE IT**. Second lieutenant, USAFR!"

Merlin R. Adams  
North Hollywood, Calif.

**AIR FORCE ASSOCIATION** specializes in cutting red tape. Experts in AFA's greatly expanded Personal Service Department follow requests from members through Washington's huge and complex administrative machinery until they *get the answer*. We are the **PERSONAL WASHINGTON REPRESENTATIVE** of every AFA member. *Every* question that comes from members is important. *Every* question gets **ACTION**. Here are a few of the personal services AFA performs for its members:

**ANSWERS** inquiries relative to latest USAF Reserve recall policy, critical MOSs, deferments, qualifications required for Regular AF enlistment, pending AF legislation, organizational changes in USAF structure, latest AF planes and equipment, personnel policies, Airmen's Career Program, current AF payscale.

**ASSISTS** Air Reservists on assignments, commissions, promotions, field training, extension courses, MOS changes, applications for reserve and active duty assignments and Aviation Cadet training, requests for Awards and Decorations.

## SEE THAT THIS COUPON GETS IN THE HANDS OF AN ELIGIBLE MEMBER

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

Please enroll me as a member of AFA and send me my lapel emblem and membership card. I enclose \$4 for annual dues (\$2.50 of which covers a year's subscription to AIR FORCE).

- I have been honorably separated from the AAF, or  
 I am now on active duty with the U. S. Air Force

My Air Force Unit  
Identification

Air Force.....

Command.....

Other.....

Signature

NAME.....

Print Plainly

ADDRESS.....

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

**AIR FORCE ASSOCIATION** can be **YOUR** personal representative in Washington. **AIR FORCE ASSOCIATION** can give **YOU** the answers.

Merlin R. Adams, of North Hollywood, is only one of the many **AIR FORCE ASSOCIATION** members who has been helped by AFA's red-tape cutting department. This is no time for fumbling about in the dark. In the uncertain days ahead you will want, quick, authoritative answers. AFA represents **YOU** in Washington.



**Join Air Force Association  
and get YOUR Answers**



## Outstanding ROTC Cadets Get AFA Award

Several universities and colleges presented the Association's silver medal and ribbon at ceremonies held during fall term

Mr. John Oman, III, of Oman Construction Company, Nashville, was recently appointed AFA's Tennessee Wing Commander by Tom Baker, AFA vice-president.

Mr. Oman is a lieutenant colonel in AF Reserve and is deputy commander of Reserve Forces, Nashville area.

Harvey B. Young, Jr., Bank of Kirksville, has been named as Missouri AFA Wing Commander by Dr. John L. Biggestaff, AFA vice-president for mid-west.

USAF has produced and distributed the 13½-minute black and white public information film "Your Air Force in Action," SFP 256. This motion picture is cleared for all public non-profit, theatrical and television screenings.

"Your AF in Action" is a dramatic documentation of the part played by USAF in the Korean crisis—establishing air superiority and providing airlift facilities and air support of United Nations troops. Within a few hours after hostilities broke out, the USAF answered the urgent request of the UN for military assistance to the Republic of Korea.

AFA units may borrow the film from the following Area Control Film Libraries servicing their locality: Hq, Middletown AMA, Olmsted AFB, Middletown, Pa.; Hq, Mobile AMA, Brookley AFB, Ala.; Hq, Ogden, AMA, Hill AFB, Ogden, Utah; Hq, Oklahoma City

AMA, Tinker AFB, Okla.; Hq, Sacramento AMA, McClellan AFB, Calif.; Hq, San Antonio AMA, Kelly AFB, Texas; and Hq, Warner Robins AMA, Robins AFB, Georgia.

Negatives of four scenes from the film have been sent to Air Matériel Area film libraries for reproduction and distribution to organizations on request as tie-ins for promoting showings.

The annual Air Force Association Air ROTC Awards are receiving early at (AFA News continued on page 48)



Cadet Wilton Ching, Univ. of Hawaii winner, received congratulations from Loretta Wong, ROTC unit sponsor.



Col. Fred D. Stevers, 12th AF Inspector General, presents AFA Award to Ray P. Hampton, Dewitt, Ark., at Univ. of Ark. inspection. He is assisted by Lt. Col. Merton L. Parks, PAS&T of Univ., and Capt. Herbert Burton, Ass't PAS&T.



Maj. E. Hibner, University of Oregon PAS&T, pins AFA medal on Cadet Clarence E. Ford. At left is Captain N. N. Mihailov, adjutant of the unit.



Lee W. Jones, Cmdr. of San Jose AFA Sqdn., congratulates AFA Award winner Charles N. Royds, San Jose State College cadet. From left to right, Dr. T. W. MacQuarrie, president of the college; Lt. Col. Thomas A. Lee, commandant, San Jose ROTC unit; Maj. Howard Brown, ass't PAS&T; Cadet Royds; Cmdr. Jones.



40 members and guests of Queens AFA Squadron are shown at recent dinner held at Idlewild Airport. After dinner, tour of Airport was conducted for the group.



Members of Syracuse, New York, AFA Squadron accept their permanent Air Force Association charter at Squadron meeting. From left to right, Col. Hildreth, USAF, ret.; George Callander; Mary Gill Rice, N. Y. Wing Commander; Congressional Medal of Honor winner Vosler; and Squadron Commander Collins.



Dr. Theodore von Karman (R), AF's Scientific Advisory Board Chairman, receives AFA's 1950 science award from AFA President Bob Johnson at recent Pentagon ceremony. Guests included Under Sec'y of AF McCone and Ass't AF Sec'y Stuart.

tention from colleges and universities during the current academic year. Several schools presented the Association's silver medal and ribbon to outstanding, advanced AF ROTC students at ceremonies held during the fall months.

The first AFA ROTC medal ever awarded in the Territory of Hawaii was presented on December 6, to Cadet Major Wilton Ching by Roy Leffingwell, commander of AFA's Hawaii Wing, as the ROTC unit of University of Hawaii held its first regimental parade of the year.

Ching, of Honolulu, was selected as the outstanding cadet in the first year of AF ROTC advanced course by Lieut. Col. William J. Hershenow, Jr., PAS&T.

Cadet Lieut. Col. Clarence E. Ford, a veteran of World War II in ETO, was the recipient of the silver AFA medal at University of Oregon ceremonies on November 28. The award was presented by Major Edwin L. Hibner, PAS&T.

Cadet Ford, in his senior year in School of Business Administration, is a resident of Portland and Eugene.

The University of Texas ROTC unit awarded the AFA medal this year to Cadet Lieut. Col. Michael B. Miraglia during a recent parade held for the presentation of Cadet commissions. Dean Arno Nowatny, Dean of Student Life, made the award.

Cadet Miraglia of Geneva served with AAF in North Africa and Middle East during the past war. He has been pledged to the Arnold Air Society.

Cadet Charles N. Royds of Redwood City was presented the Air ROTC medal by Capt. Lee Jones of San Jose, California, Squadron, AFA, at a recent parade staged by San Jose State College.

Under a recent amendment to AFA's Constitution, any individual enrolled as an AF ROTC cadet is eligible for Cadet membership in the Association.

March 1 begins the new fiscal year for AFA Squadrons throughout the nation, according to Board action established on July 3, 1949.

Squadrons should complete their election by the end of February and install new officers during the first regularly scheduled meeting in March.

A list of names, addresses and telephone numbers of new squadron officers should be forwarded to National headquarters as soon as possible.



## AFA STATE ROUNDUP

### MARYLAND

**Baltimore:** Charles Purcell, commander of the Baltimore Squadron of AFA, has announced that purchase of a training aircraft by the organization is awaiting the raising of a \$2,500 fund for the purpose.

Mr. Purcell may be contacted at 1102 No. Charles Street.

(Continued on page 50)



# For Your Security and Peace of Mind: **AFA Accident Insurance**

**LOW-COST PROTECTION FOR MILITARY AVIATION ACTIVITIES PLUS** general accident insurance—including private and commercial flying  
*issued by Lloyd's of London*

**SELECT THE INSURANCE suited to your own status**



### CLASSES A-1 and A-2

Designed especially for pilots and other flight crew members of the **REGULAR** military services, who are engaged in military flying activities as a full-time occupation. A-1 covers accidental death and loss of sight or limb from any cause, including military or civilian accidents, on land or sea or in the air, world wide. A-2 offers the same accidental death coverage as A-1 but does not cover loss of sight or limb.



### CLASSES B-1 and B-2

Designed especially for pilots and other flight crew members in the **RESERVE** military services, whose flying activities are part-time (generally limited to weekends and the two-week annual military service period). B-1 covers all types of accidental death, whereas B-2 is limited to death from aviation accidents only. B-1 also has broader loss of sight and limb benefits than B-2 (see chart).



### CLASS C

Designed for all persons who are not flying personnel and whose participation in aviation is limited to traveling in aircraft as passengers or to working in or around aircraft on the ground. Death or injury from every type of non-aviation accident, and from certain types of aviation accidents, is covered (see chart).

**H**ERE'S A NEW insurance plan which protects you and your family, day and night, at home or away, on land, on sea, and in the air, any place in the world, even while you pilot—or are a passenger in—military aircraft, and even while you are on active duty with the Air Force.

AFA Accident Insurance requires no physical examination. It pays off for loss of sight or limb, as well as

for accidental death, in certain categories. No other accident insurance offers you—at such small cost—comparable military and civilian air and ground protection. Available in units of \$1,000—up to a maximum of \$10,000—AFA Accident Insurance is exclusively for members or associates of the Air Force Association. Annual premiums per \$1,000 of insurance range from \$3 to \$15. See chart below.

### HERE'S EXACTLY WHAT YOU GET AND WHAT IT COSTS

*Premiums payable annually, semi-annually, or quarterly*

CLASS OF POLICY	PERSONS ELIGIBLE: All AFA members and associates (other than paratroopers and airborne infantry) except as follows:	SCOPE OF POLICY COVERAGE (indicated by ✓)						ANNUAL PREMIUM PER \$1,000
		Death Benefits			Loss of Sight or Limb Benefits			
		Military Aviation Accident	Civil Aviation Accident	All Other Accidents	Military Aviation Accident	Civil Aviation Accident	All Other Accidents	
A-1	No exceptions	✓	✓	✓	✓	✓	✓	\$15.00
A-2	No exceptions	✓	✓	✓				13.80
B-1	Flight-rated <b>REGULAR</b> military personnel not eligible (see note 1)	✓ (see note 2)	✓ (see note 2)	✓		✓ (see note 2)	✓	7.20
B-2	Flight-rated <b>REGULAR</b> military personnel not eligible (see note 1)	✓ (see note 2)	✓ (see note 2)			✓ (see note 2)		4.80
C	<b>FLIGHT-RATED</b> Regular and Reserve military personnel not eligible (see note 1)	✓ (see note 3)	✓ (see note 3)	✓	✓	✓	✓	3.00

**NOTE 1:** "Flight-rated personnel" means pilots, co-pilots, navigators, flight engineers, radio operators, bombardiers, aerial gunners, and similar flying personnel of the military services or their reserve components.

**NOTE 2:** Class B-1 and Class B-2 policies expire with respect to aviation accident coverage if the insured person serves 120 days, consecutively or non-consecu-

tively, on active military duty during the policy period; but Class B-1 coverage continues in effect thereafter for other types of accidents.

**NOTE 3:** Class C coverage does not apply to accidental death of the insured person on an aircraft unless he is on such aircraft as a passenger or in the course of his employment as ground crew or administrative personnel.

## CLIP AND MAIL TODAY

### AIR FORCE ASSOCIATION

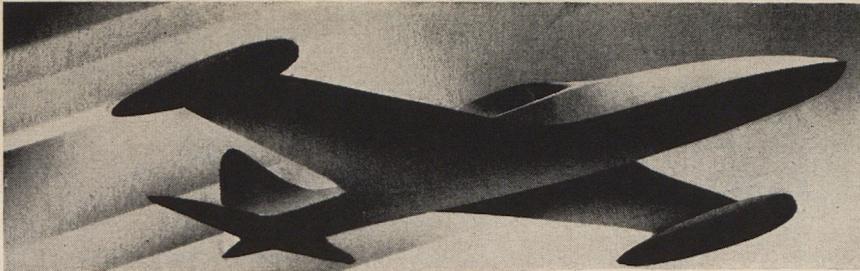
1424 K ST., N. W. • WASHINGTON 5, D. C.

Please send complete information about AFA Accident Insurance, together with schedule of optional means of payment, and application blank.

Name.....

ADDRESS.....

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



# Alodine®

## BONDS PAINT TO ALUMINUM AND PROTECTS THE METAL

### EASY TO USE

Process is foolproof and chemical solution can be applied by dipping, spraying, brushing or flow-coating.

### ELECTROLESS

Alodizing is a chemical conversion process.

### ECONOMICAL

Low chemical cost, short coating time and low temperature keep overhead down.

### EFFECTIVE

The tough, durable Alodized surface makes paint stick to aluminum and resists corrosion. "Alodine" meets these Service specifications: MIL-C-5541; MIL-S-5002; AN-E-19; AN-F-20.

## Brush Alodine®

Brush "Alodine" is easily and quickly applied to assembled aircraft in the field, shop, or hangar. Cleaning and coating chemicals for Brush Alodizing are shipped in bulk or in the convenient Brush "Alodine" Chemical Kit No. 1. This Kit contains enough chemicals to treat about 1000 square feet of surface and is an ideal package for use at airfields of commercial airlines or of the Armed Services anywhere.

**Use "Alodine" and Alodized Aluminum for Maximum Product and Finish Durability!**

**Write for Descriptive Folder.**



Pioneering Research and Development Since 1914

**AMERICAN CHEMICAL PAINT COMPANY**

**AMBLER, PA.**

Manufacturers of METALLURGICAL, AGRICULTURAL and PHARMACEUTICAL CHEMICALS

## ROUNDUP

CONTINUED

### MICHIGAN

**Detroit:** Detroit Squadron No. 1, AFA, held their annual Christmas party in the new Veterans' Memorial Building on December 16.

After a full course turkey dinner was served, games, dancing and a Christmas tree concluded the evening's festivities.

The annual installation of officers for the coming year and the Airpower Dinner will be held by the Squadron the latter part of February in Veterans' Memorial Building. For information and reservations, call LA-6-9624 or VI-2-7226.

### NEW YORK

**New York City:** The New York City AFA Squadron No. 1 (WAC) held its Christmas party on December 9 at the Home for Disabled Veterans at Menlo Park, N. J. The home consists of disabled vets from the Spanish American and First World Wars.

The party was opened with singing of Christmas carols which was followed by entertainment that included a comedian-master of ceremonies, singer, brother and sister dance team, and ventriloquist.

Among the door prizes given were a radio, silk bathrobes and several dollars in cash.

The girls filled a Christmas stocking for each patient with such items as chewing gum, apples, oranges, nuts, candy, chocolate bars and cigarettes. After they were distributed, a Christmas gift was given to each patient in the hospital. The gifts included broadcloth pajamas, woolen socks, slacks, T-shirts, gloves, bedroom slippers and lighters.

The climax of the evening arrived when the Superintendent of the hospital presented the AFA Squadron with a bronze plaque that had been made in the hospital's arts and crafts department. The plaque cited the group for the job they had done in staging a party for the vets.

Emma Meister, 309 Monastery Place, Union City, N. J., is the new commander of the WAC Squadron.

**New York City:** Lt. Col. George M. Rogers, First Air Force, addressed a recent meeting of the Bronx Squadron, AFA, at the Bronx County Courthouse. Col. Rogers explained what the USAF Reserve means to both officers and airmen, what the Reserve setup is and how it works.

The Squadron is in the process of organizing a bowling team, and plans for a Squadron theatre party are also progressing, according to Edward Smith, vice-commander.

Thomas Cosgrove was recently elected Squadron Commander.

The Squadron meets the second and fourth Thursday of each month at the County Courthouse, 850 Walton Avenue.

**New York City:** John W. Hagaman, Jr., has been elected commander of AFA's Mitchel Squadron.

**New York City:** The Queens Squadron, AFA, held a dinner at Idlewild Airport recently. After dinner, 40 members of the squadron were taken on a tour of the Airport.

Roy Carlton, 247-42 77th Crescent, Bellerose, L. I., is commander of the AFA unit.

**Rochester:** The annual Christmas party of the Rochester Squadron, AFA, was held on December 15 at the local Leierkranz Club. Dance music was furnished by an eleven piece orchestra.

The highlight of the evening was a "Model Hat Show" by the men. The wife or girl friend of each man designed a hat for her escort to model at the party.

A smorgasbord at midnight followed by more dancing rounded out the evening.

John F. Devney, 1237 East Main, is commander of the local unit.

**Syracuse:** The newly-organized Syracuse AFA Squadron held its first organizational meeting recently. Major Alex Sadowski, who served with 8th Air Force in England during the war, gave a description of the preparation for a fighter-escorted mission as seen through the eyes of a weather officer. He also showed "Ramrod to Emden," a film which starred AFA President Bob Johnson.

The second meeting of the Squadron was held on December 28 at which time Major Edd Johnson, USAF, spoke on "Communism as a way of life." Feeling the importance of the subject, the Squadron invited members of other veterans' organizations in Syracuse to attend the meeting.

AFA members interested in joining the Syracuse Squadron should contact acting Squadron Commander H. R. Collins, 114 Fordham Avenue. Meetings are held at the Carrier Corporation, 300 South Geddes Street.

#### OHIO

**Cleveland:** The First Annual Indoor Air Meet Championship Series' final session will be sponsored by the Cuyahoga Founders Squadron, AFA, in the Central Armory, E. Sixth Street and Lakeside Avenue, on Sunday, March 18 from 9 a.m. to 5 p.m.

The opening session was held on January 14 and sponsored by Cleveland Women's Chapter, NAA; American Airlines Gas Model Club; Mac's Model Shop; and Shaker Hobby Mart. The second session will be sponsored on February 18 by American Airlines, The Cleveland Press and Red's Hobbycraft Models.

The Series features new perpetual High Point Champion trophies for the contestant in Novice, Junior, Senior and Open age groups who scores the greatest number of points in all three meets. Perpetual Team Trophies also will be awarded at the final meet on March 18 for the best four-man teams in Novice, Junior and Senior age groups.

There are seven events with valuable individual prizes for winners of first through fifth places in each. The series promises to be an annual event of great interest.



# Versatile

Undreamed of versatility—designed to meet every need of air cargo delivery—paratroop or evacuation requirements—as a glider or glider tow.

A 155 mm. howitzer unit; 60 fully equipped troops; 50 litter patients, six ambulatory cases and six attendants can be accommodated by the new XC-123.



**Chase AIRCRAFT CO., Inc.**

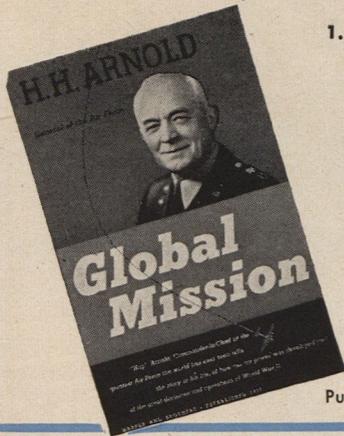
WEST TRENTON, NEW JERSEY



# AFA HAS YOUR BEST

We've combed the market to bring you fine books for every member of your family at rock-bottom, non budget-wrecking prices. **ORDER YOURS NOW!**

## Bargains in Books



### 1. GLOBAL MISSION

By Gen. H. H. "Hap" Arnold

By Special Arrangement, we are pleased to present one of the most important Air Force books published since the end of the war: The Old Man's own story, "Global Mission," is also the inside story of the growth of American Airpower from the Wright Brothers to the end of World War II. Here is the lowdown on Billy Mitchell's courtmartial, Hap's own exile and how America invented the buzz bomb in 1917. Here is a book you cannot afford to pass up. It is yours at a smashing 50 percent discount.

Pub. at \$5.00

**NOW ONLY \$2.50**

### 2. AIR FORCE DIARY

Edited by James H. Straubel

WHILE THEY LAST! Publishers overstock of Air Force Diary. Brand new books without dust jackets are being offered to AIR FORCE readers at remarkable savings. Here, in permanent form, are the best stories of your wartime Air Force Magazine. All theaters and all Air Forces are represented.

Pub. at \$3.75

**NOW ONLY \$2.00**

### 3. HUMOR PACKAGE:

**LIFE WITH ROVER.** By H. T. Webster & Philo Calhoun

Pub. at \$2.75.

**MARRIAGE JOKER.** By Robert Rango. Pub. at \$2.00

Pub. at \$4.75

The 2 Volumes Complete **\$1.50**

### 4. COOK BOOK PACKAGE

**SOUPS, STEWS AND CHOWDERS.** By Lily Wallace

**MACARONI MANUAL.** By Crosby Gage

**GASTRONOMICAL ME.** By M. F. K. Fisher

**ALL THREE BOOKS FOR \$2.50**

### 5. TALES FOR MALES.

Edited by Ed. Fitzgerald

A rollicking, spiceful, hilarious and entertaining collection of stories by W. C. Fields, Ring Lardner, James Thurber, Wm. Saroyan, Dorothy Parker, Mark Twain, John Fante, Konrad Bercovici, James Cain, and many others.

Pub. at \$2.00

**\$1.00**

### 6. JUVENILE PACKAGE

**THE OLD SAILOR**

**THE KING'S BREAKFAST**

**WINNIE-THE-POOH,** and other selections from A. A. Milne

**ALL THREE BOOKS FOR \$1.00**

### 7. THE MECHANICS' ENCYCLOPEDIA

Edited by William L. Schaaf

Nearly a thousand pages and more than 700 diagrams covering every possible aspect of wood-working, machine shop practice, electrical work as well as practical mathematics, physics and chemistry.

Pub. at \$3.95

**NOW ONLY \$2.75**

## still great buys

### 8. THE YOUNG LIONS

By Irwin Shaw (a best-selling war novel)

Pub. at \$3.95

**Now only \$2.25**

### 9. THE OFFICIAL PICTORIAL HISTORY OF THE AAF

By the Historical Officer of the AAF

Pub. at \$10.00

**Now only \$3.95**

### 10. THE AAF AGAINST JAPAN

By Vern Haugland

Pub. at \$5.00

**Now only \$1.50**

### 11. THE GERMAN AIR FORCE

By Asher Lee

Pub. at \$3.50

**Now only \$1.50**

### 12. AIRCRAFT INSTRUMENTS

By Manuel Stieri

Pub. at \$1.50

**Now only \$ .95**

### 13. AIR VICTORY

By Harold Hinton

Pub. at \$5.00

**Now only \$1.50**

### 14. AIR TRANSPORT AT WAR

By Reginald M. Cleveland

Pub. at \$3.50

**Now only \$1.50**

### 15. WE'LL SAY GOODBYE

History of the 307th Bomb Group

(4th Edition)

**Now only \$3.00**

### 16. PENSION AND RETIREMENT BENEFITS

(4th Edition)

**Only \$1.00**

### 17. A RESEARCH IN MARRIAGE

By Dr. G. V. Hamilton

"A report originally published for professional readers only, made under the same auspices as the Kinsey report, covering emotional and sexual behavior of married men and women." 570 pages.

Pub. at \$5.00

**NOW ONLY \$3.00**

## Buy All Your Books Through AFA

# BUYS IN BOOKS

Here are the newest books of top interest  
to Air Force vets and friends of airpower

## 18. SEVEN DRAWINGS

By Charles M. Russell

Plus an additional drawing by Tom Lea, and an essay on the eight pictures by J. Frank Dobie. All reproduced in original size 15½ by 22 inches and brought together in magnificent portfolio suitable for framing. Only 675 prints of these remarkable drawings by two of the most famous western artists in American history have been made. Each portfolio is numbered and additional printings are not anticipated. Here, truly, is a rare collector's item.

**\$25.00**

## 19. THE SOVIET AIR FORCE

By Asher Lee



The noted British intelligence officer, author of the popular, "German Air Force," goes to work on a careful analysis of the Russian Air Force. Many important questions are answered: How good is her air defense against strategic bombing? How will she use the A-Bomb? These are subjects of truly vital interest.

**\$2.75**

20. **THE ARMY AIR FORCES IN WORLD WAR II**  
Volume IV, by Craven and Cate **\$6.00**

21. **AIR FORCE WIFE**  
By Nancy Shea **\$3.00**

22. **AIR POWER: KEY TO SURVIVAL**  
By Alexander P. de Seversky **\$3.50**

23. **THE AIR OFFICER'S GUIDE** **\$3.50**

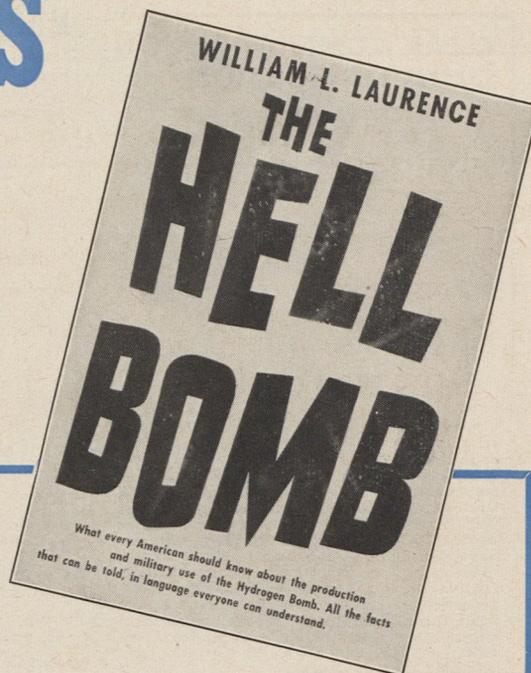
24. **THE AIRMEN'S GUIDE** **\$2.50**

25. **JET AIRCRAFT SIMPLIFIED**  
By Charles Edward Chapel **\$3.75**

26. **THE ARMY AIR FORCES IN WORLD WAR II**  
Volume I **\$10.00**

27. **THE ARMY AIR FORCES IN WORLD WAR II**  
Volume II **\$6.00**

28. **FACE OF A HERO**  
By Louis Falstein **\$3.00**



## 29. THE HELL BOMB

By William L. Laurence

Mr. Laurence, twice winner of the Pulitzer Prize and outstanding science reporter, tells for the first time, in language everyone can understand, the breath-taking story of the hydrogen bomb. This is the first non-technical presentation of all the facts, hitherto available only to a few scientists, that can be told. Can it be made? Can Russia make it? How much will it cost? Will it lead to the extinction of life? These are just some of the questions raised and answered in this most important book.

Alfred A. Knopf

**\$2.75**

## 30. LIFE'S Picture History of the War

For that very special place on your library shelf, this beautiful book is tailor made. Life's photographers took thousands of fine pictures during the war. The cream of the crop plus 75,000 words of text have gone into this book.

Simon and Schuster

**\$10.00**

Air Force Book Department, BD-4  
c/o AIR FORCE Magazine  
1424 K Street N. W., Wash. 5, D. C.

Please send me the books I have circled below:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20 21 22 23 24 25 26 27 28 29 30

Name.....

Street.....

City.....Zone.....State.....

I enclose check or money order for.....

**SORRY, NO CODs**

## CLEAR COMMUNICATION OMNI NAVIGATION

WITH  
A.R.C. **VHF**  
EQUIPMENT



**Fly Directly  
in Less Time—  
Keep All Signals**

**STATIC FREE!**



Get static-free communication and the added reliability of omni range navigation by installing A.R.C.'s Type 17 2-way VHF Communication and Type 15B Omni Range Navigation Equipment. With the 15B tuned to the VHF omni stations now covering the country, you fly directly in less time. You can receive weather broadcasts simultaneously with the navigation signals—*static free!* The 15B takes the work out of navigation and provides long, trouble-free life. The Type 17 provides an independent communication system for use while the 15B is busy providing navigational information. Other A.R.C. equipment provides LF range and broadcast reception, and rotatable loop navigation.

All A.R.C. Airborne equipment is Type Certified by CAA. It is designed for reliability and performance—not to meet a price. Installations for both single and multi-engined planes are made only by authorized service agencies. Write for further details or name of your nearest A.R.C. representative.



**Aircraft Radio Corporation**  
BOONTON, NEW JERSEY

# ALLISON RADAR

FOR  
**MULTI-ENGINEED  
AIRCRAFT**  
Military  
Airline  
Executive

Models E ES ESB

58-65 lbs. Overall Weight

1. Long range. 80-150 miles.
2. Exclusive scanning method.
3. Compact. Sturdy.
4. Easy to operate. Pilot control.
5. Simplicity of maintenance.
6. Gyro-stabilized.
7. JAN components.
8. RACON beacons.

**ALLISON  
RADAR CORPORATION**  
11 W. 42 St., N. Y. 18 PEnn 6-5811-12

## MOBILIZATION

CONTINUED

unequaled opportunity presents itself to reorganize the entire reserve structure of the Air Force and re-establish this structure into a sound, long range program—backed by adequate equipment and with an equitable rotation plan which, should the present type of emergency continue for an extended period, release those now being recalled after their normal tour of duty is completed, and bring in other Air Reservists to take their turn.

We must begin shaping this new program at once, and perhaps approach the Air Force Reserve in a new light. This will obviously require legislation and it is earnestly hoped that this hearing will mark the birth of such a program. If so, the hearing will more than fulfill the objectives set forth with regard to a constructive investigation of the reserve components—at least as far as the Air Force Reservist is concerned. In such an effort as this, the Subcommittee can obtain valuable advice from the Air Staff Committees on Reserve and Air National Guard Policy. These advisory groups, established under Section 5 of the National Security Act of 1947, bring together Regular and Reserve officers of the Air Force for joint study and recommendations. They could and should spearhead the programming for a new and improved Air Force Reserve Components program. We do, however, believe it would be a constructive move to establish enlisted representatives within these groups, now limited to officers under the National Security Act. We urge that the Subcommittee give consideration to this proposal.

If the Subcommittee decides to pursue a long range Air Force reserve program equal to the needs of the future, we urge that it probe deeply in setting up the foundation. Let such a program be founded, we suggest, not on out-moded blueprints for national security and the state militia formula of the past or on the continued and organized pressure for reserve benefits, but on long range security objectives—and first and last on military necessity. Let it be sufficiently far-sighted and flexible to meet the requirements of the technological progress that lies ahead. Let it consider the needs of the aircraft industry as well as the Air Force, and encompass the scientist as well as the pilot. And let it be attuned to cold as well as hot wars, to partial as well as all-out mobilization.

All this, we believe, can be done and must be done in the interest of national security. The Air Force Association stands ready to assist the Subcommittee to the best of its ability in this important task.

### NOTICE

A lot of people are on the move these days—voluntarily and otherwise. If you are among them, be sure to let AIR FORCE know as soon as possible. Send your change of address to:

**AIR FORCE MAGAZINE**  
1424 K St. NW  
Washington, D. C.

## ATTENTION

ALL AFA  
IN ILLINOIS  
•  
FIRST WING  
CONVENTION

February 25, 1951

Congress Hotel  
Chicago, Illinois

The 1951 and first Illinois Wing Convention will be held at the Congress Hotel in Chicago on February 25th. The program will include business sessions, forums, Air Power Luncheon and a special program for the Ladies. Speaking honors will be held by Atomic Bomb expert from the Argonne Laboratory, Chicago's Commissioner of Public Works, Air Force personnel from O'hare Field, a Washington representative from National Headquarters and others.

Registration Fee: \$5.00  
For the Ladies: 3.00

For information, contact:

M. Worshill,  
Convention Chairman,  
2054 Hood Avenue  
Chicago, Illinois

### CREDITS

COVER: USAF, Page 4, Convair; page 18, Red Cross; page 22, USAF; Page 25, USAF; page 28, USAF & W.S. Friedman; page 29, USAF; pages 30-33, USAF; Pages 34-35, USAF & WIDE WORLD; pages 36-39, USAF.

## AERONAUTICAL ENGINEERING



Design Aircraft & Components — Study with Jets & Rockets — Great Future — Advanced Aeronautical Subjects — World-Wide Enrollment — Fully Accredited — Est. 1929 — Approved for Vets — CAL-AERO grads in heavy demand.

WRITE TODAY for Special Information

### CAL-AERO TECHNICAL INSTITUTE

GRAND CENTRAL AIR TERMINAL  
GLENDALE 1, CALIFORNIA

Dept. AF

Aeronautical Engineering  Master Aviation Mechanics  
 JET ENGINE Maintenance & Overhaul

Name \_\_\_\_\_ Age \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

indicates that the Russians have developed a form of gasoline hose with electrical heating wires impregnated into its structure much like an American electric blanket to retain hose flexibility at very low temperatures, indicating that the Reds are experimenting with flight refueling at either high altitudes or under Arctic conditions.

US successes with long-range flight refueling in B-50s indicate the deadly possibilities of this combination. It means, in the plainest terms, that with in-flight fueling, and with aerial tankers standing by at places within range of Soviet protective fighter power, contemporary Red bombers are within easy striking range of America's industrial heartland.

The reports from several of the cracks in the Iron Curtain show that the deal the Kremlin made to satisfy tupolev on the blow to his pride with "Mr. Boeing's B-29," was that he would have virtual *carte blanche* in designing its successor—the "Russian B-36." These reports add that he has been aided in this project by Gurevitch, a noted structures analyst—making it a very competent engineering team indeed.

We actually know very little about the Tupolev answer to the B-36. We know definitely that there is such a prototype about ready to fly, and that its performance objectives are as follows:

- ▶ Speed within 90% of contemporary opposing fighters (1953-54 production fighters should have a top speed of over 750 mph).
- ▶ Sufficient range to carry at least one A-bomb from established bases within the Soviet Union to major population and industrial centers in the US.
- ▶ Sufficient pay load to enable the aircraft to carry heavy armament, radar and countermeasures to allow penetration to the inner target area.

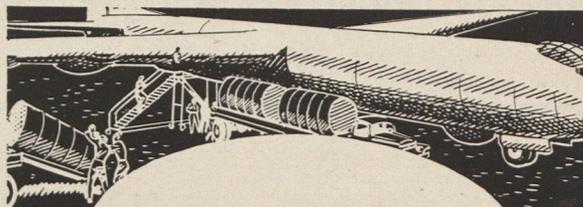
There are some reports of varying reliability as to what this airplane looks like. The best of these, from a Swedish source, describes it as a low-midwing, thin airfoil design with a fuselage that "resembles a Republic Rainbow with a slightly more pointed nose," and about a full 50 per cent longer. It is powered by six turboprop engines which, according to other reports, resemble "an oversized version of the Double Mamba" turning an eight-bladed contra-rotating propeller. The power plants have been variously reported at 8,000, 10,000 and 14,000 hp. The 10,000 figure comes to me from the most reliable source, who indicate that this engine is expected to be in production in about 18 months.

The plane is a tractor design, and the engine nacelles are said to bulge slightly below the bottom surface of the wing, a distortion made necessary by the extremely shallow airfoil. Both wing and tail surfaces follow the accepted sweptback motif. The angle of rake has been variously reported as 35 and 45 degrees, with the former, (equivalent to that of our B-47) the best bet. The ship is reported to have a high tailplane, set about half way up the fin. The entire design is supposed to utilize the simplest possible curvatures, to permit easy presswork and facilitate production.

This latter feature reminds us that the Russians removed from Germany as part of their wartime loot one or more huge 33,000 ton Wotan hydraulic die forging presses and soon after launched a program for reproducing this equipment in large number. A report published in Switzerland in 1949 indicated that even at that date the Russian's had in operation over 150 of these giant presses and were using them chiefly in the aircraft industry. It should be noted that the US airframe industry will not have an equivalent press in operation before another 18 months. During the war the 33,000 ton Wotan press was able to turn out, in a single operation, the full set of spar components required for a Ju-88 bomber. This indicates that its huge capacity is applicable to the largest single segment of an intercontinental bomber. It might be added that the Wotan press is at least a partial answer to those who would sell Russia's production potential short.

Russian production figures were reliably quoted in 1949 at 25,000 aircraft of all types and this was regarded by conservative experts as only part of the nation's total capacity. While the 1950 figure was lower in number of aircraft than the 1949 output, the total tonnage was considerably higher. There is no evidence that fighter production has been curtailed. There are

(Continued on page 56)



# Engines Packed in Cans!

**F**OR SHIPMENT AND STORAGE OF both radial and jet types of aircraft engines, Rheem Manufacturing Company has developed special shock-mounted steel containers which hermetically seal entire engines against weather, atmosphere and tampering.

**They can be stored in the open for indefinite periods—they can actually be thrown overboard and floated ashore without damage.**

Readily opened for immediate engine installation, these remarkable containers may be re-used for return shipment of the old engine.

Another First from Rheem . . .

*World's Largest Maker  
of  
Steel Shipping Containers*

**RHEEM MANUFACTURING COMPANY**  
570 Lexington Avenue New York 22  
New York



# PLANS WITHOUT PLANES

CONTINUED

bling between meals.

In case all this seems like a bunch of hanky-panky to the rugged old airmen of World War II, I can only say that "Iron Ass" LeMay doesn't regard it as such. To him it's part of the plan to get the bombs squarely on target. If it didn't serve good purpose in that regard you can be damn sure he'd have no time for it.

Yes, the Eighth has a plan; one that is designed to get every ounce of available firepower on the assigned targets. It is a plan that has been brutally realistic in assessing the capabilities of men and machines. It is a plan that has a crystal clear objective—the destruction of known targets of strategic importance. It is a plan that spells out just how that objective is to be obtained; one that has been tested, revised, and tested again; a plan so polished that a layman could hardly imagine how it could be improved upon, but one which SAC bosses will undoubtedly be refining until the starting whistle blows. It is a plan the men of SAC believe in.

## 3. TRUST IN A PLANE

Maligned as the mammoth old B-36 has been, both in public and in private, the men down here will tell you it can't be beat. They are the first to admit that it seemed to hold little promise three years ago, or even two, but if you ask them now they'll swear by it. Sure, they'll swear at it too. They'll tell you that it spends too much time on the ground for maintenance, that its engines only last 300 hours or so, and that its electronic system is as fragile as an overcooked turkey. They acknowledge that as short a time as a year ago the average number of flying hours per plane per month was at a heart-breaking low. But they point out that the average today is about 50 hours, and when you consider what you can do with a 36 in the air for fifty hours that ain't bad. And they point out too, that the B-36 was bound to have a great many bugs because it incorporated so many new features never before used on a large plane. Pusher-type engines, electronic controls and magnesium construction being among the innovations. Unbelievable as it may seem, there are thousands of radio tubes in a B-36. Is it any wonder, they ask you here, that some of them go out occasionally with all the vibration they are subject to? Sure they'd rather be rid of all these headaches, but they know in the final analysis that the plane can do the job they want it to—and that's the payoff.

## 4. TRUST IN THEMSELVES

The men in SAC know that both they and their fellows have been hand-picked for the job. They know too that they've been better trained than perhaps any other group of airmen in history. They know their leaders, and they trust them. And they know and trust their equipment. As a result they

have a unique trust in themselves. It isn't cockiness; I haven't seen a cocky man since I've been here. It's only that they know their job and they know they can do it.

## BUT THERE'S MORE TO THE STORY

From all this it would seem logical to conclude, as some have, that all we need to do to finish off the Russians is to send the LeMay men out tonight and wait for the results in the morning paper.

Unfortunately this is not the case. Nobody knows the limitations of the Strategic Air Command today better than the men assigned to it.

So far this report has had to do with the capabilities of the strategic bombing concept, with the refinement of a plan to put that concept to practical use, and with the ability of men and machines to compliment the plan.

But all four—the concept, the plan, the men and the machines are dependent for success on *one* thing: *one thing that at the moment is completely lacking, and that is sufficient numbers to make possible a continuity of effort.* Today SAC is a one-punch air force. To be sure that one punch would be straight to the enemy's solar plexus, but it wouldn't know him out by a long shot. The essence of strategic bombings to repeat the blows time after time after time. This the Strategic Air Command as it is now constituted could not do. This is where the feeling down here of despair and inadequacy comes in.

How long today's strategic air forces would last in a war under conditions of normal attrition is a matter of guesswork. But from the experience of the last war any estimate of more than a very few months would be most optimistic. Think of what this means—the *one* instrument that might win us a decision (if properly developed) spent in a matter of weeks.

From the amount of publicity they have been given, you'd think the Air Force had B-36s running out its ears. I did, and it came as a sickening shock to learn that in the whole Air Force there are only two operational B-36 bomber groups; the 7th and the 11th here at Carswell. The rest of SACs bomber force is made up of B-50s and even B-29s. There are more B-36 groups on the way, but they will be slow coming. Under peacetime tables of organization (and officially this is "peacetime") there are three squadrons in a B-36 group and six planes to a squadron, which adds up to a grand total of 36 operational airplanes! Under *ideal* conditions not more than 85 percent of that number would be operational at any one time. Most likely the figure would be far less, but being as generous as possible that means in plain English that we would have no more than 30 intercontinental planes to send against the enemy if he attacked tomorrow!

What good is *any* concept or *any* plan so pitifully implemented as that? What difference does it make if the men are brilliantly trained? What good is their equipment if there isn't enough of it to do half the job? These are the things the men ask themselves down here, and down here there's no answer. The answer is in Washington.

In Washington they are still making "balanced force" appropriations. Still splitting the defense dollar three ways to keep everybody happy. Still refusing to admit, because of politics, that perhaps one instrument might be a little more useful in accomplishing the job at hand than another. As a matter of fact, the *Army* is now getting more money than either of the other two services, as though Korea had taught us nothing about trying to defeat the Asiatics on the ground! "Balance" is the word in Washington. Not the kind of balance carefully attuned to the job to be done, but the kind of balance that matches one fireman for one policeman, regardless of the responsibilities of either. Balance is the watchword, and it probably makes Stalin very happy. As I say, there is a strange mixture in the air down here of confidence and despair, of pride and inadequacy.

## RUSSIA'S AIRPOWER CONTD

indications that Russia has cut back on her production of civil and transport aircraft and of trainer and auxiliary types, a supposition supported by the report that the Soviet Union has satisfied its obligations to the Satellite nations in the matter of advanced trainer aircraft by furnishing them with factory overhauled and converted jet and piston fighters rebuilt to two place types. The production trend also indicates, of course, that a more sizable proportion of Russia's total aircraft output is now being devoted to heavy strategic bombers.

Thus, Russia builds her counterthreat to the US Strategic Air Force.

How well we answer her move is a matter of how soon and how well our policy makers formulate a realistic military program, and how much Americans are willing to pay in production, sweat and taxes in order to project our technological superiority into modernized strategic aircraft in the numbers needed to keep ahead of the Russian threat.

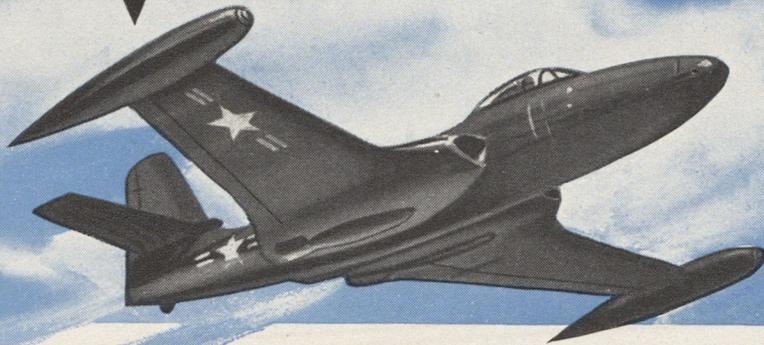
The business of building a strategic air force, the installations to operate them, the electronics and mathematics to direct their military use, the interceptors and missiles used to defend our sources of strategic airpower—these are the key to our survival. Our only potential enemy seems intent on making them the key to continued aggression.

In any case, until a real intercontinental guided missile with pinpoint accuracy comes our way, the strategic bomber is the true point of world politics. Keeping well ahead of the opposition in this matter is, beyond doubt, our touchstone of survival. In so doing, let's not sell Russia short on strategic airpower.

# Bendix Products Division

FIRST IN

FUEL METERING



## Helping American Aviation Lead the World

Aviation's remarkable progress during the past quarter of a century, together with the growing complexity of aircraft design, have created innumerable new problems in fuel metering and landing gear—many so challenging that only the great creative skill of Bendix Products has been equal to the task.

In meeting these many problems as they arise, Bendix Products has assembled the finest engineering talents and the most modern and comprehensive machinery in the industry—a fact reflected in the recognition of Bendix today as the nation's outstanding source for these vital flight components.

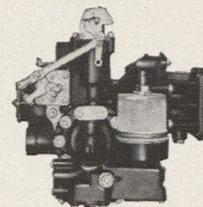
Engine builders and airframe manufacturers are urged to let this proven combination of skill and experience solve their fuel metering and landing gear problems.

**BENDIX · PRODUCTS · SOUTH BEND**

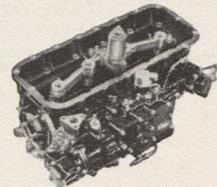


Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

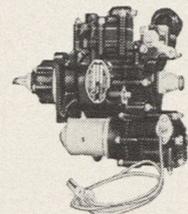
## LEADER IN LANDING GEAR



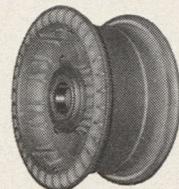
Fuel Metering Unit  
for jet engines



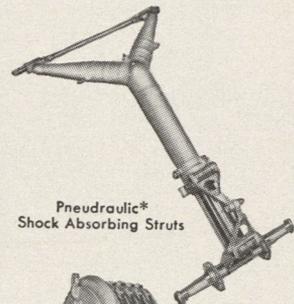
Stromberg\* Injector  
Carburetors



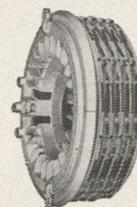
Speed-Density  
Fuel Metering Unit



Landing Gear Wheels  
for all types of airplanes



Pneumatic\*  
Shock Absorbing Struts



Segmented  
Rotor Brakes

\*REG. U. S. PAT. OFF.

ABOVE ALL — AIRPOWER!



Freedom is a fragile thing. It can be declared and won—and also lost.

America is dedicated to the preservation of liberty . . . for all the world to share.

The principal instrument of that determination is airpower—airpower to defend and airpower to strike back against aggression.

Today, airpower is a trademark of Freedom.

*Security Has Wings!*

CONSOLIDATED VULTEE AIRCRAFT CORPORATION  
SAN DIEGO, CALIFORNIA FORT WORTH, TEXAS

IN THE AIR--IT'S  
**CONVAIR\***

\*REG. U.S. PAT. OFF.