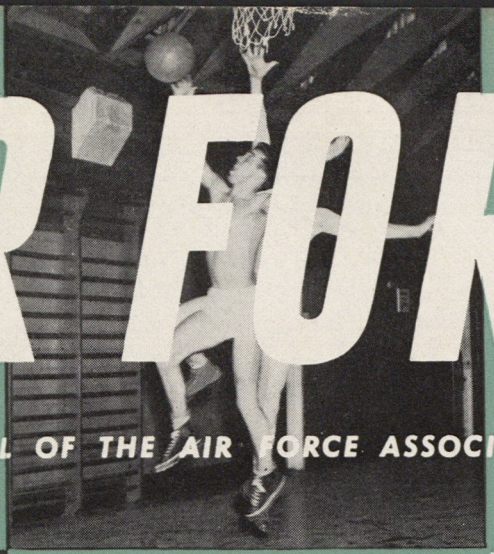
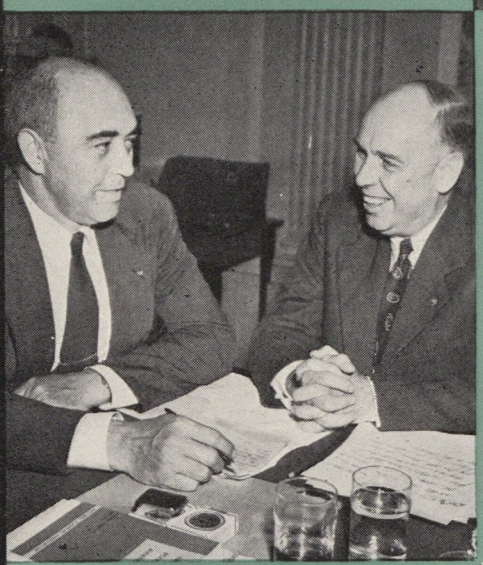
AIR FORCE



THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION, APRIL, 1948



Attacking The Youth Problem

See Page 22

The USAF launches an all out offensive against military delinquency

A NEW DEPARTMENT ON AIR RESERVE, AIR NATIONAL GUARD

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Congressional Aviation Policy Board Report

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Breaking a Giant's Heart

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With Malice Aforethought USAF engineers tear a B-36 to bits

AFA Acceptance Test

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The Ryan Navion gets the "business" from a team of AFA inspectors

Most Powerful Fighter

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Curtiss Wright unveils a four-jet fighter as heavy as the B-17

The Infantry Loves It

See Page 28

When the doughfeet needed help on Luzon the Mustangs moved in fast

DON'T MISS THE 64 BILLION DOLLAR QUESTION!

See Page 11


...from M.P.H. to MACH
MARTIN
SETS THE PACE!
Yesterday... early experiments in the field of ship-borne observation aircraft were pioneered by Martin. In 1927 the famous Martin T4M-1 scout torpedo bomber was built. Used in aircraft carrier experiments, this rugged Martin plane made Naval aviation history.
Today... the Navy's newest patrol plane, now undergoing intensive flight tests, is the Martin P4M-1 Mercator. Housed in its two nacelles are four engines... two conventional engines for long range, two jets for bursts of speed.
Tomorrow... Martin production will give our Military Services outstanding new aerial weapons. Look to Martin for sensational advances in aircraft, electronics, plastics, rocketry, rotary wing aircraft and other swiftly-developing fields.
The Glenn L. Martin Company, Baltimore 3, Maryland.
Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

Scientist, merchant, artist...

all fly for profit

Cecil Hagen, Houston consulting geologist, flew his 4-place Bonanza 20 hours his first week of ownership. Covered "3,000 miles, which would have taken 3 times as long by other means of travel." The whole U. S. is now his operating territory. He personally watches various operations without hiring more men as in the past.

Bonanza-owner H. C. Bowers, retail furniture dealer of Salt Lake City, can now make all those buying trips he *should* have been making . . . and didn't. Has more time at the store, too. Increases out-of-town sales by flying customers to the home store. Bonanza travel pays . . . in *many* ways!

Opera star Mona Paulee makes a 40,000-mile concert tour—on schedule—with the greatest of ease. "Only way to maintain that strenuous schedule is with our Bonanza," she says. Dean Holt, her husband-accompanist, does the flying. "Gives us time to hunt, fish and meet people."

Apply Bonanza Transportation to your Business

This comfortable, *fast*, amazingly quiet plane was engineered with one purpose in mind: to cut the waste out of your business travel. A note on your company letterhead will bring an informative brochure on "The Air Fleet of American Business." Write today to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

Top speed, 184 mph
Cruising speed, 172 mph
Range, 750 miles

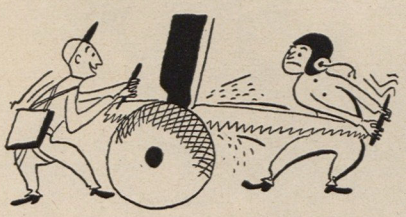
BEECHCRAFT
BONANZA
MODEL 35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

AIR MAIL

Whose Boner?

Gentlemen: In a recent Plane Boners column you criticize an A-26 pilot for not attempting to retract his landing gear after touching down in the middle of a short runway when it became apparent he was going to run off the end and into a concrete wall. I think you will find a micro-switch incorporated in the A-26 making it impossible to retract the landing gear until the strut is ex-



tended—in other words, until the plane is off the ground and the weight of the gear extends the oleo strut. Am I right?

M/Sgt. S. Lovinfosse
Spokane AF Base, Wash.

● *Yes, you're right if you're talking about late model A-26s. However, on earlier models the landing gear could be retracted on the ground by depressing a solenoid switch in conjunction with operation of the landing gear control.*—ED.

Take Your Pic

Gentlemen: In a recent article in Pic Magazine Maj. Alexander P. deSeversky said that bombing under combat conditions is only three percent accurate. Can this be true?

Earl F. Watson
Sunflower, Kan.

● *Operations Analysis Section of Headquarters USAF says 'tain't so. To quote: "While accuracy improved during the war, United Strategic Bombing Survey studies in the European Theater showed that, in the over-all, about 20% of the bombs aimed at precision targets fell within the circle. A peak accuracy of 70% was reported in the month of February, 1945. It is not clear how Major Seversky obtained his value of 3%. The survey omits from its analysis all bombs not released because of aborted sorties or lost aircraft. It also does not include bombs which did not explode or bombs which were dropped on targets of opportunity. Addition of these omissions to the denominator in order to compare the number of successful bombs with all bombs dispatched would not reduce the value to 3%. It must be that Major Seversky utilized a concept of 'target area' which is substantially smaller than a circle with radius of 1000 feet, which is what the USAF uses."*—ED.

Blind Flying

Gentlemen: In your story "Shooting Stars in the Arctic Night" (February) you have a picture of a P-80 that you say has just come to earth "for a few moments to refuel." Well, if it just came down from upstairs for a short while why is the canopy cover on it? I have worked on P-80s for a year now and I know they don't put the covers on until the ship is through flying for the day.

Sgt. A. P. Lemas
Williams AF Base, Ariz.

● *Wish we could cover up on this one ourselves. The caption was wrong. That P-80 was also through flying for the day.*—ED.

Pilot Combat Films

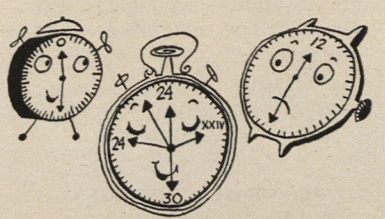
Gentlemen: I have heard that pilots' combat films made during the war can be secured now by the pilot who made them. If that is so, what is the cost and how do I go about obtaining them?

Lloyd A. Hutchins
Jackson, Miss.

● *Pilots' combat films are obtainable at one cent per foot, if they can be found and identified. Address Motion Picture Service, Information Division, Headquarters, USAF, Washington, D.C. Requests should give serial number, grade, unit assignment at the time the pictures were taken, and date of discharge from the service.*—ED.

Time Out

Gentlemen: In your February issue I noticed in the article "Lucky for Some" you stated that the pilot's watch read 2430 Saturday morning. I have just



paid off a bet after being convinced there was no such time as 2430. Would appreciate hearing that you were correct in your statement. I need the money.

T/Sgt. H. L. Cobb
Battle Creek, Mich.

● *Sorry we can't oblige you, Sergeant, but to coin a phrase, there's no time like our time. It should have read "0030."* —ED.

No Old Copies

Gentlemen: Would you kindly inform me if it is possible to get back issues of AIR FORCE Magazine and, if so, what would be the price?

Paul E. Kotke
St. Paul, Minn.

● *Sorry, our membership has increased so rapidly that the supply of back issues has been completely exhausted by new members who wanted to make their files complete.*—ED.

Gyropilot

Gentlemen: We note on page 32 of your February issue a short write-up headed "Midget Gyropilot" in which it is intimated that the word "Gyropilot" is a trade-name of the Westinghouse Electric Corporation. It is also noted that elsewhere in the article and under the picture the apparatus is referred to in generic terms as a "gyropilot."

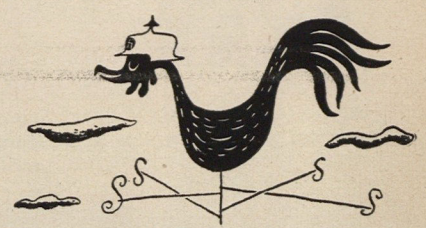
We beg to call attention to the fact that the word "Gyropilot" is a trademark of this company for the Sperry airplane automatic pilot. It has been so used for many years. Your article, therefore, gives a false impression as to the ownership of this name.

Carlyle H. Jones
Sperry Gyroscope Company

● *We stand corrected. The name "Gyropilot" belongs by registry (Reg. #334849) to Sperry Gyroscope Company.*—ED.

Some Range

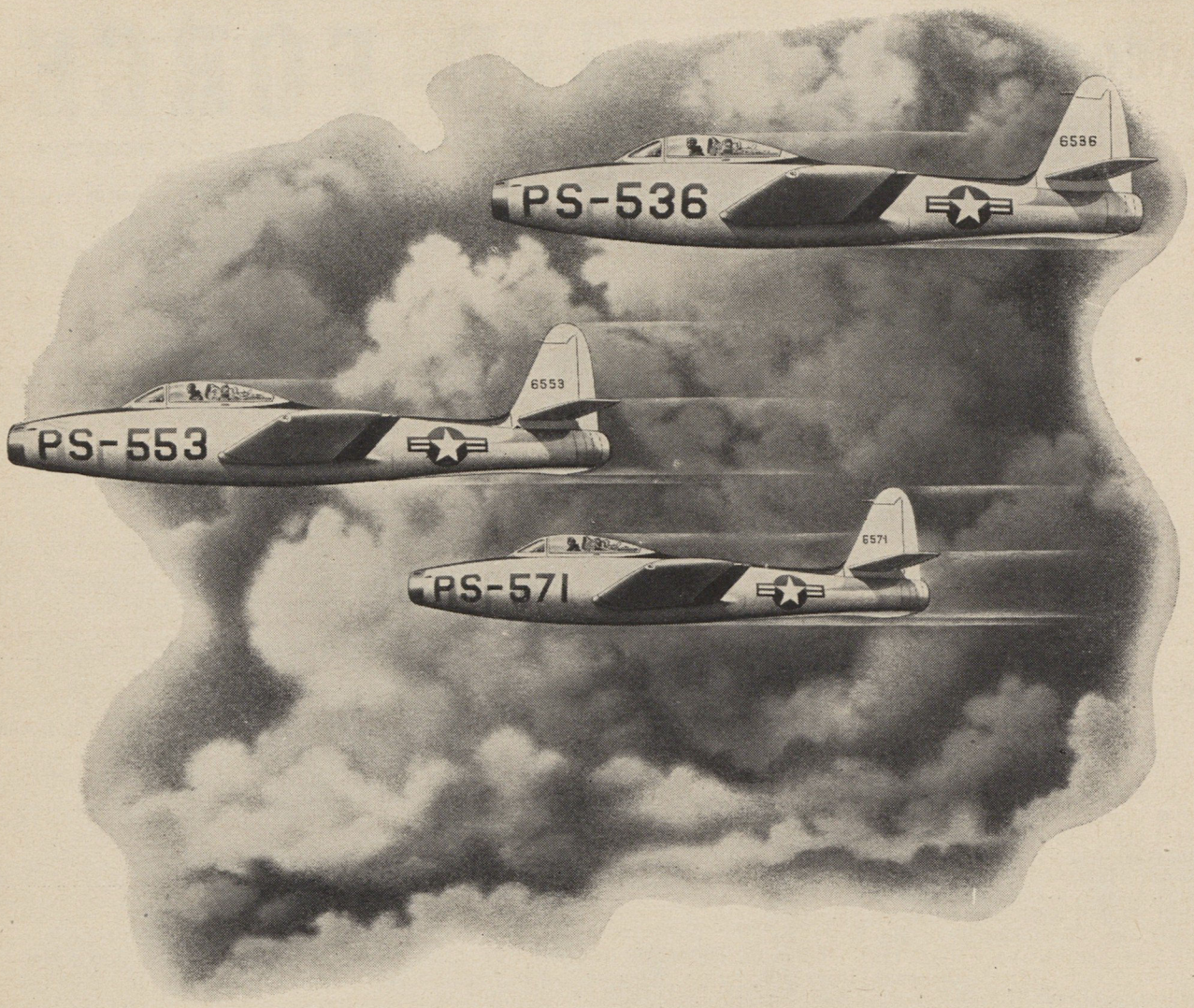
Gentlemen: In your January issue, under Cross Country, the article concern-



ing General Samuel Anderson states that Essex and Chelmsford are south of London. Had your editorial writer looked it up on a map, or been there, he'd have known Chelmsford lies northeast of London rather than south. If it had been south we in the 9th Air Force and the boys in the 8th would have been flying west to do our missions in Europe.

Merrill G. Abrahams
Princeton, Ill.

● *And that would have taken a lot of gas, wouldn't it? It's northeast.*—ED.



PROVEN IN SERVICE . . .

Worthy successor to the mighty THUNDERBOLT . . . the new P-84 THUNDERJET now being flown by two famous groups of the U.S.A.F. . . . the 14th, based at Dow Air Force Base, Bangor, Me., and the 20th at Shaw Air Force Base, Sumter, S. C., are daily demonstrating the high efficiency of this, the latest jet fighter on active service. ¶ Soon other groups will be equipped with this 600 MPH THUNDERJET. We are indeed gratified that the close co-operation between the U.S.A.F. and REPUBLIC's skilled design and production personnel has resulted in the development of another great combat plane for the security and protection of our nation.

REPUBLIC AVIATION CORP., FARMINGDALE, L. I., N. Y.

"This Is the Year of the Thunderjet"

AIR POWER US A F IS PEACE POWER

REPUBLIC AVIATION

Makers of the Mighty Thunderbolt • Thunderjet • XF-12

5th Reconnaissance Group

(Coat of Arms Approved 21 June 1924)

The Headquarters, 5th Reconnaissance Group (VLR) (Photo), was originally organized as the 2d Group (Obsn.), at Luke Field, Hawaii, 15 August 1919. Subsequent changes in designation were as follows: 5th Group (Obsn.), 14 March 1921; 5th Group Pursuit & Bombardment), 9 June 1922, 5th Group (Composite), 11 July 1922; Hq. & Hq. Sq., 5th Composite Group, 25 January 1938; Hq. & Hy. Sq., 5th Bombardment Group, 9 March 1938; 5th Bombardment Group (M), 6 December 1939; 5th Bombardment Group (H), 20 November 1940; Hq. Sq. ordered to be disbanded 22 July 1942; Hq., 5th Bombardment Group, Very Heavy, 30 April 1946, and Hq., 5th Reconnaissance Group (VLR) (Photo), 3 February 1947

Battle participation credit for the following World War II campaigns was awarded the Group:

Philippine Islands	Western Pacific
New Guinea	Luzon
Northern Solomons	Leyte
Eastern Mandates	Central Pacific
Southern Philippines	China Offensive
Bismarck Archipelago	Guadalcanal

Two Distinguished Unit Citations were awarded the Group for outstanding performance of duty in action against the enemy in the Admiralty Islands, 18 April to 15 May 1944, and in Borneo on 30 September 1944, respectively.

Distinctive Insignia

The distinctive insignia incorporates the winged skull, with the scroll and motto beneath, between the wings. All other features of the coat of arms are deleted.

VOL. 31, NO. 4 APRIL, 1948

AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

FEATURES

DEPARTMENTS

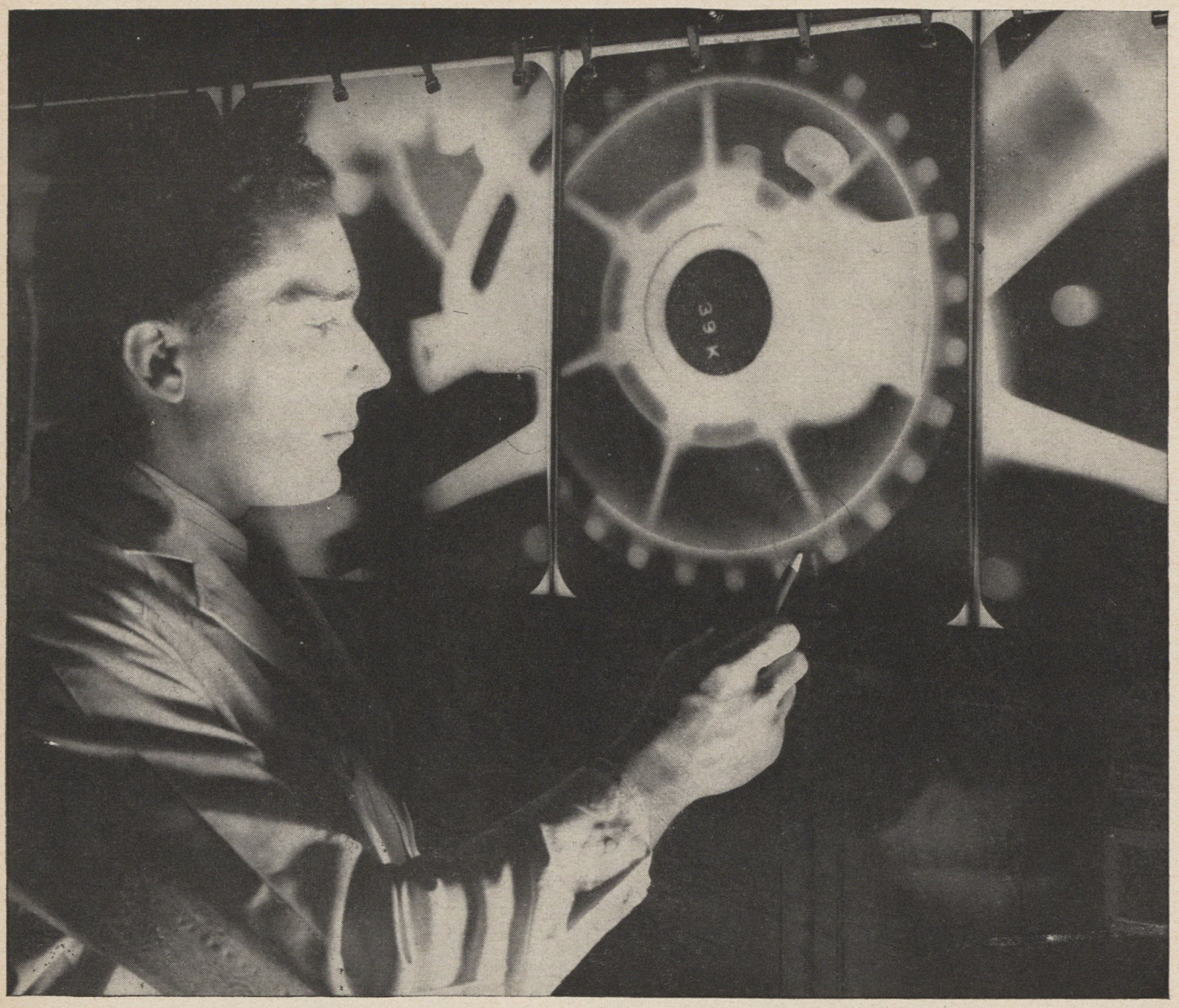
EDITOR and PUBLISHING DIRECTOR, James H. Straubel

Managing Editor, Ned Root **Technical Editor,** William S. Friedman
Contributing Editor, Douglas J. Ingells **Art Direction** by J. Walter Flynn
Assistant Editors, Janet Lahey, Helen Whyte

AIR FORCE MAGAZINE is published monthly by the Air Force Association at McCall Street, Dayton 1, Ohio. **EDITORIAL OFFICE:** 485 Madison Avenue, New York 22, N. Y., PLaza 5-6914. Publisher assumes no responsibility for unsolicited material. **ADVERTISING OFFICE:** 485 Madison Avenue, New York 22, N. Y., PLaza 5-6914, Sanford A. Wolf, Advertising Manager. **MAILING:** Reentered 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, $2.00 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.

Printed in U.S.A. **CORRESPONDENCE:** All correspondence pertaining to editorial matters should be addressed to 485 Madison Avenue, New York 22, N. Y. All correspondence pertaining to change of address should be sent to Air Force Association, 1616 K. Street, N.W., Washington 6, D. C.

AIR FORCE IS PUBLISHED BY THE AIR FORCE ASSOCIATION



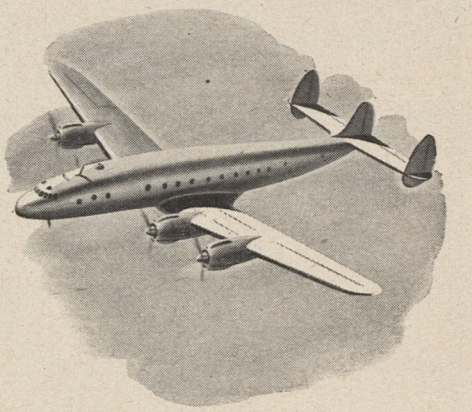
X-RAYS GET THE INSIDE STORY

▶ This Wright technician is reading an X-Ray negative of a vital engine part. The penetrating X-Ray has revealed a small flaw *inside* the casting — where the sharpest human eye would never see it.

▶ But like your family doctor, the Wright engineer is more interested in preventing trouble than in curing it. The findings of X-Ray are not limited to the rejection of parts. Information about the behavior and qualities of metals is passed along to the foundryman, the forgers, the countless others who make the parts.

▶ Better parts are the logical — and permanent — result. Technicians in the Wright Aeronautical laboratories X-Ray thousands of parts each month and 40 exposures are made on some of the more intricate pieces.

▶ Another example of the care — the instinct for perfection — used in development of Wright aircraft turbine and reciprocating engines.



POWER FOR AIR PROGRESS

WRIGHT

Aeronautical Corporation • Wood-Ridge, New Jersey

A DIVISION OF CURTISS WRIGHT
FIRST IN FLIGHT

AIRviews

Opening up before us—air carriers and aircraft manufacturers alike—is a great revenue potential that has been slow in developing.

I'm speaking, of course, of the future in air cargo, as contrasted with passenger revenue. Only since the war have the vast opportunities in this field been approached realistically. There is still a long way to go.

Even today, for example, 95% of the revenue of all U. S. air transportation companies comes from carrying passengers; only 5% from freight. Contrast this with rail transportation, which gets 18% of its total revenue from passengers and 82% from freight!

Naturally, the flying of passengers will always remain a vital and glamorous part of our aviation picture. But there is reason to believe that the flying of cargo offers far more dollars and cents return.

What seems called for now is more careful over-all planning toward the successful handling of air cargo, and a long-range program for selling this service to management.

Cargo compartments of passenger planes and converted passenger planes must be replaced with aircraft specifically designed to handle cargo. Standard methods of tying down and loading and unloading must be devised. And fair rates established on a competitive basis.

In meeting and solving these problems, we here at Douglas stand ready to aid the air carriers in every possible way.

Donald W. Douglas

PRESIDENT
DOUGLAS AIRCRAFT COMPANY, INC.
SANTA MONICA, CALIFORNIA

IN RESERVE

The SOP of AR and NG

Gentlemen: I have been in the Reserve for some time and I would like to know what is in store for me. During the war I served overseas with the Ninth Air Force as an Armament Flight Chief in a P-51 outfit. I personally want to keep a finger in the Air Force if only as a Reservist. I have attended Reserve meetings in Akron but so far all the activity has been for pilots. Can you give us armorers a little support?

Edward H. Redmond
Kent, Ohio

● *In setting up the Air Force Reserve Program, priority was given to the training of pilots since their proficiency deterioriated most rapidly. At the present time TO&E Combat Units are being formed. There are several in your vicinity at Cleveland and Akron and all have vacancies for enlisted personnel. Contact the commanding officer of the 4163rd AF BU (RT) at Cleveland or the commanding officer of the 433rd Troop Carrier Group, headquarters at Akron, Ohio.*

Gentlemen: In May, 1942, I enlisted as an Aviation Cadet and at that time was informed that I would receive a bonus of $500.00 per year for every year served as a commissioned officer. In October, 1943, I received my commission as a Second Lieutenant in the AUS. I was separated in June, 1945. Due to the fact that I was commissioned in the AUS I did not receive any bonus. I would like to know whether I am entitled to one. If so, please inform me as to how I may procure it.

Leslie Anton
New York, New York

● *The $500.00 bonus for each year of active duty service was granted to certain officers who were commissioned in the Air Corps Reserve. Those officers commissioned directly into the Army of the United States who did not receive commissions in the Air Corps Reserve were not eligible for this bonus. This is apparently the case in your situation. To secure further information as to your exact situation, it is suggested that you state all of the facts in a letter addressed to the Air Adjutant General, Headquarters, United States Air Force, Washington 25, D. C.*

Gentlemen: I am writing for several former air corps men regarding a situation here. The closest Air National Guard Unit is fifty-five miles away and we feel it is too far to drive each week. Recently a National Guard Infantry Heavy Weapons Unit was organized in Pipestone. What would our situation as former Air Force men be if we enlisted in this unit? If war should strike us would we be able to drop out of the Guard to get back into the Air Force?

Earl R. Perkins
Pipestone, Minnesota

● *In the event of a national emergency members of the ground force units of the National Guard would be mobilized into the ground forces of the Army. Any transfer between the Army and the Air Force would be contingent upon existing regulations at that time. Due to the difference in the type of training offered by an infantry unit of the National Guard and that required for the Air Force it is not believed likely that such a transfer would be approved.*

Gentlemen: Several times AIR FORCE Magazine has called attention to the availability of one or two days training without pay, at various military installations over the country and urged that officers avail themselves of this opportunity. Where is such training available? How can I receive two weeks active duty training this year?

John A. Doyle
Cincinnati 27, Ohio

● *The On-the-Job-Training referred to is in the form of "mobilization assignments" which the Air Defense Command originated. It is now being offered by all commands at Air Force level or higher echelons. These mobilization assignments are necessarily limited in number and are not being conducted at any bases except the higher echelon levels. The nearest to Cincinnati is Headquarters, Air Materiel Command at Wright-Patterson Air Force Base, Dayton, Ohio. Information regarding mobilization assignments there may be secured by addressing a letter to the Commanding General, Air Materiel Command, Attention: Reserve Training Officer. Applications for fifteen days active duty tours should be addressed to the commanding general of the Air Force area in which you are located. In your case, the Eleventh Air Force, 1612 So. Cameron St., Harrisburg, Pennsylvania.*

HAVE YOU AN AIR RESERVE OR AIR NATIONAL GUARD QUESTION? WRITE AIR FORCE ANSWERS PREPARED BY HEADQUARTERS, AIR DEFENSE COMMAND

"Cadets cleared for take-off!"

From tower to plane the word flashes: "Cleared for take-off!" Like clockwork, the trim little pursuits taxi out to the flight strip. Engines roar with power and off they go, one by one, into the wide blue sky.

Pilot training under the U. S. Air Force Aviation Cadet program is for men with the urge to fly . . . men with a passion for excitement and speed. After one year of training, you'll win your silver wings and be commissioned a 2nd Lieutenant in the U. S. Air Force Reserve. And you'll be given an opportunity to qualify for a commission in the Regular Air Force.

You're eligible for this priceless opportunity if you're single, between 20 and 26½, and have completed at least half the requirements needed for a college degree (or can pass an equivalent qualifying examination).

You'll get $75 a month as an Aviation Cadet, plus food, quarters, uniforms, etc. When you graduate, you'll go on active duty with the Air Force with pay up to $336 a month for single officers.

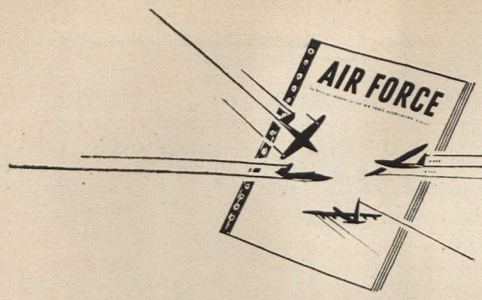
Ask for details at your U. S. Army and U. S. Air Force Recruiting Station. Or, write to Headquarters, U. S. Air Force, Attention: Aviation Cadet Section, Washington 25, D. C.

CAREERS WITH A FUTURE

U. S. Army and U. S. Air Force

U. S. ARMY AND U. S. AIR FORCE RECRUITING SERVICE

• Pilot training classes commence in March, July and October, 1948. Most Air Bases are equipped to give complete qualifying examinations.



RENDEZVOUS

Where the Gang gets together

491st B.G. While on duty with the 491st B.G., 855th Sq., stationed at the time in Metfield, our bomb dump caught fire and exploded. The hangar doors were blown down and it was quite a show, but I had no films in my camera. I wonder if any pictures were to be had of this incident? *Bill Sullivan, 65 Westborne St., Rosindale 31, Mass.*

CAN YOU TOP THIS? Is there any gunner who can top the record of 155 combat and photo recon missions, totalling 1085 combat hours? If so, write to *Edwin "Lucky" Stevens, 120 Morris Avenue, Mountain Lakes, N. J.*

HEY SARGE! I'm trying to locate Stanley E. Helberg, former sergeant who served with the 14th Fighter Squadron, 53rd Fighter Group, at Venice AAB, Florida, in the Fall of 1945. *Louis W. Cleveland, Brooks Road, Manimet, Plymouth, Mass.*

FOGGIANI: I would like to get in contact with former members of the old 342nd Bomb Group, that were in the engineering section when the squadron was near Foggia, Italy. I would especially like to contact Lt. Charles "Foots" Odum of Columbus, Miss., and Sgt. John Clements of Lubbock, Texas. *Bruce F. Tench, 235 Hinton Street, Petersburg, Va.*

DIANE: One of the best-known hostesses of SABENA Trans-Atlantic would like to contact some of the 61 US airmen she aided in France. Her name is Armande Stassart. During the war, she was a member of the famed *Comete*, a subterranean organization which smuggled Allied airmen who were down in occupied territory out of danger via Spain. Armande was finally captured in a raid. Both her father and mother were executed by the Nazis. Armande herself was tortured by the Gestapo, and was finally confined to the notorious Ravensbroeck camp. Later, she was transferred to the extermination camp at Matthausen, and was saved only by the destruction of the gas-producing equipment by the US Air Force. While she was conducting US airmen out of the Continent, she used the code name of Diane. She can be reached through: *Hugh Morrison, of John Nasht and Assoc., 16 East 52nd Street, New York.*

CO WANTED: Would like the present address of Lt. Col. Oris B. Johnson, of Louisiana, CO of the 422nd Night Fighter Squadron of the ETO. *William James, Jr., 4 Morimer Drive, Old Greenwich, Conn.*

WEDDING GUESTS: On August 2nd, 1945, I attended an Arab wedding in Mena village near the Sphinx, outside Cairo, Egypt, as the guest of Ashour Abdul Kerim El Gabry. Two flight officers, then stationed at Payne Field, were also his guests. I have lost the names and addresses of these two officers, and would like very much to locate them. *Arthur H. Blake, 229 Norfolk St., Wollastan 70, Mass.*

SEEKING PIX: Am interested in contacting any former member of the 450th Bomb Group (H) who has a complete set of combat pictures which were given each man when he finished his tour. I'm particularly anxious to get any pictures that might have been taken on the 29 December, 1944, mission in the Brenner Pass. *Irving Smirnoff, PO Box 621, Univ. of Conn., Storrs, Conn.*

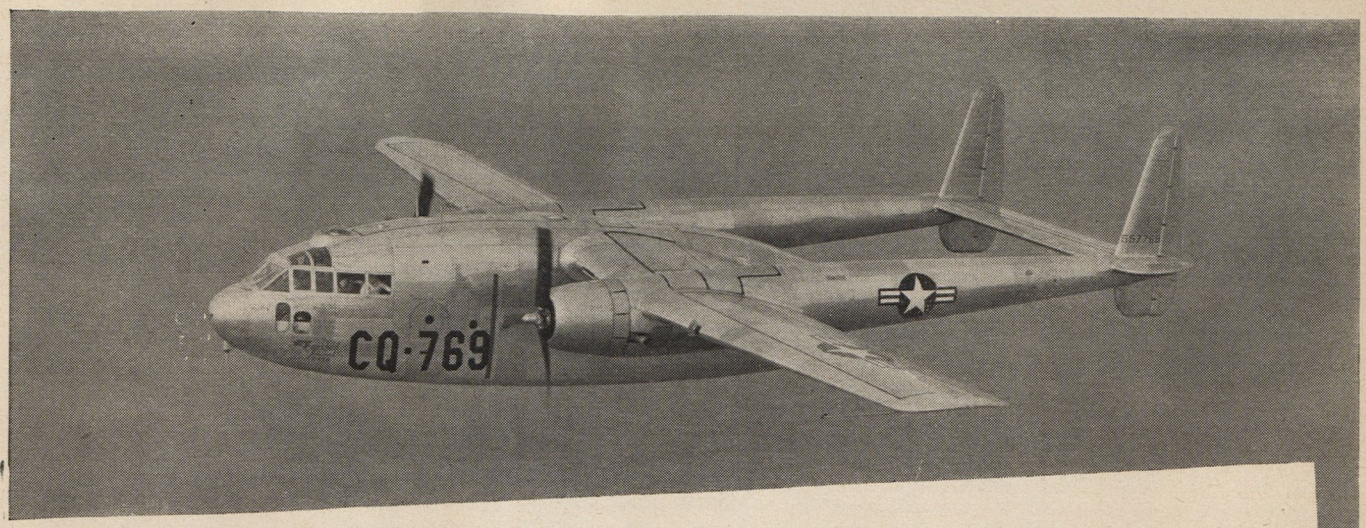
MONEY BACK: Would like to locate Allan Dreyfus who was stationed at Hq. 8th Air Force, Station 101 in the PRO office. I owe him ten dollars that he gave me to buy a gift for his girl friend. The gift came back and I wish to return the money *(Miss) Beatrice Tittle, 2817 S. Maple Ave., Berwyn, Ill.*

STILL LOOKING: Would like to hear from Officer Rina, Commander of the 551st Sq. or combat personnel from that unit. I lost touch with my outfit on Aug. 24, 1943, when my ship was shot down while returning from Telegrama, Algiers. *John F. Astyk, 78 High Street, Waterbury, Conn.*

MISSING BROTHER: I'm trying to gain information about my brother, Lt. Donald G. White. He was attached to the 13th Air Force, 339th Fighter Squadron. He was flying a P-38 from Guadalcanal in February, 1943, when he was reported missing. Since that time, we have had no information concerning him. I would like very much to hear from anyone who knew him. *Catherine Burt, Box 585, Coldwater, Kansas.*

ESCAPEE WANTED: I'm trying to locate Harlington Newkirk, a fighter pilot probably stationed in England. In 1944 he was forced to land in France and was picked up by the Underground. He was, at the time, sheltered in the home of Christine de Rivoyrre in Paris, but I cannot tell much about his movements after this time. I would appreciate hearing from any one who can give me further information. *David M. Norton, 846 Lancaster Ave., Syracuse 10, N. Y.*

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



Now! An Even Bigger, Better Flying Boxcar —The Fairchild Packet C-119

Something new in the air.

Out of the tried and proved first plane ever designed specifically for cargo-carrying has come this latest creation of Fairchild engineers—a super Packet.

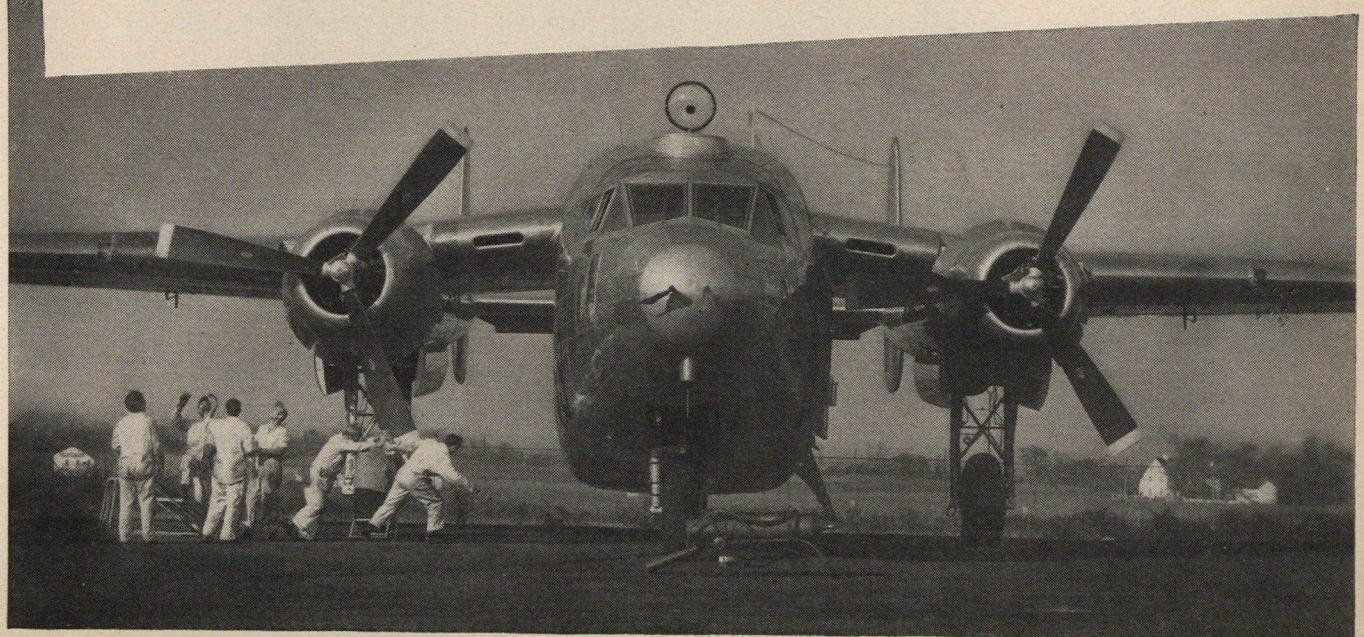
Like the original C-82 Packet, the C-119 is a product of close cooperation between Fairchild, the Air Force and the Troop Carrier Command.

With increased payload, speed and climb, the new Packet can transport 12 tons of men, equipment and supplies 1500 miles non-stop. As an ambulance plane it is equipped to carry 36 litter patients and attendants.

This new Flying Boxcar incorporates improvements and modifications proved in thousands of hours of actual service. All in all, it is flying evidence of an air-transportable Army . . . and of Fairchild engineering and research skill.

Fairchild Aircraft

Division of Fairchild Engine and Airplane Corporation, Hagerstown, Maryland



The 64 Billion Dollar Question

GENTLEMEN OF THE CONGRESS:

Less than three years after the end of the war you again sit as a jury on huge and complex military matters. One of the most complex of these is airpower.

We find the report of your Aviation Policy Board (presented in this issue) sufficiently sound in premise and comprehensive in scope to herald adequate airpower legislation.

At the same time, we are grateful to the Board for bringing to the surface a question that has given us concern—a question involving potential waste and duplication within the military establishment.

Specifically: Will strategic airpower originate from land bases, aircraft carriers, or from a combination of the two?

This can be called the 64 billion dollar question, inasmuch as the projected budgets of the two services involved, the Air Force and the Navy, total some 64 billion during the next five fiscal years.

In urging your consideration of this question as a matter of vital national importance, we offer the following comments of our own.

Air Force policies regarding strategic bombing are well established. Therefore, the answer to our question lies in the maze of fact and fancy that constitutes the Navy's strategic bombing program.

This program features astounding claims for yet unborn 80,000-ton "super carriers" and yet unborn B-29-size "super carrier bombers."

Still to be tested in the "wind tunnels" of Washington are the vulnerability of "super carriers" to submarines and land based aircraft, their long production time in relation to our defense needs, their high cost in manpower, money and natural resources, their inability to function in certain key areas of the world, their dubious effectiveness and recuperative ability under combat conditions—and a whole deckload of problems for their outsized aircraft.

Yet, the Navy has claimed that the nation's entire strategic bombing effort could best be accomplished from "super carriers." In vogue at the moment is the modified claim that these carriers would act only as a "holding force" until land based bombers took over.

This change of pace in Navy claims is not unusual. In testifying before the President's Air Policy Commission the Navy reported that it had enough carriers and enough aircraft to service them, except for replacement planes. Before the Congressional Board, in session at about the same time, the Navy suddenly found itself lacking in both carriers and aircraft.

With this in mind, it will not be surprising if the latest Navy request for "super carriers" appears to be modest enough—one carrier, perhaps, just to try it on for size. One foot in the door would be the first step in squeezing through the whole steel-studded experiment. We can come to no other conclusion, regardless of appearances, since the Navy's real desires already are on record.

When the Congressional Board, lacking a unified defense plan, accepted the separately prepared budget requirements of the three services, the Navy expressed its demand for a quartet of "super carriers" and for the air and surface craft to go with them.

Translated into dollars and cents, the Navy seeks total increases of 11.48 billion dollars over its present budget during the next five fiscal years. Beginning the sixth year, it seeks an annual appropriation exceeding by 3.87 billion dollars its present annual budget. At this "leveling off point" the Navy desires an annual budget of 2.6 billion dollars over and above the annual appropriation recommended for it by the Finletter Commission. In the six crucial budget years ahead the Navy wants appropriations totaling 2.33 billion dollars more than Air Force appropriations for the same period.

All this despite the Finletter Commission's urgent plea that the nation scrap its traditional peacetime Navy-centered defense policy and give land based airpower priority over all military appropriations. All this—or most of it—for an untried and unnecessary dreamboat program.

The Congressional Board has decided that something in the Federal Budget "must give." There is no question in our minds what that "something" must be.

We believe the surface Navy has its place in our military scheme of things, and that carrier aviation has its place as the tactical arm of the Navy. We commend the excellent tactical record of carriers in the Pacific war, and deeply respect the Navy's high calibre aviation personnel. But we think the "super carrier" program is keel-deep in waste and is an effort to duplicate unnecessarily a proved and experienced land based air organization that can provide strategic airpower faster, better and cheaper.

We ask for an answer to our question that does not jump the national defense budget billions of dollars for a fleet of floating Pearl Harbors.

THE EDITOR

Report of The Congressional Aviation Policy Board

The Board has endeavored to learn the air requirements of the Navy and Air Force in accordance with a unified plan of action, but no such plan has been agreed upon. The Joint Chiefs of Staff have been requested repeatedly to furnish a unified plan to this Board but they have yet to do so.

We are not unmindful of the problems involved. Strategic planning on a coordinated basis with a delineation of roles and missions is a time-consuming study. To be of practical value, such a plan must provide for coordination of target objectives, priority of tasks, coordination of items common to Navy and Air Force aircraft, computation of over-all logistics necessary to insure that strategic concepts are supportable, and, finally, coordination of aircraft procurement.

In spite of these difficulties, we are at a loss to understand why integrated studies of this type have not been conducted since the end of World War II. We believe the Joint Chiefs of Staff should pursue such studies intensively with a view to a determination of the minimum number of aircraft and the size of the armed forces which will insure national security.

Under the National Security Act of 1947, the Joint Chiefs of Staff are charged with the obligation of preparing such plans. It is our view that the Secretary of Defense and the President should exert whatever pressure is required to make certain of their accomplishment. We are not unaware of the fact that the Joint Chiefs of Staff, who individually represent the three separate services, may find it difficult to prepare truly coordinated and integrated plans. The loyalty of each service to its traditions is understandable, but unyielding adherence to service loyalties at the expense of national security is a luxury the Nation no longer can afford.

However, the Joint Chiefs of Staff are not alone responsible for the present impasse, as there is an important conflict between Executive order and law.

The National Security Act of 1947 and Executive Order No. 9877, which further defines the missions and roles of the various components of the armed forces, should be clarified in order to eliminate basic differences in interpretations.

There are basic differences of opinion between the Air Force and the Navy as to the mission of naval aviation as set forth in Executive Order No. 9877 and in the provision of Public Law 253, the National Security Act of 1947. As an example, the Navy interprets the law to permit it to develop any type of weapon and to base its plans and requirements on the utilization of any weapon. The Navy contends that it is complying with the law in disregarding the Executive order on this point because the law and the Executive order are in conflict. The Air Force view is that both the law and the Executive order give to the Air Force, exclusively, certain missions. The fact that such a basic difference of interpretation exists indicates the necessity for immediate clarification. The law and the Executive order as well as their interpretation appear to be in conflict, or at least ambiguous, and for these reasons recommendation is made that a solution be found either through amendment of the act or revision of the Executive order, or both. This step will increase the effectiveness, efficiency, and economy of the National Military Establishment.

In view of the inability of the Joint Chiefs of Staff to prepare a unified plan, it has been necessary for this Board to accept for the time being the statements of requirements prepared by the Navy and Air Force separately but in accordance with certain assumptions referred to herein by us as "plan A" and "plan B." The total requirements in these plans, therefore, represent the sums of the separate statements of requirements and in nowise represent a unified plan as might have been anticipated from the Unification Act.

Plan A

From the information made available to the Board by the Air Force and by the Navy separately, it would appear that the initial strength necessary to mount promptly an effective, continuing, and successful air offensive against a major enemy, is what is termed the Air Force 70-group program of 20,541 aircraft, plus the Navy program of 14,500 aircraft, total 35,041 aircraft. At the level-off period in 1953 these programs would require thereafter an annual Air Force procurement of 86,000,000 airframe pounds and an annual Navy procurement of 25,000,000 airframe pounds—total, 111,000,000 airframe pounds annually.

Plan B

Based on the same sources of information, the strength necessary to prevent the loss of a war upon the outset of hostilities appears to be the same program outlined in plan A above, but without reserve aircraft, which means a combined Air Force and Navy aviation procurement of 63,000,000 airframe pounds annually. For the purpose of comparative budget study (see tabulations) we have assumed that the combined annual procurement of 63,000,000 pounds might be divided into approximately 45,000,000 for the Air Force and 18,000,000 for the Navy. This plan is designed to

provide a force sufficient to (*a*) withstand an initial blow intended to cripple the United States, (*b*) form the basis for a strong Territorial defense, and (*c*) provide effective retaliation, but not a sustained offensive action. Under this plan it is estimated that the aircraft manufacturing industry would require a year longer to reach the volume of aircraft production necessary to cope with attrition, than it would under plan A.

Present Situation

In the fiscal year 1948 the Air Force is procuring 18,000,000 airframe pounds of new aircraft from cash expended in 1948 and deliveries from cash expended in previous years. The Navy is procuring 8,000,000 airframe pounds of new aircraft on the same basis. In addition, the two services are withdrawing from war-surplus storage a combined total of 43,000,000 airframe pounds. Therefore, the total input of aircraft into the two air services for the current fiscal year 1948 is 64,000,000 airframe pounds.

War surplus storage aircraft are being depleted rapidly. If plan B were to be adopted and placed in effect at once, industry might be able to expand to an annual production rate of 63,000,000 pounds at approximately the same time useful airplanes in storage would be exhausted, thereby maintaining the present program. This date approximates the close of fiscal year 1950. Therefore, if this strength is to be maintained, immediate action is necessary to preserve the strength we now possess. If plan B were adopted, complete modernization of the air services at the strength specified in this plan, would be effected approximately by the end of fiscal year 1954.

In order to delineate the budgetary effect of these plans over the next 5 years, we present a tabulation of budget requirements, including contract authorizations, assuming cost of labor and materials remain constant. Furthermore, in order that these military budgets may be presented in relation to the over-all Federal Budget it is assumed in the tabulation that the costs of Government (other than for the Armed Services, universal military training (UMT) and European recovery program (ERP) as set forth in the budget for the fiscal year 1948-49) remain constant at $25,000,000,000 over the period covered by the tabulation (see charts on pages 38, 39).

THE CONCEPT

A nine-point outline of the steps that must be taken if the US is to remain secure in the air

★ That the costs of the airpower program of the United States be coordinated with all other costs and expenditures of government, both domestic and foreign, that we may protect ourselves against both aggression from abroad and bankruptcy at home.

★ The military airpower of the United States should be maintained at such effectiveness as to be able under all circumstances to control the air spaces of the United States, its possessions, Territories, bases, and occupied lands wheresoever, and be able to retaliate in greater degree for any attacks launched by air, or otherwise, against the peace and security of the United States or those free allied governments with which it is joined for mutual defense.

★ Scientific research should be fostered and coordinated to maintain the leadership of the United States in technical aeronautical development.

★ The airways, weather stations, airports, and essential facilities of air navigation and control should be developed and maintained to accomplish the maximum degree of safety and certainty in air commerce and military operation, regardless of weather, burden of traffic, enemy action, or other cause whatsoever.

★ The aviation industry of the United States should be maintained in such production status and degree of expandability as to serve adequately, and without delay in emergency, the requirements of the military air forces.

★ The domestic and foreign air commerce of the United States should be fostered and promoted by whatever means appear most practical until it reaches such stature in passenger and cargo capacity as to constitute in crisis an adequate logistical air arm of the National Defense Establishment.

★ The value of the small-business man—the local airport operator, aircraft sales and service companies, flying and trade schools—along with the private citizen pilot and owner of aircraft should be regarded as a national asset and be given every recognition and encouragement.

★ In every phase of national airpower, the policy of coordination with every other phase should prevail, and the Secretaries of State, Defense, and Commerce must be specifically charged with responsibility to this end.

★ An aeronautical educational program should be established throughout the public-school system in order that basic problems of the air age—global geography, meteorology, navigation, mechanics, communications and the rudiments of flight—are well understood by future generations.

THE BOARD

California's Representative Carl Hinshaw (left) and Maine's Senator Owen Brewster headed Congressional Board.

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Senator Owen Brewster, *Maine*

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Report of The Congressional Aviation Policy Board *(Continued)*

The Board notes with deep concern that the 1948-49 armed services budgets are in amounts arbitrarily allocated by the Bureau of the Budget. They do not even approximate the stated requirements of the services.

After examination of the foregoing tables of projected Federal Budgets it is obvious that something must yield. If the over-all costs cannot be kept down within reasonable proximity of the present budget, we must either increase income from taxes to make up the difference, or engage in debt financing. Neither course is to be desired. The only alternative is a reduction in other expenditures. It should be observed here that more than three-fourths of the Federal Budget is now related largely to prevention, prosecution or liquidation of wars.

To repeat—no unified plan has yet been prepared. We believe that when such a unified plan has been determined, the total requirements of the armed services may be materially reduced below the totals of the estimates prepared unilaterally. It is not possible for your Board to estimate with accuracy the reduction in the combined military budgets that such a unified plan might make possible, but it is believed that material savings can be effected while at the same time a better and more efficient military establishment can be provided.

▶ In order to obtain a more realistic national security program, determination should be made by the National Military Establishment of the alterations in the fiscal year 1949 military budgets that should be effected, and that such determination should be presented to the President and the Congress before adjournment of the present session of the Congress, but in any event not later than June 30, 1948.

Such a determination should—

(*a*) Effect the adoption of unified plans.

(*b*) Reveal the capabilities of the armed services under stated conditions or plans and the corresponding budgets required.

(*c*) Provide definitive information to the President as Commander-in-Chief which will enable him to determine for his purposes the proper budget for the national security.

(*d*) Form the basis for an industwar plan that can be accurately translated into terms of national resources.

(*e*) Insure maximum return for the military tax dollar.

Such determination should be made annually thereafter at such time as to permit a report to the President from the Secretary of National Defense so as to be useful to the President and the Congress in the formulation of the next annual budget and appropriations.

Additional recommendations follow:

▶ The nuclear-energy propulsion for aircraft (NEPA) project should be accorded the highest priority in atomic-energy research and development and every needed resource and facility should be devoted to its early accomplishment.

▶ A Federal airways system should be established under a single civil head to facilitate integration of its function with military aviation in an emergency and study should be made by the Government agencies charged with mobilization planning to determine whether the employees of this system should have a military reserve status.

▶ There should be established a joint task group designed to withstand an initial attack directed at the United States, and to form the basic organization for a strong territorial defense.

▶ A competent aircraft-warning network should be established under the direction and control of the proposed Territorial Command.

▶ In order to provide personnel immediately available for assignment in time of emergency wherever the military situation demands:

a. A portion of military aircraft should undergo overhaul on a contract basis by civilian organizations and the employees of these organizations should be encouraged to be members of a reserve component of the armed services;

b. A realistic program of recruiting and training air reserve personnel in both air and ground echelons should be developed.

▶ The Federal Government should sponsor the design and development of prototype transport and cargo aircraft intended primarily for commercial use, but suitable for certain military purposes. Funds should be allocated to the Air Force and earmarked for this specific purpose.

▶ Form contracts should be prepared now for wartime utilization by the armed services of all aircraft of United States carriers flying international routes except those that may

be specifically exempted by the Department of National Defense; further, form contracts should be prepared now for wartime utilization by the armed services of aircraft of the domestic carriers of agreed percentage according to plans.

▶ The Navy Department should make a careful study of the career policies for naval aviators and other specialists – not specifically designated as such–in order to eliminate training and duties that are not essential.

▶ The Secretary of National Defense should revise the public relations policies of the armed services in the interest of national security.

Some of the bids for public acclaim by the Air Force and the Navy constitute an undesirable practice and mislead the American public on aircraft performance in addition to disseminating information which could be of value to a foreign power and should be closely guarded.

It gives a false sense of security to the public to learn that a military aircraft has flown the spectacular distance of 10,000 miles when it is not made clear that the distance was possible only because the aircraft was "stripped down" for the flight and could not fly half that distance under combat conditions. As a matter of fact, the effective radius of action of the longest range bomber now in use is less than 2,000 miles and the famous B-29 has an effective radius of about 1,700 miles. The effective radius of action of a bomber is approximately one-third of its range. A bomber may use its full range only in a "shuttle" operation or a "ditching" operation; and without advance fighter bases it must fly over a distant target without the protection of escort aircraft.

It is equally misleading for the public to learn that an aircraft has flown faster than sound when it is not explained that such an aircraft is years short of utilization in combat. At speeds of more than 650 miles per hour no fighter plane yet built can remain aloft longer than an hour and at sonic speeds its maximum time aloft is still less.

It is well for the services to have pride in their accomplishments but security and public faith must not be violated.

For Transport, Manufacturing, Research & Development, and Government Organization sections of the report see page 38.

If Billy Mitchell Were Here

By James H. Doolittle

Chairman of the Board, Air Force Association
Council Member, Congressional Aviation Policy Board

▶ *AFA's Jimmy Doolittle last month was awarded the General William E. Mitchell Award of the American Legion's Aviator's Post 743 in New York City as "the United States citizen making the outstanding individual contribution to aviation progress" during the past year.*

General Doolittle received the award, which had not been presented since 1944, for his postwar efforts in promoting a public awareness of the need for a strong air force to preserve the peace, and for his work in establishing and leading the Air Force Association for this purpose, according to Col. Paul S. Zuckerman, Post Commander.

The following observations are from General Doolittle's remarks as he accepted the Billy Mitchell award.

Billy Mitchell would be disgusted, as the public is, with the present bickering between our military services.

Service prestige, individual misunderstanding and political expediency must give way to operational effectiveness and economy in our military establishment.

The fundamental fault with our National Defense Establishment today, is that, despite unification, it still consists of three imperfectly coordinated agencies, three competing teams; the Army, the Navy and the Air Force.

We cannot have a sound military establishment until Land, Sea and Air learn to work together as three equally important component parts of the *same* team.

Two things are necessary to bring this about:

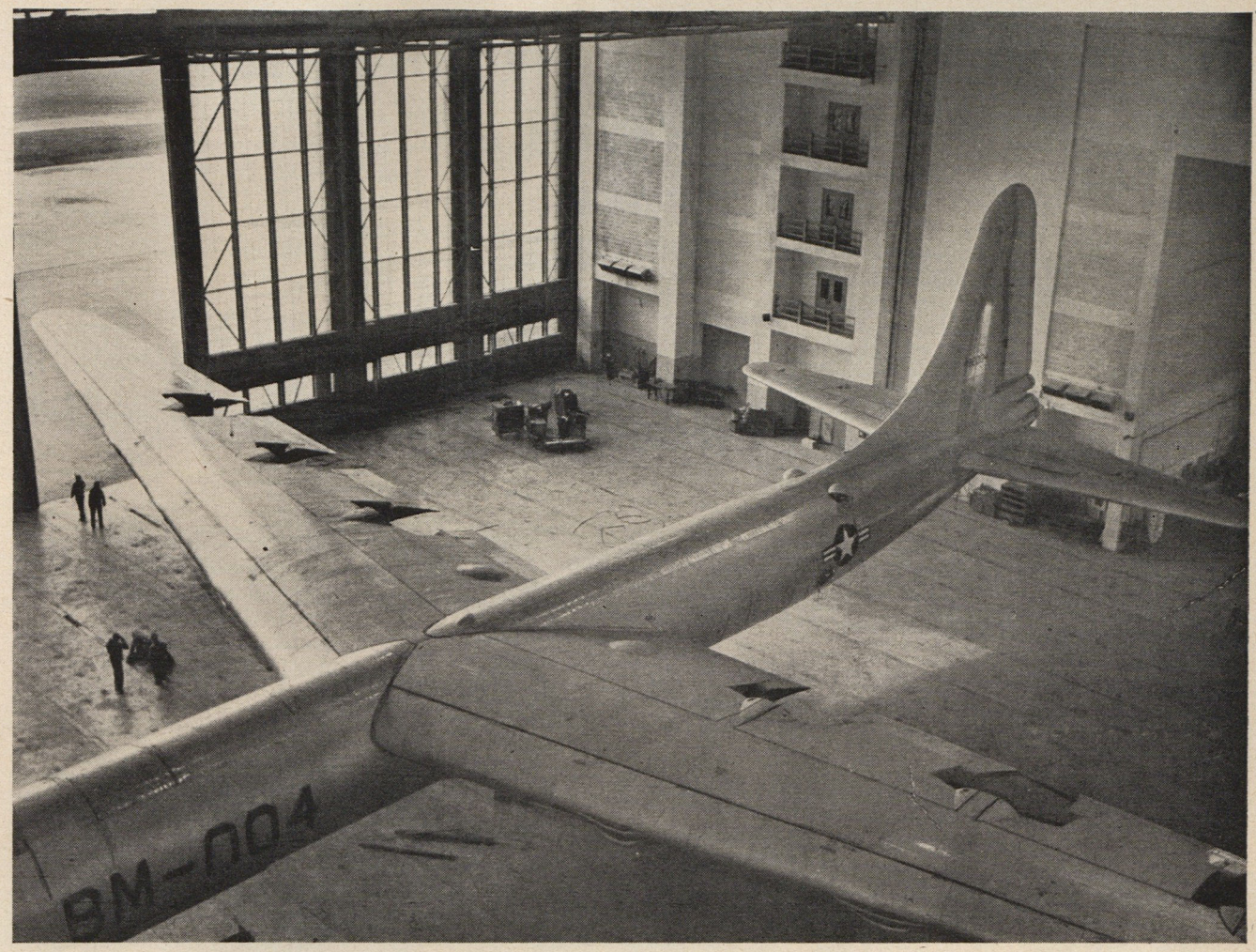
First, the team must have a "captain." It now has a "coach" in the Secretary of National Defense, but the team has no coordinating head at the playing, or operating, level. There must be a head to the present Joint Chiefs of Staff.

Second, there must be joint training and interchange of personnel from the Academy on. This is essential in order to develop cooperation and understanding and to avoid in future the service jealousies and prejudices which are presently making true unification so difficult.

Billy was not overly popular with the old Army and the sea Navy, but his fight was not with any Service. It was against obsolete weapons and obsolete concepts.

He fought for the airplane and against the battleship—simply because one was effective, the other obsolete. Despite his admonition to crucifixion, bigger battleships were built. The money spent on them would have built an Air Force which might well have obviated World War II. Most certainly, it would have made that conflict shorter and less costly in money, natural resources, national and international economic and political dislocation, and in precious human lives.

If Billy Mitchell were able to talk to us today, he would say, "Build up your land-based air force, develop the controlled air weapons of the future, the use of atomic energy as a propellent, as well as an explosive, and new and more effective weapons; but for *my* sake, at this time of international insecurity and America's great obligation to the world, don't waste our precious substance on outmoded weapons or systems."



Like the shorn convict, the B-36 stands in the static test building, stripped of power plants and other non-essential accessories. The next step is to erect the testing scaffold around it.

The 163-foot fuselage can just about be dollied into the static-test building at Wright Field. The 230-foot wing does better. The available depth, intended for two bombers, was 250 feet.

Breaking a Giant's Heart

AMC's scientists put a six-engined B-36 on the torture rack to wring structural deficiencies from it

Out at Wright Field the B-36, world's largest bomber, is being tortured to destruction—slowly. Over a period of a year, this 265,000-pounder, stripped of its power plant and accessories, will be loaded down with tons of shot bags, have its skin ripped off, and its spars bent by hydraulic pressure.

When this static test program is completed, the nation will have two things—a pile of junk metal and certain answers. The metal will be salvaged, but more important, the data accumulated will narrow down the current unknowns about super-sized aircraft.

Ever since Billy Mitchell underwrote the six-engined Barling, someone has always been decrying the sky giants as "too damned big." Yet, the record of "oversized" B-17s, B-24s and B-29s is pretty damned good. These planes are now our "medium bombers." The B-36 static test will tell us more about super bombers of the future.

To move the 90,000 lb airframe, a hydraulic-rack is improvised from 10 oleo struts which move it in 15 ft strides.

Getting the giant's four-wheel trucks into the dolly-cradle is no easy job. First the main leg is set on a steel I-beam. Then the wheels are drawn up and dropped into their stations.

First public appearance of the Beckley Squadron was made last Memorial Day when AFA members Al Bazzarre and Thomas Wilson placed a floral wreath at base of war memorial in Beckley's public square.

AFA mountain style

The Beckley West Virginia Squadron celebrates its first anniversary this month with one of the nation's most impressive records

The 12,000 townspeople of Beckley, West Virginia, first became publicly aware of an AFA squadron in their community last Memorial Day when two young Air Force veterans stepped forward from a small gathering in the town square and placed a wreath at the base of a new eight foot marble war memorial. The two men were Al Bazzare and Tom Wilson, Jr., who in themselves constituted a little less than one-tenth of the total squadron membership at the time. The wreath was an original made of 175 red, white and blue flowers. It cost half the money in the squadron treasury..

It wasn't a particularly auspicious debut for the squadron, but as it turned out the ceremony was more than a tribute to the men who had served in the last war—it was the dedication of an AFA program that in the months to follow was to unite the people of the little mountain town of Beckley in a determination to secure the kind of airpower for the US that would make unnecessary the erection of another monument of this sort.

To run briefly over the early genealogy of the Beckley Squadron, it was a former armanent staff sergeant by the name of Ralph Whitener who made the first move to organize the club. Whitener himself joined AFA in February, 1947, and shortly thereafter received from Washington some promotional material on the procedures of organizing a local unit. He talked the idea over with three of his friends who were also Air Force veterans and the four of them decided to give it a try.

Several weeks later they had

rounded up 13 additional Air Force alumni and were ready for their first meeting. It was a tremendous success—the kind that is only generated among a group of people with mutual interests and backgrounds. There was considerable swapping of tall tales at that first meeting but the men also found time to appoint one committee to draft the squadron's by-laws and another to nominate permanent officers.

At the second regular meeting Whitener was elected Squadron Commander and the constitution and by-laws committee submitted (and gained approval of) a paper which stipulated that there should be two vice mommanders of "equal powers" to avoid "cliques or set-ups," and strongly condemned mention of former military rank. These were among the rules and regulations drawn up by Committee Chairmen William L. Williamson and Jack Davis. Most important of all, however, was the fact that by now the little group was convinced that it had something—that there was more than enough interest to assure the success of an organized program to promote airpower.

On April 7—a year ago this month—National AFA Headquarters in Washington gave its official seal of approval to the Beckley application for a charter. In the 12 months that have ensued since that date the squadron has hung up a record that in the words of AFA Board Chairman, Jimmy Doolittle, is "truly outstanding." There are now 68 veterans in the club, not many compared to some units that have four or five hundred but it's a good percentage of the people in Beckley who are eligible to join. And after a year of activity in which a total of $3,585.32 was spent for various projects (including the floral wreath) the Beckley Treasurer can still report a healthy balance of $915.10 in the squadron kitty.

One of the early projects undertaken by the "mountain-AFAers" was a campaign designed to stimulate local interest in the building of a memorial airport. Shortly after the beginning of World War II, federal government officials came to Beckley to investigate the possibility of establishing an AAF base. But just about the time the government decided to

(Continued on page 44)

Beckley's Ten-Point Program

1. To be ever watchful of our National Security, and fully support the United States Air Force.

2. To keep the public abreast of world-wide aviation activities.

3. To help establish aeronautics courses in West Virginia high schools.

4. To sponsor an Air Scout Troop; provide it with a surplus plane, for a workshop.

5. To cooperate and assist in aviation projects in the Beckley area.

6. To properly air-mark Beckley and the surrounding area.

7. To frequently visit and be of service to all Air Force veterans at Pinecrest Sanitarium.

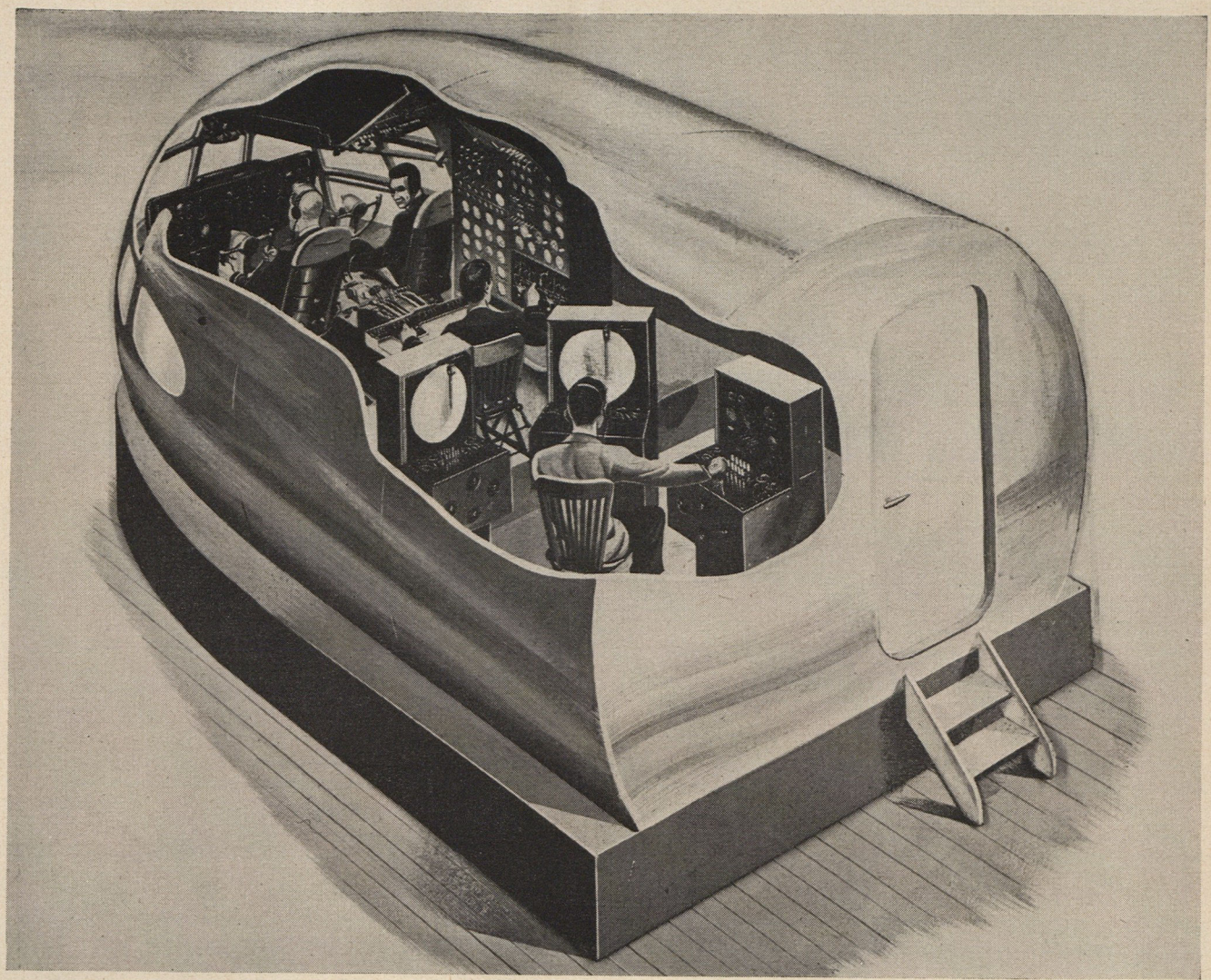
8. To help form AFA Squadrons in other cities.

9. To sponsor the annual observance of Air Force Day.

10. To solicit subscriptions to the AIR FORCE Magazine.

A Luscombe Silvaire was hauled into Beckley for display last Air Force Day. Club was only four months old at the time, but it had one of the nation's finest programs.

Visiting Air Force veterans at Pinecrest Sanitarium is one of the regular activities of the Beckley Squadron. Here Squadron Commander Ralph Whitener, left, hands an AFA membership card, paid for by the Squadron, to Fleet Counts, former armorer. Witnessing the event are Ike Devasher, Eugene Hunter and George Gunnoe.



Cutaway drawing of the Curtiss-Wright Dehmel Electronic Flight Simulator, built to train Stratocruiser crews. This type of circuit can be applied to the synthetic prototype.

From The Cockpit Out

As a fresh approach to design problems, the synthetic prototype may achieve importance in building planes

By David Morrison
Flight Safety Foundation

The demand of peacetime markets has been severely retarded by the shortage of really new type aircraft designed to meet the latest requirements of air services, air carriers and private fliers in performance, safety and economy.

The enormous and increasing cost of pioneering new type aircraft, or even introducing major modifications into existing types, is, for the most part, financially impracticable on present earnings of the industry. If our *methods* for design and development had kept pace with our *knowledge* of design and development, the cost of such activity would be only a fraction of what it is today.

The pattern of development methods which accounts for this undue cost is familiar enough. As the industry grew up, there were many variable factors and unknowns in setting out to develop new type aircraft, and frequently no way of determining, measuring or evaluating them until a finished model, or prototype, was available for testing. Often enough the prototype needed considerable modification and retesting before an optimum design was achieved. In many cases, whole series of prototypes were developed before required conditions were satisfied. The combined cost of materials, production, development and testing all too often eliminated ultimate profits on the final product. Oftener still, whole development programs had to be junked completely after enormous expenditures, because the resultant aircraft proved impracticable.

Now that the industry has time to breathe, it is in a position to modify

its method of design and development so as to cut down the time lag between determining the requirement and getting the acceptable article into the air in the quantity demanded by the market. By so doing, it will effect a great decrease in the cost of pioneering new aircraft types and enable the industry to keep abreast of increasingly rapid shifts in type requirements.

The design of aircraft must be based on a definite demand. By past methods, it has been difficult to learn the specific details of that demand, and hard to visualize the end product on the basis of rendered specifications of the customer. It has been a particularly critical problem to interpret requirements stated in operational terms and translate them into engineering objectives. The familiar gap still exists between those who specify the desired flight and control characteristics, cockpit layout and instrumentation, and those who set out to design aircraft to meet these conditions.

The Mock-up Board has the traditional task of pinning down the requirements in any given aircraft type to be developed. The pilots and engineers constituting these groups are selected for their ability and qualifications for determining the utility of the proposed aircraft. They must be thoroughly familiar with the bewildering number of factors essential to successful aircraft design. And these factors make it inevitable that differences of opinion, experience and conception result in inconsistencies and ambiguities in the final statement of the requirement.

The Mock-up Board is still hampered by the concepts of an era when designers felt concern only for the limitations imposed by less advanced knowledge of light metals, aerodynamics, power sources, etc. The technical difficulties of merely achieving flight were in those days so great as to outweigh the human and financial difficulties.

We are still faced to some extent with problems of limits on materials, aerodynamics and power. But we have now advanced to a stage of design development where our apparent approach to the maximum limits of human tolerance in such matters as temperature, vibration, fatigue toleration and reaction-time are of central importance.

Consequently, intensive investigation of the human being on a broad scale, comparable with our inquiring into the strength of materials and the characteristics of complex structures, is gradually being undertaken. It must be rapidly expanded in order that advances on the human, or pilot-passenger front, may keep abreast of the advances on the aircraft design front.

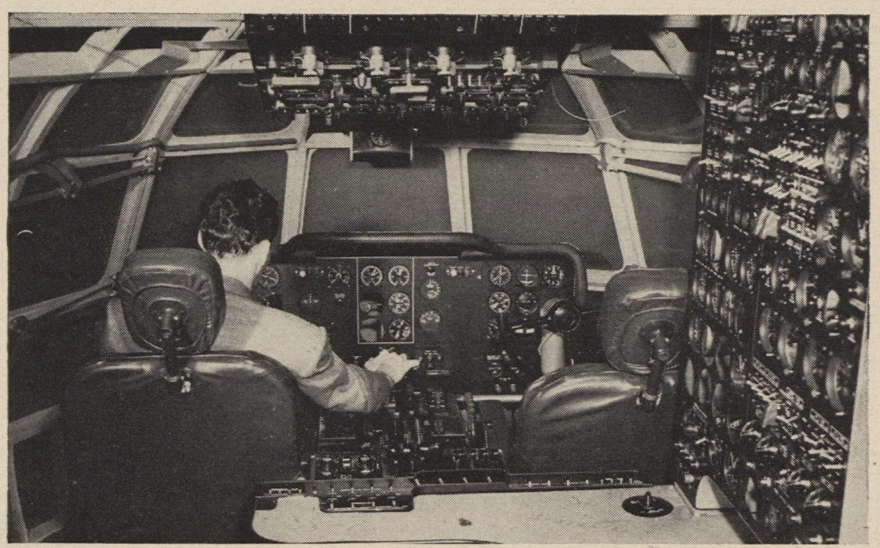
In 1943 wartime demands began to draw attention to the importance of designing aircraft so that the mechanical devices used by flight personnel would be but the elongations or extensions of the operator's physiological and mental equipment. In clarifying this new concept, Dr. Eugene DuBois called it "the nervous anatomy of the cockpit," and inspired a stream of literature amplifying the idea and leading to a completely new philosophy of the problems of aircraft design—one which has yet to achieve its proper place in postwar design methods.

However, in many research and development laboratories attention is being paid to the problem of determining the *human* requirements and limitations to which aircraft design must conform. In contrast to former emphasis on physical requirements, the simultaneous consideration of human requirements looks toward achievement of a synchronized development for greater utility and increased safety.

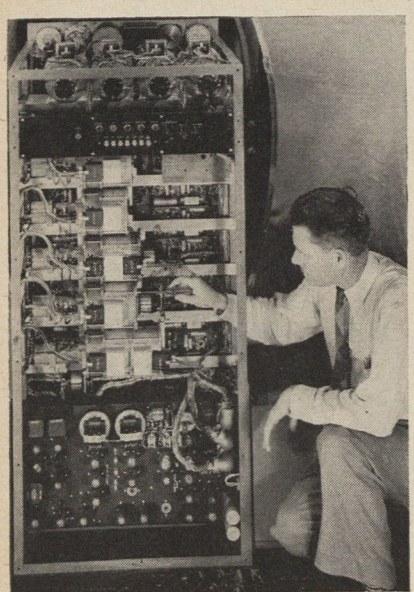
As a result of recent advances in electronic computing and recording equipment, it is possible today to apply this new concept. By preparing special equipment we can permit designers to gauge the human factor and calibrate design and performance calculations to conform to it.

Such equipment would correspond to the familiar "mock-up," but would extend far beyond it as a guide to the design of the end product. It would afford electronically activated and accurate measurement of human reaction to authentically simulated flight under practically all conditions affecting ultimate design. The real-

(Continued on page 42)



Closeup of the pilot and flight engineer's position in the C-W Dehmel simulator. This unit operates on the theory that all flight characteristics can be expressed as quadratic equations, converted to readings through shaped potentiometers.



Circuit view of an AT-6 Dehmel reveals chiefly standard parts. This system may simulate almost any type airplane.

Attacking

From the homes and backyards of the nation the military inherited many maladjusted young soldiers, and took on a social issue that complicated its mission and tested its leadership. This report on the problem provides a penetrating analysis of the peacetime GI

After 117 young student soldiers had gone over the hill during Holy Week and returned to their squadron at an Air Force radio school, they were asked, why? The reason, they said, was that soldiers of the Jewish faith had been permitted to go home for the high Holy Days, and they felt they had the same right. On further questioning it was learned that very few of them had gone near a church while AWOL. Nearly all, however, admitted to difficulties with the radio course. Many were having their problems with the first sergeant. Most of them were just "plain homesick." Several had "girl trouble."

That was in the spring of 1946. Military leaders were having trouble enough with the business of converting a wartime organization into a peacetime military establishment. Budgetary and manpower cutbacks, reorganization and revised training schedules gave them a demanding job. And it was becoming increasingly apparent that excessive soldier misbehavior was complicating the main mission of national security.

Unacceptable soldier deportment still makes bad statistics—in rates of absence without leave, confinements to the guardhouse, venereal disease contraction. Company punishments under the 104th Article of War, covering less grave infractions of military law and order, are noticeably high in number. We have a maladjusted and none too happy generation of young soldiers, and they require expert guidance.

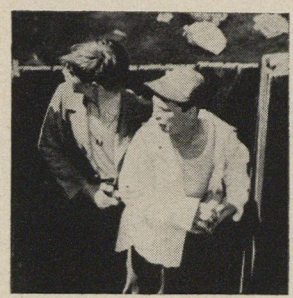
A prominent judge has been quoted by the press as saying that the problem of misbehavior in young soldiers "is squarely up to the high command." That statement represents a neat mental trick. I

"The problem was inherited . . ."

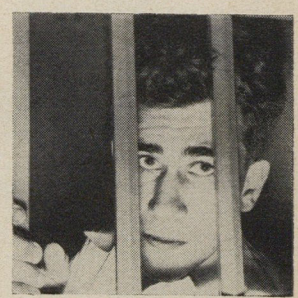
THERE is no denying that the military has a youth problem. "But," says Chaplain Wolverton, "it is part and parcel of the *nation's* youth problem. Military life has not provided the predisposing causes of maladjustment. These are to be found in the preceding years of civilian background."

While one youth watches and blows bubble gum (left) another lies dying beside his demolished "hot-rod" roadster.

A twelve year old Chicago youngster (left) tells police that he stabbed and killed his seven year old playmate.



With a pistol at his back, a Boston boy is used as shield by his friend during tragic battle with advancing police.



From behind prison bars this young man who should be planning career considers instead murder charge.

the youth problem

By Chaplain W. I. Wolverton
Air War College, Maxwell Field, Ala.

hope it will not generally be resorted to. It is a nice way of getting the "cat off the back" of many people who must share in the responsibility for the formative years of our young servicemen. It would be a great deal more honest, and much more realistic, if all of us of the older generation were to face the facts of failure in homes, schools, churches and communities, to see our own share of wrong example and bad doctrine, and to realize that directly or indirectly we have aided and abetted in the unfortunate behavior of the young, *including* many youthful soldiers.

Yes, the military has a youth problem. But it is more than what you read in the newspapers about inexperienced troops trying to do a man-sized job of occupation and police work. It is, rather, part and parcel of the nation's youth problem. Evidence is everywhere available that this country has something extremely critical facing it under various guises: juvenile delinquency, emotional instability, mass malajustment. Those who have eyes to see need only look about them for the evidence in their own communities.

In this article I am trying to present the military's share in the larger problem. It is a sizeable share, because at least a half million men now in uniform are under 21 years of age. When many of these enlistees put on the uniform they carried their basic unhappiness with them into the service. Taking the oath and signing up did not change them; nor do a few months in basic training work any miracles.

Though the military side of the problems stares me in the face, from what I read of youth's behavior in civilian life I cannot believe that the military's facts and figures on soldier deportment spell out to the easy conclusion that the youth problem in uniform is *primarily* to be found in youth's adjustment to military life. To many it may provide the *precipitating factor*, although on this point we are not altogether certain. It might be considered a kind of catalyst which brings basic maladjustment to a recognizable state. But military life has not provided the *predisposing causes*. These are to be found in the years of civilian background.

The poorly adjusted young man—who is incidentally a soldier—represents, and dramatizes, the youth problem which the military has somehow to deal with, a problem which the military did not create, but which has, in a sense, been inherited by it.

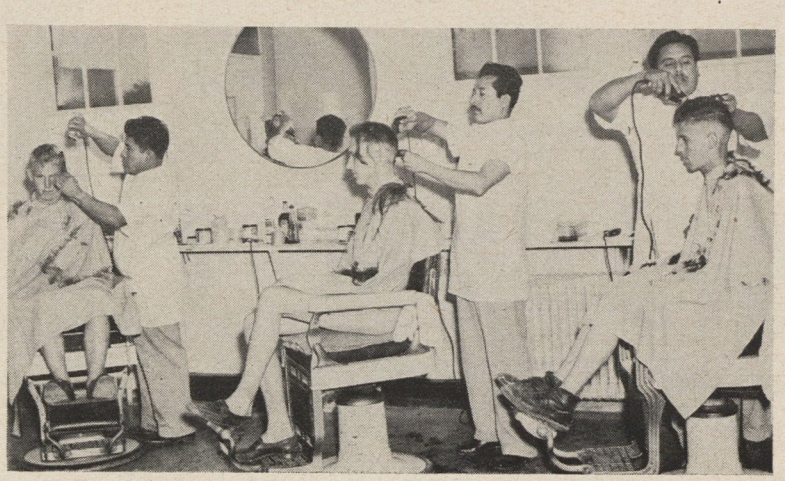
The job is no small order. The solution is complex. A pronouncement that the problem is "up to the high command," or the thinking represented by it, will not get us anywhere. Would to God it were as simple as that. It would be wonder-

With a five-gun arsenal spread out before him, this 18-year-old Brooklyn youth broods over a crime that resulted in his life imprisonment.

"... the solution is complex"

THE teen-age soldier was born on the average a year before the crash of 1929. His childhood was subject to the tensions of the times. Pre-war boom days of his adolescence added to his dislocation. To correct this the military is launching an intensive program of vocational, recreational and social guidance.

"Keep their minds and bodies busy."



Youngsters who want action find it aplenty at Lackland. Processing which once took many hours is now done, complete with haircut, in 35 minutes.

attacking the youth problem *(Continued)*

ful if the moral law could be as easily taught as the manual of arms, if character and citizenship could be as readily acquired as a technical skill. No, the military cannot properly be expected to accomplish in a few years what was left undone in the lives of these young people for 18 years. The military must do what it can. And we are doing just that.

When the extent of the military's social problem became apparent in the spring of 1946, the Commanding General of one of the Air Force's largest commands expressed his great distress at the alarming number of General Courts Martial cases involving the capital crimes of recently inducted or enlisted soldiers. The ages of the offenders too often were between 17 and 21. The Commanding General called upon me, his staff chaplain, to see what I could do. After a few months of groping around in a welter of interrelated causes and effects I found the problem to be far beyond my own capabilities even to outline. I asked that a board of officers be convened to study it. The command was screened for officers of varied backgrounds: former school teachers, lawyers, psychologists, and others who by reason of their civilian and military experience promised to have good insight to bear upon the inquiry. The board convened, and for ten hot August days we deliberated. We called upon the help of experts from a neighboring university and from the social agencies of the nearby metropolitan area. We set about to answer four questions:

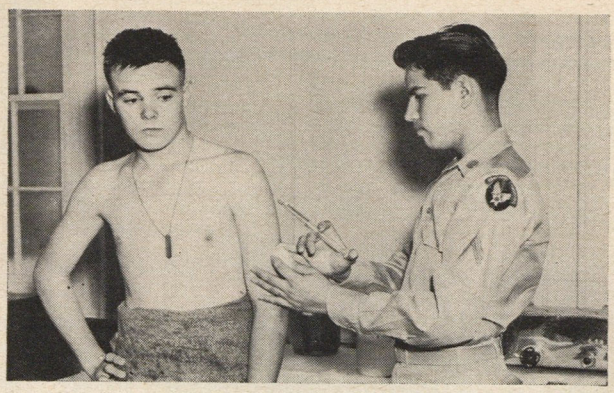
- What are the mental and moral characteristics of these young soldiers?
- What ways of dealing with them have proved to be faulty or in error?
- What ways have proved to be successful?
- Do they require a special kind of leadership?

The findings themselves were not in the least dramatic. Ours were common-sense conclusions. We were able to rule out a number of false notions that had become current about the handling of young soldiers, and to reevaluate the tried and traditional methods. At the same time were were given complete freedom to examine and to point out existing flaws and irregularities in disciplinary and administrative practices which were adversely affecting the adjustment of the young men to military life. We were to use no whitewash.

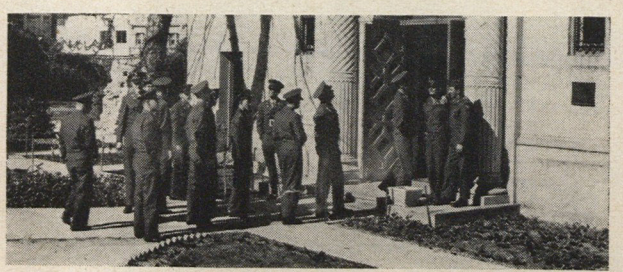
To answer our first question,—What are the mental and moral characteristics of the young soldiers?—it was necessary to examine what in general had been their pre-military experience. With the aid of our civilian experts this is what we arrived at.

The teen-age soldier was born, on the average, about one year before the financial crash of 1929. His early childhood was subject to the strains and tensions which came with the depression. An atmosphere of uncertainty and insecurity surrounded these impressionable years. Approximately at the time of his puberty, which brings, normally, enough of its own problems, came the pre-war boom, with all its anxieties and intensities, its quickened pace, its plentiful jobs, its available

"... the solution is complex" *(Continued)*



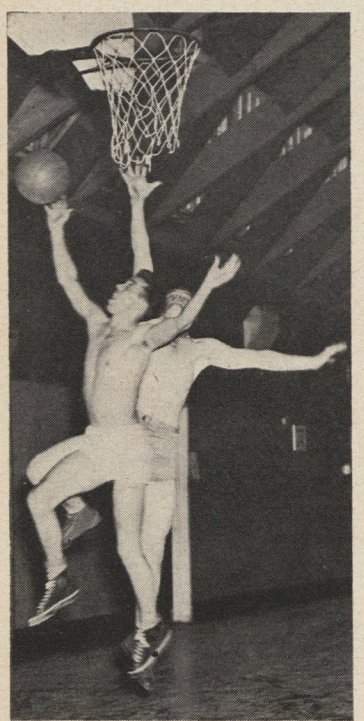
With dog-tags already dangling from his neck an Air Force veteran of some 20 minutes resigns himself to first shot.



Part of program to keep Lackland's recruits content and occupied is visit to nearby Alamo museum in San Antonio.

One of the most beautiful spots in San Antonio is Chinese Sunken Garden which, like museum, is a must for rookies.

money. The war period itself only increased the tempo and compelled him to make, in addition to the normal adjustments to growing up, many other complicated ones. New communities, new people, and new activities presented a changing and sometimes hectic environment. In many cases, within his family group there were difficult adaptations to be made. Most families had one or more of the following conditions: both parents working, a brother or sister in service or working away from home, a different place of residence, increased sharpness in conversation, loss of family tranquility. His schools had declined in quality. He often had to make important and character-shaping adjustments with little control or supervision. It was not unusual for him to quit school and go to work and gain for himself more dollars than he had the sense to manage. All of these influences tended to create unreality in his thinking, especially in regard to the heroics of war, and to make him impatient with his youth. His bent toward idealization caused him to identify himself with war heroics and to wish to be in uniform. From the movies, comic books, and other sources of misinformation he formed erroneous ideas about military life.



Lackland's time-off facilities include four theatres, three hobby shops, eight pools, three bowling alleys, a golf course and a gym.

Now that this adolescent has become a soldier, it is not surprising that all too frequently he should reveal traits of character and ways of behavior inimical to good military order. He appears too morally vague, which is to say that he has no well developed moral code or standard of conduct. His philosophy, if he has one, is frequently very materialistic. He is prone to ask, "What is there in it for me?" He is destructive, and has only sketchy ideas about property values, as evidenced by an apparent disregard for the personal possessions of his buddies, and weird notions as to what constitutes government property. He is irresponsible, and given to noisy exhibitionism. He rationalizes to suit his own ends, and while he is not basically a liar, he twists facts, magnifying real or fancied injustices. He is unwilling to think or follow through on a situation, or request help on things which he could think out for himself.

These are his undesirable traits and characteristics. On the other hand, he does exhibit some traits which, if properly channeled or guided, are desirable. He is given to hero worship and is very impressionable. He responds to leadership. He is inventive in meeting his own immediate problems, and impatient of inaction. He will generally take some kind of measures, even ill-advised ones; this may be a form of initiative. He has a very strong urge to belong to a group and makes many attempts to get settled somewhere even before his training is completed. He has his own special sense of honor. He will not "rat" or bear tales on other soldiers of his own status.

I must caution against a wrong conclusion. The above findings refer to the group of young soldiers which has been giving us trouble and concern. In this inquiry it was a case of "the squeaking wheel geting the grease." We were studying chiefly that minority, although all too large a group, which makes up the more critical part of the Army's youth problem—that percentage of young men which one commanding officer estimates to be about five out of the hundred. They are the soldiers who actually get into serious trouble. But there is still a larger percent, although perhaps not a majority, which gives a commanding officer a headache by exhibiting one or more of the undesirable traits to a noticeable degree.

As I have indicated, we did not confine ourselves to the business of taking the maladjusted young soldier to pieces. Only the first of our four basic questions related to the characteristics of the soldier himself. The other three questions were concerned with methods of dealing with him. To answer these we had to take ourselves apart. And so the entire fabric of the military establishment, as represented by our own command, was given merciless scrutiny. We found that we were giving the young soldier considerable of a bad time in the many irregularities and confusions which had come into military life during the first phases of the reconversion period.

The adolescent soldiers suffered from frequent transfers from one base to the other. This induced in them the feeling and conviction that they were not wanted. There were many cases of malassignments and faulty classification. There were long unoccupied periods of waiting before the soldier was able to get into the training activity for which his transfer was made. There was inadequite initial briefing of the officers and enlisted men by the organization commanders as to policies, procedures and ground rules of the base. There was delegation of authority by organization commanders to subordinates without adequate instructions or supervision, resulting in ambiguous or contradictory orders and threats, which further served to confuse or incense the adolescent soldier. There was an inadvised resort to or too lax use of the Manual for Courts-Martial. There was oftentimes a use of blanket punishment, or non-productive or meaningless punishments, under the 104th Article of War. There was, moreover, poor example of conduct, especially in young rated officers who had not gained any experience in the leadership of larger groups of men. If we could have held on to a considerable number of our experienced leaders long enough to train new leaders as replacements, the situation would not have been so difficult. As it was, because of a critical shortage we had to utilize as squadron officers, young pilots, bombardiers and navigators whose wartime experience had not involved dealing with large numbers of recruits and trainees. Shortages in non-commissioned officers with command experience required that

(Continued on page 45)

The Ryan Navion

AFA's Montclair team tests this modified four and comes up with some interesting evaluations

Plane portrait: Navion over Manhattan. One of the apparent changes incorporated by Ryan since taking over production of type from North American is high-gloss finish.

Members of the Montclair test team inspect the Navion's power plant as part of the general briefing. L to r, George Parr, Richard Noyes, Richard Butler, Dick Schieler, Bill Martin of Mallard Air, John Lawrence and Edward Knowles.

EDITOR'S NOTE: *This is another in the series of personal plane reviews conducted in cooperation with Test Teams from AFA squadrons. When a new plane comes along we select a squadron to test it. The squadron chooses a Test Team from qualified pilots, maintenance men and technicians in its ranks. We bring team and plane together at a convenient airport for test flights and inspections. Then we interrogate the team and compile the findings.*

When we inaugurated this feature a few issues ago we called it a "fresh approach to magazine reviews of new aircraft." We're happy to report that our readers seem to be in agreement. We hope they will continue to give us the benefit of their comments, and let us know which lightplanes they would like to have reviewed.

The Test Team

The team was provided by the Montclair, N. J., Squadron of AFA. It consisted of the usual two pilots, two mechanics and two general observers. The pilots were Edward A. Knowles of Glen Ridge, N. J., and Richard Butler of Essex Fells, N. J. Knowles is a former 15th Air Force B-17 pilot, a veteran of 24 missions. He is an active reservist, assigned to

Feminine touch: Bill Martin looks on as Dick Butler helps Mrs. Butler into the Navion. This was her first airplane ride and the Navion made a convert to air transportation.

Technical check: Richard Schieler and George Parr inspect the Navion's steerable nose wheel. Arthur Kedjierski, Mallard's maintenance chief, explains the unit's operation.

the 92nd Wing at Newark. Butler is an industrial engineer doing experimental work with the Curtiss-Wright Corporation. During the war, he was an 8th Air Force crew chief.

The mechanical check was conducted by George M. Parr, a Seton Hall College student who did 17 missions as a bombardier with the 15th Air Force. He was assisted by Richard H. Schieler, former Air Operations specialist with the 5th Air Force. Dick is also an active reservist, assigned to the 114th Air Force Base at Newark.

The general inspection was conducted by Richard E. Noyes, Commander of the Montclair Squadron, and John D. Lawrence, member of the Squadron Council. Noyes, an active reservist, served as a sergeant major with such outfits as the 400th and 91st Bomb Groups. Lawrence was a 9th Air Force armament and ordnance officer.

Adding a feminine touch, Mrs. Elizabeth H. Butler, wife of one of the team members, came along for the ride.

Mallard Air Service of Teterboro, Airport, Hasbrouck Heights, N. J., on whose equipment the test was conducted, provided two of its representatives for the test. Chief Pilot Bill Martin, former fighter pilot gunnery instructor with the Training Command, flew the trials with the Montclair team. Arthur Kedjierski, former Troop Carrier Command crew chief officer in the Pacific, conducted the mechanical briefing.

The Aircraft

The 1948 Ryan Navion is a four-place all-metal low-wing monoplane, powered by an opposed type six-cylinder Continental engine, rated at 185 hp. Its all-metal airframe is generally similar in structural texture to combat aircraft. The fuselage consists of 20 transverse positions and an all-metal skin to make up the semi-monocoque fuselage. The wing is the conventional all-metal 2-spar 12-rib set-up, with metal stiffeners and skin. Ailerons, elevators and rudders are built with a minimum of internal structure, most of the stress being carried by a thick corrugated skin. Both tricycle landing gear and flaps are hydraulically operated, the power being supplied by an engine-driven pump. Two 20-gallon tanks are installed near the wing roots. These are complete unit tanks, not integral structures.

The Navion was originally built by North American Aviation as a major post-war project. When the builder of the war-famed Mustang and Mitchell decided that they wanted out of the personal plane business, they sold the Navion to Ryan, design, jigs, production line and all.

Ryan has incorporated several detail changes, enough to require a new CAA Approved Type Certificate. These have included such features as a high-gloss finish and new interior styling. Vents have been incorporated into the wing fillets to improve interior ventilation. Liberal use of glass wool has cut down interior noise and vibration, and a grooved felt strip, set under the canopy has further reduced sound. The fuel system has undergone major change. Formerly, two conventional diaphragm pumps were used. These units have a history of a certain degree of unreliability, particularly in hot weather, when the diaphragms become porous. The new circuit uses one engine-driven pump and one electrically-driven Dell pump. The latter is used for take-offs and landing, but is available at cruising should pressure drop.

The test plane was a brand new ship with standard equipment only. This consisted of a two-way radio, plus 11 standard flight and reference instruments (sensitive altimeter, turn

(Continued on page 41)

"Leaning on their elbows the infantry boys are shouting but the thunder of bombs drowns them out."

The Infantry Loves It

When the Mustangs came in for close air-ground coordination in Luzon, the doughfeet looked up from their foxholes and cheered at the top of their voices

By Capt. John E. Rhode

Illustrated by Louis S. Glanzman

April 1945: Complete collapse of the Nazi horde was less than a month away. Rumors were rife that Heinrich Himmler was making frantic attempts to "close a deal" with the allies through Sweden, but in Washington President Truman made a re-affirmation of the US position before Congress. "Our demand," he said, "has been and remains . . . unconditional surrender."

In the meantime Patton's Third Army was outrunning its gas supply in its sprint into the Reich. Twelve hundred bomber operations supported by over twice that number of fighters and auxiliary aircraft swarmed over Europe with only cursory opposition from the Luftwaffe.

Victory didn't seem so near in the Pacific Theater though . . .

We are situated on a rise of a hill in Luzon, overlooking the Jap front line. Our radio-equipped jeep is at the foot of the hill, and beside us is a field telephone. From our foxholes, dug on the very top of the hill, we can see the Japs at their guns, covered with weeds. From time to time we see the weeds rise, a gun muzzle push itself out, and a flash of fire. Occasionally, the rear extremities of a careless Jap or a leaf-covered helmet can be distinguished as the little men creep among their dugouts.

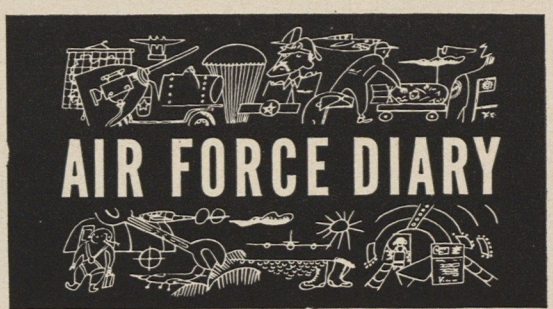
A distance of 600 yards separates us from the Japs, but there is a valley in between and the situation is stalemated. If we advance now, we will get machine-gun fire full in the face. If we try to steal up the steep sides of the opposite hill, Jap snipers, who have a habit of appearing out of nowhere, will have things too much their way.

H-Hour this morning is 0900. Our artillery is already beginning to pound the enemy on the frontal slope. The air is thick with whistling shells. Dirt and dust are flying everywhere. From the rear, we can hear the drone of tank engines and, now and then, the boom of the big guns behind the infantry.

We know it is time for the show to begin, and also time to call in our planes for close air co-ordination with the ground troops. We pick up the field telephone and call "Red Leader," code word for the commander of our already airborne fighters. We identify our aircraft-controller station as "Rhinestone." Nothing but a crackling sound responds. We repeat, "Rhinestone calling Red Leader. Come in, please. Over." Still nothing.

As we wait for a reply, we wonder if the P-51s will be on time. This split-second timing is a ticklish business, the worry of keeping our fighters from strafing our own troops.

Still no contact with Red Leader. One last look around, a final check. We can see our front line and the big white panels indicating our forward positions. There are one off to the left, two on our right, and two more in front of us and a little below. Just behind and a little above us is a big white arrow pointing to the opposite hill, today's objective.



We made a check with the artillery. "Artillery from aircraft controller. Are you ready? Over." The answer comes promptly. "Ready for your instructions. Over."

That means the artillery will have smoke shells set to put the finger on our Jap neighbors as a guide to the fighter planes.

Five minutes to go. Where the hell are those P-51s? Another call.

"Rhinestone to Red Leader. Come in. Come in. Over." This time we make contact.

"Red Leader to Rhinestone; Roger. What are your instructions?" The curtain is ready to go up. One more look around before we give the fighters their first instructions. Then, "Rhinestone to Red Leader. Orbit off to the west, and I'll silence artillery to clear the target for you."

Artillery is told that the planes are heading in. The guns are to fire only white phosphorus to mark the target. Another peek over the edge of our foxhole at the Jap lines. All quiet. "Red Leader from Rhinestone. Do you know your target? Have you the correct photos? Do you want any further instructions?"

"Rhinestone from Red Leader. We know the target; we have the correct photos, and will follow your instructions. We are orbiting west of target area and have it spotted."

"Rhinestone to Red Leader; good boy. Artillery will mark the target with smoke in two minutes. Target is at three o'clock from your present position. Will you make a dummy run over the bald spot on the hill, directly opposite the white arrow marker? Trajectile path is south to north at your present altitude and position. You are clear of this path."

"Roger from Red Leader; we understand."

"Artillery from aircraft controller; planes are ready for you to mark the target."

"Back to aircraft controller from artillery. Smoke is on the way. Will be on the target in sixty seconds."

(Continued on page 40)

tech topics

Fire-resisting paint and supersonic sleds feature this month's technical pioneering

Fireproof Bubbles

A new material capable of reducing to a large extent the current fire hazard in aircraft is being privately demonstrated in New York and shows considerable technical promise. The material is known as Albi RX and is a water-dispersible resin that can be applied with a brush.

In a demonstration conducted by the Albi Chemical Corporation's control chemist, Bernard J. Tyler, sheets of standard AN-32 aircraft aluminum alloy were given two coats of Albi RX. Then a Presto-Lite flame was applied to their surfaces with a running temperature of 2000° F. The protective material charred and puffed up into a carbonous bubbly coat, trapping within it cells of inert gas. This spongy substance acted as an insulator keeping the temperature on the reverse side of the metal down to only 300° F. after 10 minutes of exposure to the flame. When the metal had cooled, the burned Albi RX was scraped away, revealing no damage to the metal. The same flame on the bare metal would have burned through in less than a minute.

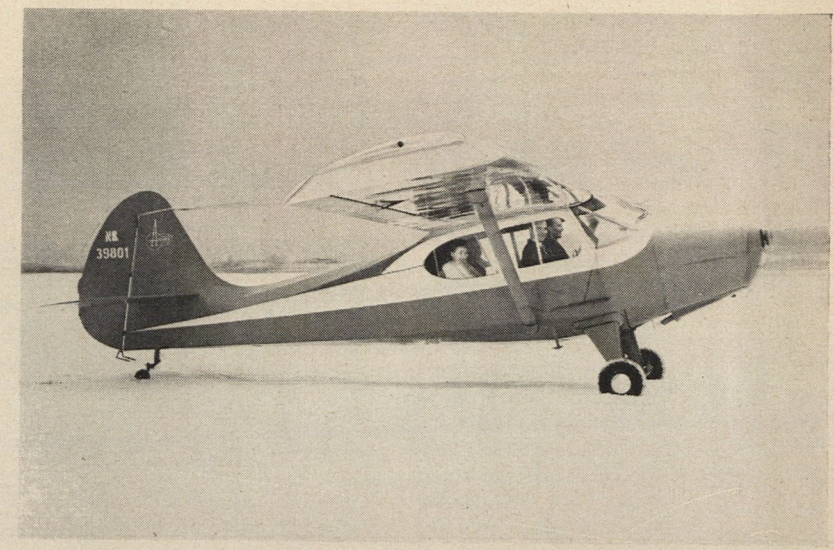
At present Albi RX is being tested by the Civil Aeronautics Administration, as well as by several of the leading aircraft builders. Two coats of the material, considered adequate protection for typical gasoline fires, weigh less than an ounce per square foot including the zinc chromate primer. It is non-corrosive and can be applied to aluminum alloys without altering their chemical or physical structure. Freshly applied, the material is sensitive to abrasion and water and requires protection with a synthetic overcoating in places where it is exposed to moisture or chafing. Suggested applications would be around tanks and fuel lines, junction boxes, engine sections and baggage compartments.

Supersonic Sled

Northrop has released some hitherto unpublished facts about its supersonic railroad sled. As previously announced, the sled was designed as a substitute for wind tunnels which, because of internal phenomena, lose considerable efficiency and accuracy at new high speeds. Instead of shoving space past a model, Northrop engineers decided to shove a model through space. Inaugurated in September of 1936, their "outdoor wind tunnel" was until recently a close mouthed secret.

Project Engineer S. E. Weaver and his group of engineers set up a 2000 foot section of standard railroad track on the outskirts of Muroc Air Base. The vehicle used was a modified jet-bomb launching sled, about 15 feet long, built of aluminum alloy tubing, with magnesium axles. It was designed to slide on "slippers" made of magnesium with flanges to fit over the rails and hold the speeding vehicle on the track. The sled was driven by five Monsanto T10-E1 solid fuel rockets, each developing 10,000 pounds of thrust for 1.8 seconds.

Terrific heat and wear generated by the speed made it necessary early in the experiment to change the design of the magnesium slipper. On the high-speed runs, the slipper wore out in a bare two seconds.



Aeronca has entered highly-competitive 4-place field with a low-price entry designed particularly for pilots with only lightplane experience. Generally similar to the traditional Aeronca line, the new Sedan is powered by a 145 hp Continental engine. The fuselage is welded steel tubing, fabric covered, the wing is 80% metal. The Sedan has a span of 37′ 6″, length is 25′ 3″. Useful load is 900 lbs. Range is over four hours at 105 mph cruising speed.

Several substitute materials were tried out, and finally, stainless steel inserts were chosen as giving the most satisfactory wear.

Tests were run on a small model airfoil mounted on a boom extended in front of the rocket sled. Instruments were attached to record the effect of the air on the model.

Fully loaded, the sled weighed 1500 pounds, stood only 14 to 16 inches high.

Every 50 feet along the track, a small switch was installed; the switches were designed to be closed by the sled as it passed over. This impulse was transmitted to a timing device. At the same time, a high-speed motion picture camera was installed to double-check the time.

With the carriage carefully checked out on the track by the test crew, rockets were fired. The sled almost instantly achieved a velocity of 1485 feet per second or 1012 mph. Although the rockets were designed to burn for less than two seconds, they had barely flared out as the carriage roared off the end of the 2000 foot track and bounced across the flat expanse of the desert.

It passed over the electric switches so fast that they failed to function properly and the computations for the first run had to be made from the photographic record.

Subsequent runs were made at various speeds, some of them as high as 1019 mph.

Since the short track did not permit halting of the sleds, the Northrop engineers did not attempt to make serious use of the aerodynamic readings on the airfoil. This test series was designed mainly to investigate the feasibility of this system for high-speed research. Enough data was accumulated however to determine that a 10,000 foot track with proper breaking facilities would enable them to reach 1000 plus mph and then halt the carriage without overrunning the track.

One method for breaking the high-speed sled was with a water trough mounted in the road bed between the rails. A three inch diameter spout dipped into the trough, picking up quantities of water and deflecting it through 90 degrees by means of curved channels. The device was quite successful.

British Stratochamber

Work is now being completed on what is believed to be the largest stratosphere chamber in the world at the Vickers-Armstrong shipyard at Barrow-in-Furness in England. Built to reproduce conditions at 70,000 feet, the structure will be transported in sections to Weybridge for final assembly.

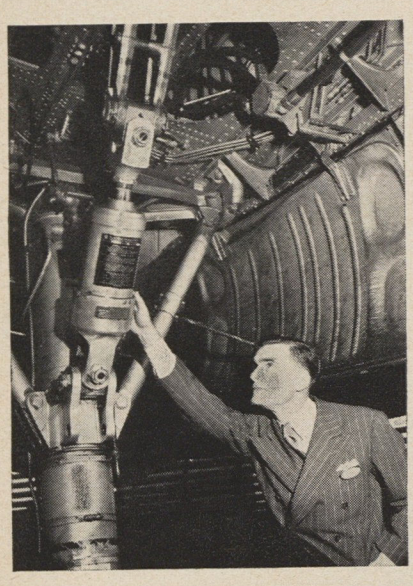
The test chamber itself is a cylinder 25 feet in diameter and 50 in length. It is built of half-inch steel plate, stiffened by external rings at two-foot intervals. Two airlock compartments are installed at the sealed end to permit access. These are fitted with emergency safety valves.

The complete structure weighs about 215 tons; its enclosed volume is 40,000 cubic feet. Thermal insulation will be effected by a steel-frame shed outside the chamber, lined with 12 inches of insulating material.

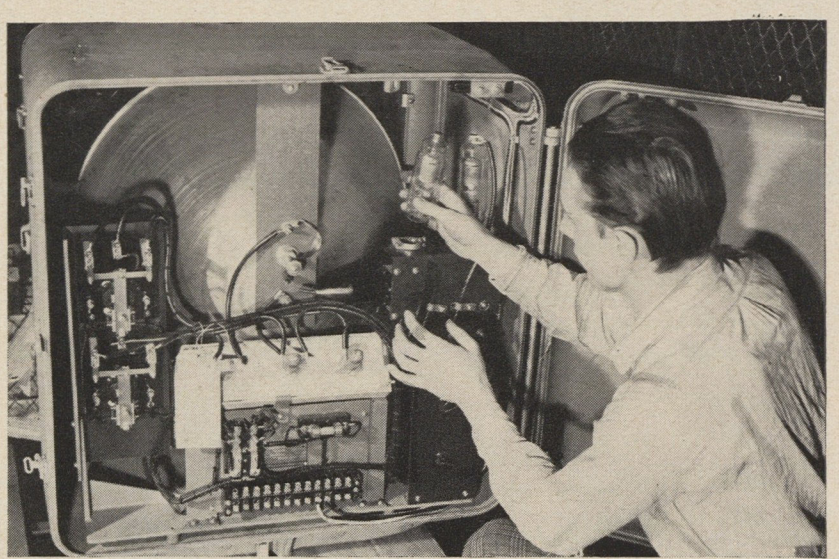
Refrigeration will be provided in two stages. The first, integral with the installation, will bring temperature down to minus 50° C, while a second, built apart from the unit, will carry it down to –70° C. A two-stage vacuum pump driven by a 140 hp electric motor will reduce the chamber's pressure to one twentieth of the normal atmosphere in 90 minutes, the equivalent of a rate-of-climb of 1000 feet per minute.

Radar for Guided Missiles

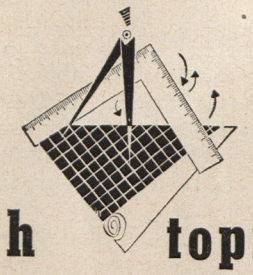
When the guided missiles now being developed by North American Aviation are test flown this year,



Lockheed structural engineer J. F. McBrearty examines the new drag strut developed for the Lockheed Constellation. The unit is expected to reduce the number of landing gear accidents by dampening out excessive vibration.



Electronic flasher. Circuit end of new 3.3 billion candlepower Krypton light built by Westinghouse to be used as an all-weather approach light. Flashed alternately on and off at predetermined intervals by an electronic timer, the unit is housed in a weather-proof case which contains light, reflector and timing device. These lights will be used for the first time as a complete field unit at New York's new air terminal, Idlewild Airport.

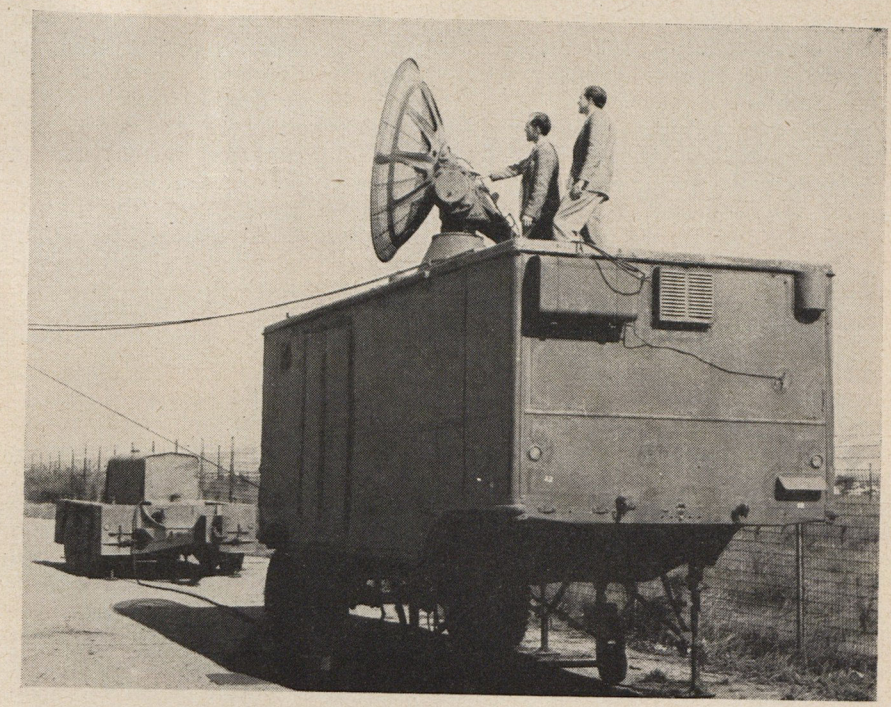


tech topics

continued

radar will be used for their guidance and observation. Using only refinements of equipment in common current operation, North American's aerophysicists expect to be able to track the pilotless craft through its flight. Should it be found that the missiles vary from their pre-set course, the fuel supply can be cut off by a radar signal emanating from the ground station.

Present experiments are being conducted by a B-25 which plays the part of the missile. Guidance engineers, stationed in an Army SCR-584 radar van observe the test run and track the course, just as though it were a missile in flight.



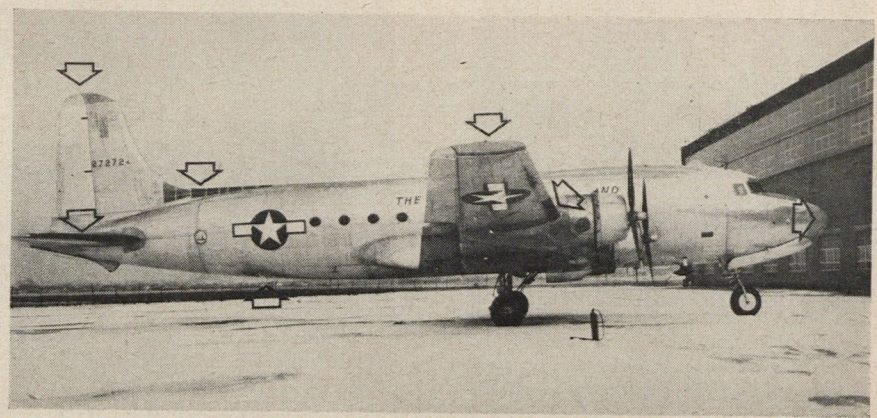
See **Radar for Guided Missiles.** North American Aviation's aerophysicists use a modified SCR-584 mobile radar unit in attempts to track and control guided missiles. Below, left, engineer Stan Kerber tracks a B-25 on unit's radar scope.

Vanishing Antennae

Air Material Command is currently flying a C-54 equipped with ten radio sets and no visible antennae. This is part of a research program being conducted by Goodyear Aircraft Corporation to reduce parasite drag on conventional airplanes.

In this C-54, extensive changes were made to eliminate all external wiring. Sections of the leading edge, wing tips, nose, vertical stabilizer fuselage belly and radome were removed, and replaced with segments made of a special laminated material; resin-impregnated Fibreglas cloth, baked to a hard, glass-like surface (see photo). Unlike the metal skin they replaced, this material did not stop the radio waves. As a result, specially-designed compact radio antennae could be installed in places covered by the new surface.

In the new arrangement, the marker beacon antenna was set in the fuselage belly, the glide-path localizers in the radome, the radio compass loop in the vertical fin, the VHF command and homing antennae in the fin tips and center section and the liaison set aerials in the leading edges and wing tips. With the exception of the VHF and liaison installations, all the units have been approved by the Air Force. The remaining two are currently under ground and flight test. Technical data resulting from this project will be routed to all manufacturers of military aircraft for installation on planes now projected or in production.



See **Vanishing Antennae.** This C-45, recently modified by Goodyear Aircraft, carries 10 standard radio sets, yet no antennae are visible. All are internally installed under a skin of resin-impregnated Fibreglas. Arrows show locations.

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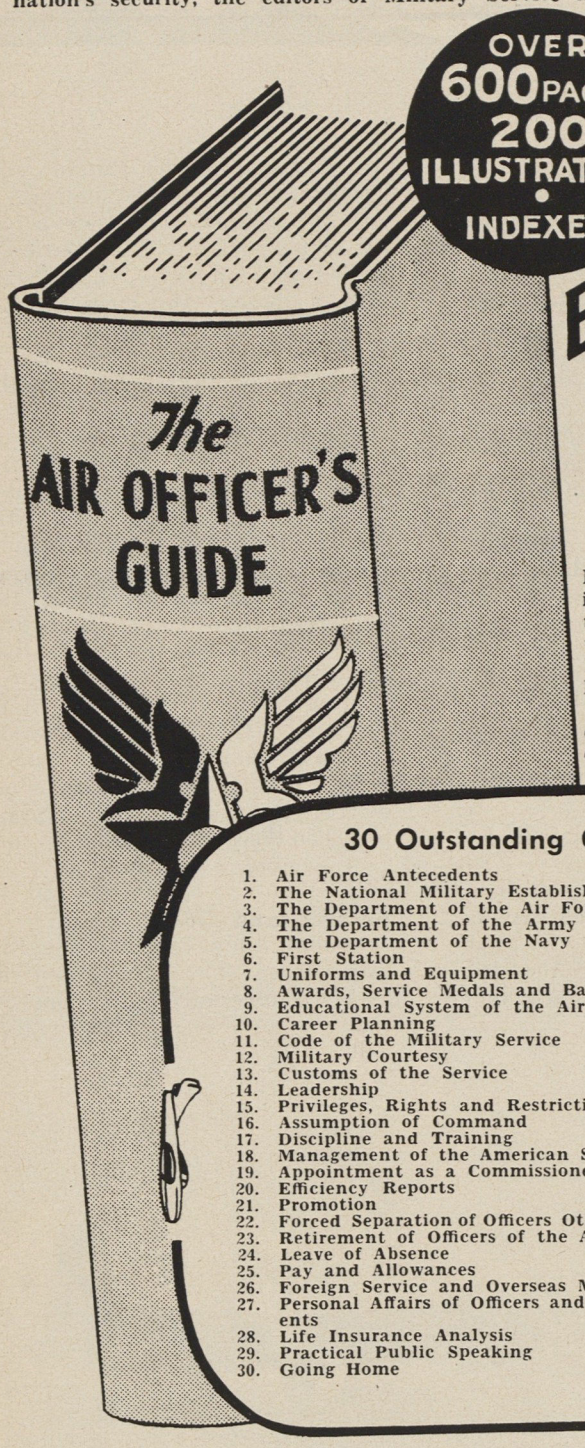

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CROSS COUNTRY

Fireman Save My Plane!

Personnel of the 137th Air Force Fire Department stationed at Wold-Chamberlain Airport in St. Paul had an unique opportunity to put their equipment to work preventing rather than curing a disaster. Earlier this year a Northwest Airlines DC-4, flown by former ATC pilot M. Harold Kittelson, took off for Chicago with 27 adults, two children, the usual two stewardesses and a spare stewardess who was deadheading back to the Windy City.

Right after the plane took off, ground crew men noticed that the nose wheel failed to retract and, instead, turned to a 45 degree angle. Immediately, the ground station radioed to co-pilot Don Peterson.

For two and a half hours the plane circled the field. While the stewardesses served coffee and doughnuts and kept the passengers calm, ground personnel cooked up a fancy idea. First, firemen of the 137th Air Force Base Unit, a reserve training unit of the Air Defense Command, poured two thousand gallons of water over a strip of runway 1000 feet by 40 feet. It didn't take long to freeze over.

Once this giant sliding pond was firm, pilot Kittleson got all the passengers as far back in the fuselage as possible. Just before touching down, Kittleson raised the plane's nose, so that none of the weight went onto the locked nosewheel until considerable speed was lost. When the nose went down, the wheels touched the iced surface, and the plane slid forward without ground looping, finally coming to a halt. No further damage was sustained by the airplane. Passengers and crew climbed out uninjured. The Air Force fire fighting unit, which had been standing by, went home happy. It wasn't needed.

Okinawan Culprit

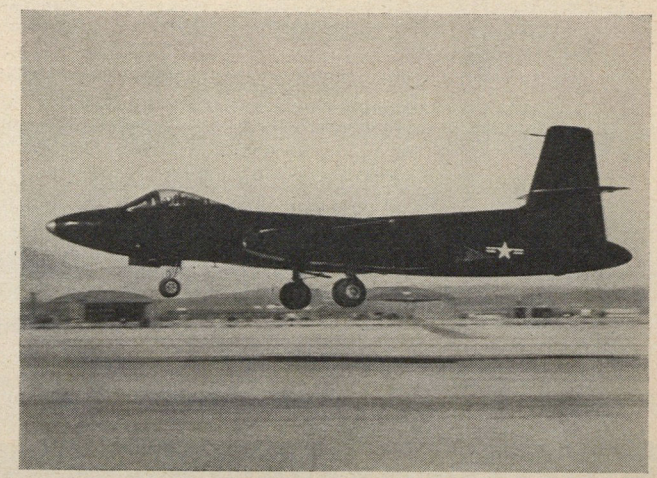
Seventh and 8th Air Force veterans who think all is now quiet on "the garden spot of the Pacific" (the quotes are ours), please listen to this one. PFC James F. Agnew was walking his guard post near the Kadena Base post exchange on Okinawa. The time was 2220, which, all former Okies know, is well past the shank of the evening at this "garden." As Agnew neared the door of the PX, he heard a clatter within. He hastened to the Quonset that acted as the Exchange, and peered into the darkness. There was a patter of feet, followed by a clatter of falling cans and bottles. One thought flashed through the guard's mind. Someone raiding the Exchange. He sounded the alarm. Sirens wailed in the night, bringing ace men from the 1391st Military Police Company to the scene. The atmosphere was as tense as a murder movie when the killer is finally brought to bay. Weapons in readiness, the MPs flung open the door, ready to pounce on the intruder. Flashlights illuminated the interior, revealing the debris of perfume and nailpolish bottles, beer cans, broken pickle bottles and cigarette cartons.

"Halt"—the warning rang out in the chilly air, as the desperado scrambled into the chilly night. A volley of shots followed, and a moan escaped the fugitive. The MPs approached their quarry. Jocko, a renegade monkey, was dead.

Reserve and Guard

New AR Policy. Recent changes in requirements for participation in USAF Reserve training have opened

(See **People.**) Designer of survival fishing kit Michael Lerner gets President's Certificate of Merit from Lt. Gen. G. E. Stratemeyer. Captain Eddie Rickenbacker looks on.



(See **Most Powerful Fighter.**) First take-off of Curtiss-Wright XP-87 at Muroc. Powered by four Westinghouse jets, its power is equal to electric locomotive. Plane is in 600 mph class.

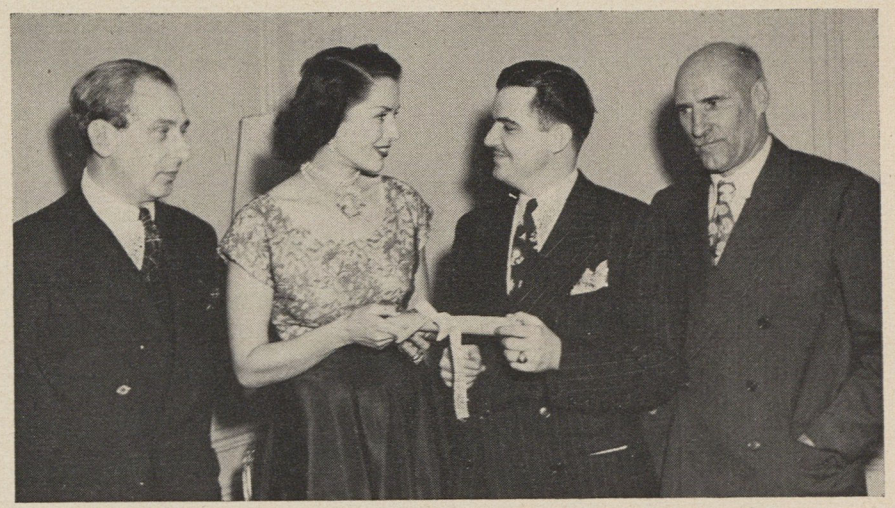
the program to many who heretofore were considered ineligible to participate. Under the new policy, individuals with no previous military training can be recruited as enlisted personnel. These enlistments are only for assignment to Air Force Reserve Units undergoing training, and are restricted to individuals between the ages of 17 and 34 who meet the citizenship requirements and current physical standards. However, personnel having certain needed technical skills may be enlisted up to 44 years of age.

This new policy was promulgated to permit more rapid inplimentation of the reserve training program. Further policy changes permit veterans who draw disability compensation or retirement pay to be appointed or enlisted in the USAF Inactive reserve providing they can meet certain physical standards. This is a change from a previous ruling which made these persons ineligible. Veterans drawing compensatory pay who sign up with the reserve on inactive status will not draw pay, nor will they be eligible for summer active duty training tours.

(Continued on page 36)

Air Force MPs draw a bead on a villain who broke in the Kadena PX. (For sad results read Okinawan Culprit.)

afa news



Major Alexander de Seversky, author and air strategist, left, and Casey Jones, right, look on as Jinx Falkenberg presents the AFA charter to Bill Roach, Commander of the newly-formed Show Business Squadron at the Wings Club in New York.

ARIZONA
The Phoenix Squadron held its first annual Valentine's Day Dance on February 14 at the Shrine Auditorium. Proceeds went for scholarships of students enrolled in the aeronautics course at Phoenix Union High School.

CONNECTICUT
The New Haven Chaper of the Air Force Association, now in its second year, held election of new officers at the January meeting. John J. MacAulay, Jr., formerly Vice Commander of the organization was elected Commander. Samuel M. Gordon was elected Vice Commander. William H. Johnson was re-elected Secretary, and Gilbert E. Osborn was elected Treasurer. Douglas Keeney, John E. Loeb, and Steven Dipsner were elected to the council.

CALIFORNIA
California continues its steady progress in the formation of AFA Squadrons with the announcement last month of the chartering of the Fresno Squadron.

HAWAII
Newest Squadron to be organized in the Territory of Hawaii is the Oahu Squadron, Honolulu, which was officially chartered on January 19, with 45 members.

ILLINOIS
The second active AFA Squadron to be chartered in Illinois this month is the Parks College organization which was approved on March 8.

The Sangamon Squadron of Springfield was chartered on January 7 and already has an active aviation program underway in the capital city of Illinois aimed at promoting aeronautical courses in the high schools of the city.

MASSACHUSETTS
At the end of its first year of operation, members of the Boston Squadron have elected a new slate of officers which includes: Albert A. Eldridge, Commander; Mrs. Esther G. Hoernlek, Vice Commander; Peter Colombo, Secretary; Borris C. Kleiner Treasurer.

At the December meeting of the Salem Squadron, the following officers were elected for 1948: Warren J. Hayes, Commander; Edward C. Tufts, Vice Commander; Sidney Schneider, Treasurer, and Jeannette L. Kehoe, Secretary.

MICHIGAN
The anxiously awaited Detroit Squadron was chartered last month with 150 members and a potential sufficient to make it one of the largest and most

(Continued on page 37)

CROSS COUNTRY

About People

Governor Kim Sigler of Michigan, one of the nation's top aviation enthusiasts, did a routine B-29 training mission at Davis-Monthan Air Force Base at Tucson, Arizona, recently. Upon invitation of Col. James C. Selser Jr, commander of the 43rd Bomb Wing (VH) and with the approval of General Carl Spaatz, Governor Sigler participated in pre-flight briefing and crew inspection and took off in a B-29 flown by Major Karl L. Briel of the 63rd Bomb Squadron. The flight was a four and a half hour run to the West Coast and return. During the run, simulated bomb runs were made on San Diego and Hoover Dam. On the return leg, an actual bomb was dropped on a local bomb range.

During the flight, Governor Sigler was accompanied by his aide, Trooper Kenneth Templin of the Michigan State Police. The governor, who holds a private license, flew out to Tucson in his own Beechcraft Bonanza.

Michael Lerner, noted angler and sportsman, received the President's Certificate of Merit from Lt. Gen. George E. Stratemeyer, chief of Air Defense Command, at a special ceremony at Mitchel Field. The citation was for Mr. Lerner's work in developing the fishing kits used in survival equipment.

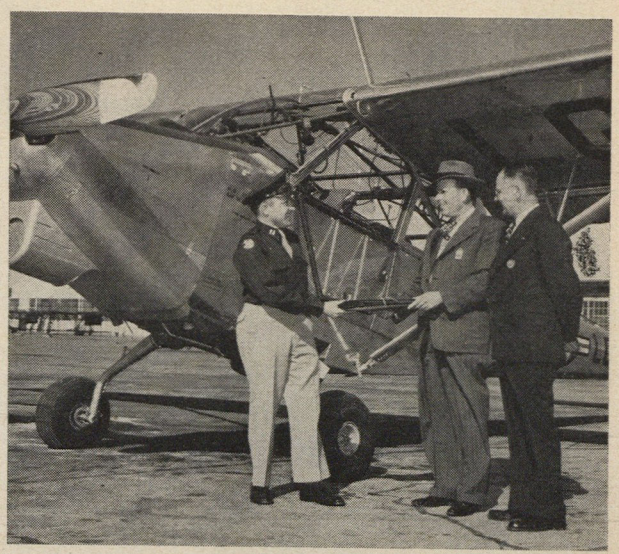
T/Sgt Michael Luciano of Cleveland was acclaimed "Soldier of the Year" by the civilian and military personnel at the Munich Air Base in Germany. The title is the result of a recent poll at this occupation installation. According to the citation, the personnel felt that Luciano "had contributed more to the service and his organization than any other enlisted man in 1947." This distinction resulted chiefly from such examples of organizational ability as the Specialized Maintenance System Luciano created, which reduced major repairs through periodic inspection of aircraft. The system is now in use in all USAFE airline terminals in the European Command.

Maj. Gen. Howard M. Turner, Commanding General of the Tenth Air Force, was appointed Deputy Commander of Air Defense Command, succeeding Maj. Gen. Charles B. Stone III, recently named Director of Supply and Maintenance at Wright Field.

Most Powerful Fighter

The world's most powerful fighter plane, the new four-engined Curtiss-Wright XP-87, successfully completed its initial test flight at Muroc Air Force Base in California, early this month. The new plane remained in

Cartoonist Milton Caniff looks on proudly as Lt. Col. Alfred L. Wolf, Commander of Philadelphia's 55th Troop Carrier Squadron, Air Force Reserve, presents a Major's Commission to the noted syndicate character, Steve Canyon. Brig. Gen. Ralph A. Snavely, Chief of the Eleventh Air Force, appears to be pleased with his new recruit.



In the shadow of the first Consolidated-Vultee L-13 to be delivered to the Army Ground Forces, Capt. H. S. Wann of the Field Artillery accepts transmission documents from William H. Stancil, Air Force inspector at Convair, San Diego, and C. B. Carrol, the L-13's project engineer. The Air Force is taking over a hundred of these planes.

the air for about an hour on its maiden trip. B. Lee Miller, C-W's flight operations manager at the Columbus O. plant was at the controls. Robert Parks of Columbus acted as flight engineer.

With the XP-87, the full line of the Air Force's future equipment begins to take definite form. The new craft has been classified as a long-range fighter. It has a span of about 60 feet and an overall length of around 65 feet, a reversal of the usual relations in dimensions. The plane is powered by four Westinghouse 24C axial type jet engines, which gives it as much power as a giant-type electric locomotive.

It is designed to operate in the 600 mph zone with a range of 1500 miles. Its crew consists of a pilot and probably a radar-operator-engineer-navigator. Service ceiling is in excess of 35,000 feet.

The new Press Center at Wiesbaden, Germany, headquarters for all Air Force activity in Europe, is officially opened as Brig. Gen. and Mrs. Joseph Smith step through the barrier formed by US publications.

afa news

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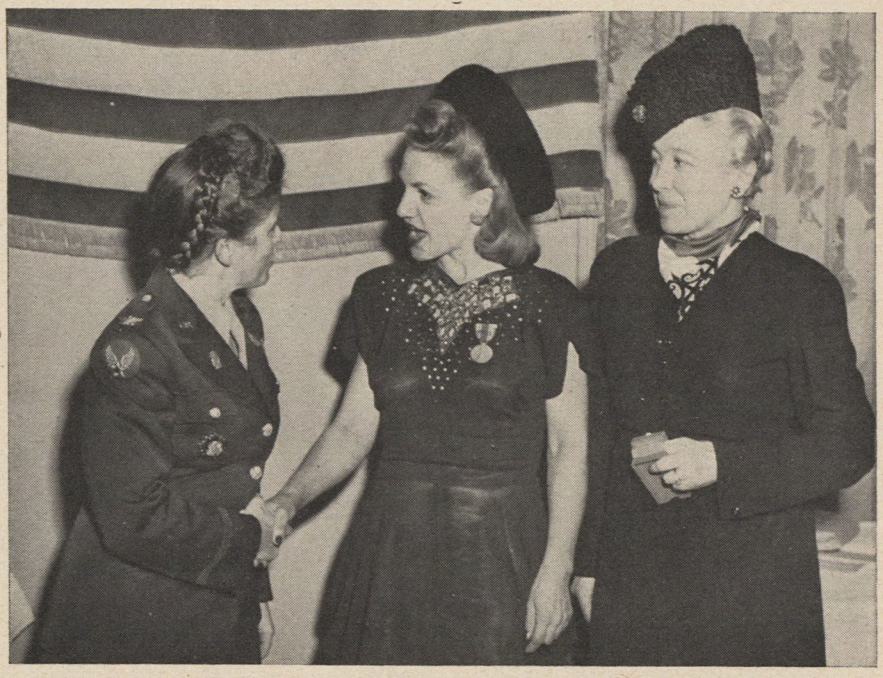

Mrs. Jimmie Doolittle watches as Col. Mary A. Halleran, Director of the WAC, presents Mickey Grinevich of New York's all WAC AFA squadron with her Victory Medal. This was part of a special dinner ceremony at the city's Wings Club.

active AFA Squadrons in the Nation. Officers are: Willliam M. Joy, Commander; George R. Weinbrenner, Vice Commander; Richard C. Hodges, Secretary-Treasurer.

MISSOURI

The St. Louis Squadron of the AFA held its first open meeting in the form of a luncheon at the Statler Hotel on January 31st with Joe E. Brown as the guest of honor.

MONTANA

The Bozeman Squadron has announced the election of a new slate of officers for the coming year which includes John Gander, Commander; Fred Heckerman, Vice Commander; Jack Penwell, Secretary, and Ivan Smith, Treasurer.

NEW JERSEY

The Monmouth Squadron was chartered on March 4, putting the state of New Jersey high on the list of active Wings. Officers include: Warren C. DeBrown, Commander; F. T. Vansant, Vice Commander; Irving B. Zeichner, Secretary, and Nelson O'Glensky, Treasurer.

NEW YORK

Announcement of the results of the election for officers for the coming year was made at the last meeting of the Brooklyn Squadron. John E. Most was re-elected as Commander; John Favorita was re-elected as Vice Commander; Beatrice Tarnoff was elected Secretary; and Joseph Hallek was re-elected Corresponding Secretary, while Irving Tenzer was re-elected as Treasurer.

WISCONSIN

Announcement of the chartering of the Billy Mitchell Squadron, Milwaukee, home of the famous Air General, was made on March 8. Officers of this newly activated Squadron are: Herbert Pirkey, Commander; Matthew A. Fredrich, Vice Commander; Florence Fintak, Secretary; and Donald Kirk, Treasurer. Next big project of this Squadron is to assist in the observance of the 100th Centennial of Wisconsin.

Report of the Congressional Aviation Policy Board (Continued from page 15)

In addition to its findings on combat aviation (pages 12-15) these are some of the conclusions reached by the Board on other aspects of the nation's air program.—ED.

Air Transport

National security requires a financially sound, operationally efficient, and technically modern air-transport industry.

The problem is how to provide a pool of modern transport aircraft facilities, equipment and personnel to approach most closely the requirements for a national emergency within budgetary limits that can be supported by American economy. Stimulation of passenger, cargo, and other air traffic is the obvious solution.

▶ The target program for installation of an ultramodern all-weather navigation, landing aids, and airways traffic-control system should be endorsed as a first priority.

▶ The Arcata California project for the development of additional visual aids to landing should be continued.

▶ Necessary funds should be authorized to enable the Weather Bureau to furnish weather service on routes newly approved by the Civil Aeronautics Board, when traffic warrants, and to continue investigation of causes and characteristics of thunderstorms and hurricanes.

▶ International cooperation should be encouraged for prompt exchange of accurate weather information over the oceans and in Arctic regions.

▶ In establishing airworthiness requirements, consideration should be given to the special nature of cargo aircraft.

▶ The entire airport program should be reviewed by the Congress with a view toward providing a system of airports more closely keyed to current needs.

▶ The Federal Government should continue to have exclusive jurisdiction over the establishment of safety regulations applicable to all classes of aircraft and airmen.

▶ The Civil Aeronautics Act of 1938 should be amended to give the Civil Aeronautics Board power to regulate certain contract and charter operators.

▶ The Congress should give early consideration to transport by air, at first-class rate, of all first-class mail.

▶ Appropriate legislation should be enacted for establishment of domestic air parcel post, at reasonable experimental rates.

▶ No action should be taken at present to separate the subsidy pay from the mail service pay.

▶ The Civil Aeronautics Board should establish "permanent" rates for the carriage of mail internationally by US air carriers.

▶ In recognition of the importance of further evolution of policies in air cargo, contract flying and charter service fields, the governmental agencies concerned and the Congress should give the earliest practicable consideration to the formulation of basic policies to govern expeditious and orderly development, on the basis of public convenience and necessity.

▶ The Board does not recommend any change be made at this time in the provisions of the Civil Aeronautics Act of 1938 with respect to participation in air transportation by carriers other than air carriers.

▶ Full support should be given International Civil Aviation Organization.

▶ Constructive diplomatic action should be taken to assure continued availability of necessary overseas bases.

▶ Congress should examine customs and immigration laws as they affect air carriers with a view toward their modernization by corrective legislation.

▶ The National Advisory Committee for Aeronautics and the US Air Force should be encouraged to conduct intensive research in the development of small aircraft with a wide speed range and with emphasis on safety and low-cost production.

▶ Flight and technical courses should be promoted in colleges and universities with full scholastic credit given; and aviation education courses should be stressed in our primary and secondary schools.

Aircraft Manufacturing

It is essential to have enough peacetime production contracts to maintain industrial potential for rapid expansion. Beyond these basic necessities certain other preparedness steps must be taken promptly to remove existing barriers to rapid production acceleration in an emergency. The Board recommends:

▶ A comprehensive plan for allocating manpower should be developed for immediate application in the event of an emergency.

▶ New designs for aircraft should be carefully considered for producibility and serviceability.

▶ New and advanced designs of air-

PLAN "A"

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Figures in billions of dollars for fiscal years

	Present	1949	1950	1951	1952	1953	Level Off
AIR FORCE:							
Appropriations for aircraft procurement	.12	.80	1.70	2.40	3.00	3.50	3.20
Contract authority for aircraft*	.43	1.90	2.60	3.20	3.20	3.20	3.20
Total appropriations for Air Force**	**3.10**	**3.50**	**5.20**	**6.50**	**7.30**	**7.80**	**7.50**
NAVY:							
Appropriations for aircraft procurement	.28	.52	.95	1.39	1.28	1.30	1.20
Contract authority for aircraft*	.25	.91	1.04	1.21	.96	.96	.96
Total appropriations for naval aviation**	.73	1.20	1.75	2.08	2.05	2.00	2.00
Total appropriations for Navy**	**4.13**	**4.80**	**5.75**	**6.48**	**7.30**	**7.80**	**8.00**
ARMY:							
Total appropriation for Army	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**
TOTAL ARMED SERVICES:							
Total appropriation for armed services	**10.35**	**11.42**	**14.07**	**16.10**	**17.72**	**18.72**	**18.62**

*These figures represent authority to contract. Appropriations for liquidation are included in the appropriation figures for the years in which expenditure is anticipated.

**The total appropriation figures for naval aviation do not include pay, allowances, subsistence, medical care, etc., of uniformed personnel, nor do they include funds for building or maintaining aircraft carriers. These funds are included in the total appropriation for Navy. Figures for Air Force personnel do include pay and support of uniformed personnel.

craft should be available and ready to place in quantity production.

▸ The armed services should contract for the maintenance of standby facilities privately owned.

▸ There should be planned overlapping of design and production contracts to provide continuity of labor; to obtain economy in procurement, and to assure the availability of expendable engineering and production teams in industry.

▸ Time limitations on the expenditure of appropriations as well as the time limitation upon contract authorizations should be eliminated.

▸ Congress should authorize a succession of five-year programs, reviewable yearly, for research, development, and procurement.

▸ Contracting officers and the aircraft industry should plan procurement and production to assure all classifications of aircraftsmen maximum job security.

▸ Government procurement agencies should encourage subcontracting of parts and assemblies to other manufacturers within the industry if there appears to be an excessive concentration of procurement.

▸ The Government should continue to encourage sale and use abroad of civil aircraft manufactured in this country, but with due consideration for maintaining and increasing the strength of US overseas air lines.

▸ With proper safeguards, the US should encourage sale and use by friendly nations of military aircraft and aviation ground equipment manufactured in this country.

▸ In proper cases, dollar credits should be made available to air lines of friendly foreign nations for purchase of new aircraft, ground and airborne equipment manufactured in this country.

Research and Development

If the US is to retain leadership in the air, it is requisite to finance an intensive well balanced program of research and development.

▸ The government agencies concerned, and the aircraft industry, should adhere to the functions and responsibilities set forth in the National Aeronautical Research policy of March 21, 1946, to assure a unified effort to provide the nation sound aeronautical research and development.

▸ The National Advisory Committee for Aeronautics and the Research and Development Board of the National Military Establishment should expedite preparation of a unified plan for transonic and supersonic research and development facilities.

▸ The National Advisory Committee for Aeronautics should coordinate basic aeronautical research to insure a sound cooperative effort.

▸ The Research and Development Board of the National Military Establishment should integrate the needs of the military services in planning and guiding a sound program of applying research results to development of superior aircraft, missiles, and other aeronautical equipment.

▸ Research should be considered separately and independently from development, and both should be separated from other budget categories.

▸ Increased attention should be given to the aeromedical problems resulting from the severe conditions imposed on airmen by high-speed flight.

▸ The advantages and economies that may be achieved through synthetic training equipment and methods should be fully explored.

Government Organization

One of the greatest needs of aviation today is stable government operating policy.

▸ The present Air Coordinating Committee should be reestablished with statutory power to coordinate and recommend aviation policies affecting two or more agencies of the federal government.

▸ A Joint Congressional Committee on Aviation Policy should be created which, among other duties, would make a biennial report to the Congress of the defense and commercial capabilities of the nation in the light of the then existing international situation and aviation strength of other nations.

▸ The administration and enforcement functions of the Civil Aeronautics Administration relating to aircraft and airmen should be transferred to the Civil Aeronautics Board and the operative functions of the CAA should remain in the Department of Commerce.

▸ The Civil Aeronautics Administration should be abolished and an "Office of Civil Aviation" be created in the Department of Commerce.

▸ The Civil Aeronautics Board should: Continue as an independent quasi-legislative and quasi-judicial agency and be charged with the administration of the economic responsibilities imposed by the Civil Aeronautics Act of 1938; be freed of its present administrative ties to the Department of Commerce; continue to have five members.

▸ The salaries of the CAB should be increased to the present statutory limit of $12,000 per annum.

▸ An independent Director of Air Safety Investigation should be appointed by the President and confirmed by the Senate.

PLAN "B"

"... Strength necessary to prevent the loss of a war upon the outset of hostilities ... and provide effective retaliation, but not a sustained offensive action ..."

Figures in billions of dollars for fiscal years

	Present	1949	1950	1951	1952	1953	Level Off
AIR FORCE:							
Appropriations for aircraft procurement	.12	.80	1.70	2.40	2.70	2.70	2.00
Contract authority for aircraft*	.43	1.90	2.60	3.20	2.40	2.00	2.00
Total appropriations for Air Force**	**3.10**	**3.50**	**5.20**	**6.50**	**6.70**	**6.80**	**6.10**
NAVY:							
Appropriations for aircraft procurement	.28	.45	.67	.88	.96	.96	.96
Contract authority for aircraft*	.25	.57	.77	.77	.77	.77	.77
Total appropriations for naval aviation**	.73	.96	1.31	1.42	1.50	1.50	1.50
Total appropriations for Navy**	**4.13**	**4.46**	**5.11**	**5.22**	**5.45**	**5.50**	**5.50**
ARMY:							
Total appropriation for Army	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**	**3.12**
TOTAL ARMED SERVICES:							
Total appropriation for armed services	**10.35**	**11.08**	**13.43**	**14.84**	**15.27**	**15.42**	**14.72**

*These figures represent authority to contract. Appropriations for liquidation are included in the appropriation figures for the years in which expenditure is anticipated.

**The total appropriation figures for naval aviation do not include pay, allowances, subsistence, medical care, etc., of uniformed personnel, nor do they include funds for building or maintaining aircraft carriers. These funds are included in the total appropriation for Navy. Figures for Air Force personnel do include pay and support of uniformed personnel.

THE INFANTRY LOVES IT *(Continued from page 29)*

"Rhinestone to Red Leader, your target will be smoke in fifty seconds. Do you have it? There it is."

"Roger. We see it."

"Back to Red Leader. There are heavy machine guns, caves, and dugouts in that area. The wooded spot a hundred yards west has a battalion of Nips. Behind the hill are mortar positions. You are to attack and destroy them. The target is all yours. Go get 'em."

The Japs know what is going on, and their tracers start coming up from their positions. Red Leader dives in at 400 miles an hour, and the P-51s buzz the target.

"Hello, Rhinestone, was that the right area? Lousy shots, aren't they?"

"Rhinestone to Red Leader, Roger Dodger, old fellow. That's the spot. Drop 'em there and you'll bring home the kewpie doll."

The bombs whiz in. Smoke, dust, guns, and parts of Japs are flying through the air.

"Red Leader to Red Two and Three. All right, boys, follow our tail and put it where they like it the least."

The next two flights of P-51s follow in and drop their bombs on either side of the first flight's area. The air is red. Then there are clouds of white and yellow smoke, with black specks turning lazy loops in the center of it. Noise and concussion are incessant. The infantry boys are on their elbows, with big smiles on their dirty unshaven faces. They are shouting, but the thunder of bursting bombs drowns them out.

The Japs are breaking and running around like bewildered monkeys. Some of them are just lying there like burst bags of rice; others are crouching in their foxholes, dazed and wondering, perhaps why their own airforce doesn't come.

"This is Red Leader to Rhinestone. Last run coming up."

The last bomb run is completed. The P-51s pull away for a look at the target before they come in again, this time for strafing. Now comes the dangerous stage. In a moment our tanks will move up and the infantry will begin an advance up the side of the hill behind the tanks—and the pilots must be dead certain not to strafe our own troops and machines in the thick smoke.

"Rhinestone to Red Leader. Do you see the panels marking out front lines?"

"Red Leader back. Roger; don't worry, we see them."

"Rhinestone back. Go in and finish 'em off. Give the boys a holiday. The target is still yours, but after the fourth pass we'll begin moving up the side of the hill under cover of your strafing. Watch those dugouts on the north slope. They may still have something up there. Make your runs south to north, or west to east."

"Roger, Rhinestone. Wilco."

The transmission is hardly over before the fighters come whistling in at 350 miles an hour with their .50s blazing. Some infantrymen jump hurriedly back in their foxholes as the empty shell casings shower down. Then, looking sheepishly at their comrades, they smile and turn to watch the show.

Red Leader and his boys are really enjoying their work now. We listen in as the air crackles with their excited conversation: "Good work, Joe. You drove him right through the foxholes."

"Look at those bastards run."

"Hell, don't look. Go in after them."

"There's some about three o'clock, Sam. Go get 'em."

The planes are circling and diving right over our heads. Puffs of fire are sprouting all over the place from 150 yards in front of us to the whole top of the hill. Smoke, red tracers, and flames are everywhere—on the objective. The ground boys are getting anxious, they want to take part in the show now. The planes have cleared the way for them.

The planes are racing across the hill again. Fires, Smoke. Deafening chatter of machine guns, Cheers, Yells. More smoke.

Now the troops move. "Rhinestone to Leader. The boys are moving up the left side of the slope. Don't make any passes on the left side of the hill. We are going to throw in a little mortar."

"Red Leader to Rhinestone. Roger."

This is the real thing now. Full co-ordination of all air and ground units.

Red Leader passes along the instructions to his pilots: "Last plane: Hit that area again. Keep a lookout for them running along the trail."

"Watch out for the ground fire, George. They are firing head on."

We have more instructions for Red Leader. "Rhinestone to Red Leader. Our troops just got some fire from the hill, two o'clock from the bald spot."

Red Leader passes the dope along to his boys. "O.K., let's get Baldy's friend over there, gang. Dammit, Sam. That was too close to our troops. I told you not to fire if you don't know where our troops are."

"Hell, I saw them. I saw them."

It goes on and on, for about fifteen minutes, and then, "O.K., Rhinestone, we're through. Hope we did some good."

"Roger, Red Leader. You did a swell job. The troops are up three quarters now and moving right along. Red Leader, can you make a few dummy passes to keep the Nips in their holes until the infantry gets the rest of them?"

"Roger; can do. It's good practice."

Already 200 Japs have been killed in this air attack, and one ammo dump, three supply dumps, and from seven to ten machine guns and gun pits knocked out. The infantry is taking the objective without loss of a single life. The majority of the remaining Japs are just sitting in their foxholes, bewildered and dazed—not even knowing the air attack is over until the ground troops go right into them with bayonets. As the infantry mops up, a flight of bombers checks in with us to blast the rear areas and prevent the Japs from moving up reserves and counterattacking our troops. It's exhausting work. Tough climbing. Close co-ordination. But our planes on Luzon are doing it every day. And the infantry loves it.

From AIR FORCE DIARY, edited by James H. Straubel and published by Simon and Schuster, $3.75.

THE RYAN NAVION

(Continued from page 27)

and bank indicator and clock), electric starter and Hartzell automatic variable pitch propeller.

Approved extra accessories which can be installed without reweighing include a gyro instrument panel for all-weather operation, flares, cabin heater, dome speaker and portable fire extinguisher. An extra 20-gallon tank installed in the baggage compartment has been approved for extending the range.

The cabin interior features front seats divided into two units with folding backs. The front seat allows 38 inches of headroom and 50 inches of legroom. Rear seat legroom is 40 inches. The baggage compartment has a capacity of 20 cubic feet. The Navion furnishes as close to bubble-canopy vision as is practical.

The Navion has a span of 33 feet 4½ inches, has an overall length of 27 feet 8⅝ inches and a maximum standing height of 10 feet 3⅝ inches. It weighs 1680 pounds empty, carries a gross useful load of 1070 pounds. This brings its gross weight to 2750 pounds. The craft was tested in this weight against the following performance claims.

Maximum cruising at 2300 rpm	157 mph
Cruising, 75% power	150 mph
Landing speed at 40° flap	54 mph
Take-off (ground run)	560 feet
Over 50 foot obstacle	1,250 feet
Landing run (in 10 mile wind)	335 feet
Over 50 foot obstacle	710 feet
Rate of climb per minute	830 feet
Service ceiling	15,600 feet

The Findings

The team accepted demonstration in three-man flights, following a circuit inspection of the airplane. The mechanical members liked the accessibility of the power plant and found that its automobile-type cowling could be opened for any routine servicing with the turn of a large coin. Top and sides of the engine and the top end of the nose-wheel mechanism were accessible through the engine cowl, but Dick Schister thought the carburetor was a little tough to get at.

Ed Knowles indicated that the cockpit arrangements were created not only for maximum utility but for convenience as well. The panel was properly placed and in the instrumentation proved easy to read and interpret. Knowles added, "Ground vision is unusually good. The 360 degree horizontal vision is among

(Continued on page 42)

THE RYAN NAVION *(Continued from page 41)*

the best I've ever seen. The best plus factor in this line is the sloped-down engine cowl which permits short-distance vision over the nose."

The take-off was short. In the light breeze, the Navion leaped into the air in what apeared to be a shorter distance than specified.

The unique phases of the flight were the turns and stalls. The Navion's wing is designed to stall from the wing-root out, rather than from the tip in; the ailerons were the last part of the wing to lose laminar flow. This gave the plane excellent stalling characteristics, both straight and level and in turns. Knowles noted that very little control pressure was required to hold altitude in a steep turn. The plane appeared to require only general coordination for a well-executed circuit. In discussing stalls, Knowles said, "This is the first plane I've ever flown that you could 'walk' down from a complete stall using ailerons only."

Dick Butler agreed generally with Ed Knowles on the ship's performance. He liked particularly the fact that 65 to 70 degree banks could be executed at slow speeds without any "falling out" tendency.

On the other hand, Knowles thought that the excellent characteristics of the plane might encourage pilots to stretch a point on weather. For that reason he felt that the gyro instrument panel should be standardized, even at increased expense. And he added that Air Force veterans would feel more at home with a manifold pressure gauge.

The traditional "forgotten men" of personal flying—the passengers—had a lot to say. John Lawrence observed that in his bulky winter overcoat it was easier for him to get in and out of the airplane than it was the automobile that brought him to the airport. Mrs. Butler, after her first flight in any kind of an airplane, reported no difficulty in getting in and out of the plane.

Passengers all agreed that their back-seat vision was better than in the average auto. Dick Noyes wanted a bit more headroom or an angle adjustment for the seats, but Dick stands six foot four inches, so it was no wonder.

Conclusions

General performance:	*Superior*
Pilot vision:	*Superior*
Passenger comfort:	*Excellent*
Operational utility:	*Excellent*
Interior quiet:	*Superior*
Structural quality:	*Superior*
Maintenance quality:	*Excellent*
Stall characteristics:	*Superior*
Speed:	*Excellent*
Range:	*Excellent*

FROM THE COCKPIT OUT *(Continued from page 21)*

ism and accuracy of data so obtained would provide a far more reliable basis for design than the guess-work opinion derived on the basis of "display-type" mock-ups of the past.

The term *Synthetic Prototype* may be used to characterize this special equipment. It would utilize a complete set of instruments and controls for simulating all aspects and conditions of flight operation. Electronic type computers would be hooked up for measuring the results of operation by a pilot with the same accuracy and thoroughness as that of an actually flight-tested prototype. The term has been selected because, although the equipment would provide some of the same data available from a prototype in actual flight, it would be obtained by synthetic means at a substantial reduction in the present cost and less risk of abortive efforts.

A piece of equipment suggestive of the *Synthetic Prototype*, and now in use on a test basis, is the Flight Simulator, developed by Dr. R. C. Dehmel, Chief Engineer of the Curtiss-Wright Corporation's Electronic Trainer Department. The Flight Simulator was developed to meet the need for a newer, more up-to-date method of training pilots to operate specific aircraft types without the time, cost and hazard of actual training flights. Of outstanding value is the fact that it affords the first opportunity in the history of flight for pilots to be given intensive training in solving emergency flight problems. Dr. Dehmel has expressed the belief that the Flight Simulator affords a means for more definitely establishing optimum criteria for design objectives than has been available in the past.

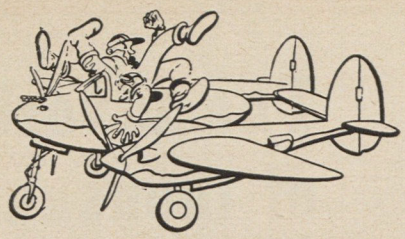
The Flight Simulator is a mock-up fuselage, duplicating an aircraft in every dimensional and appearance detail, with all instruments and control forces responding accurately to its electronic flight and powerplant computing apparatus. The computors are designed to match a specific aircraft by utilizing aerodynamics and engine data furnished by the airframe and powerplant manufacturers. Engine and airstream sound effects are included.

According to Dr. Dehmel, "This equipment may be designed for any flight and control characteristics desired when being used for the determination of requirements for new aircraft. Since changes in these characteristics as well as in the cockpit layout and instrumentation can be made much more easily in the Flight Simulator than in any aircraft, a variety of configurations may be pilot-tested at a small fraction of the cost of constructing an aircraft. Accessories may be developed for use with the Flight Simulator to represent other aircraft in flight, target vessels, terrain objects, or to reproduce a large variety of radio navigation signals."

Well-engineered devices of this kind, in combination with a Flight Simulator, introduce operational factors which should permit proper determination of the desired aircraft maneuverability, rates of closure, cockpit arrangement, and allowable pilot fatigue. New types of radio aids, radio instrumentation, and traffic control procedures may be evaluated without the costly development of actual airways systems. The Flight Simulator is a time-saving and low-cost means of predicting aircraft and navigation requirements.

The equipment, although developed specifically for pilot-training in specified aircraft types, demonstrates the feasibility of the *Synthetic Prototype* as an all-purpose medium for casting the design of any projected aircraft in the mould of the men who must operate it.

An operational mock-up such as the *Synthetic Prototype* would be calibrated to very accurate measurements of actual operating results, both on the part of the pilot and on the part of the aircraft, as predetermined by any selected configuration of flight conditions. The greater part of these operational and tactical factors could be introduced as desired, and the characteristics of performance and the cockpit arrangement and specifications varied under controlled and precise conditions. The Mock-up Board should, in a sense, be able to "fly the aircraft" even before a manufacturer reaches the preliminary design stage. It should even be possible to obtain objective information, uncolored by "opinion," as to the eventual value of proposals. The resulting aircraft would, in fact, be designed around the pilot.



PLANE BONERS

Analyzed by Veteran Pilots

A pilot took off in a fully-loaded C-47 and 10 minutes later the right engine began vibrating violently, shaking off a piece of the engine cowling. The pilot feathered the propeller and returned to the field to make a single-engine approach. He came over the end of the 8,000 foot runway at approximately 75 feet and after floating well down the runway, he attempted a go-around. When he retracted the gear and advanced the throttle, the plane settled to the runway and was wrecked in the belly landing.

Comment: This pilot demonstrated poor technique throughout the approach. First, he did not retard the throttle of his good engine below 25 in. Hq., and, second, his judgment was poor in attempting a go-around considering the field elevation (6,000 ft), his low altitude and dangerously low airspeed, and the full load of the C-47.

A pilot in an AT-7 started his takeoff. Approximately 350 feet down the runway, the landing gear retracted and the airplane skidded to a stop on its belly.

Comment: Another accident attributed directly to failure to use the checklist. The pilot started his takeoff run with the landing gear selector switch in the UP position. As the weight of the plane came off the gear, allowing the oleo to extend, the gear retracted. Use the checklist—that's what it's there for.

A student pilot was practicing 180° side-approach, simulated forced landings in an AT-6. He concentrated so intently upon hitting the "spot" that he forgot to lower the landing gear. The instructor called the student repeatedly by radio and a red flare was fired to warn him of the danger, but he failed to notice either and landed wheels-up.

Comment: Concentration is a wonderful thing, but not when it is centered on one object. You must keep your mind on a myriad of small details while flying.

An AT-6 pilot had exhausted his supply of fuel in the right gas tank and had flown a considerable length of time using fuel from the left main. When he was just a few miles from the field at 3,000 feet the engine quit because of fuel starvation. The pilot lowered gear and flaps, then realized he could not reach the field. He retracted the gear and bellied the AT-6 into a swamp a short distance from the airfield.

Comment: There were still 20 gallons of fuel in the RESERVE *which would have taken the pilot to the field if he had changed the fuel tank selector. His second error was lowering gear and flaps before being certain of reaching the field.*

AFA MOUNTAIN STYLE *(Continued from page 19)*

build, the war took a turn for the better and the project was abandoned. Realizing, however, that a commercial air base would have tremendous community value, several Beckleyites picked up where the AAF had left off and endeavored to persuade local taxpayers to levy taxes for sufficient funds to build the field. The federal government, they pointed out, would match whatever funds were raised locally under the Federal Airport Plan. The proposal came up for vote twice, but both times it was defeated. Undismayed, the diehard air enthusiasts got the proposition on a local ballot for a third time. This time all of the service organizations in the community banded together in full support of the proposal. The AFA squadron dispatched its Secretary, Bill Hall, to Air Force Headquarters in Washington to try to arrange for an air demonstration over the city just before election. At that time, however, the Air Force was out of gas and wasn't doing any "unnecessary" flying. So Hall went to former Congressman Jennings Randolph, Assistant to the President of Capitol Airlines and asked him to come to Beckley to speak on the importance of aviation. Randolph accepted. His speech was sincere and persuasive. The townspeople accepted it enthusiastically. A short time later, on the third ballot, they voted the funds. Last month, after a five year battle, work was begun on Beckley's new airport.

Air Force Day, 1947, is a day that will be long remembered and talked about in Beckley. Still less than five months old at the time, the ambitious little West Virginia AFA group put on one of the finest airpower shows in the country. For a while though it looked as though there would be no show at all. For when the town of Beckley awoke last August first it found the sky lying right on its front doorstep. The mountain dew was actually coming from the clouds instead of the jug. By 10:30, however, the sky began to clear.

The merchants closed their doors for half a day, and at 11 o'clock the entire town turned out to witness the AFA parade. After the parade, Brig. Generals Jarred V. Crabb, Deputy Commander of the Ninth Air Force, and Charles R. Fox, West Virginia Adjutant General, spoke at the Woodrow Wilson High School on the importance of airpower. As General Crabb concluded his remarks—at 11:47 to be exact—a squadron of 13 P-47s piloted by the all-Negro fighter group of North Africa fame, flew out of the clouds directly over the heads of the assembly.

In the evening there was a banquet attended by most of the town's civic leaders and by many Air Force personnel both active and inactive. The banquet was followed by a dance in the local armory.

More recently the Beckley Squadron has occupied itself with the sponsorship of a new Air Scout squadron for youngsters between the ages of 15 and 18 years. After having gained approval of the Boy Scouts of America, the Air Scout Troop Committee led by Roy D. Jones, Jr., is now in process of making application for an Air Scout charter. The Aviation Activity Committee of the AFA unit headed by Edgar R. Cantley isn't waiting on the formality of a charter, however. It is already in the final process of procuring a war surplus cargo plane, either a C-46 or a C-47, for use as an Air Scout headquarters.

Late last year Beckley AFAers passed a resolution to work for the incorporation of aeronautical courses in the curricula of all high schools of West Virginia. The resolution was promptly presented at the State Education Association Convention in early November by a committee headed by Eugene Hunter. It was accepted by this group and was scheduled to be presented to the State Principals Association which is in session as this is being written. Students, naturally as might be expected, were enthusiastic in the extreme. To further stimulate their interest, the AFA squadron, in cooperation with the local Air Force recruiting office, is currently sponsoring a trip for a group of high school boys to one of the USAF's air bases. Selection of the group to make the trip will be made by written examination on aviation subjects. Transportation and billeting will be furnished by the USAF. Meals will be paid for the squadron.

Beckley even has a committee to promote readership of AIR FORCE Magazine among those not eligible to join AFA. Some time ago, at the suggestion of the committee, the squadron voted to subscribe to the "book" as a gift for some of the town's civic and political leaders. In addition the squadron is endeavoring to get outside subscriptions from among other townsmen. As still another activity in this line, some members of the squadron each month collect old magazines and distribute them through the local college and high school libraries.

As if all this weren't enough to keep the squadron busy, Joe Macsmaryk and two other pilots are now engaged in making aerial surveys to determine where airmarkers in the Beckley region are needed to assist transient pilots. As soon as the weather clears the squadron will seek the assistance of the State Road Commission in the actual marking. It will also recommend other AFA units take similar steps.

There are three members of the Beckley outfit who don't participate in any of its activities. Their names are Fleet Counts, a former aircraft armorer; Jean McDonald, an ex-radio instructor, and Glen Eller who served with the 20th Air Force on Guam. They are patients at nearby Pinecrest Sanitarium. Not long ago, before the three of them belonged to the Beckley squadron, a group of squadron members headed by Commander Whitener called on them to see if there was anything AFA could do to make time pass a little less slowly. The patients responded that they would like to join the Association and get AIR FORCE Magazine. At its next meeting, squadron members unanimously voted to pay for the three memberships out of squadron funds. In addition, it was decided that several members would visit the sanitarium at least once a week. So far the visitors have derived as much benefit as the patients.

To people on the sidelines the entire program of the Beckley Squadron is likewise an inspiration. From the simple gesture of laying a floral wreath at the base of a war memorial, to the ambitious campaign to have courses in aeronautics installed in all West Virginia secondary schools, the group has convincingly demonstrated that strength does not always lie in numbers. Enthusiasm, a willingness to work, and devotion to a purpose can more than compenstate for numerical deficiencies. As Jimmy Doolittle told the national AFA convention at Columbus last year, "The Air Force spirit is strong in the hearts and minds of the group that went forth from Beckley to fight with the AAF. With a small membership this squadron has done as much to bring the message of airpower to their fellow citizens as any community in the country." The General might have added that the squadron would continue to promulgate that message with all its energies until they were satisfied that the nation had attained a position in the air which would assure its security.

ATTACKING THE YOUTH PROBLEM *(Continued from page 25)*

we utilize as "acting corporals" young men only a little, if any, higher in experience level than those they led, and technicians whose non-com stripes did not mean that they had skill at handling men.

When station boards on the young soldier problem submitted their findings on irregularities in administration and discipline, a list of more than 70 different defects in the system was compiled.

The problem of the young soldier required, on the one hand, the encouraged and directed effort of the soldier to meet and come to terms with his environment; and it required that his environment be straightened up to improve his chances of making a satisfactory adaptation. And in our deliberations one valuable truth emerged. The thing which the young soldier needs most of all was just what the military was in a better position to give than any other form of collective life heretofore—a stable and orderly pattern of existence. It was necessary, therefore, in spite of the almost insurmountable obstacles in the way, to set our house in order.

The kind of leadership required by these young men? For the life of us we could not see that they called for any special or unusual brand. They had made the poor and inexperienced leader look very poor and inexperienced, indeed. They had shown up our deficiencies in leadership at a time when we were extremely short. But there was nothing in our findings which indicated that we had to refashion our traditional ideas as to the best principles for handling men. We concluded that the tried principles of the past were still valid, and needed only to to be applied. We had to get into high gear in leadership training.

I do not mean to imply that our study at one command headquarters was all that was being done to understand the military's youth problem. In every echelon of command, from the War Department down, thinking people were engaging themselves with similar or related studies.

From the directives which have come down from higher headquarters and from conversations with people working in those higher echelons the following general conclusions may be drawn:

▶ That the higher command is

(Continued on page 46)

CREDITS

Cover—USAF, Press Association, Hans Groenhoff, Bob Doty, Dayton Journal Herald, US-AF; Page 14—Press Association; Pages 16-17—Bob Doty, Dayton Journal Herald; Page 18—Bill Barrett; Page 19—Elizabeth Withrow; Page 20—Curtiss-Wright; Page 21 — Pan American, Curtiss-Wright; Page 22—Press Association, Acme, Press Association, Acme; Page 23—International, USAF; Pages 24-25—USAF; Pages 26-27—Hans Groenhoff; Page 30—Aeronca; Page 31—Lockheed, Westinghouse; Page 32—North American (2), Goodyear; Page 34—USAF, Page 35—USAF, AFA; Page 36—USAF, Consolidated Vultee; page 37—AFA.

ATTACKING THE YOUTH PROBLEM *(Continued from page 45)*

aware of the great responsibility it bears to the nation to develop the young soldiers in responsibility, professional ethics, moral character and citizenship.

▶ That we must engage in this program assiduously if the maturity and character level is to be brought up to a standard required by military life. In other words, it is necessary to have a morally reliable and psychologically stable soldier as well as a technically, militarily trained one.

▶ That this is a program which must enlist the active participation of leaders in all levels of command.

▶ That leaders themselves must be more thoroughly grounded in the historic and tried principles of handling and managing men.

▶ That both leaders and led who take too long to develop in moral character, stability, and good citizenship must be given their papers. In short, while the Army is duty bound to undertake this program, it is not primarily a reformatory.

What is the military actually doing about its youth problem? First of all, it has been found absolutely necessary to discharge rather large numbers of young soldiers who have proved themselves inept for military life. Not every young man can adjust to it, we readily admit. Oftentimes it is no discredit whatsoever to be adjudged unfit for military service. But among those who have been sent back to civilian life there is a considerable number who come very near to being social misfits. Many had court records and had been given the choice by the civilian court officer to join the Army, or else. We just do not have the time to recondition all of these unfortunates. To keep them in the service would not be wise, or fair to other impressionable young men. Meanwhile, we are eliminating officers who prove to be irresponsible or who show unwillingness to assume leadership responsibilities.

As for specific programs, Lt. Gen. John K. Cannon, Commanding General of the Air Training Command, recently presented an account of how his command is dealing with the young soldier problem. The major features of this new approach may be summarized under three main headings:

▶ **Realistic management practices** based on a wise insight into the nature of our youths. They want action. Waiting around permits their natural restlessness to find many unacceptable outlets. Lackland Air Force Base, at San Antonio, Texas, is the "boot camp" of the Air Force. Here an average of 16,000 young airmen undergo a 13 weeks basic course. And here the pace is a fast one. As General Cannon explains it:

"Incoming processing, a procedure that required many hours during the war, is typical of the new idea. It is now accomplished in 35 minutes. The entire activity is confined to one huge building. A civilian enters one door and, 35 minutes later, comes out another door as an airman in uniform. In the interim he has received coffee and doughnuts from the Red Cross, had a shower, a haircut, received his Air Force clothing issue, his innoculations against disease, completed his basic military records and met the flight leader who will guide him through the entire 13 weeks of basic training."

Realizing that adolescents are prone to be easily distracted, a "restriction and furlough plan" has been introduced at Lackland. "Under the plan, basic trainees are confined to Lackland Air Force Base for the entire training period. The only 'off-post' activity is a conducted tour about near-by San Antonio. The restriction serves to advance the adjustment of the basic trainee to Air Force life by ruling out, insofar as is possible, all distractions. It keeps the young man out of trouble, keeps him alert to training."

Because initial Air Force pay is quite a temptation to improvidence for these young men, a pay withholding agreement was instituted. "During the period in which the trainee is at Lackland, he is paid, by agreement, only a nominal sum. The bulk of the money due him accumulates. Then, when he is ready to leave, the furlough plan goes into effect; and he is ready for it. He has enough cash to see himself home and to his point of return."

▶ **Vocational guidance.** "Under the old war-time system of classification, AGCT scores, aptitude tests results, military needs of the moment and various other factors figured in the determination of individual technical training or assignment. Today, the desire of the individual is given every possible consideration. The limited capacity of technical schools and the lack of appeal of some courses preclude the possibility of all individuals receiving their first choice, but the individual's desires are met wherever possible. Classification specialists provide vocational guidance in assist-

(Continued on page 48)

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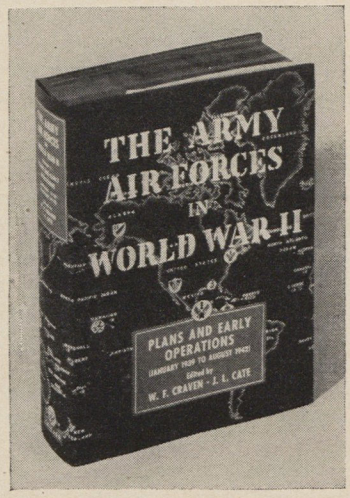

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ATTACKING THE YOUTH PROBLEM *(Continued from page 46)*

ing the trainee to an honest, intelligent, individual selection."

Richer social experience. "As the restriction plan precludes participation in civilian entertainment and recreation activities, Lackland Air Force Base has activated an elaborate on-post recreational program. Facilities utilized include four theaters, four large Service Clubs, 29 day rooms, three recreational halls, three hobby shops, five libraries with 36,820 books, eight swimming pools, three bowling alleys, a gymnasium and a golf course. There are countless smaller facilities—softball and baseball diamonds, boxing rings, handball courts, tennis, basketball and volleyball courts by the score. There are nine post exchanges. Lackland has five Chapels and one theater-chapel, with Chaplains on duty at all times. The Personnel Services unit presents regularly scheduled professional stage shows, sponsors talent shows featuring trainees. It arranges squadron dances, tournaments, and the like."

General Cannon points out that it is too early as yet to quote statistical evidence of the Air Training Command's success in its new program. He explains that some of the major features did not go into effect until shortly before the first of the year. But Air Training Command officials point to definite trends paralleling the institution of new ideas and to tangible results already obtained. They report that academic failures in the command's technical schools are definitely on the downgrade, that AWOL rates are falling, that venereal disease rates have declined sharply, that student morale is high, and that interest in training is far above average. This looks like real progress toward an effective solution of the military youth problem.

On a broader plane, we of the military have come to the conclusion that our established code of professional ethics must be reemphasized. As to that code, ask the old soldier who has lived with it. It is mostly an unwritten code, and generally alluded to in the words, "the Customs of the Service." There is a partial expression of this code in a basic field manual which treats of Military Courtesy and Discipline. I say that it is a good code. Honor, integrity, fair play, consideration for others, responsibility and justice are understood by any old timer to be in that code. Soldiering is a profession, and it has its professional ethics the same as any other. Standards relaxed in the military during the war years just as they did in the institutions of public and civil life. We must bring those standards back. There is nothing new-fangled about them. They belong to the "ancient, honorable profession of arms."

A program of restoration of these time honored principles has already begun. The Secretary of War has decreed that "Commanding Officers will impress moral responsibility and encourage strong self-discipline in officers and enlisted men of their command." Chaplains are to be given ample opportunity *in the training schedule* to give instruction in citizenship and morality, and all military personnel will attend. We don't expect a moral revolution but we do expect a moral reawakening; and one phase of the military youth problem will be dealt with.

If a body of moral precepts is to receive general acceptance it has to be enforced by a system of discipline. Again, ask any wise parent or teacher. I have found almost uniform thinking among Chaplains that these young men need fair, consistent and firm discipline; and the thinking ones among the soldiers themselves readily admit it. As military leadership improves, particularly in the noncommissioned and young commissioned officer classes, this discipline will increase in firmness, consistency and fairness; and as discipline improves the military's traditional professional ethics will gain in widespread acceptance. I am certain, too, that the young soldier who comes to terms with discipline, and who makes a personal acceptance of the traditional code of ethics, will be happier, a better adjusted military man, a better citizen.

The military has thus become aware of a problem, which is not essentially any different from that which faces the nation as a whole. We have our own special means for dealing with it, but in this program we need the support of the public.

So manifold and varied is the problem of young people's adjustment today that it will require the consistent and intelligent action of everyone concerned. It is up to each one of us who have any part in the education and molding of the character of the younger generation to take hold of the problem wherever and whenever it presents itself. In the military we are trying to do our part, at the same time that we are discharging our main task of providing for national security. In a few years we believe that we shall see evidence of real progress.

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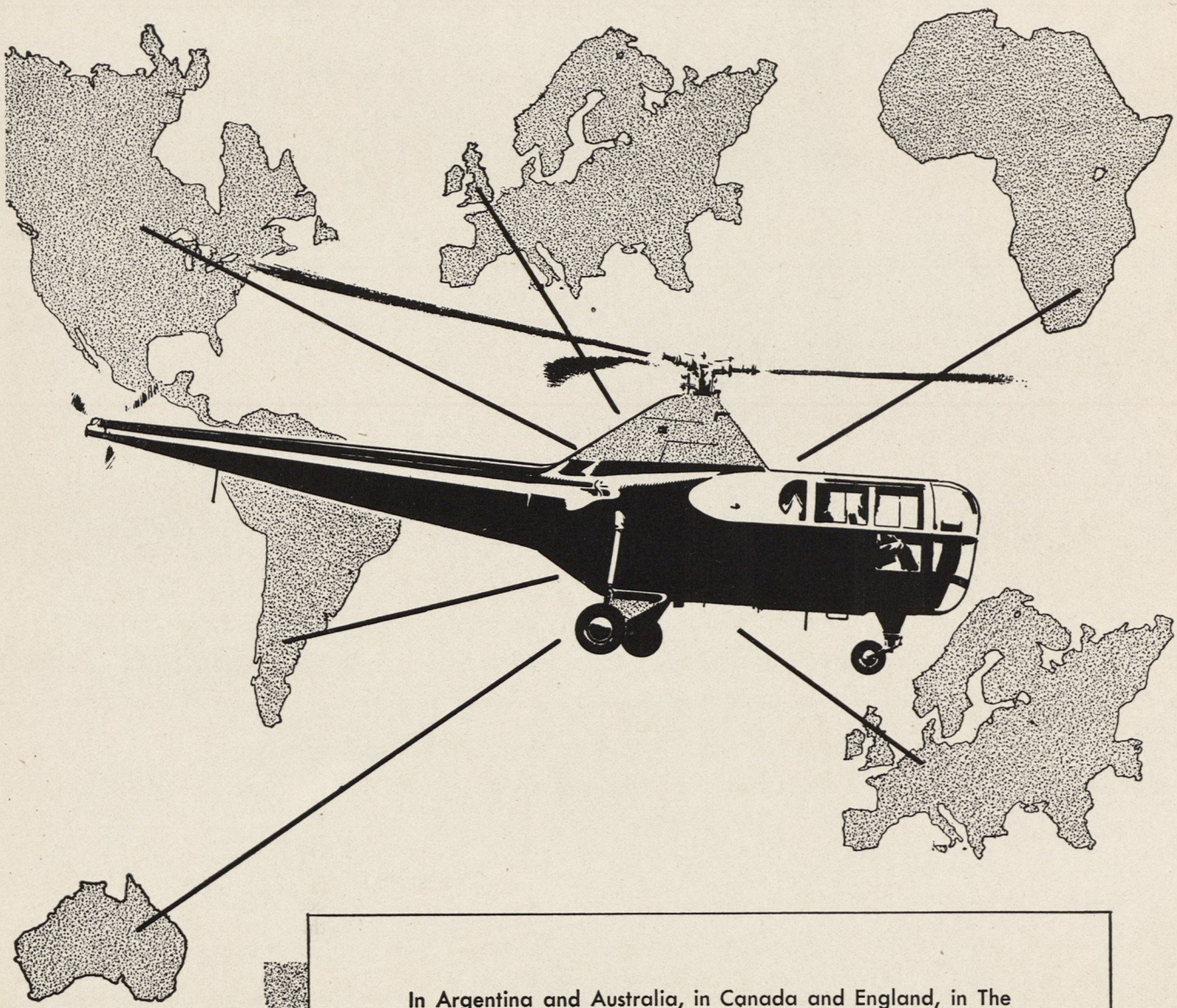

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