

# AIR FORCE

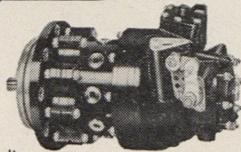
SEASON'S GREETINGS FROM THE AIR FORCE ASSOCIATION, DECEMBER, 1948



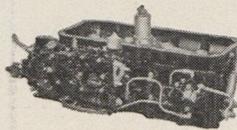
*Kelly Beachli*

# Bendix Products

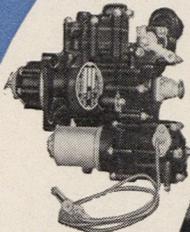
## AIRCRAFT FUEL METERING SYSTEMS



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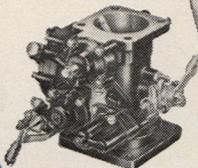
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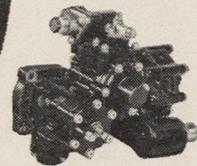
Bendix  
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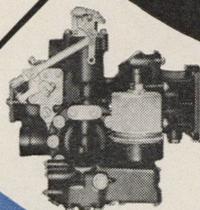
Stromberg  
Float Type  
Carburetor.



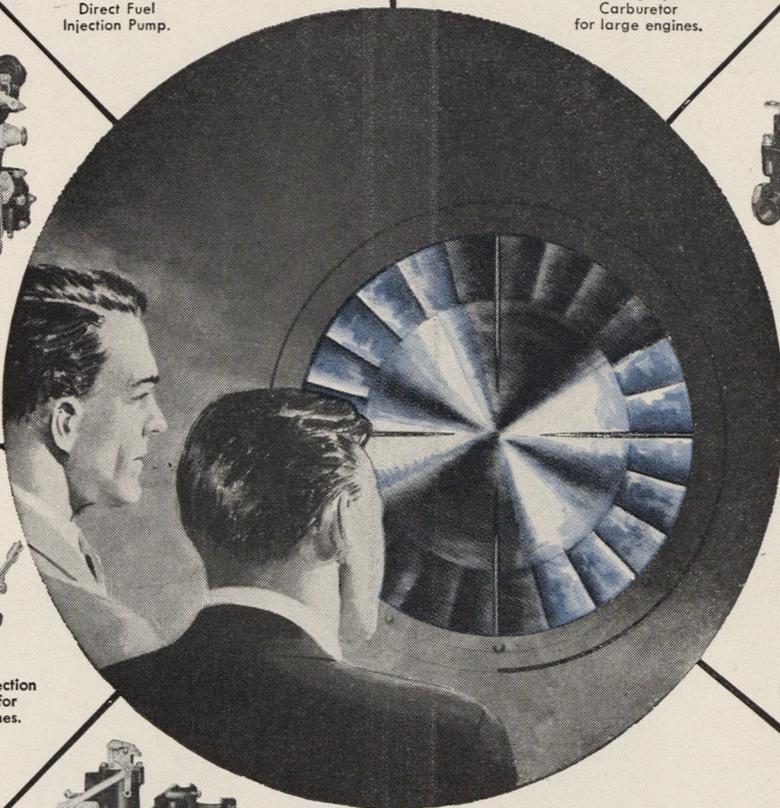
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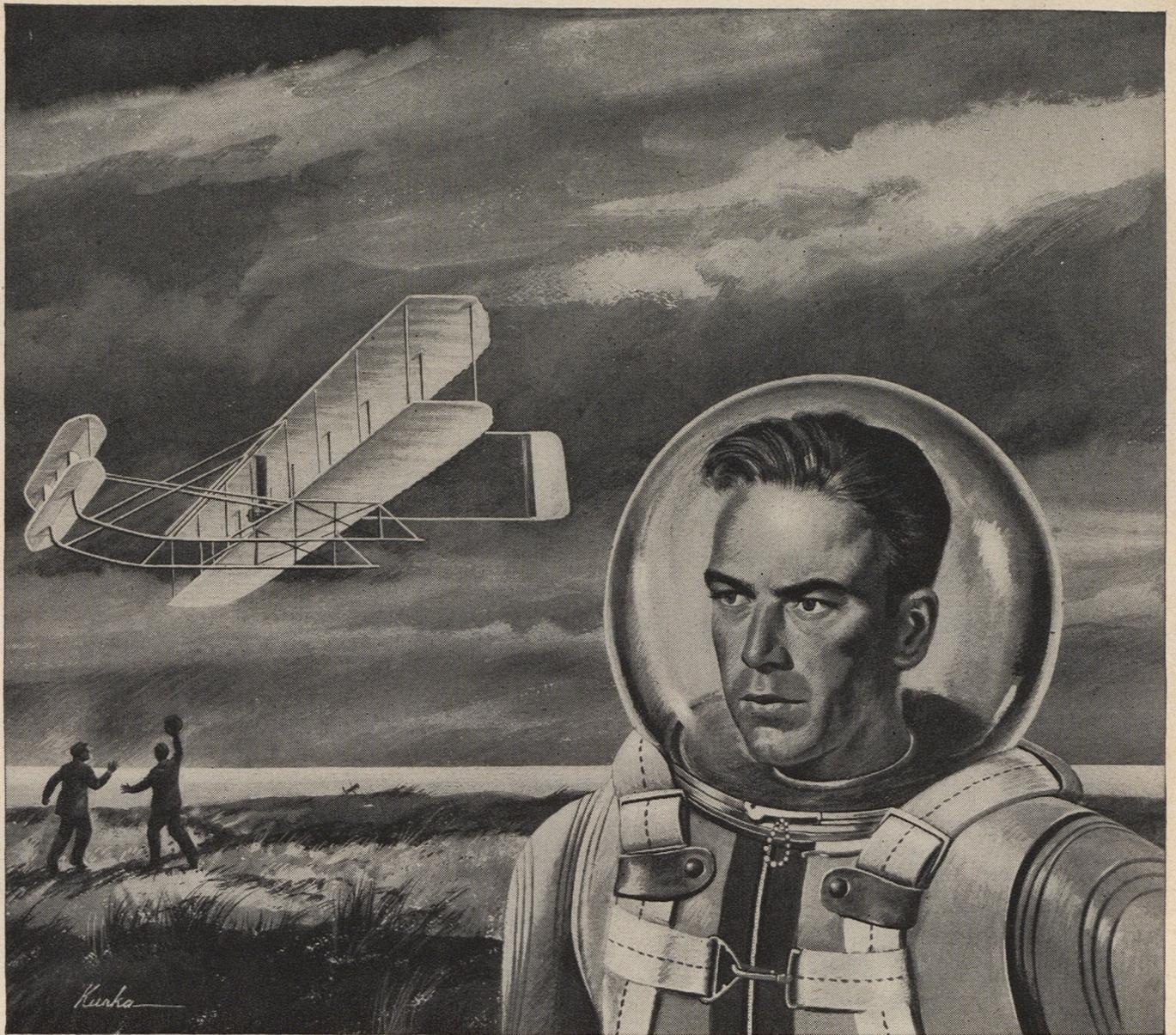
# Martin AIRCRAFT

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"FLAK BAIT," Devon Francis' new book, is the thrilling story of the heroic men who flew and serviced Martin B-26 Marauders in bomber strikes from the Southwest Pacific to the gates of Berlin. We are proud to be mentioned with these gallant men.



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Today, aviation knows no limits. In doing honor to the Wright brothers on the 45th Anniversary of their Kitty Hawk flight, Curtiss-Wright also honors the ingenuity and productivity of American men and women of aviation . . . the far-seeing ones, the followers of Orville and Wilbur Wright and Glenn H. Curtiss, three great pioneers of heavier-than-air flying.

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DEVELOPING  
 FLIGHT TO MEET  
 THE FUTURE

# AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

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# 56th Fighter Group



(Coat of Arms approved 4 April 1942)

**SHIELD**: Tenne' on a chevron azure fimbriated or two lightning flashes chevronwise of the last.

**CREST**: None

**MOTTO**: Ready and Waiting.

**HISTORY**: Hq 56th Fighter Group was constituted as the 56th Pursuit Group (Interceptor), 15 January 1941, at Savannah, Georgia. Subsequently it was redesignated as 56th Pursuit Group (I) (Twin Engine), 31 January 1942, as Hq & Hq Sq, 56th Fighter Group (Twin Engine), 15 May 1942, as Hq & Hq Sq, 56th Fighter Group, 1 June 1942, and the Hq Sq was ordered to be disbanded, 22 July 1942. Hq 56th Fighter Group was inactivated 18 October 1945, at Camp Kilmer, N. J., and activated 1 May 1946.

The Group is entitled to battle participation credit for the following World War II campaigns:

- Air Offensive Europe
- Northern France
- Ardennes
- Normandy
- Central Europe
- Rhineland

Two Distinguished Unit Citations were awarded the Group for outstanding performance of duty in action against the enemy over Europe for the period, 20 February—9 March 1944, and in Holland on 18 September 1944, respectively.

## Distinctive Insignia

The distinctive insignia is an adaptation of the coat of arms.

## Insignia Manufacturers

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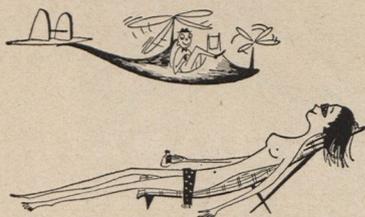


# AIR MAIL



## Informal Complaint

*Gentlemen:* The management of the Silver Springs Resort (near Ocala, Fla.) has made an informal complaint to our representative regarding aircraft flying



low over their resort and the boats in the adjacent river. They claim that civilian, Air Force and Navy aircraft are involved.

It is believed that a considerable amount of this low flying is not an intentional violation of regulations, but is prompted by curiosity on the part of the pilots and passengers of the aircraft who want to have a look at this well known spot. From experience, we know that little of interest can be seen from an aircraft flying at a legal altitude.

Possibly a warning, publicized by you, will serve to avoid actual violations with their resulting unpopular legal actions. Can you, in the interest of aiding aviation, help us get this caution notice to the pilots?

Harry D. Copland  
Department of Commerce  
Civil Aeronautics Adm.

## Arctic Jets

*Gentlemen:* It seems to me that now is the time to clear up a little misunderstanding about flying of jet aircraft in the Arctic. The 1st Fighter Gp. (no reflection on this fine outfit) seems to be getting all the publicity and the 57th Fighter Gp. (the only all-jet group in the Arctic) gets no credit at all.

Cold weather tests were conducted by the 94th Sq. of the 1st Fighter Gp. at Ladd AFB during the winter of 1947-48. The F-80Bs used in these tests were left at Ladd AFB when the personnel of the 94th returned to the States. In March 1948 the aircraft (F-80Bs) were assigned to the 65th Fighter Sq. of the 57th Fighter Gp. The 65th did a fine job of overhauling the ships and flying them to Elmendorf AFB, home of the 57th Fighter Gp. (JP).

Utilizing pilots with jet experience, the 65th checked out its pilots in short time and began flying gunnery and navigation training missions in the F-80Bs. Pilots in the 64th and 66th Fighter Sq. were also checked out in the F-80s while maintaining proficiency in the F-51. In a short time the group was ready to change over to complete jet operation.

At the present time the 57th Fighter

Gp. is all jet equipped. The 64th and 66th Sq. have the F-80Cs and the 65th Sq. is replacing the F-80Bs with the F-80C.

As to any question that might arise as to whether jets are flying in the Arctic, the sight of a formation of sleek F-80s streaking across northern skies has become as familiar to the people of the Far North as the northern lights.

Lt. Harry B. Bailey  
APO 942  
Seattle, Wash.

• *And that should settle that.*—ED.

## Pro and Con

*Gentlemen:* A word of congratulations for the greatest edition of AIR FORCE; namely the November issue.

Dick Barger  
Great Falls, Mont.

*Gentlemen:* For your information, the November issue of AIR FORCE was received by AFA members in Niagara Falls with much disfavor.

J. A. McCusker, Commander  
Niagara Falls Squadron

*Gentlemen:* The last issue on "Operation Wing Ding" was terrific!

Morey Weisman  
Brooklyn, N. Y.

*Gentlemen:* Just got my issue of AIR FORCE, and the gang really did a tremendous job in their coverage of the convention.

Peter W. Geiger  
New York City

*Gentlemen:* You sure hit the jack-pot on cheap publicity at the convention. Gypsy Rose Lee and TV—it stinks!

N. B. Kehoe  
W. Lafayette, Ind.



*Gentlemen:* Why in hell didn't you tell me about Gypsy Rose Lee? I just saw those pictures in AIR FORCE and here's my check and membership form. If that's what your members get, I want in!

Gilbert Gabriel, Jr.  
New York City

*Gentlemen:* Although I have not yet received my November issue of AIR FORCE I have already received phone

calls from some of the boys who have, voicing their protest over the lack of publicity we received on the Air Force Day celebration. I would suggest to the good AIR FORCE editor that he "get off and on."

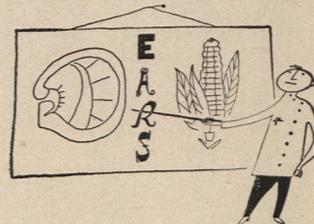
Harry J. Johnson, Jr.  
S. Fort Mitchell, Ky.

*Gentlemen:* Your last issue of AIR FORCE was a honey. The pictures dressed it up elegantly.

Charlotte Fleshman  
Beckley, W. Va.

## Ears Have It

*Gentlemen:* In the November issue, page 37 (among the pictures of the marvelous convention) there is a picture of two champs. To end an argu-



ment—Clark Gable is shaking hands with General Dwight D. Eisenhower. Do I have the names right? My husband, a swell guy, says it is not Clark Gable but Jack Dempsey. He must be wrong.

Jane Nevin  
Syracuse, N. Y.

• *Yes he is. Tell him to take another gander at those ears.*—ED.

## Shade Was the Important Thing

*Gentlemen:* As I looked through your splendid issue of November, my eyes stopped at a picture in the lower right hand corner of page 47. The caption stated that spectators were seeking shade under the tail of a B-26. It sure doesn't look like the B-26 tails I crawled over in Africa to replace radio antennae. It looks more like an A-26 tail to me. Am I right?

Elmer S. Huston  
Kent, Ohio

• *To answer your question, yes.*—ED.

## No Action

*Gentlemen:* Any information you can give concerning Senate Bill 2559 will be greatly appreciated.

John R. Chase, Jr.  
San Francisco, Calif.

• *Senate Bill 2559 (to change commissions of certain flying officers from AUS to USAF Reserve, thus making them eligible for a \$500 bonus) has not yet been reported out of committee.*—ED.



## NO REINDEER FOR ST. NICK THIS CHRISTMAS!

It might look strange seeing St. Nick buzzing chimneys, but it's just one more indication of the ever-growing influence of air-power. In fact, for the first time, his gift bag will be filled with copies of AIR FORCE magazine.

As a member of the Air Force Association you are keeping up with important developments in aviation through AIR FORCE magazine and the many organized and personal services of AFA. However, the chances are, many of your friends and relatives don't know a B-36 from a Piper Cub—and that's where both you and St. Nick come in . . .

. . . YOU to give subscriptions to AIR FORCE magazine (or full AFA membership to those who qualify\*) to the names on your Christmas list . . .

. . . ST. NICK to deliver copies of AIR FORCE (together with an attractive Christmas card announcing your gift) not only at Christmas but twelve times throughout the year!

Today, with airpower and defense in the news constantly, it's vital for every thinking American to know exactly what's going on in the field of military aviation. That's why subscriptions to AIR FORCE or

As you know, distribution of AIR FORCE has been limited exclusively to Association members. This year, however, as a special service to members, we're making AIR FORCE magazine available to those of your friends and relatives who do not qualify for membership. If you act now, you may enter subscriptions to AIR FORCE for *everyone* on your Christmas list.

memberships which include the magazine are the most important and welcome Christmas gifts you can give this year.

It's late, so act now. Here is the perfect way to solve your last minute Christmas shopping problems. The unique Christmas card, incorporating the airlift

design of this month's cover of AIR FORCE, will be mailed to the names you list in the coupons below the instant we hear from you. And don't forget—sign your name on the line indicated in each coupon exactly as you want us to sign it on the card!

FILL OUT COUPON BELOW AND RETURN IT TODAY!

### Christmas Gift Rates

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Association membership\*....\$4.00  
(Including years subscription to AIR FORCE)

\* Only those who have been honorably separated from the Air Force—or are now on active duty—are eligible for membership.

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# SHOOTING



# THE BREEZE

THE editorial in the *Indianapolis Star* put it this way: "We have two armies, the Army army and the Navy army. We have two navies, the Navy navy and the Army navy. We have several air forces, the regular Air Force, the Navy air force, the Marine air force, the Coast Guard air force, and Military Air Transport Service." And the editorial writer concluded: "If that is unification we'll eat an admiral's hat."

If it is we'll eat an admiral, we mused, then shuddered at the thought and continued our browsing through the stack of newspapers. For what is under the admiral's hats these days we stopped at the *Washington Daily News* column *In the Offing*, the weekly composite expression of all *Scripps-Howard* writers on the Washington staff. We read: "Admirals hate to admit it but the Navy will never build another battleship . . . Carriers are now Admirals' darlings. It's significant that work on the sixteenth battleship, the *Kentucky*, has stopped; money's diverted to 65,000 ton carriers. Chances are *Kentucky* won't be finished . . . High command is convinced it must switch to carriers to win appropriations."

A *United Press* report in another Washington paper, the *Times Herald*, told of the Navy's program for a fleet of 28 "high speed aircraft carriers," including the super job which would cost \$124,000,000. No price was placed on the entire fleet. Whatever the cost, it was evident that the Scripps-Howard boys knew their stuff.

The *New York Times* quoted Rear Admiral D. V. Gallery, director of the Navy's guided missile's branch, with the statement that carrier aviation was the nation's best bet for long range bombing, come an emergency, and the *Washington Post* carried the pronouncement of Vice Admiral R. B. Carney, Deputy Chief of Naval Operations for Logistics, that "the carrier task force is virtually invulnerable." Whatever they were up to, the admirals seemed sure they could deliver the goods.

Then we ran into the syndicated column of Joseph and Stewart Alsop in the *New York Herald Tribune* which began: "Another Manhattan District is needed." Aware that something pretty vital must be involved to call for such drastic action, we read on to learn about what the Alsops termed "the shocking results of the Navy's recent Newfoundland war exercises." During these important maneuvers, it seemed, eight Schnorkel-equipped submarines had "sunk" virtually the entire naval task force of 100 vessels trying to establish a beachhead on the Newfoundland coast. With the Soviet navy now primarily an underseas fleet, studded with Schnorkels, this vulnerability of the

US Navy was so serious, thought the Alsops, that only a project of the scope of a Manhattan District could fill the bill.

We pondered the millions of dollars wasted, right through to the good old unfinished *Kentucky*, on outmoded battleships, of the millions more going into the 28 carrier fleet, still unproved in terms of the strategic bombing Admiral Gallery had described, and Admiral Carney's statement of carrier "invulnerability." We recalled that Admiral Gallery had commented directly on AFA's Statement of Policy demanding a single air force as the only way to solve the waste and inefficiency in our air establishment, that the Admiral had said this would mean "sea-going mobile airpower of the United States would be abolished."

In the face of the Navy's tragic experience off Newfoundland, it was quite apparent that a single air force could hardly abolish "sea-going mobile airpower" anywhere near so fast as Schnorkel-equipped submarines could abolish it. We concluded that in this month of December with its "Remember Pearl Harbor" memories, we might well add "Remember Newfoundland" in appraising our national security.

We kept that thought in mind as we continued our newspaper browsing, running through the coverage of Navy press releases with their continued plugging of B-29 size atomic weaponed bombers operating off "mobile bases," and then we struck an item that made us forget Newfoundland for the moment. It was an article by Jim Lucas, a Scripps-Howard staff writer, in the *New York Journal American*. Lucas revealed that while there seemed to be growing support for a single air force, there was actually talk behind the scenes of assigning all aviation to the Navy. He reported that Secretary Forrestal was "thinking about it," and was testing the idea on his luncheon guests at the Pentagon. He quoted an unnamed "high-ranking Navy officer" as saying that this idea was "something we have talked over among ourselves for a long time." This officer, added Lucas, "insists the Navy could take over without much reshuffling" and could "do a better job cheaper."

We agreed with an expert on the Navy named William Bradford Huie that "If such shenanigans were not fraught with tragedy for all mankind they would make prime stuff for com-

edy." Huie explained that, "These admirals who now come to sell us the super-super carriers are the same gentry who sold us the super-battleships to keep themselves in business. These admirals who now want to control our strategic air power are the same gentry who spent millions trying to prevent the development of strategic air power. These admirals who now want a 'Navy version' of the B-29 are the same shortsighted men who shouted the derision of the B-29 all over the Pacific."

And speaking of Pearl Harbor, Huie said, "The American people should never forget this point: On the day that 2800 men died at Pearl Harbor these admirals were still restricting the flight of land-based bombers from Hawaii to not more than 300 miles off shore."

We had left our stack of newspapers and were now reading this Mr. Huie in the current *Reader's Digest*. Here in his article "A Navy—or an Air Force," we found answers to the fantastic chain of events that saw the American taxpayer permit battleship admirals to drop their battleships after wasting millions on them, adopt carriers as a surer method of getting appropriations, campaign for strategic bombing, from carriers, learn from experience that carriers were helpless before modern submarines, and still be in a position to have the Secretary of Defense toying with the idea of turning all military aviation over to them.

Huie's article hits this tragic muddle right on the head. It deserves the widest possible readership, and we urge all AFA members to stuff their pockets with the December issue of the *Reader's Digest* and see that the article on page 62 gets the right kind of readership. The author, a well known book and magazine writer, knows his Navy first hand. He served two years with the Navy in World War II. And he also served as a war correspondent on every front where US troops saw action.

Mr. Huie has concluded from the overwhelming support given the 70-group air program by the 80th Congress, "Most Americans now believe that an unchallengeable air force is our best hope for peace," but this decision *not* been accepted by that defiant old bureaucracy, the Navy. The Navy's answer to us taxpayers is that it will not be 'relegated' to such a 'secondary role.' It too will expand." The admirals, he explains, have accepted "preservation of the Navy bureaucracy" as their Mission Number One. So they have evolved a Plan-to-Save-the-Navy. Under it they will hide its weaknesses with propaganda while the 'Navy' is deliberately and expensively converted into another long-range, strategic air force" (the italics are his).

Mr. Huie continues: "The admirals know that if the Navy is to be saved as a separate gigantic bureaucracy they must get the atomic weapons and big, long-range bombers and super-super-carriers. They, too, must qualify to attack Moscow and Magnitogorsk. Unless they can do this they know that the Navy can never justify another ship larger than a destroyer. As one admiral put it: 'Either we swallow the Air Force or they will swallow us.'" Does Mr. Huie sound like a fanatic? Maybe so. Maybe he just got soured in the service. If that's the case his arguments can be dismissed. Or maybe it was *facts*—facts about how the Navy operates that turned his stomach.

Later Mr. Huie reviews "some of the cards which the Navy holds": its powerful industrial support through the Navy Industrial Association composed of 522 Navy suppliers; the Navy League's ceaseless propaganda to Congressmen, schools, libraries, newspapers; politically-wise Navy spending in remote Congressional districts; the Navy's record as "the cleverest or the most ruthless in handling Congress. He describes how Navy medicine looks after the health of Congressmen and Bethesda Naval Hospital is available to all high-ranking Government officials at a nominal cost, how the Navy maintains the yacht *Williamsburg* with 70 officers and men for the President, and a smaller craft used by the White House secretariat, how with 40 officers and men it maintains, guards and provisions Shangri-la, the retreat for the White House in Maryland's Catoctin Mountains, how through Admiral Leahy the Navy gets two votes on the Joint Chiefs of Staff to one each for the Air Force and Army. "But the ace in the Navy's deck," Mr. Huie observes, "is our traditional pride in the Fleet and its oaken-hearted men. Navy propaganda has maneuvered so many of us into the position where for us to 'oppose the Navy' seems like breaking faith with John Paul Jones and all the valiant men who have gone down to sea in ships."

The bulk of Mr. Huie's article is a piercing analysis of roles and missions, wartime records, peacetime positions, costs. He finds that in trying to support two major air forces plus a Navy and Army that "obviously we can no longer escape a choice. Obviously deep and painful cuts must be made in the old bureaucracies. Our entire war organization must be simplified and unified."

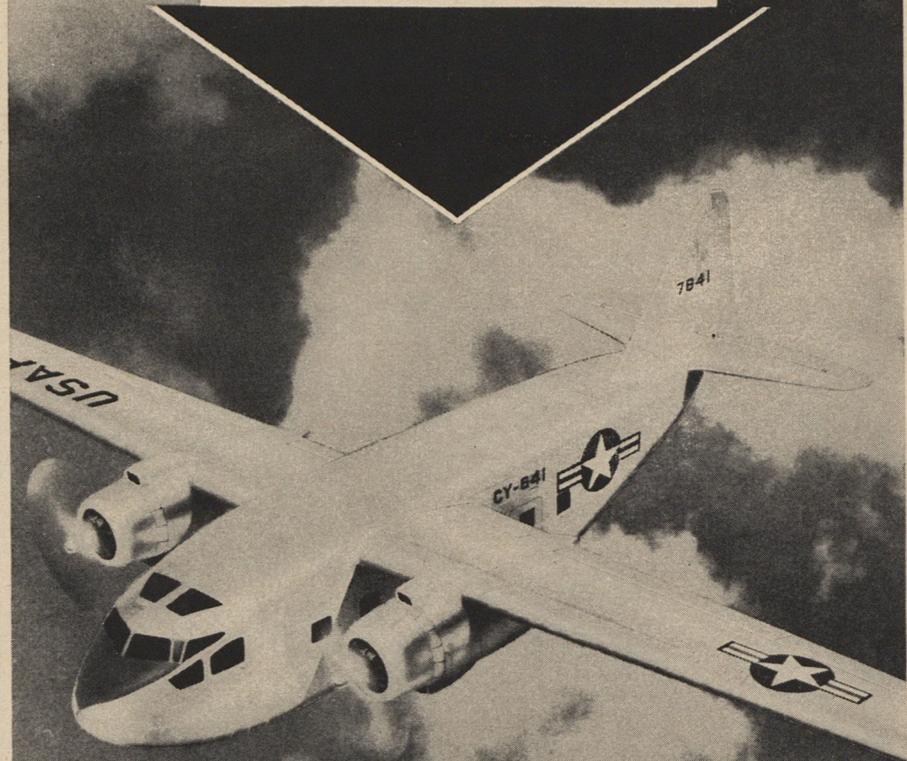
His concluding thought should stimulate action on the part of every AFA member: "We, the people, can win this conflict—and save billions of dollars—only if we are informed and insistent."

J. H. S.

#### CREDITS

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## Where the Gang gets together

**FIREBALL:** Anyone know-  
ing the whereabouts of  
Capt. Eugene M. Har-  
vey, formerly of the  
Army's "Fireball Air-  
line," Miami, Fla., please  
write to me. C. Cham-  
plin Starr, 15 Farm St.,  
Cranston 9, R. I.

**SMITTY:** My son Joseph  
died while a prisoner of  
the Germans on Jan. 11,  
1945. I am seeking in-  
formation as to where  
my son was buried. He  
was taken prisoner by  
the Germans who shot  
down his C-47, the  
"Erma Mae," on Dec.  
23, 1944. The War Dept.  
notified me he was bur-  
ied in the vicinity of  
Coblentz. I am anxious  
to have my son's re-  
mains brought home to  
rest. I understand he  
was buried by several of  
our boys who knew him  
only as "Smitty," and so  
they put a crude marker  
on his grave—Smitty. I  
will be most grateful for  
any information. Mrs.  
J. F. Smitrus, 157 George  
St., New Brunswick, N. J.

**AACS:** Would like to hear  
from some of my former  
buddies of the 136th  
AACs Sq. Det. of Gan-  
der, New Foundland,  
and Kindley Field, Ber-  
muda, same outfit. A. F.  
Harper, Jr., 718-4th St.,  
Port Arthur, Texas.

**THE ROVING 363rd:**  
Would like to get in  
touch with any of the  
men from the 363rd  
Fighter Sq., 357th Fight-  
er Gp. which was acti-  
vated late 1942 at Hamil-  
ton Field. The outfit  
trained at Tonapah, Nev.,  
Santa Rosa, Calif., Or-  
ville, Calif., and Casper,  
Wyo. We were stationed  
near Lieston and Sax-  
mundaham, England,  
and after VE-Day we  
moved to Station R-85,  
Nieubeberg, near Mun-  
nich, Germany. And I  
would also like to know  
if a group history has  
been published; if so,  
where can I obtain one?

Robert M. Fertsch, 27-  
10th St., PO Box 507,  
Carle Place, N. Y.

**LOST ON FURLOUGH:** I  
want to locate M/Sgt.  
Franklin E. Albright, a  
regular Army man with  
the 15th Air Force. Our  
last address was Sq. M  
at Mac Dill Field, Tam-  
pa, Fla., in July 1946.  
He was on his 90 day  
furlough when I was dis-  
charged; later I heard  
the outfit was broken up.  
Any advice will be great-  
ly appreciated. E. I.  
Faust, 130 W. Broad St.,  
Tamaqua, Pa.

**INSIGNIA COLLECTOR:**  
Would like to obtain the  
Squadron insignia of the  
718th Sq., 449th Bomb  
Gp., stationed in Grotag-  
lia, Italy, and the 409th  
Sq., 93rd Bomb Gp., sta-  
tioned in Hardwicke,  
England. Furthermore,  
I'd like to hear from for-  
mer members of above.  
Alfred E. Esparcia, 1247  
Taylor St., San Fran-  
cisco, Calif.

**CAMERA REPAIR:** I am try-  
ing to locate William  
Hatcher, a camera re-  
pairman in the 40th  
Photo Recon Sq. He was  
in St. Louis the last time  
I heard from him. Wil-  
liam S. Guthrie, 1036  
N.E. Hancock, Portland  
12, Ore.

**772nd HB:** Would like to  
find Capt. C. B. Caldwell  
who was a B-24 pilot at-  
tached to the 772nd HB  
Sq., 450th HB Gp., dur-  
ing the Group's tour of  
duty in Manduria, Italy,  
and any other members  
of the 772nd. If anyone  
can tell me whether  
M/Sgt. Gilbert "Hattie"  
Hatfield, ex-line chief  
and lastly a B-24 Flight  
Engineer, who was shot  
down over Germany, has  
been officially listed as  
KIA or has been returned  
to the States, the infor-  
mation will be greatly  
appreciated. Robert W.  
Henry, 149 Cedarcrest,  
Auburn, Ala.

**DIFFERENT GROUPS TO-  
GETHER:** Would like to  
contact Lt. Chas. F.  
Wright, who was sta-  
tioned with me at Buck-  
ingham Field, Ft. Myers,  
Fla., and Alexandria Air  
Field, La., in 1943 and  
1944. We were later with  
the 8th Air Force in  
England with different  
Bomb Groups. His home  
at that time was in Wor-  
cester, N. Y. Chas. D.  
Crawford, 1st Lt.,  
USAF, Hq. 15th AF,  
Colorado Springs, Colo.

**COULD THIS BE YOU?** I'm  
looking for Bill Gagne,  
ex-gunner on a B-26,  
who I know is anxious to  
pay back the ten pounds  
he borrowed from me in  
Southport, England.  
Formerly of the 391st  
Bomb Gp., 9th Air Force  
—whereabouts today un-  
known. Ken Magner, 156  
Alexander St., Princeton,  
N. J.

**SUB-DEPOT:** Would like  
to hear from a couple of  
guys or their where-  
abouts. One is still in  
service—M/Sgt. Edward  
"Frenchy" Legere, and  
former T/Sgt. Albert  
Kober. Last heard of he  
was with a sub-depot at  
Salisbury, England. Will  
answer any letters from  
former 445th Sub-Depot  
members who were in  
Kimbolton, England.  
Wm. Tkachuk, 20 S.  
Sacramento Blvd., Chi-  
cago 12, Illinois.

**AMNESIA VICTIM:** I was  
in the 50th Fighter Gp.,  
313th Sq., in the late  
spring of 1945. The out-  
fit was at that time  
moved from Nancy,  
France, to Wurzburg,  
Germany, then to Man-  
heim. I'd like to know  
the name of the CO of  
the group and squadron,  
too. I have nothing in  
my file on them, and I  
cannot remember their  
names. I'd also like to  
know if they're still in  
the service. Carl A. Ship-  
man, Barksdale Field,  
Laurens, S. C.

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Here are the actual "strength" figures of the three leading four-place planes, together with "performance" figures. They explain the outstanding success of the Bonanza since its introduction, the loyalty and enthusiasm of Bonanza owners, and the Bonanza's consistently high resale value.

The following facts are taken from the CAA Approved Flight Manual or Operating Manual published for each airplane by its manufacturer. In order to make comparisons at similar altitudes, some of Plane A figures are interpolated from other data contained in that Manual.

## Strength and Permissible Operating Speed

	Plane A	Plane B	Bonanza A35
Limit flight load factor, at full gross weight*	3.8	3.8	4.4
Ultimate flight load factor (at which failure may occur) at gross weight (based on CAR 03.201)	5.7	5.7	6.6
Placarded, never exceed, dive speed	153 mph	190 mph	202 mph

\*Upper limit of the ratio of normal load to which the airplane may be subjected without incurring permanent deformation and damage.

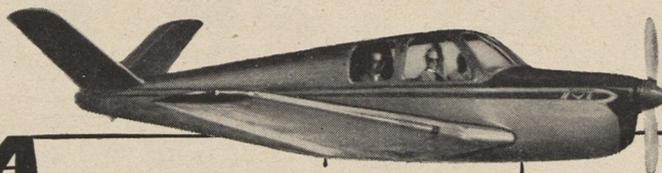
## Performance

	Plane A*	Plane B*	Bonanza A35
High Speed, Sea Level	132 mph	157 mph	184 mph
Cruising Speed, 3500 feet	128 mph	150 mph	163 mph
Fuel Consumption at 3500 feet, gallons/hour, recommended cruising	10.8	12.0	9.5
Range at 3500 feet with standard fuel	540 mi.	495 mi.	670 mi.
Cruising Speed at 8000 feet	129 mph	144 mph	170 mph
Fuel Consumption at 8000 feet, gallons/hour	10.1	10.5	9.8
Rate of Climb at Sea Level	731 ft./min.	730 ft./min.	890 ft./min.
Rate of Climb at 8000 feet	240 ft./min.	310 ft./min.	515 ft./min.
Service Ceiling, feet altitude	10,400	12,000	17,100
Take-off distance, over 50 feet, Sea Level	2022 feet	1900 feet	1690 feet
Landing distance, over 50 feet, Sea Level	1916 feet	1300 feet	1155 feet
Stalling Speed, flaps up	64.5 mph	69.0 mph	65.0 mph
Stalling Speed, flaps down	61.5 mph	55.0 mph	56.0 mph

\*The performance figures for both Plane A and Plane B are for planes equipped with optional, expensive changeable pitch propellers. The Beech controllable pitch propeller is standard equipment on all Bonanzas.

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- New York Times*: "The impact of this book is terrific."  
*Cleveland News*: "Unquestionably the best of the books about the recent global air war."  
*Philadelphia Inquirer*: "AAF veterans will love this book."  
*Tulsa World*: "Every line of it carries the stamp of authenticity."  
*Indianapolis Star*: "Each page breathes with real, live unvarnished realism."  
*Chicago Sun*: "Here at last is the Air Force as seen by the Air Force."

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# IN THIS ISSUE

### New AIR FORCE... Coming Up

There's been a new flavor to our incoming phone calls ever since AFA officially called for a single Air Force in its Statement of Policy adopted at the convention.

The Navy has favored us with half a dozen calls, mostly from Admiral's Aids, each requesting copies of the policy statement and each asking a whole flock of questions about the association.

We're flattered, of course, for we want the message to get the widest possible readership. We like the AFA stand, the more we live with it and we are sure all taxpayers will like it, the more they live with the National Defense Budget.

This issue we devote the lead article to this subject and we consider it one of the best statements of its kind ever presented. It comes from AFA's chairman of the board Jimmy Doolittle.

The famous Jimmy, who is the subject of a six-part article by W. B. Courtney just concluding in *Colliers*, needs no introduction to readers of AIR FORCE or of any other magazine, but we thought you would be interested in the fact that Doctor James H. Doolittle (he holds a Doctor of Science degree in Aeronautical Engineering from M.I.T.) has recently been appointed by President Truman as a new member of the National Advisory Committee for Aeronautics. He also is currently an advisor to the Hoover Commission's hearing on reorganization of National Defense, as he was an advisor to the joint Congressional Policy Board earlier this year.

### Introducing Two New Departments

Two departments of AIR FORCE, expanded and dressed up into full-fledged sections take their bow this month.

One of them, called *In Reserve* is a seven page section beginning on page 35. This is the title we formerly used to identify letters from readers on Reserve matters—a feature contained in this new section—but it now represents what we believe to be the most comprehensive coverage of the Air Reserve in any monthly magazine.

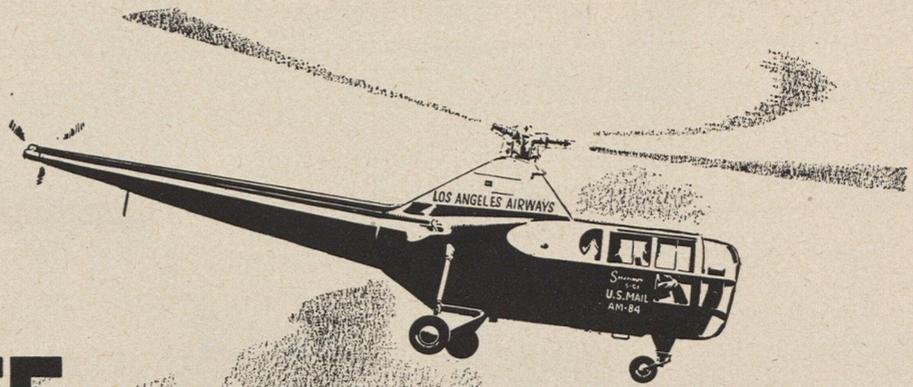
This month we recommend that Reservists pay particular heed to an article in this section on page 37 called "H.R.6744". It presents the problem of a Naval Reserve pilot, seriously burned and scarred in a plane while on two weeks Active Reserve duty, who today gets no disability compensation—simply because present law does not permit it. This unbelievable situation, which has ruined his career, could be *your* situation. All Reservists stand equally helpless before the law.

Our other magazine new-comer, replacing the department readers have known as *Tech Topics*, is a full fledged section we now call *Technique* highlighting Military Aviation but covering a broad technical field. It runs nine pages in this issue beginning on page 23.

Major contributor to the section and the bylined author of its inside dope column, *Tech Talk* on page 27, is Douglas J. Ingells, a veteran technical writer who probably knows Wright Field as well as anyone out of uniform. Doug wore an Air Force Sergeant's uniform during the war when he performed an identical writing assignment each month for the old AIR FORCE, and did a dope column that was widely talked about in and out of service. This month Doug has an item on the B-47 that especially interests us, one which includes an astounding statement that "Today the plane (B-47) can perform many of the range missions of our wartime B-29's carrying equal if not greater Payloads."

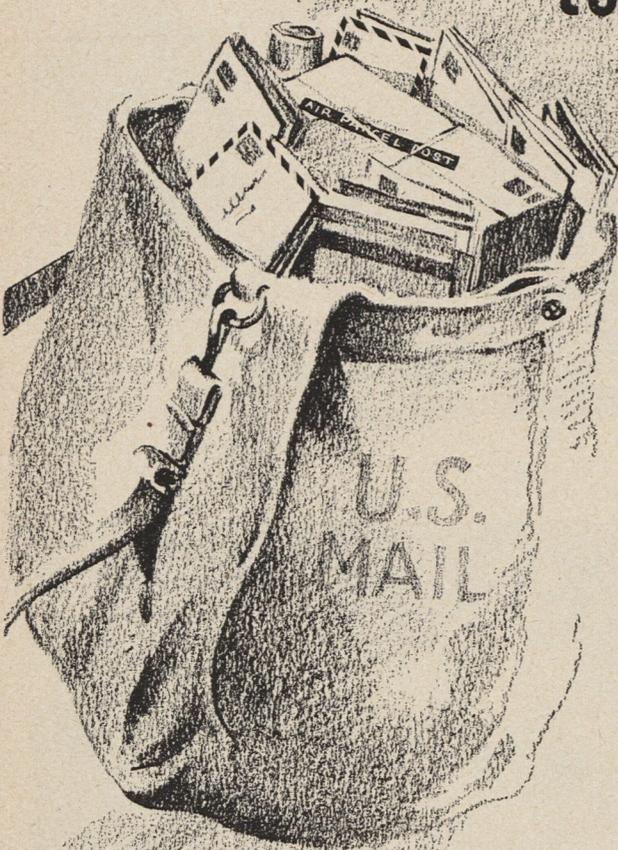
### A Lady in Distress

In a featurette on page 45 we guarantee a report on a heavy bomber mission the like of which readers have never before seen. We realize these are big words but this, in its own way, was a big problem: A girl passenger on a B-29 during a 21 hour flight, with no "Little girls room" aboard, and no stop off at powder rooms along the way. The girl who tells her trying story of "My Dry Run in a B-29," or "A Lady in Distress," is Charlotte Sleshman, a newspaper gal who flew as a reporter for the Beckley, W. Va., *Post Herald* on one of the B-29's hops this past Air Force day.



# HATS OFF

## to Los Angeles Airways to the U. S. Post Office



In cooperation with the U. S. Post Office, Los Angeles Airways has completed a full year of pioneering in carrying the mail by helicopter. A few figures indicate how eminently successful the operation has been.

	Oct. 1947	Sept. 1948	Increase	Total
Pounds carried	48,100	272,981	468%	1,510,670
Revenue miles flown	9,853	26,465	169%	237,474

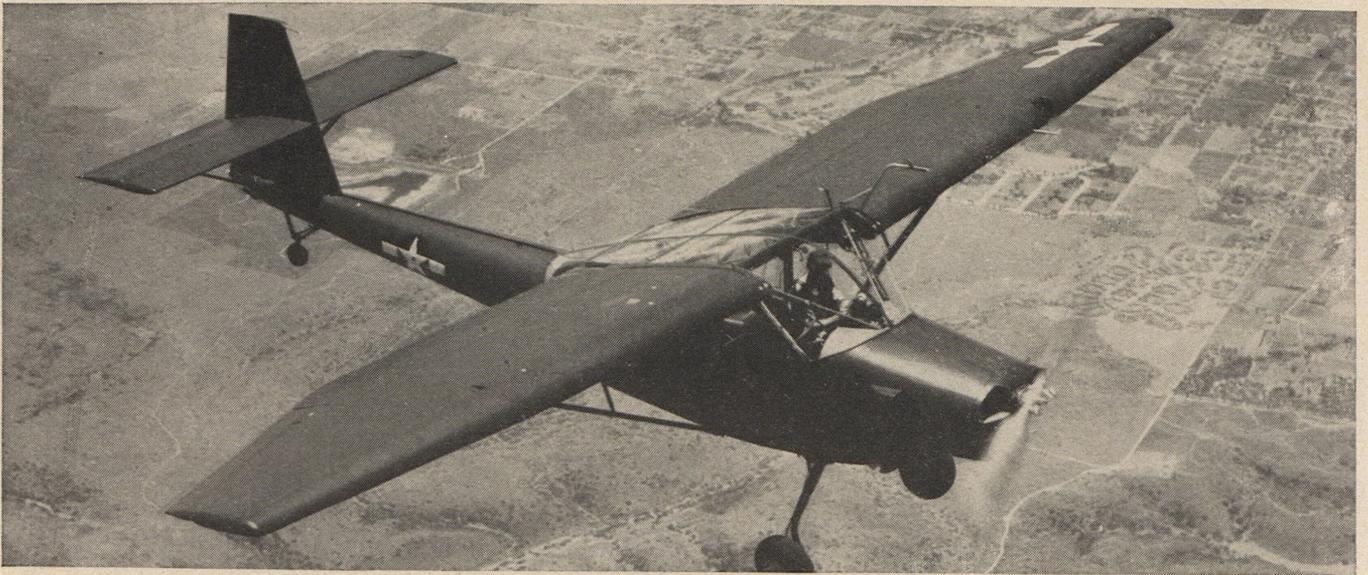
In performance of this task, rugged Sikorsky helicopters, the only ones used, have amassed a total of more than 4,000 trouble-free hours in the air. The operation, having carried the equivalent of 95,000,000 letters and saved an estimated 47,500,000 letter days, has proved its worth to the Post Office, to Los Angeles Airways, to the people being served—and to Sikorsky Aircraft.

# SIKORSKY AIRCRAFT

BRIDGEPORT, CONNECTICUT

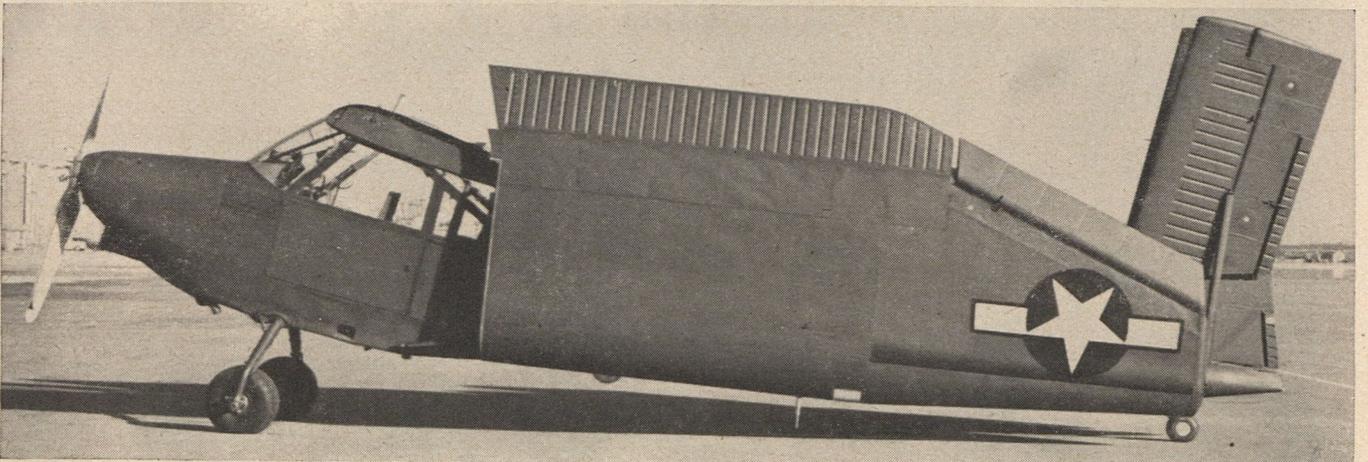
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**1** CONVAIR'S ALL-METAL L-13, powered with a 245-hp Franklin, takes off in 230 feet with a ½-ton payload. Designed

for a crew of 3, it can carry 6. Converted for ambulance use, it carries two litter patients, medic, and pilot.

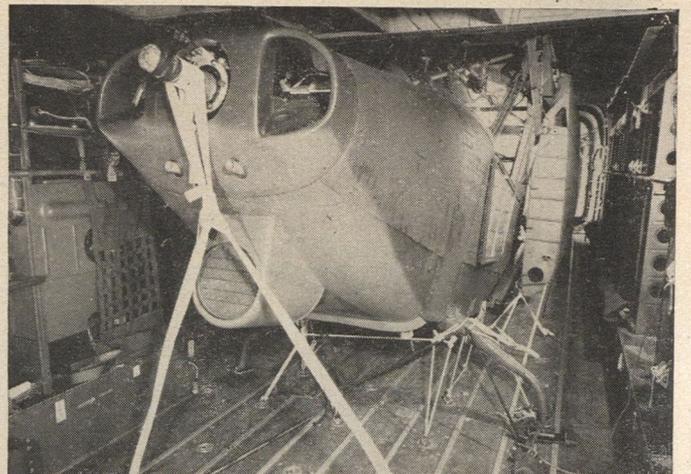


**2** FOLDING WINGS are nothing new. But note Convair's solution for the empennage. The L-13 can handle wire

laying, courier service, artillery spotting, supply dropping, and aerial pickup. Landing speed: 43.5 mph.



**3** LANDING GEAR SPINDLES are designed for wheels, skis, floats. L-13 can be towed as a glider at speeds up to 150 mph, then released to complete mission under its own power. Controllable-pitch prop need not be removed.



**4** HEATED L-13 CABIN has dual controls, full complement of instruments. L-13 cruises at 92 mph for 363 miles, or 750 miles with auxiliary tank. Picture shows plane tied down inside a C-82 Packet for transport.

# CONVAIR

Consolidated Vultee Aircraft Corporation

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*Jimmy Doolittle Scores:*

## WASTED DEFENSE BILLIONS

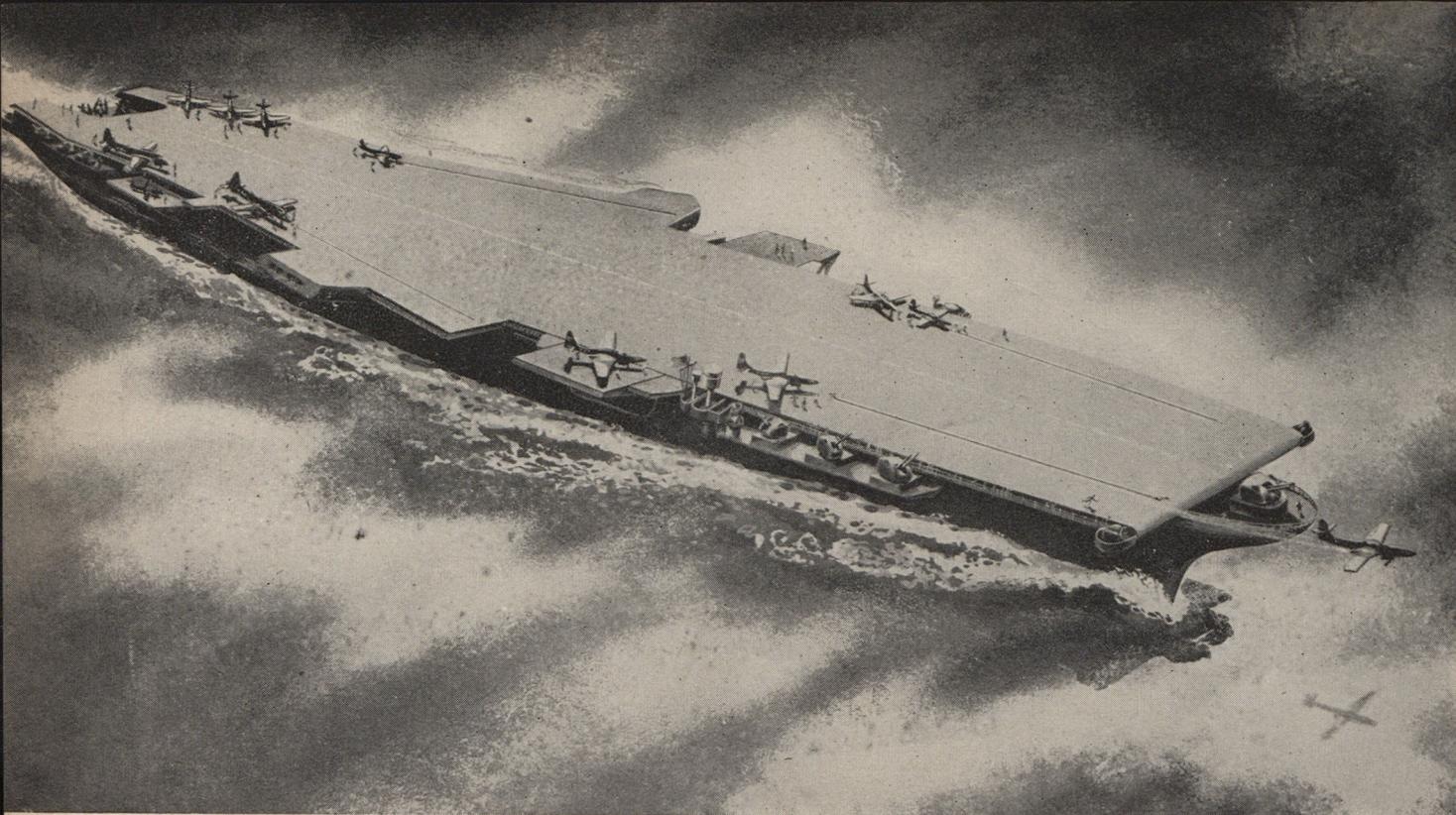
When AFA in convention adopted a Statement of Policy urging a single Air Force, Board Chairman Jimmy Doolittle was in Europe. When he got back, President C. R. Smith asked for his comments. The Doolittle answer, expressed in this letter, makes vital reading for everyone.

Dear C. R.

There are many aspects to the unification problem and all must be considered. The tendency in the past has been to deal with the relatively simpler and less important phases and

sidestep the fundamental question from which all major service differences evolve: Shall we have one integrated and coordinated Air Force or two competing and conflicting Air Forces?

The National Security Act of 1947, as finally passed, was a



Navy's strategic bombing hopes center in super carrier now abuilding. Above, artist's concept.

## DOOLITTLE CONTINUED

compromise—as it has turned out, an unfortunate compromise—between widely divergent, highly conflicting and strongly held and expressed opinions.

The individuals responsible for the formulation and passage of the law were well aware of its deficiencies, but hoped that the normal processes of evolution would clarify, justify and strengthen it.

Unfortunately, some of the compromises that were made violated fundamental principles of sound organization and modern military requirements. As a result of this, and also due to a lack of wholehearted cooperation on the part of the agencies involved, time has intensified rather than reduced the undesirable effects of the inherent faults and conflicts.

The time has now come to objectively analyze the results achieved over the past year, the law itself, and the changes necessary to provide a National Defense Establishment which will give us the greatest possible degree of effectiveness, efficiency and economy—the greatest value in defense and, if necessary, offense, for each defense dollar spent.

Tremendous economies are possible through true unification. They have not been achieved under the present law and will not be achieved through minor modifications of the existent law. Great economies can be realized only through basic changes—through correcting a fundamentally erroneous concept.

As stated in the first paragraph, the present law is an unfortunate compromise. One side, represented by the Army and the Air Force, wanted:

- One separate autonomous Air Force.
- Complete coordination of the three

Armed Forces—called Unification.

- A single Secretary of Defense.
- A head to the Joint Chiefs of Staff.
- Roles and missions designated by Executive Order of the President and not by Act of Congress.

The other side, represented by the Navy, was opposed to all of these things. The compromise follows:

- The Army Air Force was made separate. The Navy retained its Air Force.

- Unification, of a sort, was achieved.
- A coordinating head for the Joint Chiefs of Staff was not authorized.
- Roles and missions were designated by law.

The new law was hailed by different groups as: "A splendid compromise." "An unfortunate compromise of fundamental principles." "Fatal appeasement." "The greatest Naval victory since Trafalgar."

The important point is that after a reasonable period of fair trial, although some improvements have been made through this partial unification, we are not enjoying the economies possible through true unification. We are spending unnecessary billions on defense. And, what is more, no minor modifications of the present law will correct the situation and make or permit it to work. It can be made to work (and by working I mean give the taxpayer a fair return on his defense dollar) only by ruthlessly disregarding the selfish desires of the individual services and operating wholly in behalf of national security and welfare—by fearlessly removing the flagrant fundamental faults in the present law regardless of the effect on service pride or prestige.

There are three fundamental media in or on which modern war will be conducted—land, water and air. We must therefore have three services, each one of which operates in, and whose per-

sonnel specialize in operations in, one medium. This means an Army operating on and under the water, and an Air Force operating in the air. Each agency must operate in its own medium and all must be intimately coordinated. Each must be dependent upon the others for service in the other's particular element. There must be maximum mobility and flexibility to meet the rapidly changing conditions of modern warfare. It must be possible to use the whole or any part promptly and effectively where and when required. It is obvious that we cannot afford three self-sufficient Services: An Army with its own Navy and Air; a Navy with its own Army and Air; and an Air Force with its own Army and Navy. It is equally clear that two self-sufficient, competing US armies or two US navies would be wasteful. We actually have two self-sufficient, competing air forces, each planning to win the air war in its own way. We have the US Air Force and the Naval Air Force. We cannot afford this luxury—this prodigality.

We also have one self-sufficient service. We cannot afford this wasteful extravagance. True, the Navy can do its own job better by having its own Army and Air Force, but so could each of the other forces if they were also completely self-sufficient. We cannot afford three self-sufficient forces and the essential need for maximum economy will not permit us to have even one. Preserving the self-sufficiency of one service reduces the overall effectiveness of the three taken together, and substantially increases the overall cost in natural resources, equipment, facilities and personnel.

We do not know what the eventual size of our military establishment must be in order to keep us out of war or

enable us to win promptly if attacked. It is unfortunate, but true, that Stalin effectively determines our required defense budget. He hopes to bankrupt us; to make us spend so much money on defense that we will destroy our economy and eventually our form of government. Any inefficiency or waste plays into his hands. True unification, with the smallest Army, the smallest Navy and the smallest Air Force that will assure us of a reasonable degree of security, operating under a sound, coordinated strategic plan and organized to give not only maximum efficiency but maximum economy as well, will substantially reduce our military budget and represent the minimum interference with our economy, our prosperity and our manner of life. By putting all Air under one head, we can substantially reduce the total expenditure required and greatly increase the flexibility and defensive and offensive potentialities of our Air units. With land-based aircraft and carrier based aircraft under the same head, they will no longer be competing with each other—one planning to do the entire job of defending the Nation or winning a war through the use of carrier-based aircraft and the other with land-based aircraft. One streamlined service, so organized as to most effectively utilize both types, would minimize size and resulting cost.

As long as it is completely separate from the other services, it doesn't matter whether our Air Force is called the US Air Force or the Naval Air Force. It could well be the National Air Force, thus retaining the Navy designation of NAF. Personnel, equipment and facilities would be pooled and we would end up with one integrated Air Force. Not only could we get along with less of everything, including supporting forces, facilities and services through combining the two, and thus billions, but the personnel, equipment and practices remaining would be made up of only the best, hand-picked from both; and therefore substantially increased effectiveness would be achieved through economy.

The carriers, which are merely mobile air bases, could still be operated by the Navy. Carrier-borne aircraft would be manned and serviced initially by former Navy personnel, and always with personnel specially trained in that type of work. One specialized branch of the Air Force would cooperate with the Navy just as a specialized branch, the Tactical Air Force, now cooperates with the Army.

The Marine Corps, as long as it remained a small, integrated, highly-mobile, tri-phibeous striking force, accomplishing the function for which it was originally conceived, could well remain with one of the basic services. If, however, the Marine Corps continues to grow, it must either become a separate service or be absorbed, retaining its identity, in the three basic services. To make four independent services, when there are only three fundamental media in which to operate, is obviously unsound both from the



**Wars are fought in three elements—land, sea and air. That Navy has strayed far from its element, as has this Navy plane from the sea, is evident in fact that taxpayers now buy more planes for Navy than they do for the US Air Force.**

military and an economic point of view.

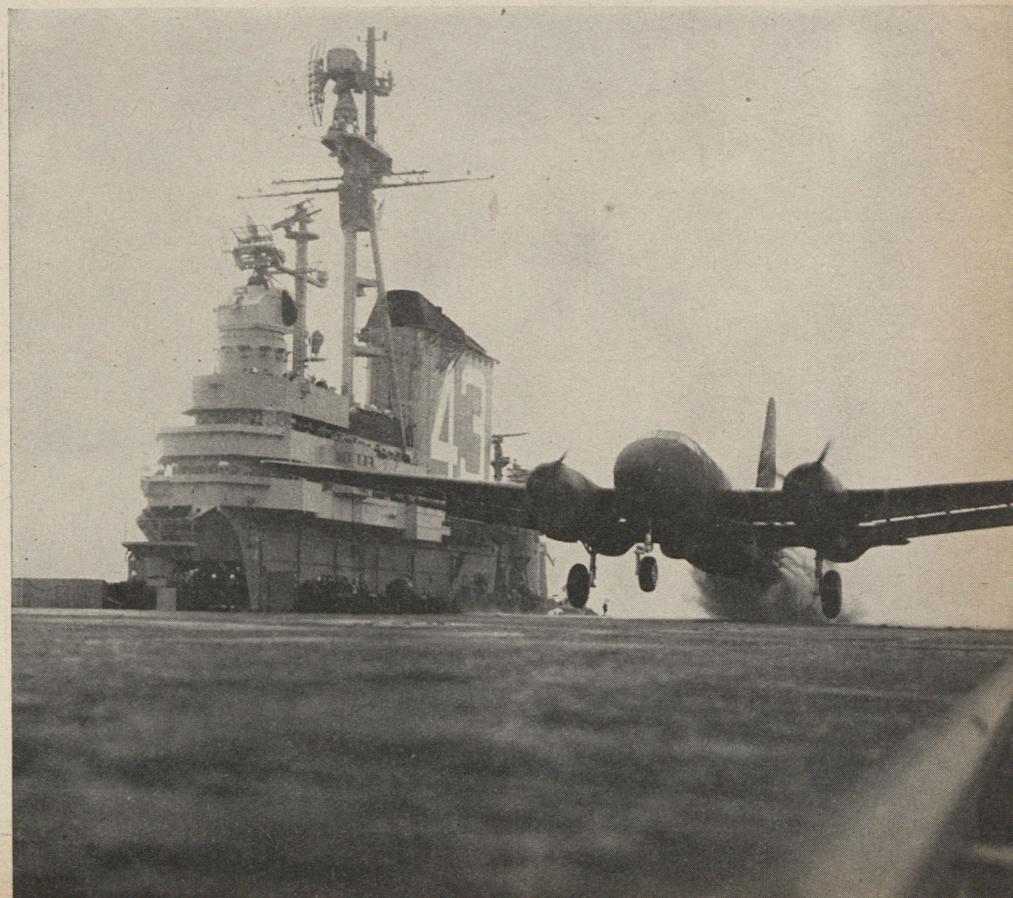
Am delighted that the Air Force Association came out, at the annual convention, for a single integrated Air Force. If we are instrumental in the prompt realization of this important

objective, we will have made a very great contribution to national security and prosperity and to the establishment of a better and a peaceful world.

As ever,

/s/ J. H. Doolittle

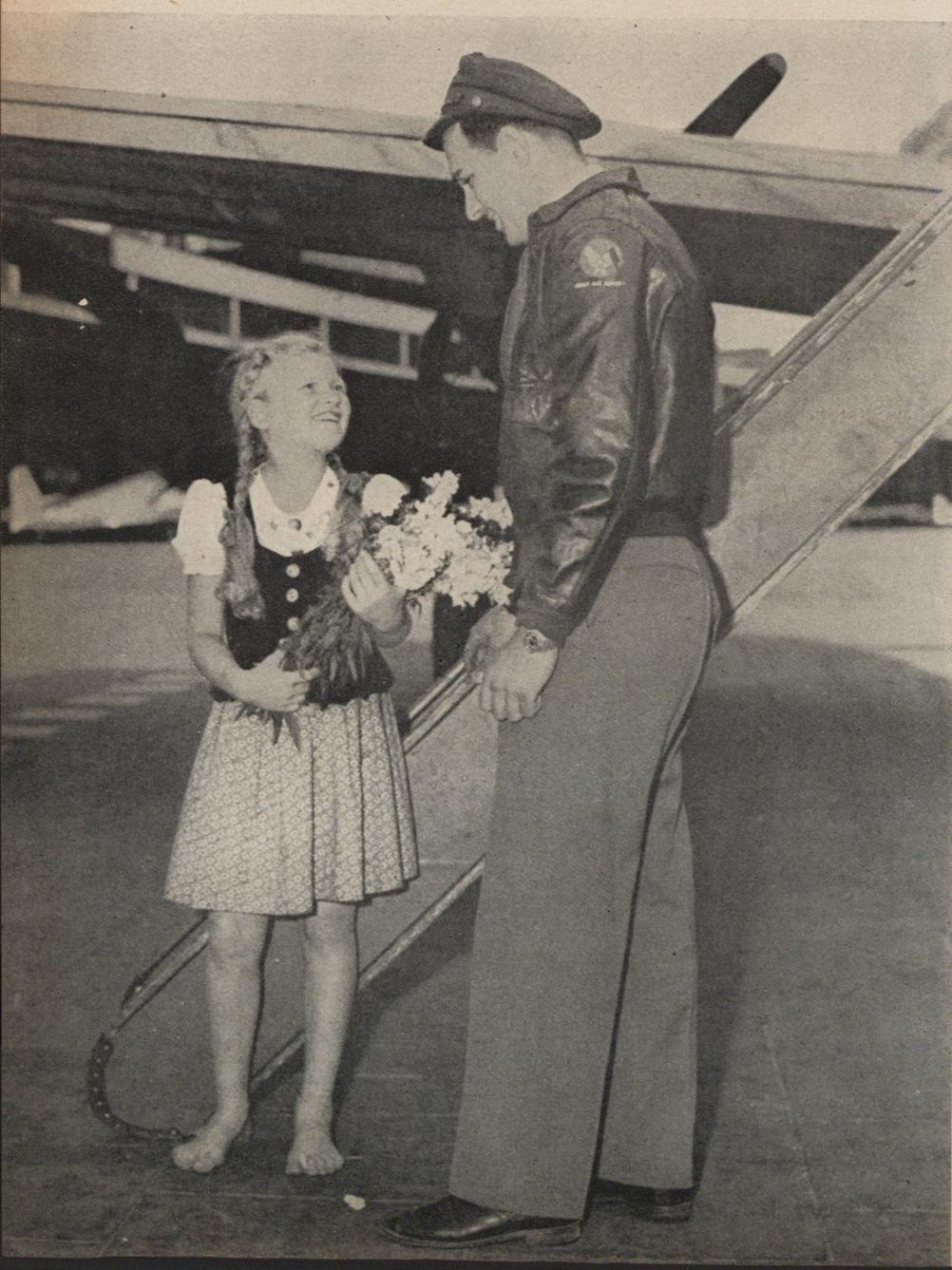
**Navy propaganda mill grinds out tons of publicity to build up its Air Force story. It released takeoff shot below in effort to sell public on carrier-based heavy bomber operations. Missing was picture of heavy bomber landing.**





Above, a French Guard of Honor watches first US plane land at Tegel airfield.

Below, a barefoot German girl meets the pilot of a Vittles plane with bouquet. Other gifts from grateful Germans include dogs, watches and family scrapbooks.



# CHRISTMAS in BERLIN

Vittles pilots will get their turkey dinners on the wing



**T**HERE will be less unbridled joy in Berlin this Christmas than might be indicated by this month's cover. Among the people who originated many of the Christmas customs we ourselves have since adopted, there will be neither the spirit nor the means to observe the day in any but the most meager of ways. In spite of the heroic work of the Airlift Task Force, there will be acute shortages of things to eat and wear.

In so far as a sense of great activity is indicated, however, the cover is entirely accurate. For never, outside of war, has the US Air Force undertaken a single operation of the magnitude of Vittles. On Thanksgiving the tempo was so rapid that pilots and crewmen making the flight between Templehof and the American zone grabbed their turkey dinners from pushcarts wheeled out to their planes so that more round-trips could be made.

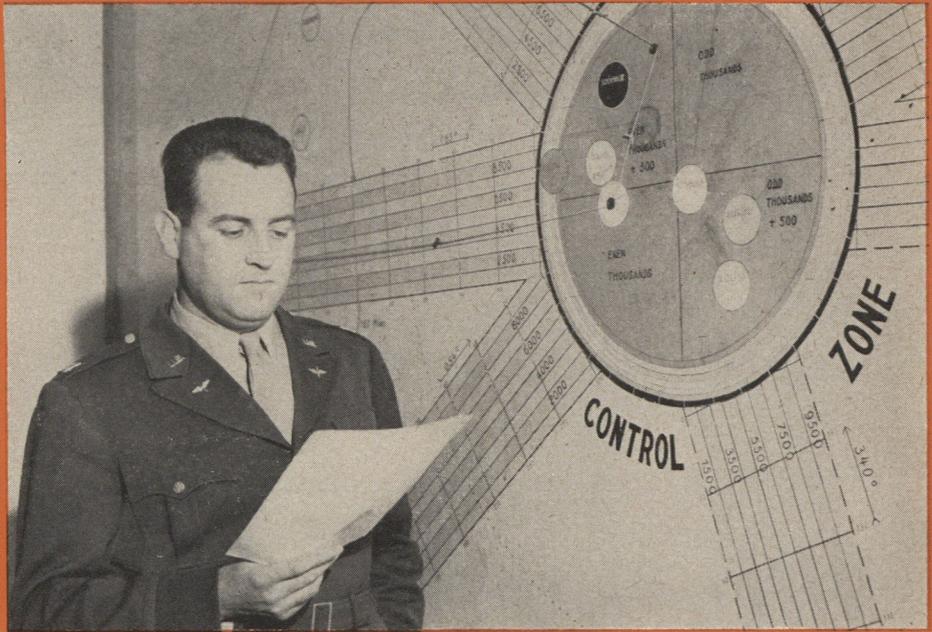
Fast as the Thanksgiving operation was, however, it will be even faster on Christmas. For by then the new American-built airdrome at Tegel will be moving into full scale operation—a fact which in itself constitutes the biggest Christmas present the German people could ask for. For on paper, at least, this will mean a doubling of supplies the US will be able to fly in during any one 24-hour period. Statistically this is about the way the operation breaks down: The military government has estimated that a minimum of 4500 tons of foodstuffs, medicine, coal and other essentials are required to keep the 2,500,000 people in the 3 western sectors of Berlin going. In airplane flights this means at least 450 C-54s carrying 10 tons each. Under ideal weather conditions Templehof can handle 1 plane every three minutes, or 480 a day, to stretch a mathematical point. Add to this 100 planes flown into Gatow by the British and you have a comfortable margin over the tonnage minimum. The joker is the weather. Under instrument conditions the number of planes Templehof can take care of is exactly halved. And of course there have been and will continue to be many occasions when even instruments won't work and operations have to be suspended entirely.

It is for this reason that the opening of Tegel is of such primary importance. Theoretically, at least, the minimum can be met even though instrument conditions prevail at all three fields all of the time—an eventuality which is quite unlikely. The French will neither operate nor service the planes which fly in and out of Tegel. It will be entirely an American operation, and although it will undoubtedly add nothing to the Christmas joy of the Russians, the activation of the field practically assures the success of Vittles through the winter.

## Cooperation Limited...



A German child steps from a Berlin bakery with bread made from the flour flown in by the airlift. Communist newspaper headline says, "Airlift a Failure." Below, a line of C-54s waiting for the fog to lift at Tempelhof for return flight to US Zone.



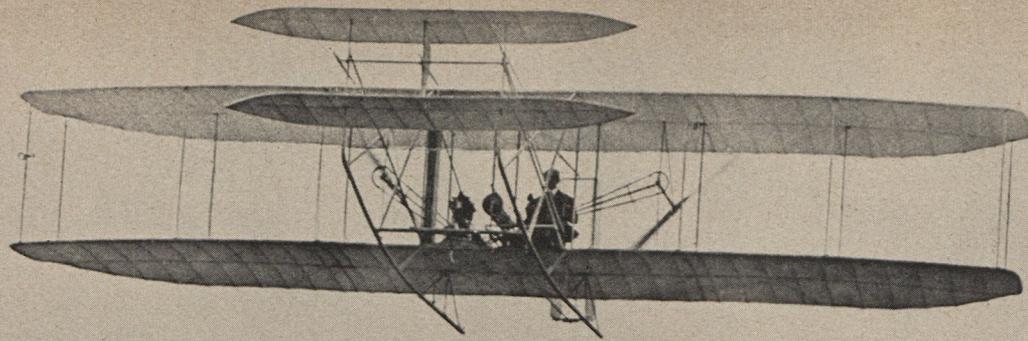
In Berlin the myth of four-power cooperation is carried out in the Air Safety Center where all powers report planes in corridors. Above, US Capt. V. H. Gookin.



Above left, Russia's Capt. Galkin reads a paper backed novel. His flight information board is empty of entries. Right, the US board is entirely filled.



With a bored interpreter at his side, Capt. Galkin reports "large number of Yak fighters in Brandenburg (US corridor) area." Few additional details are given.



Proud in its historic achievement, the original Wright Brothers plane soars to altitude of 30 feet in an early flight.

# KITTY HAWK'S LAST LANDING

Forty-five years after its initial flight the world's first plane is sent to Smithsonian

**F**orty-five years ago this month Orville Wright, a bicycle salesman of Dayton, Ohio, made the world's first flight in a machine-driven heavier-than-air craft. It was a hop of 40 yards in length and 12 seconds in duration. The highest altitude attained was 10 feet.

Today, completely outdone by its own progeny which spans the world in flights of 10,000 miles and altitudes of 40,000 feet, the airplane now known as the Kitty Hawk is being readied for its final landing at the Smithsonian Institute in Washington, D. C.

For 20 years the Kitty Hawk has been on display at the Science Museum at South Kensington, London. It was sent there by Orville Wright in 1928 as the result of a running dispute lasting for many a decade between himself

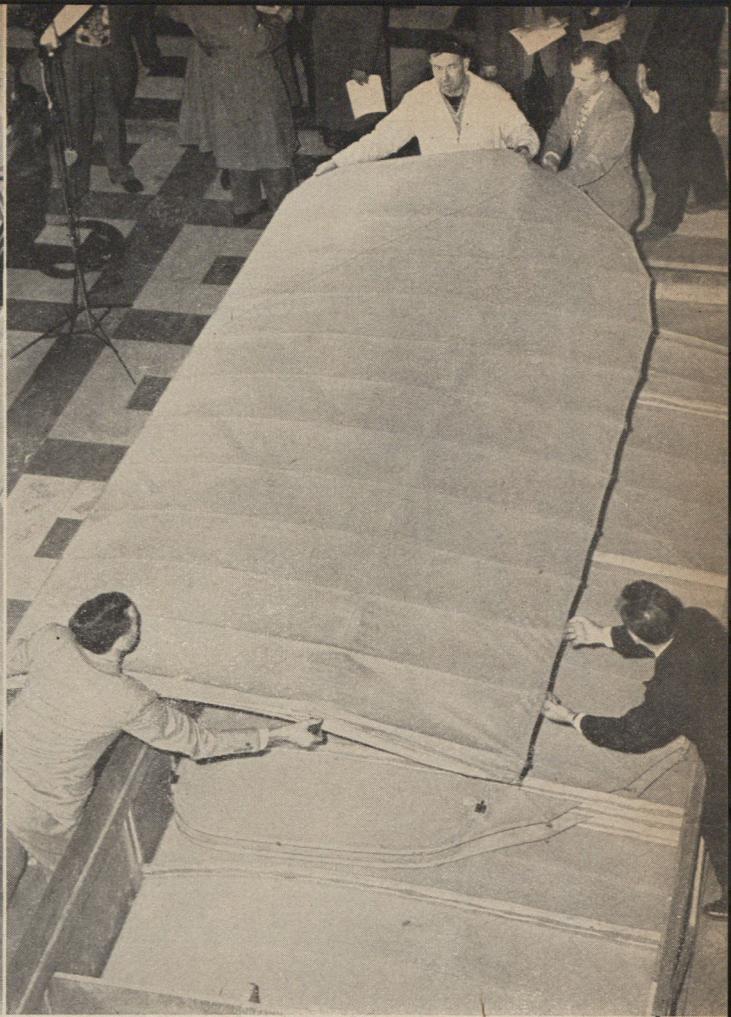
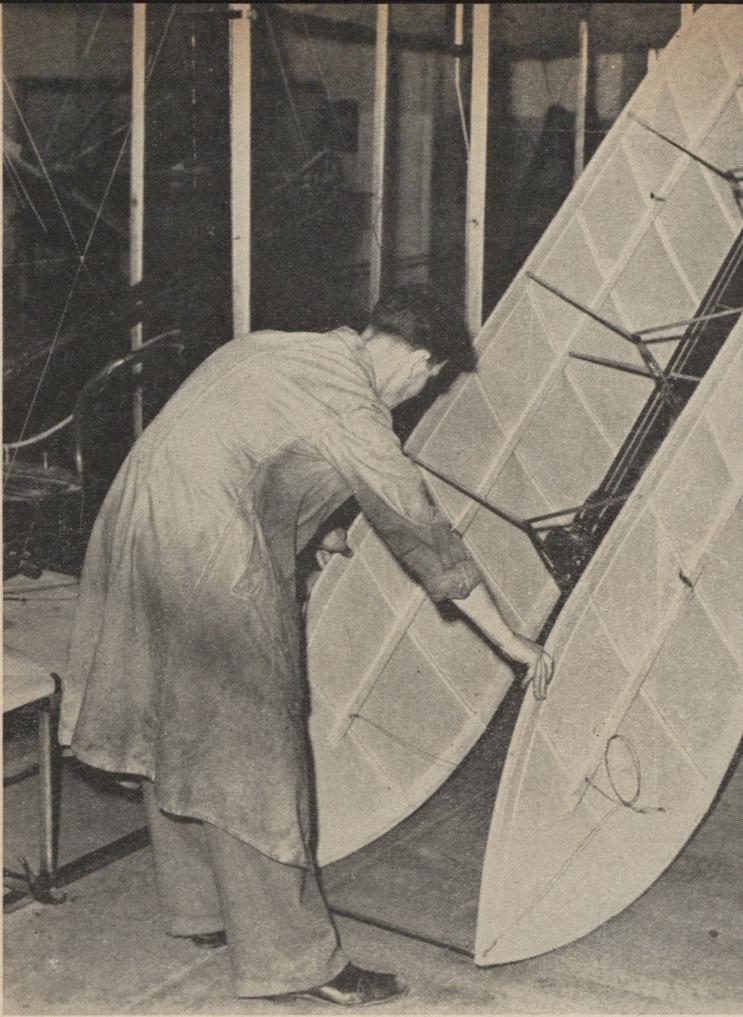
and the Smithsonian as to which actually was the first plane to fly—the Kitty Hawk or the one built by Dr. Samuel P. Langley, the Smithsonian's one-time director and secretary. Actually it was not until 1942 that the Smithsonian issued a statement of regret acknowledging to Wright's satisfaction that the position the Institute had taken on the Langley plane could not be supported by fact. It was the publication of this paper that cleared the way for the plane's return to the U.S.

But the squabble that sent the Kitty Hawk to London is of relatively little significance compared to the astonishing interchange between the two Wrights and the US Army at the time of the Kitty Hawk's development.

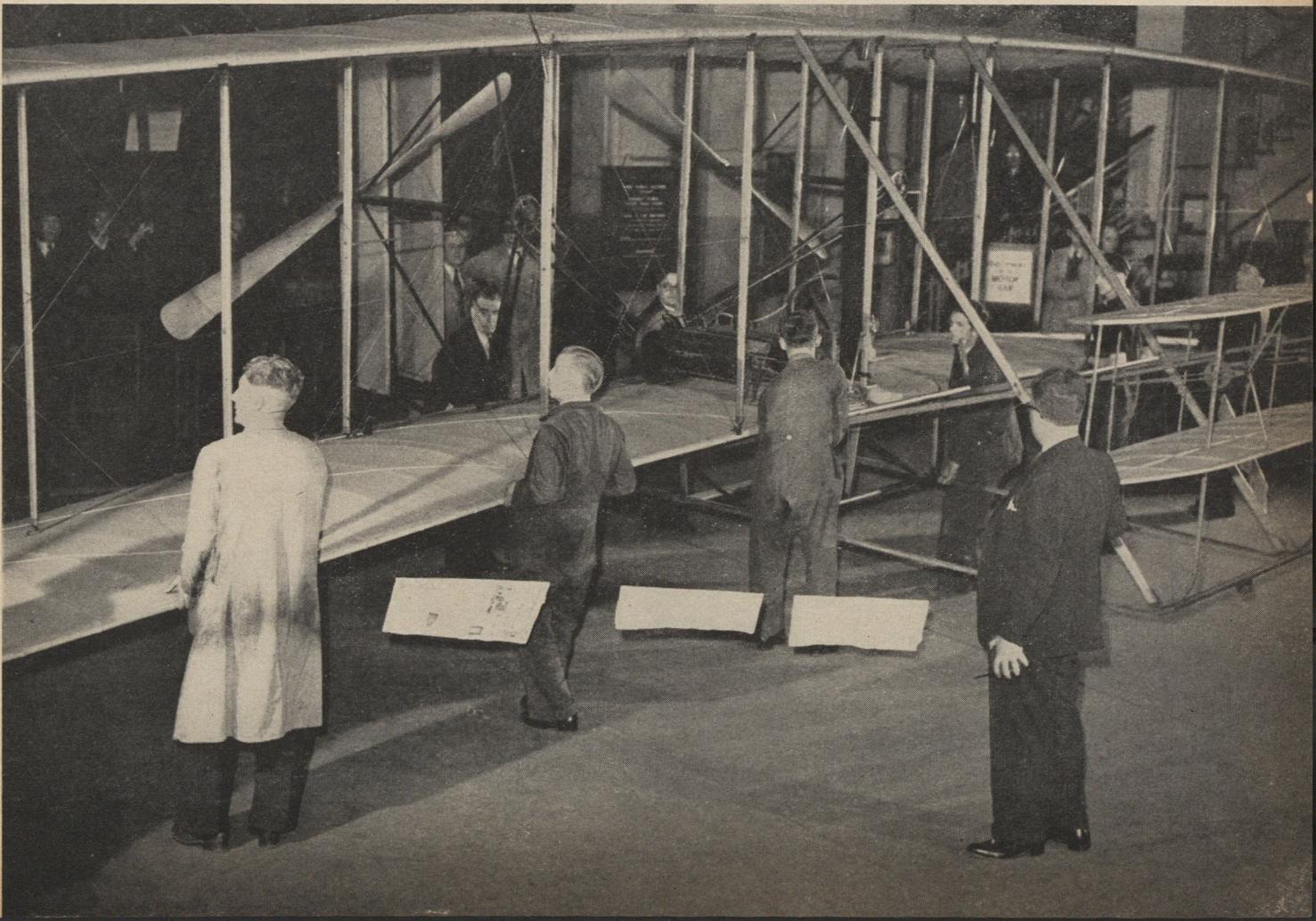
On January 18, 1905, the Wrights,

in trying to sell the practicality of flying to the Army, wrote their congressman as follows: "The numerous flights in straight lines, in circles, and over 'S'-shaped courses, in calms and in winds, have made it quite certain that flying has been brought to a point where it can be made of great practical use in various ways, one of which is that of scouting and carrying messages in time of war. If the latter features are of interest to our own government, we shall be pleased to take up the matter either on a basis of providing machines of agreed specification, at a contract price, or of furnishing all the scientific and practical information we have accumulated in years of experimenting."

The letter was forwarded to the  
(Continued on page 48)

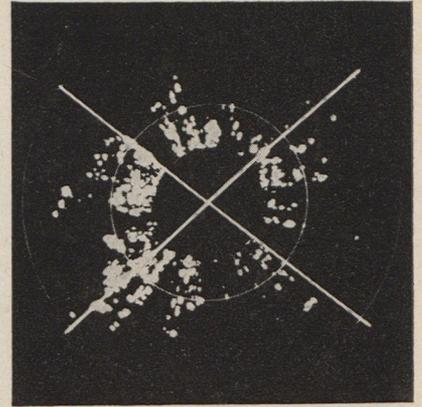


Above left, workmen at the Science Museum in London remove the elevator of the Kitty Hawk prior to shipment to the US. Picture below was taken shortly after the plane was lowered from museum's ceiling. England has already made plans to replace original with a replica. Above right, a wing section is removed after plane's arrival at Smithsonian. The craft was shipped home in three crates—two of them were the same ones used 20 years ago in the shipment to London.





Veteran of all-weather airline was General Duke, the squadron mascot. The general had his own parachute and had logged 200 hours when schedule ended.



Screen of radar scope used on ground to catch planes within 40 mile radius.

## END OF THE LINE

**USAF flies scheduled airline  
two years with perfect record**

**By Orville Splitt**

**O**ld Man Weather, veteran nemesis of the airman, has finally taken a decisive licking. An elite group of Air Force airmen battled the crusty old gent for two years without losing a single round.

These men were the aircrews and radar technicians of USAF's all-weather airline which recently wound up full-time operations after more than 25 months of flying a perfect 2-a-day schedule under instrument conditions.

The all-weather crews, wearing the colors of Air Materiel Command's All-Weather Flying Center, logged their last scheduled flight on September 10. Flying even when the birds were confined to limb-length taxiing, they had—since August 1, 1946—flown the 375-mile stretch from their home station at Clinton County Air Force Base (near Wilmington, Ohio) to Washington's Andrews Air Force Base and return, 5 days a week with an average schedule deviation of only 30 seconds . . . Repeat . . . SECONDS! that's not a bad record considering that all flights were made under actual or simulated instrument flight conditions.

The notation "Cancelled" never appeared on the airline's flight operations board although on two occasions All-Weather flights did not land. One time a flight remained in the traffic pattern over Washington for four hours waiting for CAA permission to set down. The boys just got tired of hanging around so they went back to Clinton County. The other time landing gear

*(Continued on page 46)*



The above picture is no fake. This is actually the kind of stuff the green ticket men flew in regularly without deviation from their schedule of more than 30 seconds. Pilot of this C-54 said he had more trouble taxiing than he did landing.

When the weather wasn't good enough, that is when the sun was shining, all-weather pilots wore blue goggles, below left, which prevented their seeing through orange windshield. Below right, the radar traffic control unit at Wilmington.



# Last Match



If you plan to use your undershirt for a distress signal  
be sure you get the kind that burns

By Lt. David M. Small AS TOLD TO CAPT. ALLEN C. RANKIN, JR.

December 1943: This was Lt. Gen. Ira Eaker's last month as boss of the 8th. His boys gave him something to remember them by. On the 13th they dropped a record number of bombs (1613 tons) on Bremen, Kiel and Hamburg. On the 24th they established a record in number of aircraft dispatched in a single day—650 heavy bombers with fighter escort. In the Pacific records were falling too. The 14th Air Force announced at the end of the month that 125,000 tons of Jap shipping had been sunk since September. Closer home, a lieutenant with a worn out undershirt was taking off from Anchorage, Alaska, in an old B-18 . . .

A man doesn't think much of his undershirt until it saves his life. Mine under my flight jacket was cotton, the same kind I had bought for years back in my home town of Oxford, Mississippi. Besides, this undershirt was worn out, and I gave it less than no thought at all as our B-18A lifted from the runway and dropped Anchorage, Alaska.

So long, Anchorage! We grinned from ear to ear. Lt. Oscar Cook in the pilot's seat, myself beside him as copilot, and the crew huddling exuberantly together in the rear. So we were going to escape, were we, if but momentarily, from Alaska's green firs, its white ice and deep blue water—and its silence? We thought we were.

I had put the memory of a year in the Aleutians and the vivid mental picture of two bomber crashes behind me. Now, I thought about nothing but getting home.

All day our two ships, being ferried back in exchange for new ones, held their formation. Like two geese, we roared along over waste and water and ice in a dead straight line for home.

More of the same the next day. It was bright noon, and we still roared along, Maj. Kenneth Northermar piloting the head ship and we sticking dead on his tail. Suddenly our ship lurched.

Major Northermar's voice snapped into our radio: "Your wing's on fire." The rest happened quickly. Fire wrapped the wings—and the wing was full of gas—then the right conked out.

"We're gonna have to go," said Cook, wrestling with the controls. Through drawn lips he said, "I'll tell you when to tell 'em to go."

I ran back in the ship's belly and checked the chutes. The men were standing at the open door, ready.

Cook fought to get the ship over land before he let them go. He was trying to make an island off Prince of Wales.

"Now!" he said. I gave them the high sign, and we no longer had a crew. Cook and I scrambled out the top hatch and jumped together.

As my chute jerked open I saw my friend whiz down in front of me. I watched him until he disappeared behind a mountain. I don't know whether he was hit by the ship or not, or if he ever pulled his ripcord, but the chute didn't open. Later, I found that four crew members had met death on striking the ice water, that only the ship's engineer and I had survived.

That blue ice water was coming up fast, and the wind was taking me farther out from land. To land in the water was death. I dumped my chute hard on the land side and fell as far as I dared. Then I let the chute fill again, and hoped.

I hadn't hit in the water. My face was smashed and my back sprained. I was dangling by my chute from the top of two tall fir trees. Just dangling. It was a long way down. I knew if I kept swinging up there I'd freeze, so I unbuckled my straps and let go.

Snow broke the fall, and I bogged down waist-deep in it. I knew I should do something, but it hurt too much to move. I finally crawled under a tree and stayed there. Two hours must have passed before I got my bearings.

I knew I would freeze if I didn't get up and exercise, and keep exercising. There was a sheet of ice on my flight jacket. I groped for my emergency kit, then remembered my fingers had been too cold to get it off the chute in the tree.

The watch on my wrist said 12:20. It had stopped when I hit.

I struggled toward the beach.

Then I knew why I couldn't see. I was being blasted by a snowstorm. I had to find shelter. My head was clearing.

I stumbled upon a dead tree which had fallen across a ravine, making a dry burrow. I crawled in and tried to build a fire.

Boy Scout tricks failed. The letters I took from my pocket for kindling

wouldn't catch in the damp leaves. Desperately, I struck match after match.

When only one match was left, I pocketed it for possible future use and went on exercising, waiting.

I was on the beach. I didn't know how long I'd been there. It seemed ages. It must have been almost midnight when the storm abated. All I could think of was the pain in my back. But I kept moving around as much as I could. I had to. I don't know why, but I had one little tune in my mind and it stuck. I went on whistling it into the icy wind, "Ninety-nine Miles from Home. . . Ninety-nine Miles from Home."

I sat down to rest.

Terrified, I realized I had dozed off just for a moment. The "twack" of a drove of ducks hitting the water near by had awakened me. I stood up, knowing I must not sit down again. I went on exercising.

I could hear a boat whistle. The thought that somewhere down the beach the boat might be looking for me gave me hope.

Suddenly the cutter came around the point, with lights on its decks and a big searchlight swinging in toward the shore and combing the mountains behind me. I screamed at it until I no longer had a voice, but I could tell the boat was slipping past, leaving me.

Then I got the idea. As the boat turned to clear the point, I ripped down my outside clothing and snatched off my undershirt. I bent over that crumpled bit of cotton, my stiff fingers holding the last match. I struck it and the tiny flame flickered.

Then it caught the cotton and flared like a bonfire as I waved the shirt. You never saw a prettier blaze than that!

I was still waving when the searchlight turned slowly, deliberately, and pinned me in the middle of its shaft.

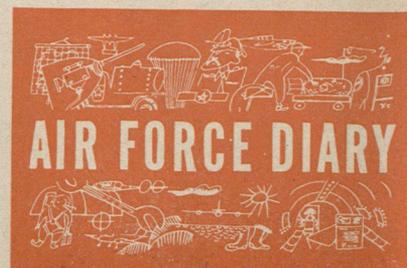
I sat down when the light hit me. All the strength went out of me, and I flopped. I could hear the ship's dory being lowered from the cutter to come get me. I knew I was saved.

That was last February 8. For a long time after that, I thawed out in a string of general hospitals. When I got out, I went into a clothing store and bought some underwear.

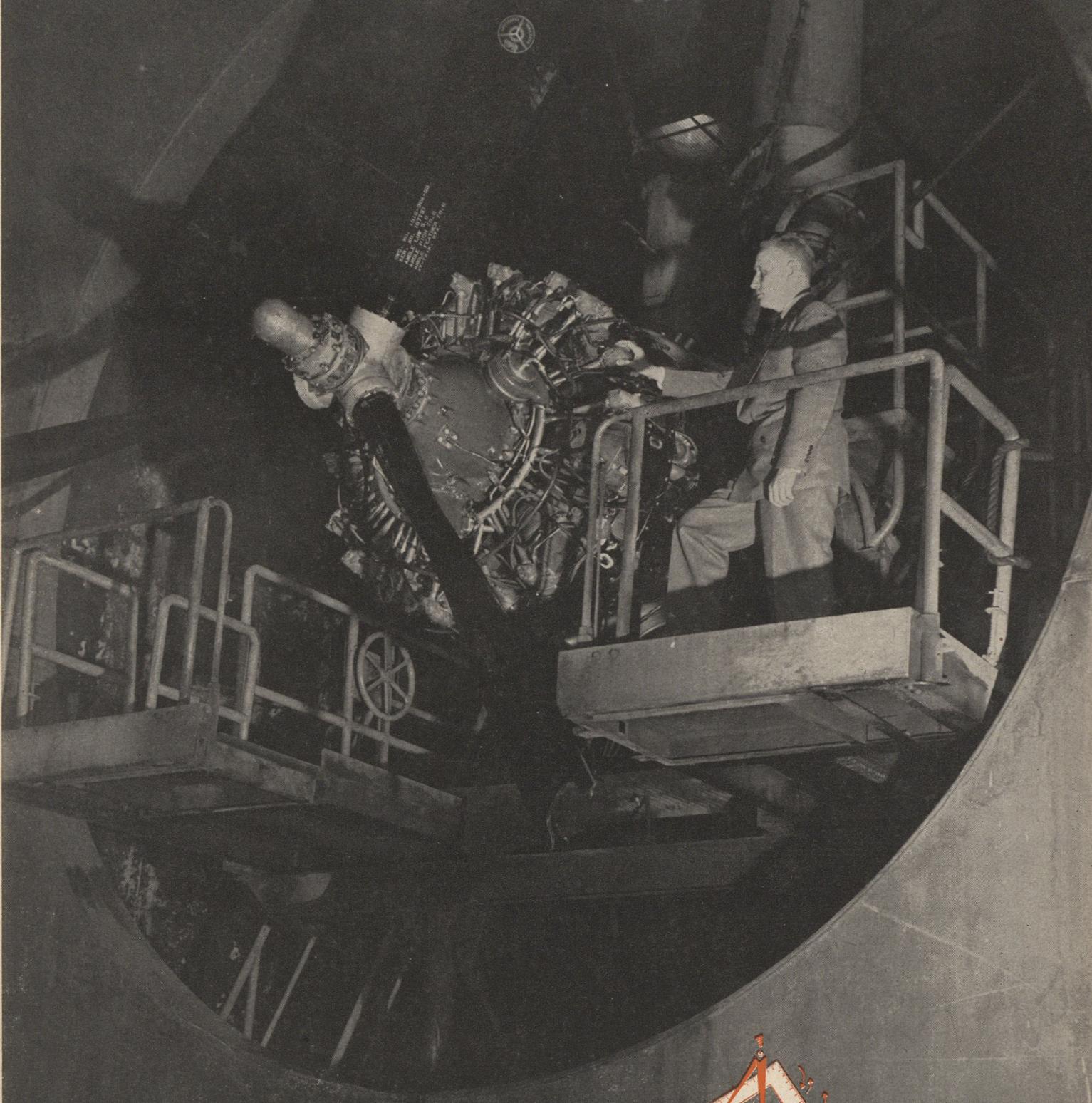
I didn't just say: "Gimme four pairs of those things."

I said: "Gimme four pairs of UNDERWEAR . . . cotton . . . Mississippi cotton . . . the kind that'll burn."

From AIR FORCE DIARY, edited by James H. Straubel and published by Simon and Schuster, \$3.75. Copyright 1947, by Army Air Forces Aid Society.



The Turbo-Cyclone compound engine ready for test.



*Technique*

A NEW DEPARTMENT

# EVERYTHING BUT THE SQUEAL

Engine manufacturers, like meat packers, are learning to put the by-products to profitable use. In this case it's the engine's exhaust energy

By William S. Friedman

The meat packing industry found the trick a long time ago. When they butchered a pig they invented some sort of use for nearly "everything but the squeal." There was no waste—no by-products that couldn't be salvaged.

The builders of airplane engines, on the other hand, haven't been so fortunate. Until now the "by-product" of the four-cycle engine, exhaust energy, has been of little real value. There has been a constant struggle on the part of engine builders to convert the waste energy that pours from every exhaust stroke into useful thrust without interfering with the primary operational effectiveness of the four-cycle engine. The attempts have varied from simply pointing the exhaust stacks backwards, to achieve some crude reactive effect, to the complex turbo-supercharger, which harnesses the waste gases to the task of driving the supercharger impeller. Still, only a portion of the energy released by the oxidation of the petroleum derivative inside the cylinder finally has been transformed into propulsion.

It is unfortunate that the spectacular nature of gas turbine power plants and their current development appears to have eclipsed a couple of developments which are actually of more immediate import in harnessing the squeal. Both of these developments deal with re-conversion of exhaust energy into useful thrust, and are apt to be in operational use long before the more spectacular power plants are ready for practical application.

These two major developments are primarily military, but their application to civilian flying, particularly in the business of long-range and trans-oceanic operation is too obvious to require proof. Both are devices, appended to proven power plants.

One of these is a development by the General Electric Corporation and is, in essence, an improvement and extension of the turbo-supercharger. It is the Variable-Density Turbine and it adds some 500 horsepower to the largest production piston engine extant—the Pratt & Whitney Wasp Major. The other is the Wright Turbo-18, a system for feeding the salvaged power from the exhaust directly back to the crankshaft, saving 20% of the fuel.

The Variable-Density Turbine (VDT) takes the exhaust gases from the Pratt & Whitney 28-cylinder engine, and feeds it to the GE CHM 2-stage turbo-supercharger. This device absorbs some of the energy while compressing the air required for the intake system. The gases are then discharged rearward through an orifice whose size is varied to obtain the best division of exhaust energy between supercharging and direct jet thrust. Thus, the energy can be utilized to deliver power to the propeller shaft, the supercharger or to create straight jet or reactive thrust.

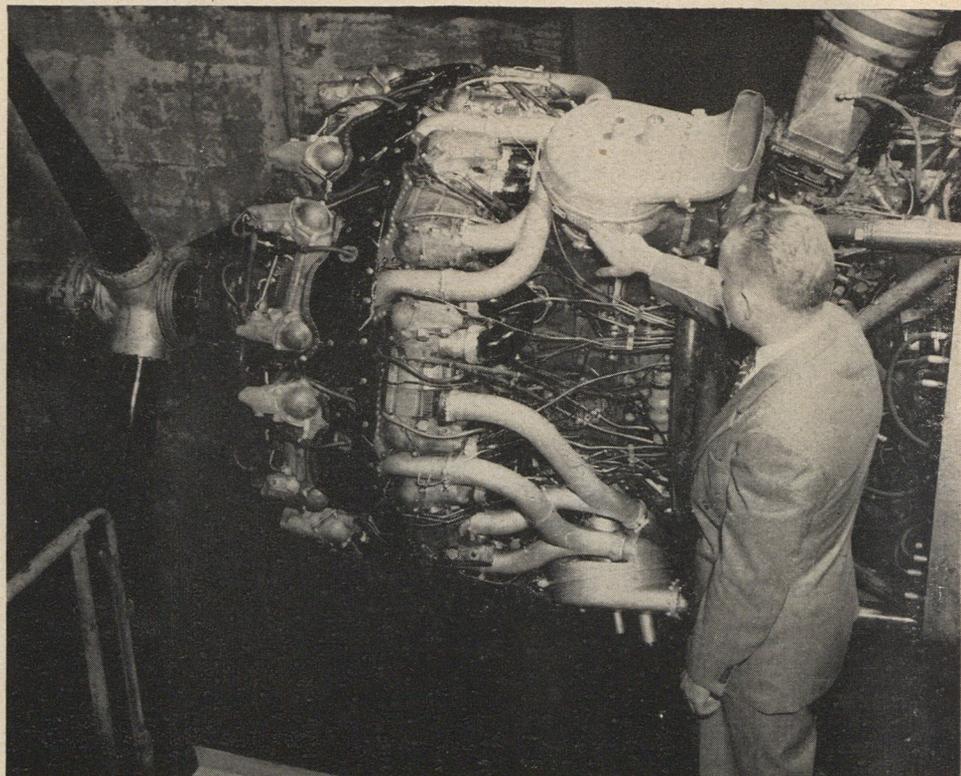
In the VDT power plant, the throttle can be used only at low power settings. At higher power readings, the engine output and speed are regulated by a control which restricts the variable area discharge nozzle. This determines the

amount of exhaust energy extracted by the turbine for supercharging.

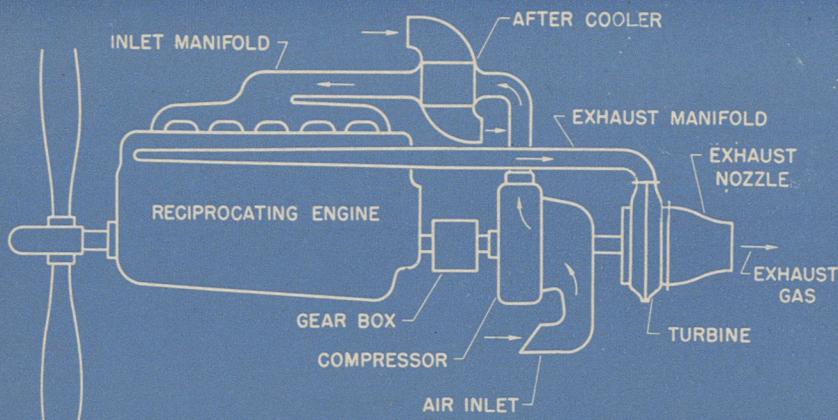
In turn this determines the amount of air to be supplied to the engine. The elimination of throttling in the air intake passage-way reduces air entrance losses.

The VDT power plant is being installed in the Boeing B-54, originally known as the B-50-C. The power plant change will not only increase its range and speed, but will also permit approaches to the target at an altitude of over eight miles.

Direct compounding, the business of putting the lost energy directly back into the crankshaft, has been a power plant designer's dream for many years. Like the turbo-jet itself, its arrival was delayed by the absence of metals and fluid dynamics required to make it



W. G. Lundquist, chief engineer of Curtiss-Wright's engine division inspects Turbo-Cyclone 18 compound engine mounted in test stand at New Jersey plant.



practical. Long-range and mass bombing during the latter stages of the war brought out the importance of fuel economy. Encouraged by the British Air Ministry and by the NACA, Allison Division of General Motors and Rolls Royce built prototype compound engines and conducted tests. At first the results were not particularly promising, as the early compounding systems caused a good deal of back pressure and thus robbed the piston engine of nearly as much power as was salvaged.

Moreover, the propeller-driving gas turbine loomed large in the researcher's eye; light in weight, its efficiency curve rapidly rising, both military and civil planners pressed for its development, at the expense of the compound engine. However, the advent of a cold war, threatening possibly to turn hot, made

some planners question the wisdom of putting all the power-plant eggs into the prop-jet basket. On the basis of its stop-gap value alone, work on the compound engine was encouraged, and the Wright Aeronautical Corporation tackled the problem.

Wright's engineers selected the 2700 ph Duplex Cyclone, an 18-cylinder 2-row radial for development. A practical, proven power source, it was left undisturbed back as far as the rear accessory case. To this section was appended a two-stage, two-speed, gear-driven supercharger. The 18 exhaust stacks were marshalled by means of siamese connections into 3 groups of 6 each. The gases were directed by means of vanes to three small turbines of the "blow down" or velocity type. These turbines were designed to render

the minimum impedance to the flow of the exhaust gases. The turbine wheel, spinning at a very high rate, exerts little if any back pressure. The turbines deliver the power through shafts, an eight-to-one reduction gear system and a coupling to the back of the crankshaft and eventually to the propeller.

The bare collector ring of the power plant might have exerted some 450 pounds of static thrust. Through compounding, this thrust waste is reduced to less than 150 pounds. Even this loss could be recovered by further compounding, although its use as direct jet or to draw cooling air through the cowl is more practical.

Because of the relative simplicity of the setup, no additional engine controls are required and aircrews are not required to take any transitional training to handle the new units. In many instances, the Turbo-Cyclone 18 can be installed in airframes designed for the old Duplex without major modification. The power recovery unit also acts as an engine muffler, reducing the noise level without cutting power.

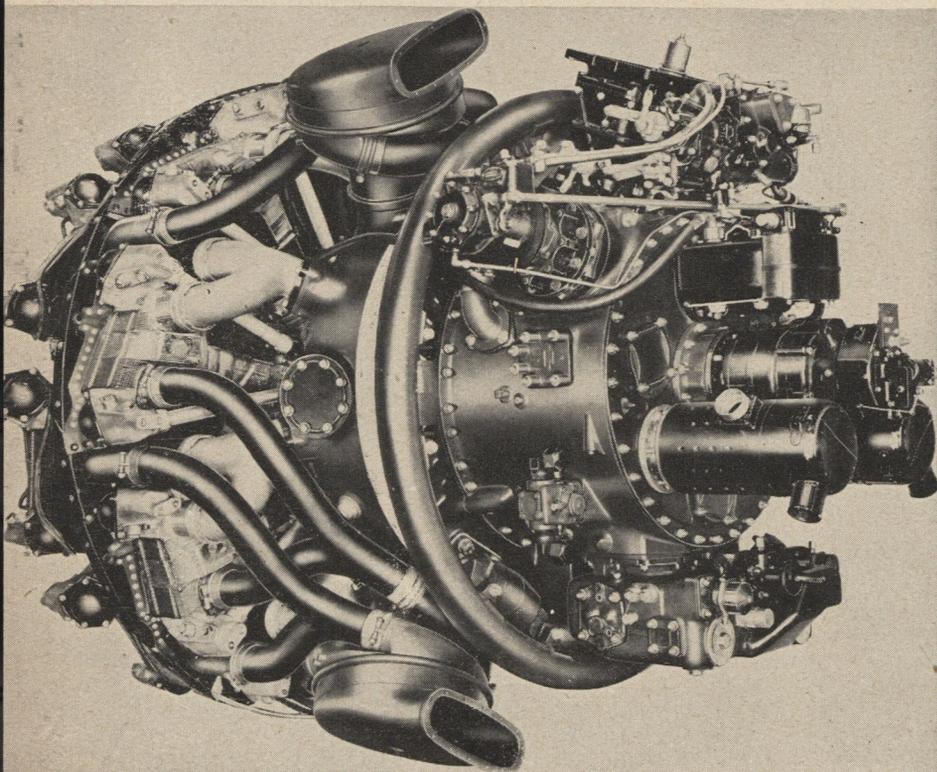
The most important gain achieved by compounding is a flat 20 percent increase in fuel economy. In military aircraft, this means a jump in cruising radius or a jump in bomb load. In the B-36, for instance, compounding could mean almost a doubled bomb load at extreme ranges.

However, the real significance of the 20 percent cut in fuel does not hit home until one considers what it could do for our ailing air transport industry.

On the transatlantic run, the adoption of compound engines in the Lockheed Constellations and DC-6s would result in a range jump sufficient to allow the total elimination of the Gander stop, a pause for refueling which generates virtually no traffic and whose local weather conditions have caused considerable loss through delay. This stop has to be manned and supplied. Every take-off and landing is expensive in itself since it requires procedure, traffic handling as well as wear and tear on the airframe and engine. A general survey of North Atlantic operation indicates that the Gander stop and the expense involved in its operation totalled more than the overall deficit of the route operations involved. Even if the stop were retained, compounding would increase the pay load over 4000 pounds on the New York-London run.

Or figure it another way. The domestic airline operators purchased \$55,000,000 worth of gasoline in 1948. Twenty percent of this (\$11,000,000) could make a significant dent in the previous year's \$40,000,000 loss.

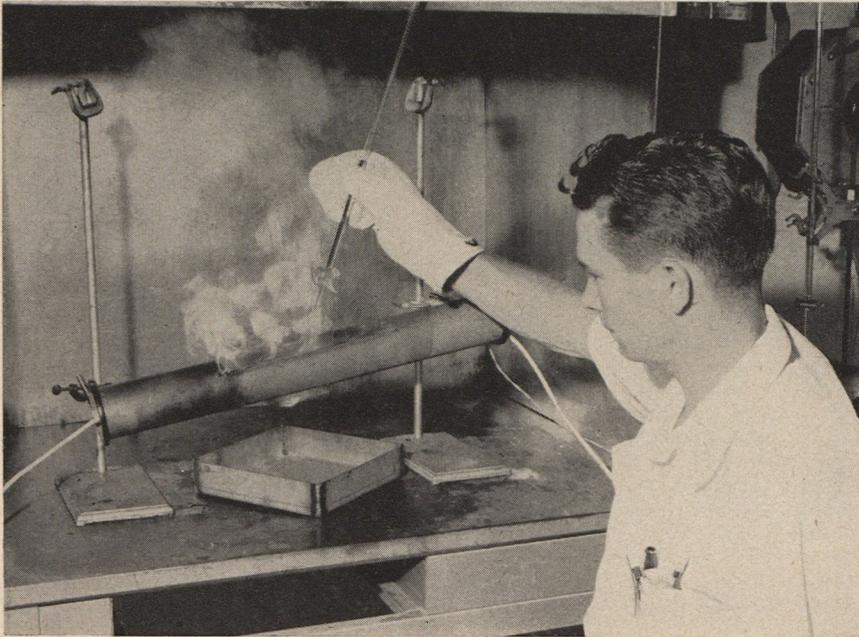
The strides that aviation's technology has made toward solving military and civil aviation's operational problems are heartening. If the airlines can find financial means of putting these technical advances to work, the future of the air transport industry might also be better. Perhaps the harnessing of exhaust energy, like the long-sought use for the squeal of the pig, may aid in making long-range air strategy workable and airline profits possible.



A three-quarter rear view of engine. Most important gain achieved is 20 percent increase in fuel economy—which means bigger pay loads and more range.

# NEW HYDRAULIC FLUID PASSES FIRE TEST

Skydrol has autogenous ignition point of 1050°F, and service tests indicate it will hold lubricity twice as long as conventional fluids.



In simulated hot manifold test, the new hydraulic fluid is dropped onto a red hot tube of steel heated to 1300°. Instead of igniting it merely vaporizes.

Experts in airport fire fighting and in airplane fire prevention have conceded that one of the major hazards to safe operation in large aircraft is the inflammability of conventional hydraulic fluids. Even the smallest leak in the complex plumbing system that delivers motive power to flaps, landing gear, bomb bay doors and other moving units, results in a fine, highly inflammable spray which could be turned into a catastrophic fire by the smallest spark. For many years, this hazard was accepted as a necessary evil because the work demanded of hydraulic fluids called for little change in viscosity and for high lubricity. The fluid was called on not only to carry the energy but also to lubricate the high speed pumps that are the pulses of the system.

It was this hydraulic hazard that motivated many designers to adopt electric and mechanical movement for auxiliaries, despite obvious advantages of hydraulic hook-ups.

Douglas Aircraft, as a matter of engineering policy had been committed to hydraulics for many years. However, experiences early in the war indicated that, particularly for military aircraft, something had to be found to take the place of petroleum-based fluids. They were not the only organization concerned with the problem. The Aircraft Industry Association had long sought a substitute, and had created, for laboratory comparison, a reference fluid designated as HS-1. While this was not a hydraulic fluid, its combustion characteristics were the same as an ideal

resistant hydraulic fluid. The problem was to locate or create a fluid whose physical properties made it a workable hydraulic fluid, and whose fire resistance was as good as the control.

Douglas Aircraft started their own program two years ago, testing first existing fluids and then some 78 suggested formulas. During this program, Monsanto Chemical Company entered into the picture, and between the two staffs, a totally new ester was developed, a synthetic possessing better hydraulic qualities than the petroleum product previously used, and having a much higher ignition point. The fluid, designated as Skydrol, has an autogenous ignition point of 1050°F as compared with 750°F for the AIA's reference fluid, or the 500°F for hydrocarbon.

Skydrol's service tests indicate that it will hold its lubricity over twice as long as the conventional fluid, and will operate unimpaired down to -40°F. Over 4000 hours of operation at 160°F showed a viscosity loss due to shear breakdown ("pulling apart" of the fluid at high-speed turns) of less than 18 per cent. Presently-used fluids undergo over 30 per cent breakdown in only 2000 hours.

Besides being fire resistant, Skydrol is inert—it will not attack aluminum or its alloys, magnesium, copper or any other structural metal. It will not irritate the skin and can be stored in ordinary containers without special handling. However, because it is a totally new fluid, new types of gaskets and packings must be installed in systems using it.

# GIANT PRESS

The Air Force is considering use of a giant 60,000-ton stamp-out press for the speeded up manufacture of large aircraft parts in line with rapidly expanding aircraft production standards. The big press which would be the largest of its kind ever attempted, according to AMC engineers would mean huge savings in time and money.

Still in the formulation stage the project is under the direction of Richard F. Trimbach, a special assistant to Major General K. B. Wolfe (of B-29 fame) who is chief of Industrial Mobilization Planning at Wright Field. Working with Trimbach on the plans is a German scientist, Dr. Hubert Altwicher who developed a smaller type hydraulic press (30,000-ton capacity) at Dusseldorf, Germany during the late war.

Principal work of the huge press would be in the fabrication of large wing spars and huge metallic wing fastening discs which join the wings onto the fuselage. Now an intricate and complicated process involving a series of stamp-out and piece-together operations the giant press could accomplish the same end result with one operation.

# SELF-DETACHING COVER FOR PITOT TUBES

For a long time pilots have complained of operational sluggishness, sometimes complete negative operation, of the vital air speed indicator during critical phases of take-off and early climb maneuvers. Studies revealed that high among the reasons for this faulty behavior was the fact that pitot tube casings—protective coverings over the tube to keep it free of dirt and other interferences on the ground—were not being removed, thus rendering the speed indicator virtually inoperable until the speed of the airplane either blew off the casing or burned it off by friction heat. The result today is a new type pitot tube covering which automatically detaches itself after the airplane reaches a speed of 60 mph which means before the high-speed aircraft of today is half way down the runway.

The nuisance which never proved fatal—but might have been—was whipped by engineers in the Equipment Laboratory at Wright Field. It was a one man project. George R. Larkin, one of the laboratory's engineers, developed the new cover which utilizes a flap-like device that blocks the airstream and snaps loose the casing. Although still in the experimental stage, refinements incorporated in the idea on the basis of successful tests according to its inventor will undoubtedly put the self-detaching cover into general use in the near future.

The Larkin device is composed of three basic parts: the tube covering of a water-proofed canvas-like material lined with felt which slips over the thin

# TECH TALK

By Douglas J. Ingells

Now it can be told that the much talked about and proof tested Boeing XB-47, the jet bomber voted most likely to succeed, went through some critical periods of birth pains. It was originally planned to have the six engines located internally in the fuselage. Air Force recommendations, gleaned from lessons learned about simplified maintenance from studies of German jet designs, dictated the change which put the B-47's powerful jets in sling installations under the wings. The switch in plans meant increased bomb and fuel load inside the new bomber, responsible in part for the fact that today the plane can perform many of the range missions of our wartime B-29's carrying equal, if not greater payloads. Another aerodynamic characteristic about this aircraft which heretofore has received little mention concerns the thrifty use of fuselage space. The reason it can do the job of bigger bombers like the B-29 and still keep its slim, trim lines necessary for the increased speeds attainable is because inside the fuselage virtually every inch of space fulfills a definite purpose—bomb racks, fuel tanks, instrumentation—whereas in previous designs a lot of empty shell went along as so much excess luggage. It represents a new trend in aircraft structural planning.

Another range extender for jet planes evolves around building bigger aircraft. One new bomber will weigh almost half a million pounds, twice that of the B-36. Its range will be upped because it can carry more fuel. But in addition it incorporates jet engines driving high-speed propellers. The idea is to take advantage of the props for cruise range but still have greatly increased power over reciprocating engines for high-speed performance.

Incidentally, a conventional engine designed for 5000-horsepower has exceeded that output in test-stand performance. Dropped from top priority experimentation because of its complicated parts, excessive weight and size—no match for comparable power from the jet engines—it's still a good insurance policy to have around. At just under 5000 hp, it has powered a conventional aircraft in actual flight.

Although range extension is the principal problem taking up the time of our engineers and plane designers, another design problem is growing every day—structural shapes and controls. Thin leading edges for wings, for instance, definitely helped penetrate into the super high-speed performance regions. But the thin wings have a high degree of flapping tendency. Highly flexible, they make it a tough problem to hang on powerplants and other extrusions such as external fuel tanks and rocket boosts. Too, high speeds which put new strains and stresses on pilot physiological limitations may see cockpit controls rearranged for prone position flying. The pilot will fly his airplane on his belly like a youngster guides his sled in a belly-flop. The advantage, not explained too accurately before, is not that the change in position decreases the forces. It doesn't. The forces are still there. But instead of reacting unfavorably on a pilot's blood vessels and organs the full length of his body, head-to-toes, pull-ups and sharp turns affect him chest-to-back, or maybe simply through the thickness of a hand or finger.

Not only are they thinking of putting pilots on their bellies in future designs but they are also considering putting them in a closed capsule for high-speed, high-altitude bailouts. A projection of the ejection seat idea, the new plan calls for a complete cockpit-canopy-seat "blow out" which will permit the pilot to come down in a closed container lowered by a large parachute. Pressurized, the container takes him through the danger regions of the rarefied air. At lower altitudes he can bail out with a conventional parachute.

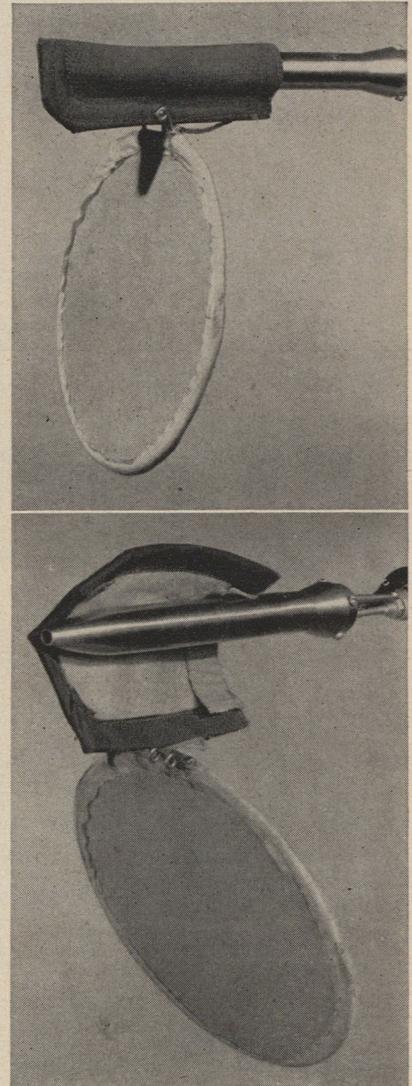
Continued on page 29

tube projection like a glove, "L" shaped flat steel springs sewed into two opposite sides and one end of the covering which make it pop open and free like the pop-out operation of a parachute pack; and a pressure disc, a simple cloth covered steel ring approximately seven inches in diameter which "catches" the airstream utilizing its force to rip off the cover.

New developments, now under experimentation, with flush mounted pitot tube installations may eliminate the need for the new type covering, but until these are perfected the problem has been solved.

## WRIGHT BOASTS TINIEST AND BUSIEST AIRPORT

Up on a hill-top, in the midst of webbing runways and laboratories at Wright Field is the world's smallest and busiest airport—a model flying field. Part of the model research program, the miniature flying field is complete



Top photo shows pitot covering secure. Lower photo illustrates way it is released when plane reaches 60 mph.

with runways, control tower and the facilities of a full-sized airport.

No miniature airport for the sake of airport design or terminal studies, this field is actually an airport for flying model planes. Everyday when the sky is clear and the weather flyable you can see small detailed scale models of virtually any type aircraft the army has take off from the runway and roar into the sky. A B-17 with four real engines

—each weighs about eight pounds—roars into the sky. A helicopter, detailed in scale as a replica of the famous R-5 designs ups-and-downs and hovers flying sometimes alongside a real full-sized rotorcraft. Or, it might be a flying wing that zooms around the course. The whole idea is to have a separate airport for the flying models which try out many new phases of design and development features.

It all began when Adam Stolzenberger of the Model Unit, Aircraft Laboratory at Wright Field "sold" the engineering division on the use of powered, radio-controlled or control line models to augment wind tunnel experiments in obtaining pre-flight data on various types of aircraft. An enthusiastic model builder, he now heads a separate unit which is concerned with dynamic models. The small planes are designed, built and fabricated in a big model shop laboratory where expert technicians are doing model maker's tasks with an eye to detail and craftsmanship which produces some of the most exact replicas of our biggest aircraft. Some of the models cost upwards of \$5,000 apiece, but engineers estimate that over a period of years the little gadgets will save the United States government many hundreds of thousands of dollars to say nothing of precious time that will be saved.

When it came to flying the models, however, engineers saw the need for an airport all their own. The model field on the hill was born.

It is unusual in that its runways are all one solid circle of concrete. In the center is a control line pylon. The models which fly under their own power are controlled by an operator in the pylon. He sits in a conventional pilot's seat having all the full-sized controls of a regular aircraft. Thin but strong wires connect to the model's control surfaces and the "pilot" flies them just like he would a full-sized airplane. Sometimes, too, the models built with radio control mechanisms so that an operator can fly them with a simple stick-box control system. He can hold it in his hands.

On some days when the ceiling is almost zero the models are flying, testing out some new device, when the big planes are on the ground. But from the roar of the midget engines you would think a whole fleet of planes was up there in a fog cloud.

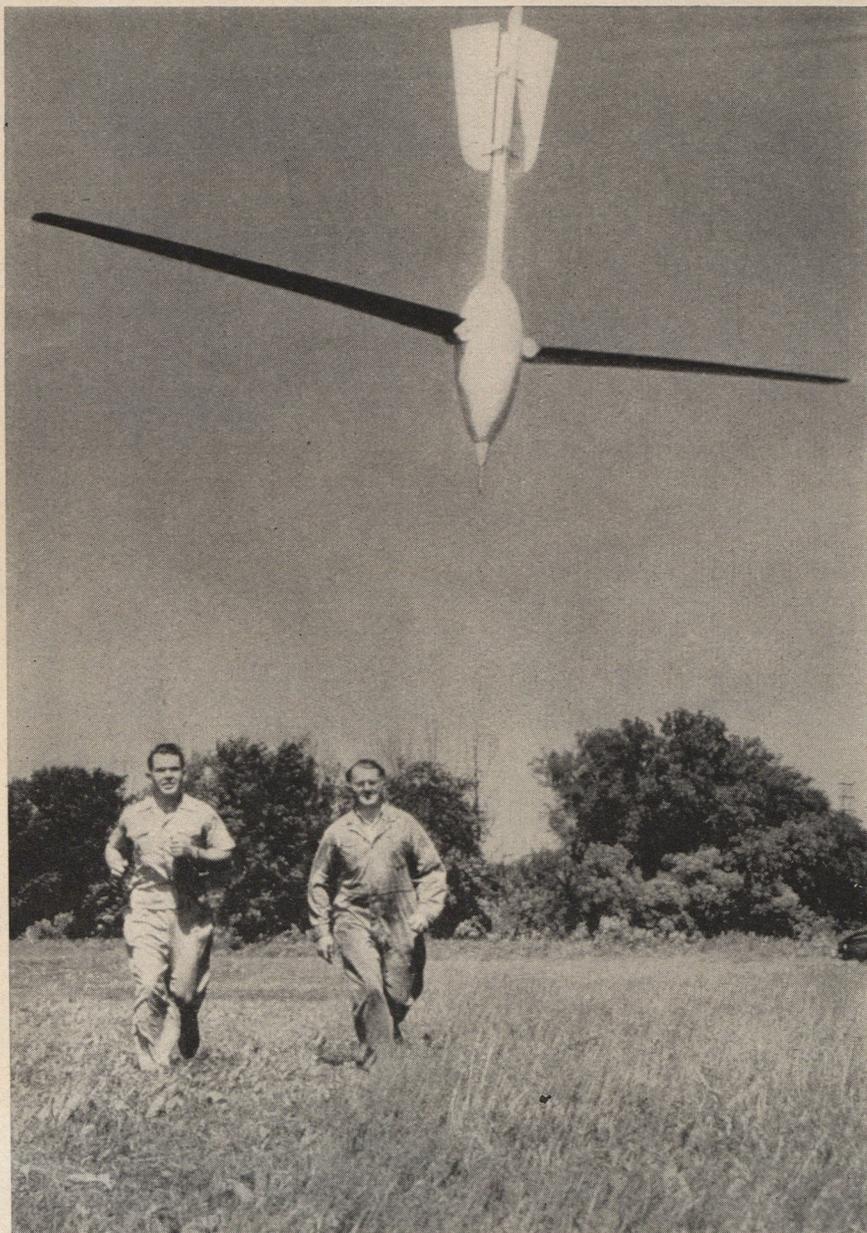
Recent tests at the model airport included flying two planes in close formation experimenting with a new rigid tow method being developed for gliders and other air-to-air tows.

## WEIGHING THE GIANTS

The Air Force is now using a specially developed hydraulic life recording scale to determine accurate weights of its super-duper big bombers. In principle it is not unlike the system used to weigh heavy rail equipment or, for that matter, the road scales used to get weights of large trail-trucks. They simply wheel a big plane onto a set of prescribed scales, calculate the resulting figures recorded and they can tell you within five pounds—over or under—how much the aircraft weighs.

Ever since we started building planes which topped the scales at 150,000 pounds or over engineers have known the need for new type weight measuring devices. The result is a flexure plate

## PREVIEW OF THE PARACHUTE OF TOMORROW



A parachute for the supersonic age. Inventor I. B. Benson (left), and air mechanic Joseph Willi rush up to retrieve a supersonic parachute during a test at General Electric Company plant at Schenectady, N. Y. The dart-like device was manufactured to bring safely back to earth the delicate instruments shot to altitudes up to 100 miles in V-2 rockets. Rocket

expels the parachute which reaches supersonic speeds in its earthward plunge before the spinning vanes open up and slow it down to 27 mph on landing. Although it is only an idea at present, engineers are toying with the possibilities of building a larger instrument of same design capable of holding a human being in capsule-like container in the center.

## TECH TALK CONTINUED FROM PAGE 27

A report from a west coast manufacturer puts a bit of the circus atmosphere in the upper air parachute test program. It says gorillas are being kicked out of planes at high altitude in experiments with high-speed sock openings of latest type parachutes. Other animals are getting free rides in the specially instrumented nosepieces of super rockets which penetrate higher into the atmosphere than ever before. They are the only living things to invade the outer sphere of the universe.

The extensive Upper Air Program has likewise produced some astonishing photographic records. A big question is why can't we take a squint at some of the color pictures made with Air Force cameras at altitudes above 60 miles which so definitely prove Columbus' theory that the world is round. The way they get these photographs back to earth is another parachute "first." A timer at maximum altitude blows out the camera installation. It falls for miles, then another timer snaps open a parachute container. The whole camera installation comes down safely . . . sometimes.

At Wright Field they are concerned with a new type of gardening. In one of the laboratories, for instance, they are growing virtually every type of fungus growth found anywhere on earth, growing it under controlled climates on propeller hubs, jet engine cowling controls, loading ramps, wiring, instruments and virtually every part of an airplane which might be affected by it. Some of the answers they have found already will prohibit having a forced layover for big planes in some of the tropical areas because of fungus in a propeller hub mechanism. That trouble grounded several of our big planes, incidentally.

In line with new automatic flight controls and improved radar installations, Link trainers, according to their manufacturer are about ready to come out with a new type trainer which can school pilots in GCA approaches and other radar and automatic flight trickery.

Runway lighting systems designed for both fog and darkness are subjects for extensive study by experts at the School of Aviation Medicine at Randolph Field. They are running tests with personnel to determine effects of various colored lights, angle of rays and brightness. There may be some changes in airport Christmas tree decorations next year . . . Similar tests with color indicate some dissatisfaction with present day US aircraft identification insignia. Don't be surprised to find a new design coming up.

Another new program at Wright Field is making model builders take on a new importance. Now, instead of just being satisfied with wind tunnel models which enable measuring the effect of airflow over a stationary model's surfaces, the engineers are developing detailed scale models powered with real midget engines, which permit studying airflow as the plane moves through the atmosphere—a more accurate simulation of actual flight performance. They even have a small model airport with webbing runways and everything. Some of the models are radio controlled. Others are control line models very similar to those which model airplane companies offer to youngsters (and grown-ups).

Something very new in the aircraft field is a recent report that a dirigible builder in Akron is making a new large airship. Reportedly it will be equipped for launching rockets and powered with jet engines. The Navy has expressed interest. So have a couple of airlines who see in it a new luxury bid for over-ocean travel. The idea is that some people want Queen Mary luxury and accommodations in an ocean crossing which they can't get in present day aircraft designs. A dirigible might provide this enticement. It would, admittedly, be slower but the airline industry is and always has been a strong bidder in the race for luxury and comfort as well as in the race for speed . . . Speaking of comfort, one cushion manufacturer has proposed a new

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type scale produced for the Air Force by Fairbanks, Morse & Company. It consists of five scale platforms necessary to accommodate the tricycle gear arrangement of bombers and the new tandem wheel arrangement of some of our jet designs.

For the more conventional type aircraft, like the B-29 or the heavier B-36, three of the platform scales are used. These correspond with adjustments to the landing gear arrangement of the aircraft being weighed: one scale under each of the supporting gear. Each of the main scales can hold at capacity 150,000 pounds. The nose wheel scale holds 50,000 pounds. An aircraft weighing in excess of 350,000 pounds can be weighed on the scales with present adjustments. But minor changes in the recording mechanism will permit weighing aircraft twice the size of any present designs—up 500,000 pounds or more.

A new feature about the system evolves around an adjustable—up or down—nose wheel platform. It permits the nose wheel to be lowered in order to put the aircraft in simulated flight attitude. Weight figures obtained thus permit corresponding adjustment in relationship to the airplane's center of gravity.

Originally the system of scales was limited to a trio of weight determining platforms, but bomber designs which feature tandem wheel arrangement dictated two additional scales. Actually these are tail-wheel scales used for measuring previous designs, now mounted in a new tandem arrangement to accommodate the bicycle type landing gear such as that on the B-47 bomber.

All the scale platforms are in fixed positions inside a large hangar to permit weighing aircraft under controlled temperatures. Experts can read the weight recordings on the large scales just as a butcher might read the poundage of a meat purchase. But in addition to the accurate visual readings, a paper tape is cut automatically, thus providing recorded data for ready reference at any time in the future.

At present the scales are used to weigh aircraft before and after modification and engineering changes; to check the manufacturers' weights following delivery of a new aircraft to the Air Force and to make annual weight checks required for aircraft in service. Data are used to establish correct basic weights, determine maximum loads allowable for certain type structures, and permit determining operating limits.

## Pilots Get "New Look" To Combat G-Forces

Pilots who climb into fast new jet or rocket designs will soon be wearing a "new look" flying suit with built-in protection against the G-forces experienced during sharp turns and pull-ups.

A development of the Biophysics

Branch of the Aero Medical Laboratory at Wright Field the suit is a modified version of the G-4 bladder-type vest and trousers worn by our pilots during the late war and still standard equipment for fighter jockeys. Designated the G-4A, the new model is a coverall patterned after the standard summer flying suit with sewed-in bladders to afford anti-G protection in the abdominal and leg sections.

During tests with personnel subjected to G-forces in the Human Centrifuge the suit reportedly offered considerably

increased protection against the activated forces of gravity. A principal advantage was the protection afforded parts of the lower body—from the last lower rib to the ankle and especially the crotch and buttocks region—areas which are not protected with any bladder arrangement to equalize pressure in the standard type G-suits. The new suit covers the arms, trunk and legs as a normal coverall whereas the earlier model is merely a skeleton suit affording protection to limited areas.

Comprised of two types of material

instead of just Nylon as was the previous design, the G-4A with its upper section made of Byrd cloth and lower section of Nylon offers better absorption features eliminating the discomforts of excessive perspiration. In addition, bladders which when inflated tend to help equalize pressure exertions on critical parts of the body, are larger than those in use on the standard G-suit.

Another advantage in the new design is that it affords tailored fitting because of new lacing and adjustment arrangements. Instead of simply a lacing adjustment—similar to the way a corset hauls in the waistline—the new suit provides a permanent “fix” for laced areas and after it is once tightened to fit the individual he never has to lace it again. The suit slips on and off by means of zippers across the chest and in the legs. Laced areas around the bladders automatically fit snugly to the wearer when the zippers are fastened. By comparison it takes half the time to get into the new suit than it does to squeeze into and lace up present types. Too, each individual has a suit best fitted to his own measurements. The suits come in five sizes: 38 short, 38 medium, 38 long, 42 medium-short, 42 medium-long. Height and waist measurements of a pilot determine his suit size.

On the strength of tests both at Wright Field and at March Field in California where pilots have worn experimental models of the G-4A this suit has been recommended to replace present standard equipment. It will be available for distribution in the very near future.

## New Altimeter Will Reduce Pilot Error

Simplified speedometer-like dial has one hand instead of three, and leaves little excuse for pilot error in reading altitude.

The simplicity of an automobile's dashboard speedometer with its single pointer and numerical counter may soon be adapted to aircraft altimeters to eliminate reading error, a frequent confusion peculiar to pilots using present type altitude indicators. Already in the experimental stage, the counter type altimeter which uses only a single pointer instead of the conventional trio of pointers is being given extensive tests by Wright Field Aero Medical Laboratory experts concerned with improvement of instrumentation and human engineering trends.

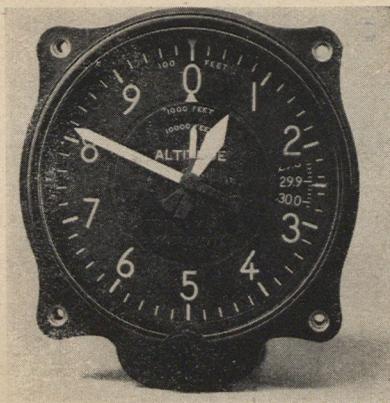
At present altimeters in use by the Army Air Forces are fabricated with three pointers operating on the same pattern as the hands on a stop watch, a big hand, little hand and sweep hand. The sweep hand indicates altitudes in hundreds of feet, the big hand in thousands, the small hand in 10,000ths. At a glance, pilots according to accident reports, claim they have mistaken their altitude readings by as much as 5,000 to 10,000 feet a factor which might easily cause fatal accidents.

Such reports led engineers in Wright Field's Equipment Laboratory's Instrument Branch to work out a new type altimeter specifically designed to eliminate the error. The experimental in-

strument, a replica in size and shape to conventional types and comparable in weight has a single sweep hand which indicates altitude in hundreds of feet. (Later, when and if more delicate diaphragming can be obtained with new ideas now under consideration the sweep needle may indicate in tens of feet, a decided improvement and advantage.) The altitude in thousands and ten thousands of feet is indicated with numbers which click off changes like the mileage indicator on your automobile dashboard speedometer.

Tests with the new altimeter against the old, during actual cockpit installations, have shown decided improvements in “reading error.” One test result, for instance, revealed a 15.9 percentage of errors reading 100-plus foot altitudes with the three-pointer, in-use altimeter as against a 3.5 percentage of errors using the counter altimeter. The difference was, test subjects reported, they had to watch three needles and found it confusing. But the single pointer was like looking at a Calendar!

Although the instrument has been developed and perfected in the Equipment Laboratory a similar design is already being manufactured for commercial use in private and airline operated aircraft.



The old. Three hands all pointing different ways—confusing at best.



The new. One hand and a meter on side—much less room for pilot error.

## NO MORE MAE WESTS?

If recent tests are anything to go by, then a new type over-water light-weight flying suit which incorporates a life preserver vest and an emergency sustenance kit may soon replace the familiar “Mae West” jackets. The suit has built-in buoyance features and the emergency kit is sewed in with zipper pockets which makes the whole paraphernalia a tri-purpose affair—garment, life-preserver, emergency kit.

At least one Air Force sergeant, Lawrence Lambert of Wright Field's Aero-Medical Laboratory test division thinks its the “cat's pajamas.” One day last, month, for instance, they took him up to high altitude in a big plane and he jumped out wearing the new suit, landing in the rough waters of Indian Lake which is near the Field. Just as he hit the water he “exploded” the buoyancy valves which puffed up his built-in life vest. He floated on the surface “like a cork” waving his arms with great freedom. It was even simple to get at his emergency ration kit while floating on his back and munch a chocolate bar until rescuers in a boat picked him up.

Designed especially for use by pilots in tropical areas—it has no anti-cold

## TECH TALK CONTINUED FROM PAGE 24

type air-inflated cushion for cockpits which will be tailored to fit.

Fuels experts are working on a new type water-separating unit to eliminate the "watering" in jet engine fuels during cold weather operation, a serious problem confronting jet aircraft in sub-zero climes. Use of a special activated chemical as a desiccating agent separates water from the fuel . . . Cold weather problems also are basis for a series of new experiments by Aeronautical Ice Research Laboratory experts atop Mount Washington near Gorham, N. H. Engineers are running tests with several different air foil sections to be exposed to icing conditions during 1948-49 icing season. The new wing shapes will be also flown in ice fronts, mounted on a B-24 aircraft equipped with intricate temperature and measuring instruments . . . The experts at Mount Washington base also have designed and developed new visibility meters, icing rate meters and special heated venturies for use in their experiments this year . . . Consolidated Vultee has redesigned its "hot-wing" anti-icing system which is based on the idea of piping hot gases along the leading edge of the wing to prevent ice from forming. The new system for both experimental and production aircraft incorporates that exchangers which will provide clean hot air flowing through the narrow tunnels in the wings defeating the problem of dirt and corrosion which hampered its previous system . . . A new type gasoline-burning, combustion heater designed for operation at temperatures of 70 degrees below zero is being performance-tested for possible installation in the M-2 tractor which ground personnel use for towing aircraft on the ground at cold weather bases.

Don't be surprised if you see numerous curlicues and other odd shaped but highly streamlined protuberances on some of the new airplanes. Various shapes, sizes and styles of antennae for communication and navigation instruments are being developed for mounting internally or externally on new aircraft structures. The aim is to reduce aerodynamics drag and mechanical failures found in certain types of present day antennae.

Jet engine operation may be simplified with the development of a new electronic control which governs speed, temperature regulation and compressor stall computing for proper operation of the engines from sea level to 50,000 feet, from a negative 65 degrees F to 160 degrees F temperature.

Special tests are being conducted in one of the large wind tunnels at Wright Field relative to new fire prevention and fire extinguishing techniques as applied to jet engine aircraft. Systems under test parallel safety factors achieved in conventional-powered aircraft.

The Materials Laboratory at Wright Field has developed methods for the investigations of fine powders, smokes, pigments and other particular materials and metallic surfaces. Use of an electron microscope permits more careful scrutinization of the fine structure of materials than previous methods. The new device offers about 50 times more resolution than the best light microscope.

Firepower in new high-speed bombers, according to AF Armament engineers has produced an interesting trend in turrets and their gun combinations. Instead of complex multi-gun installations, armament experts are concentrating on fewer guns in the turrets but faster rates of fire, increased projectile velocities and new intricate devices for ranging, aiming and direction to virtually guarantee hits.

A peacetime development engineered by Air Force equipment technicians includes a new, more compact, simplified light-weight, quickly-attachable insect spray dispenser for use on a standard liaison airplane. The new system is lighter than previous installations and aids in speeding up spraying techniques over wider areas . . . In line with weight saving programs, engineers have also developed a small light-weight airborne radio compass. It operates in the 100 to 1750 kilocycle band employing low-voltage tubes thus eliminating the need for high-voltage power supply.



Successor to the Mae West—and safer

features—the suit has integrated neck and chest flotation bladders which insure keeping the wearer's head above water, and specially designed leg pockets for survival kit and rations. No longer does the "bail-out victim" have to worry about losing his Mae West tie-on or his snapped-on emergency kit during descent. He's wearing them in one piece of clothing.

The suit itself is made of basket weave nylon. It is lightweight, comparable to the ordinary flying suit. Pockets are located in the trouser legs at the back of the calves and are large enough to contain necessary emergency articles such as: permutit kits, drinking water, "A" rations, life-raft charts and books, chap sticks, sunburn ointment, first aid supplies, flashlight, signaling mirrors, wrist compasses, police whistles.

The suit's circular neck bladder and rectangular chest bladder are inflated by an actuating cylinder. Bladders are so arranged that they will right the wearer to a 10-degree-from-vertical angle three seconds after he hits the water. The location of the bladders makes it virtually impossible for an injured airman to float face down if he should lose consciousness. The suit also has an oral inflation valve. The airman, himself, can blow it up like you'd puff up a balloon.

An auxiliary feature is a new container for one-man life-raft accessories. It is attached to the life raft which in turn is attached to the jumper's life vest element of the suit by a cord to insure against loss. The container is of light metal and contains complete survival equipment. It features a quick-release zipper which requires only a finger-touch operation.

# A-BOMBS AND AIR STRATEGY

In a world armed with atomic weapons the decisive period of any future war is bound to be short. Our entire concept of preparedness must be altered accordingly

By Bernard Brodie Associate Professor of International Relations, Yale University

## U. S. Cities Declared Atom Bomb Targets

New York, Nov. 15.—A Government official today declared the Nation's larger cities, including Washington, are becoming better atomic targets daily. Gayle W. Arnold, of the National Security Resources Board, warned the National Association of Estate Planners and their United States meetings today that, he said, the open country, separated by 10 miles of open country, would make it prohibitively expensive to A-bomb. Arnold said.

## Atomic War Defense Planners Urge Corps Of 500,000 Civilians

Proposal Maps  
Training Over U.

### CONCLUSION

In the previous articles in this series, Dr. Brodie has delineated means of employing the A-bomb in accordance with the numbers of such bombs available to any country at any given time. Having determined that whole new concepts of air strategy must be evolved, the next problem is to determine how these concepts will affect our over-all national policy. Here too, radical changes are in order. In the following article Dr. Brodie brings to the surface some of these changes—or their alternatives.

What adjustments does the A-bomb indicate for our over-all national policy? We have first of all to consider the consequence of the fact that in a world armed with substantial numbers of atomic bombs the decisive phase of a war between great powers is bound to be short. That will mean an accent, which at least for the US will be unprecedented, not merely upon preparedness in the old sense of the term—which involved mainly provision for great expansion of the military services and of military production after the outbreak of hostilities—but upon having a military establishment ready to shift to a war footing on very short notice.

We are already witnessing the stirrings of that recognition in the measures recently adopted to institute a peacetime draft and to build up our Air Force to 70 groups. These measures have been, to be sure, markedly stimulated by our current difficulties with the Soviet Union, but those difficulties have probably served merely to hasten an adjustment which was inevitable in

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any case. When and if we enter a happy period of relatively easy relations between the Soviets and ourselves, we can count upon our military leaders to carry out their unquestioned duty of reminding us that we are after all living in an age of atomic bombs.

This country has long been accustomed to the policy of having at least one branch of the armed services, the Navy, ready at least in theory to assume a war footing on short notice. The fact that the emphasis now shifts to the Air Force—that the atomic bomb threatens to deprive the Navy of most of its historic functions—makes a great deal of difference in the degree of effort necessary to maintain what is loosely termed preparedness. In the first place, the rate of obsolescence of the basic equipment of the Navy—that is, the warships themselves—has for the last 40 years been far lower than the recent and current rate of obsolescence of aircraft. That of course gives some indication of mounting costs. Coupled with that, and more important, is the fact that the atomic bomb has for the first time destroyed the invulnerability of the US to direct air attack from the Eurasian Continent. To be sure, there were bombs before the atomic bomb and aircraft which were steadily increasing in potential range, but no reasonably conceivable development of aircraft, at least along principles now known, would have made such attack a practical proposition on a sustained basis so long as one had to use chemical bombs. It requires only a brief digression to indicate why.

The problem of very-long-range bombing has never been simply that of getting a few bombs delivered to the maximum possible distance. Except for purely demonstration purposes (such as the Doolittle raid on Tokyo and our first B-29 raid on the same city from bases in China), it has meant carrying enough bombs per sortie to make militarily worthwhile the cost of the sortie. And since costs tend to rise with distance by something comparable to a geometrical progression, the barrier to extreme-range bombing has been that the necessity for carrying large payloads (of chemical bombs) mounts most rapidly just as the physical feasibility of doing so drops drastically. With an atomic bomb, however, there is little question of the sortie paying for itself at whatever distance it is physically possible to deliver it. Moreover, whatever developments the bomb may undergo, there is no necessity for its ever weighing more than either the Hiroshima or Nagasaki bomb. Thus, any improvement in the weight-carrying capacity of aircraft can be devoted entirely to the carriage of more fuel for either greater range or speed or both. There is no necessity for proportionately increasing the bomb load. Besides, as we have already noted, the fact that much larger costs can be accepted for sorties with atomic bombs than for sorties with chemical bombs means that in the former case the aircraft need not be retrieved, while in the latter case there must be a high

percentage of air planes that get home.

What do these new factors indicate concerning the future costs of military preparedness? Oddly enough, there is little direct correlation historically between the rate of innovation in weapons and the size of military budgets. For example, between 1808 and 1893, at a time when the character of the warship was changing at a fantastic rate—when ships were actually becoming obsolete before they were completed, relative to new ships already under construction—the naval budget for Great Britain remained practically stationary at a figure of about 11 million pounds. If that figure is related to the rising national income during that time, we see that the proportion of the national wealth spent on naval security for Britain was rapidly diminishing; and that during the period when the cost of the individual ship was expanding most rapidly. What are the reasons for that? Of course the times were relatively pacific, but it was also true that the changes then ensuing were not fundamentally altering the basic premises of degree of national security and of the duration of wars. As long as Britain retained superiority on the seas against other powers, which she could do with the new weapons as well as with the old, she did not have to worry about being overwhelmed in the first days or weeks of war.

The atomic bomb, on the contrary, is bound to result, as it already has, in increased costs of military security. That is something to be perturbed about, unquestionably, but we should not assume that there is no roof to those increased costs. There are certain important restraining factors. We have already noticed in Congress, during the recent debate on the increase of the Armed Forces, a very decided reluctance to appropriate sums which threatened to cause a deficit in the national budget. Congress quite properly feels that deficit financing is not appropriate for times of boom. Thus, while Congress approved by overwhelming votes the principle of a 70-group Air Force, it rejected the contention of Secretary Forrestal that an increase in air groups required also a proportionate increase in the Army and Navy involving a total additional cost of 15 or 16 billion dollars.

Historians have dwelt on the scale of the armament races preceding the two World Wars, usually without observing that the scale is partly a question of the point of view. In each case the extent of the arming with most of the belligerents turned out to be relatively small in comparison to the expansion of the war period itself. We observe, in other words, a certain pronounced and effective reluctance to strain the national economy over-much even when war appears imminent. It is characteristic of wartime economies that many kinds of production for civilian consumption are deferred and that expenditures creating huge inflationary pressures are made as a matter of course. In both cases the abnormality is accepted largely because it is deemed

by the population to be temporary. Dictatorships and democracies differ only in degree but not fundamentally in kind in the limits of toleration accorded to advances in the permanent level of military budgets. Despite the recent great rise in the US military appropriations, the American people have not yet in their entire history accepted in peacetime any increase that could be deemed to have a clear and immediate depressing effect upon their standard of living. That does not argue that they will never do so in the future. But it does suggest the existence of powerful inhibiting forces acting to limit the rate of growth of military expenditures.

In that connection, we have heard much of the business of dispersing our cities. Such dispersion would have to be accomplished within the next 20 years at most if it is to keep pace with the development of the need. Within such a period a wholesale dispersion of our industries and populations would be physically if not economically impossible. Much of the wealth of this country exists in the form of fixed and sunk capital and therefore, by definition, not subject to removal. Second, one might venture to estimate that such dispersion would probably be militarily improvident even if it were possible. A great many fighter planes could be provided with what it would cost to disperse one moderate-size city. Third, if our intuitions about how people feel about those things are anywhere near correct, it would in any case be vigorously resisted. There is a good margin for dispersion which would be minor in scale but probably important in quality, and commitment to such dispersion is about as far as one can expect our government will ever go, if indeed it goes that far.

In venturing such a prediction, one must make due allowance for the excitement which will prevail in this country when the conviction settles upon it that the Soviet Union is producing atomic bombs. Measures not otherwise imaginable might then become entirely feasible. The main question is whether the outlet for perturbation will take the form of extravagance in defense (including wholesale dispersion) or a will to aggression. In that connection we must bear in mind the observation made above that on the day the Soviet Union makes its first atomic bomb the US will have many more than it does now. Depending upon when that situation occurs, the promptness with which the realization of it is communicated to the American people, and the current state of relations with the Soviet Union, the psychology of "preventive war" might become a much more difficult one to suppress than it appears to be at present. On the other hand, it is equally conceivable that the capacity of the human animal for inertia in the face of clear and present danger will again be demonstrated. The very incomprehensibility of the potential catastrophe inherent in the atomic bomb may well make easier the development of the habit of living with it.

END

# WANTED 7,000 OFFICERS

## for Active Duty with the U. S. Air Force

The requirements of an expanding U. S. Air Force called for 5,000 additional officers by the end of this year; another 5,000 by July, 1949. Already approximately 3,000 applications have been accepted. However, many attractive vacancies still exist in a wide range of professional, technical and administrative fields.

### WHAT DOES THIS MEAN TO YOU?

- ☆ Opportunity for voluntary recall to three years or more of active duty in the highest grade you held prior to relief from wartime active duty.
- ☆ Better opportunity to qualify for a regular commission.
- ☆ Training for new careers in the Air Force or in the field of commercial aviation. The USAF is developing into the world's greatest air organization, offering training and experience in all phases of aeronautics. Here's an excellent opportunity to change that wartime MOS into the new postwar career you desire.
- ☆ **HIGHER RETIREMENT INCOME.** Three years of active duty can boost your retirement pay as much as 30 percent.

### WHO CAN QUALIFY?

Vacancies exist now for officers in all company and field grades, including a limited number of openings for colonels in technical fields. (Sufficient applications for flying positions now are on hand to meet immediate requirements.)

Officers under the age of 45 are encouraged to apply for extended active duty. Officers must be commissioned in the Air Force Reserve or the Air National Guard of the United States. Former officers who do not now hold commissions may obtain U. S. Air Force Reserve Commissions at the same time they apply for active duty.

#### Special opportunities exist for officers with military or civilian experience in these fields:

- |  |  |
|--|--|
| ★ <b>Communications</b> —<br>Electronics and Radar         | ★ <b>Management</b> —<br>Finance, Accounting, Budgeting and Statistics |
| ★ <b>Supply</b> —Procurement, Production and Renegotiation | ★ <b>Public Information</b>  |
| ★ <b>Intelligence</b> (especially photo-interpreters)      | ★ <b>Chemistry</b>   |
| ★ <b>Inspection</b> —Technical and Administrative          | ★ <b>Weather</b>   |
| ★ <b>Air Installation</b> —Civil Engineering               | ★ <b>Aeronautical Engineering</b>                                      |
| ★ <b>Radar Navigation</b>                                  | ★ <b>Photography</b>   |
|  | ★ <b>Personnel</b>   |
|  | ★ <b>Law</b>   |

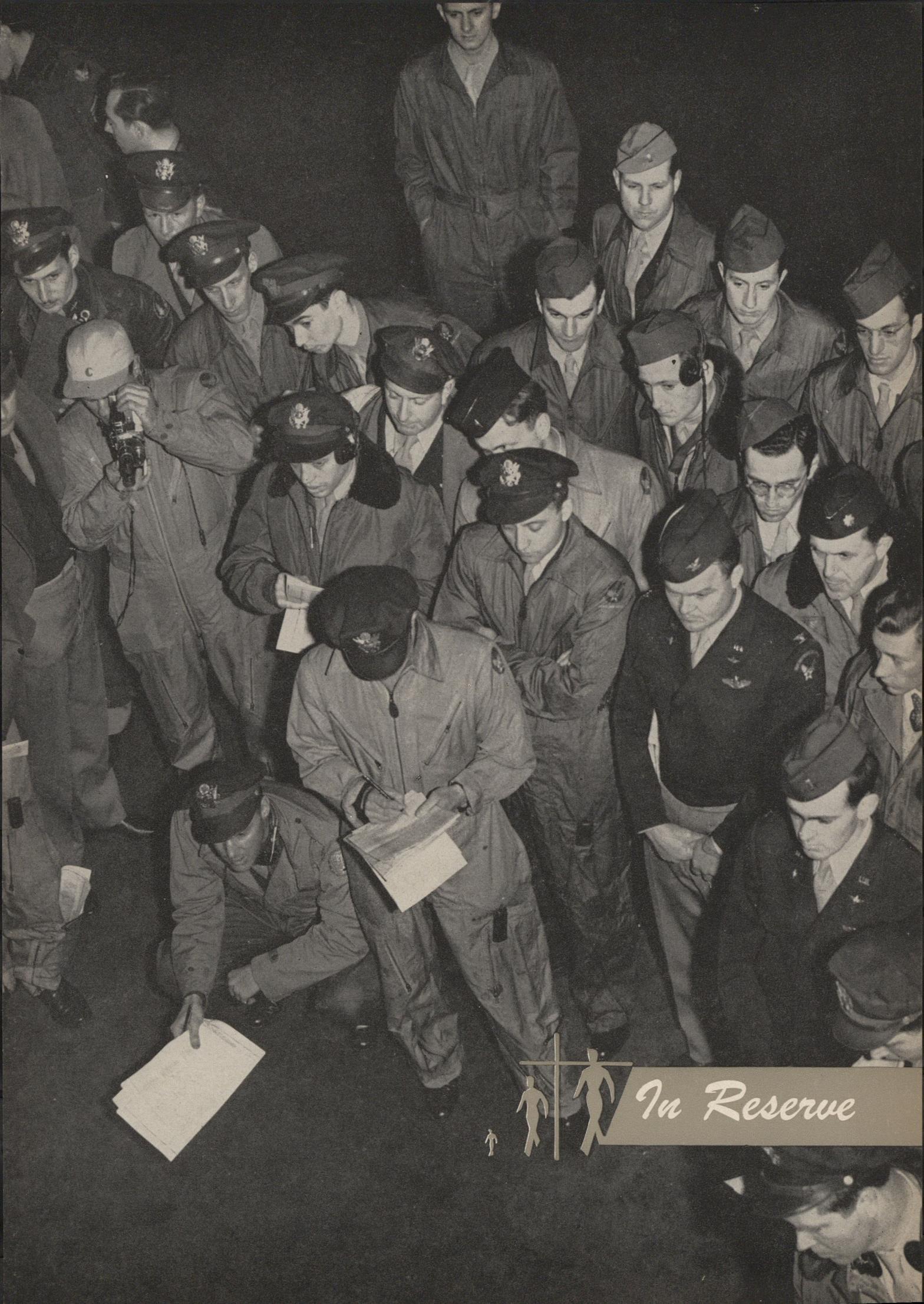
Application Form 125 may be obtained at your nearest Air Force Base, your local Air Reserve Unit, any U. S. Army and U. S. Air Force Recruiting Station, or write: Chief of Staff, United States Air Force, Washington 25, D. C. Attention: Recall.



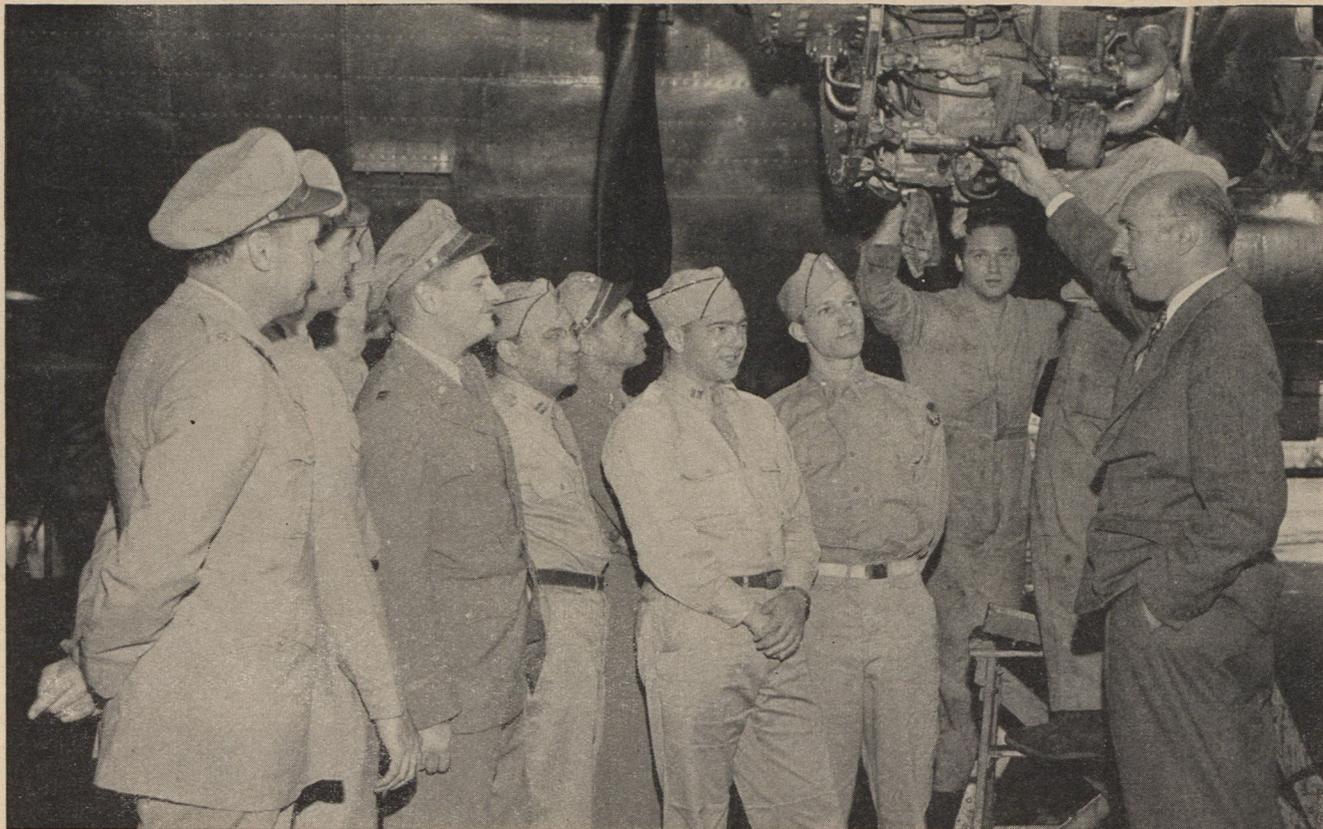
U. S. ARMY and U. S. AIR FORCE RECRUITING SERVICE

## BIGGER AND BETTER

Beginning with this issue, AIR FORCE introduces an expanded In Reserve department which will include not only the familiar letters and answers column, but also a full round-up of late reserve news—another AIR FORCE service to help keep you posted on your own status.



*In Reserve*



Keeping abreast of technical advances in commercial aviation, organized reserve officers of the 16th Air Force Service Command have the DC-6 engine oil system explained to them while touring airline facilities at La Guardia Field, L. I.

## NEW COMMAND TO HEAD RESERVE ACTIVITIES

**In move to strengthen civilian components, the Continental Air Command is given primary responsibility for Reserve and Guard**

On November 18, the US Air Force announced without particular fanfare that organization had begun on a new command—the Continental Air Command, “designed to strengthen the Air National Guard and the Air Reserve programs in line with a recent executive order of the President.”

What the announcement didn't make clear was this: For the first time in history, a major command of the US Air Force will have as its primary function the administration of the Air Reserve components. In recent years the job had been done by the Air Defense Command as a subordinate responsibility to that of the defense of the continental US. CG of the new Command will be Lt. Gen. George E. Stratemyer, former ADC boss.

The move does not presage any radical or overnight changes in the Reserve program—either from the standpoint of new planes, new fields, or new training programs. What it does involve is this: The six numbered Air Forces now assigned to either the Air Defense or Tactical Air Commands will be transferred to the jurisdiction of Continental Air Command. Reserve functions in the field will be accomplished through these Air Forces which, incidentally, have been given geographical areas to corre-

spond to the six ground armies located within US boundary limits. For the present this will mean greater decentralization and closer supervision and support for Air Reserve and Air National Guard activities. Eventually it will mean something more. It will mean at least partial dissolution of Reserve training units as such, and the establishment of a program whereby Reservists will actually fly and work with operational units of the Air Force in their areas.

In the meantime, headquarters of Air Defense Command and Tactical Air Command, which have been stripped of their operational units, will become planning headquarters. ADC will retain as its primary responsibility the defense of the US, while TAC will concentrate on programs of ground-air cooperation. In the event of emergency the full facilities of both commands, will be available for concerted action through CAC.

### WHO GETS THE CABBAGE?

Confusion as to eligibility of Reservists to receive retirement pay under Public Law 810 has evoked the following clarification from Reserve officials:

The new law provides a point system allowing Reservists to qualify for retirement benefits similar to those open to 20 and 30 year career men. This plan was inaugurated to make possible a Reserve emergency mobilization.

Over 20 years satisfactory service is needed. The Reservist must have earned 50 points each year. Both inactive and active service counts toward retirement at the highest rank held.

Points are compiled in the following ways: One for each day of active service; one for each drill or Reserve meeting attended; and fifteen points a year for honorable membership in a Reserve component. Service correspondence schools and other equivalent instructions are given special evaluation.

Upon retirement at 60, the Reservist's grand point total is divided by 360 to obtain the actual number of years served. This figure, multiplied by 2½ per cent of the longevity and rank pay, is the size of each retirement check.

Under this system, all active service increases the soldier's gratuity. Any benefits due the Reservist will not affect his social security or other funds coming through civilian sources.

For Reserve retirement, a soldier's last eight years of service must be with a civilian component, active or inactive. Otherwise, he must qualify under Regular retirement provisions.

Civilian component officers are also entitled to retirement after 20 years active service, providing 10 years has been in a commissioned status.

Reserve time is automatically accredited as 50 points a year.

## OFFICER RECALL QUOTA IS BEING FILLED RAPIDLY

A good indication that the Air Force will have no trouble at all in getting the 10,000 Reserve officer volunteers it asked for in September was seen in the recent announcement that 4500 applications were received at the Pentagon in the month of October alone. Many of these were from rated personnel, for whom only a limited number of vacancies exist, but enough—about 50 per cent—were received from former officers with administrative and technical MOS's to assure the success of the program.

In spite of the flood of early applicants, however, the Air Force has given no indication that it intends to order a halt any time in the immediate future. The call is still out for Reserve officers who by MOS or civilian experience can qualify in one of the following fields: Management (accounting, statistics, finance and budgeting), Communications (electronics and radar), Supply (procurement, production and renegotiation), Intelligence (especially photo-interpreters), Air Installation (civil engineering), Inspection (technical and administrative), Radar Navigation, Public Information, Chemistry, Weather, Aeronautical Engineering, Photography, Personnel, and Law.

Aside from MOS qualification, other prerequisites are these: The applicant must be under 45 (unless he is a full colonel applying for one of the few technical vacancies), he must have at least a high school education and preferably two years of college, he must have a satisfactory efficiency rating, and he must be adjudged as qualified to fill a vacancy. Interestingly enough, it has been indicated that the USAF is more concerned with the technical and academic background of the applicants than with prior military training. College seniors and recent college graduates, regardless of military experience, are being given an excellent opportunity for active duty and regular commissions.

As might have been expected, the Air Force reports that the processing of many applications has been slowed down; applicants are failing to give proper information in filling out Application Form 125. Among the more common errors are these:

- Many applicants refer to college work completed since their return to civilian life, but fail to include supporting papers as required.
- Some officers apply for active duty without first applying for an Air Force Reserve commission. Officers returning to active duty must be commissioned in the Air Force Reserve or in the Air National Guard.
- A surprising number fail to sign their applications.
- Applications from Air National Guard officers are sent direct to Washington rather than through State Adjutant Generals as required.
- Many officers give the date of their last Reserve commission instead of the last promotion prior to terminal leave.

# H. R. 6744

**A bill that should have passed last year — but didn't**

**T**he job of writing the rules for the Reserve components of the US military establishment is no Sunday picnic. If the Reserve is to be operationally efficient the regulations must be operationally correct. For unlike the regular establishment, the Reserve is primarily a paper organization—until M-Day. It is therefore doubly necessary that the papers be right. M-Day is too late to correct them.

In the regular forces, the rules can be put to the test every day. If they are found wanting they can be quickly changed. In the Reserve, where there is far less activity, the "bugs" are more difficult to find. It has taken two and a half years, for example, for the Air Force Reserve chiefs to find the error of their early post-war theory of giving a little reserve training to a lot of people rather than a lot of training to a few—a plan they have more recently adopted.

Aside from making the Reserve operationally efficient, the congressmen and officers who write the rules have another responsibility—to the Reservists themselves; the men who have enough concern for the security of their country to volunteer their time, and sometimes their money, to make the Reserve strong.

The other day an unbelievable incident brought to our attention a bug that has not yet been removed—a responsibility not yet been met.

A Lieutenant in the US Naval Reserve came to see us. He was the young and eager type. His shoes were carefully polished and his nails neatly manicured. But his outstretched hand was burned and red and twisted. One side of his face was equally scarred. Lt. John D. Morrison was a pilot in the US Naval Reserve. This was his story: He had been through the war and had come out unscratched. He had gotten his law degree and was just getting well established with a practice of his own in Clifton, N. J. He was married and was planning a family.

Last summer he took time out to return to active duty for two weeks. He was sent to Floyd Bennett Field where he flew a Navy F4U Corsair. One afternoon he stalled during an emergency landing and crashed.

As of December first he will have been on the books at St. Albans Hospital in Long Island for six months, and, although he gets out and around, he'll be under treatment for six months more. Up to here Lieutenant Morrison's case is not unique; things like that happen all the time. But here's the catch—the bug. Since he was called back to active duty for less than thirty days the present law provides that he cannot get his pay as a lieutenant for longer than that period. Until he is discharged from the hospital the Navy will attend to his medical requirements, but nothing more. His pay stopped on the 31st day, in spite of the fact that he was totally disabled in the service of his country. Except for a pittance from the Federal Security Administration, he gets no compensation. His law practice, of course, is at a complete standstill. He's stuck. His reward for displaying enough patriotism to take two weeks out to retain his proficiency is this: His wife has had to go to work to earn his living. All thoughts of a family have been abandoned.

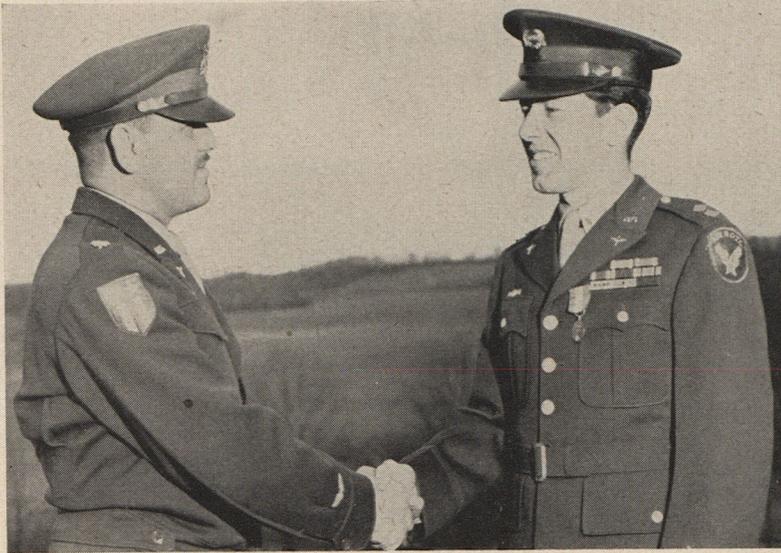
And that's the bug. Furthermore, it's the same in the Air Force as it is in the Navy. Under the present setup, any guy who goes on active duty for two weeks during the summer is taking his own chances of being seriously injured and paying for it out of his own pocket the rest of his life. Some bug.

Unbelievable—yes. But here's something even more unbelievable. This is not one of the bugs that has gone undetected. Top Air Force and Naval Aviation Reserve officers know all about it and have made serious attempts to correct the situation. But it requires an act of Congress. Last year such an act was introduced—H.R. 6744. But Congress had more important things to attend to. The bill was shelved. Some Congress.

There are plans afoot to re-introduce H.R. 6744, or a revision thereof, this coming session. It is conceivable that it will be shelved again. Conceivable that is, unless the men on the Hill are made to realize that this single defect could destroy the efficiency of the entire Reserve, for there are too many men who will back out—and justly so—if they know the risk involved.

If you have pen and ink, suppose you tell the man on the Hill who represents you.

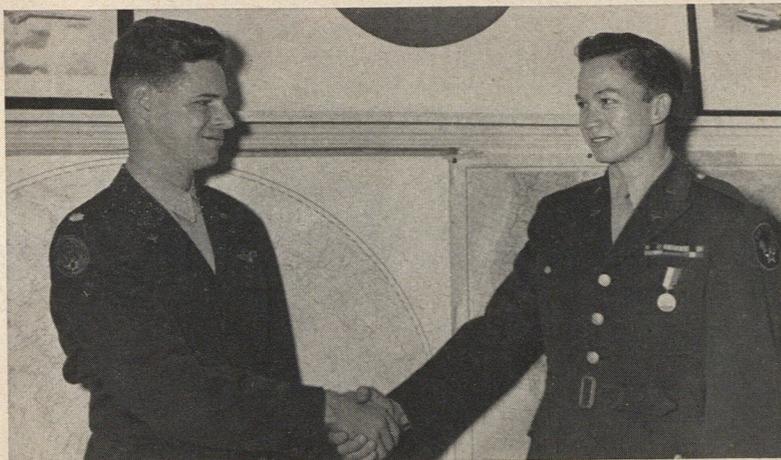
## AIR ROTC MEDAL WINNERS



Recent winners of AFA's Air-ROTC medal are pictured here. Above, Lt. Col. Donald Pricer makes the award to Richard Lyman (right) of Colgate.



Robert E. Gallagher (right) was winner of the award at Washington. Brig. Gen. Ned Schramm and Col. W. H. Jones offer congratulations.



First winner of the award at Michigan was Robert Harn (right) a business major. Medal was given by Lt. Col. Don Ainsworth, Asst. PMS&T.

## NINE STATES NOW PAYING BONUSES TO VETERANS

According to a recent announcement by the Veterans Administration, a total of nine states and two territories have now authorized and are paying bonuses to veterans or their next of kin. The breakdown is as follows:

- Connecticut: \$300 to veterans; \$300 to next of kin. Apply before June 1, 1949, to office of the Treasurer, Veterans Bonus Division, Hartford.
- Illinois: \$10 a month for domestic service and \$15 per month for foreign service between September 16, 1940, and September 2, 1945, inclusive. The next of kin will be paid the sum to which serviceman was entitled. EXCEPTION: The next of kin of deceased Illinois servicemen will be paid \$900 if death was service connected and occurred between September 16, 1940, and September 2, 1945. Apply before July 1, 1949. Veterans and survivors in Cook County, apply to Service Recognition Board, 218 West Monroe St., Chicago 6; all others apply to Service Recognition Board, 301 West Adams St., Springfield.
- Massachusetts: \$300 to veterans; \$300 to next of kin. Apply to State Treasurer, State House, Boston. (NOTE: World War I veterans who were in the service between February 3, 1917, and November 11, 1918, are eligible to receive \$100. Apply to State Treasurer, State House, Boston.)
- Michigan: \$500 to veterans; \$500 to next of kin. Apply prior to March 19, 1949, to the Bonus and Military Pay Divisions, Adjutant General's Office, Lansing 1. (NOTE: World War I veterans, \$10 payable for each month spent in service; apply same as above.)
- New Hampshire: \$100 to veterans; \$100 to next of kin. Apply to The Adjutant General, Concord.
- New York: \$250 to veterans; \$250 to next of kin. Apply, Veterans Bonus Bureau, Dept. of Taxation and Finance, 1875 No. Broadway, Albany.
- Ohio: \$400 to veterans; \$400 to next of kin. Apply to Director, World War II Compensation Fund, Columbus 15. (NOTE: World War I veterans and next of kin, \$250, apply to The Adjutant General, Columbus.)
- Rhode Island: \$200 to veterans, \$200 to next of kin. The time limit for applying expired on June 30, 1947.
- Vermont: \$120 to veterans, \$120 to next of kin. Apply to Veterans State Bonus Division, Montpelier.
- Alaska: \$300 to veterans. One year minimum period of service required unless discharged for service connected disability. \$300 to next of kin. (NOTE: Veterans may elect to take the bonus or a loan and in excess of \$10,000. If the bonus is accepted, the veteran is not eligible for a loan until such time as the bonus is repaid.) Apply to the Commissioner of Veterans Affairs, Juneau.
- Hawaii: \$300 to veterans with 10 per cent or more disability only. Apply to Director of Veterans Affairs, Honolulu.

# WASPS TO BE OFFERED RESERVE COMMISSIONS

Move made by Air Force "to extend field of qualified specialists needed in Air Force Reserve to meet mobilization requirements."

The US Air Force has broadened its Reserve program by permitting women without prior military service, but with certain specified specialized technical qualifications, to apply for Reserve commissions, the USAF announced this month.

Applicants, upon request, may be brought on active duty for a three-year period, if qualified for available assignments.

Former commissioned officers of all the women's services are eligible to apply for the Reserve commissions.

Former members of the Women's Auxiliary Service Pilots may count WASP service, except periods of training, for purposes of appointment only.

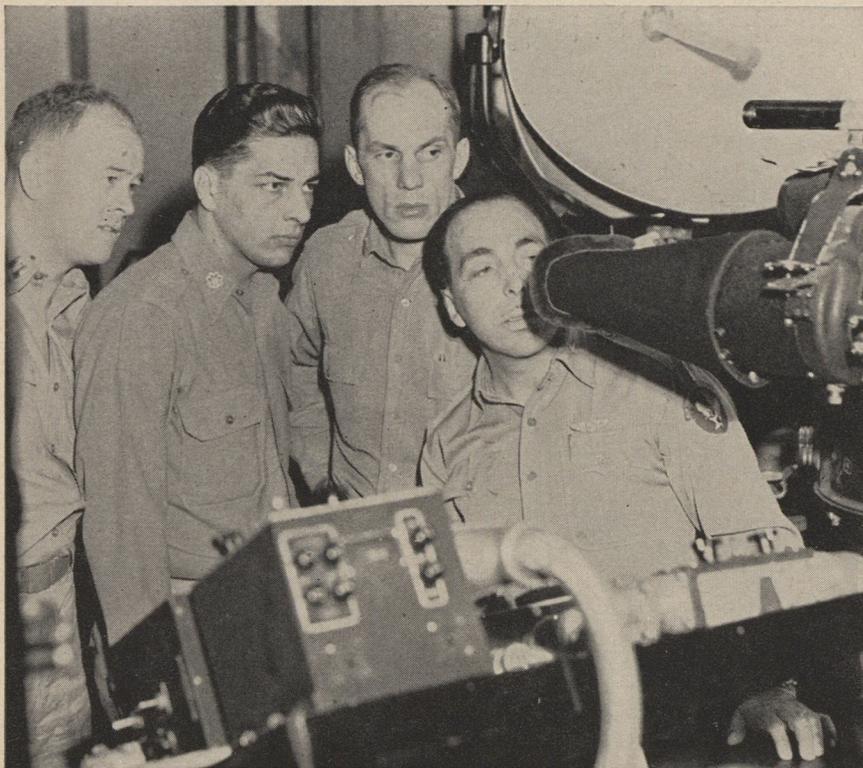
The invitation to women, with or without prior military service, is designed to extend the field of qualified professional and technical specialists with skills readily adaptable to military occupational specialties needed in the Air Force Reserve to meet mobilization requirements.

A revised Air Force Regulation 45-15 prescribes that applicants must have reached their 21st birthday and must not have reached the following ages on the dates of appointment in these grades: 2nd lieutenant, 28; 1st lieutenant, 31; captain, 38; major, 45; and

lieutenant colonel, 52. Applicants seeking Reserve commissions as legal specialists may not have reached the ages by grades of 28, 32, 39, or 46 respectively for 1st lieutenant, captain, major, or lieutenant colonel. Appointments to colonel are restricted by law to male specialists.

The following types of professional and technical specialists, including both men and women, are needed: production inspection officers, photographic equipment officers, aircraft inspection officers, maintenance and repair officers, ground safety officers, weather officers, comptroller specialists, intelligence production specialists, design and development officers, production management specialists, armament officers, special investigations officers, special investigations technical officers, air installation officers, legal specialists, industrial planning specialists, industrial specialists, industrial planning economists, public information officers, and human resources research specialists.

Applications should be made on WD AGO 170 pending availability of Air Force Form 24, and should be submitted through channels to the Commanding General of the Air Force having jurisdiction over the area in which the applicant lives or is stationed.



In accordance with increased emphasis placed on Reserve officer training in the Air Force, a group of 16 ex-Air Weather Service officers recently made a two weeks active duty nationwide tour of the principal MATS weather installations. Stops included New York, New Orleans, Oklahoma City, and Fairfield-Suisun, California. Above group examines APQ-13 radar equipment in California.

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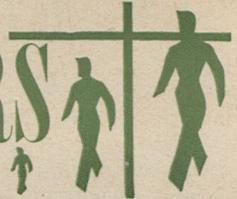
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# IN RESERVE LETTERS



## The SOP of AR and NG

Gentlemen: I was a Tech Sergeant in liaison pilot in the last war, and last year I applied for two weeks active duty and served the duty as a mechanic because there are no regulations governing enlisted pilots. I then applied at the Air National Guard. They also had nothing for me and referred me to the National Guard Ground Forces. I inquired about the ground force pilot course and was told it was only for officers. I am now trying for a reserve commission in hopes I can acquire further pilot training that way. However, I have been informed that although I have all the necessary qualifications I am over age by several months. I would like to know if there is any way I can fly or receive further training.

Edward A. Geyer  
Glendale, N. Y.

• *The enlisted pilot rating has been cancelled and there is no indication at present that it will be reinstated. If you are over age there is no way of getting a rated commission. Best bet is to enlist as an aerial mechanic in order to fly.*

Gentlemen: In the June 1948 issue of AIR FORCE you state, "Policy regarding enlistment of partially disabled veterans was recently changed. You may apply and enlist in the Air Force Reserve at any recruiting station." The Phoenix, Arizona Recruiting Station does not know anything about this. Also, if a person is in the Reserve or National Guard and wants to accept a position in Arabia, what will happen to his Reserve status?

William R. Krause  
Phoenix, Ariz.

• *Par. 8c, Change 3 to AR 150-5 authorizes the enlistment in the ERC of former members of the Armed Forces who are drawing a disability compensation. Members of the Reserve forces who accept a position outside the continental limits of the US must notify by letter the Adjutant General of their contemplated departure and return and their contemplated address in the overseas area. The Reserve status remains the same.*

Gentlemen: I would appreciate information concerning personnel of the Medical Corps. Just where do we fit in the Reserve picture? If called back into the service for a period of extended active duty, just what assurance have we that it would be the Air Force?

Leonard Carpenter, D.D.S.  
Porterville, Calif.

• *All members of the Medical Corps Reserve, whether or not they served on extended active duty during World*

*War II with another arm of service, come under the assignment jurisdiction of the Army area commander in whose area they reside. If you desire to assure yourself of extended active duty with the Air Force in the event of an emergency, apply through the Commanding General, Sixth Army for assignment to the Air Force Reserve for training purposes. The procedure outlined in AF Reg. 42-25 should be followed.*

Gentlemen: Having been discharged as Chief Warrant Officer, I immediately applied for a Reserve commission. Information received at separation center was to the effect that no provision had been made for Warrant Reserves. Recent inquiry produced a rejection of application for commission as 2nd Lieutenant on the basis of my being beyond the age limit (30 years old last October). Can you give information on the following questions: (1) If I were to enter service again, would I lose all previous service credit? (2) Is there any information available regarding a Reserve status for Warrant Officers?

Francis W. McGowan  
Queens Village, N. Y.

• *Previous service credit will not be lost upon re-entry into the service. There is a bill presently in the House of Representatives awaiting action by Congress to authorize the grade of Warrant Officer in the US Air Force Reserve.*

Gentlemen: I am a Captain in the Air Force Reserve, 42 years old, and am prevented from going on duty by the age limit, which makes me over age in grade. Is there any possible way out of this difficulty other than waiting for promotion; also, will a promotion policy for the Reserve be announced soon?

Percy S. Chandler, Jr.  
Hampton, Va.

• *Personnel who do not meet the age-in-grade requirements for training may request a waiver from the appropriate Air Defense Command Air Force commander. Promotion policies for the USAF Reserve were announced in AF Reg. 45-5.*

Gentlemen: Please tell me what course I may take in regard to decorations earned while serving in the AAF, World War II, and which I never received due to returning home.

Billy D. Carter  
Winston Salem, N. C.

• *Information regarding decorations awarded may be obtained from the Demobilized Records Branch, TAGO,*

St. Louis, Mo. If you know what decorations you have earned and are in possession of the general orders in which the award was made, you may write to the Chief of Staff, USAF, requesting such decoration be furnished and presentation made.

Gentlemen: Just where does the Reserve Navigator stand today? It looks to me as though he is the forgotten man. I would also like to know what is the present navigation training program, and where the Navigators are being trained. Since the present day Navigator is supposed to be a navigator, bombardier and observer, does that mean that a WW-2 Navigator with one MOS is now worthless? I received a lot of valuable training, including radar experience on a Ferret crew. I was separated as a 2nd Lieutenant, MOS 1034, and have since received my college diploma. According to the USAF notice on page 60 of the September issue, this should make me just about what the Air Force is looking for. Can you give me any idea, or tell me where I can find out the type of duty I would get if I were to re-enlist?

James M. Grady  
Rittman, Ohio

• The Reserve Navigator is not presently a forgotten man and the World War II MOS under the new Air Force arrangement will actually give you qualifications in three separate specialties. Navigator training is being accomplished at Air Reserve TO & E combat type units. Assuming you wish to maintain your proficiency and participate in the Reserve program, visit the 2240th Air Force Reserve Training Center at the Cleveland Municipal Airport.

Gentlemen: I would like information on how to apply for a Reserve commission. I am quite sure I can meet all the requirements as stated in the June issue.

Robert Love  
Lynden, Wash.

• Assistance in applying for a USAF Reserve commission may be obtained from the recruiting station nearest your home or by contacting the Commanding Officer, Air Force Reserve Training Center, McChord AFB, Wash.

Gentlemen: I would appreciate information regarding transfer to the Air Force Reserve from Signal Corps Reserve; also, I live in Chicago and would like to know the possibility of receiving 15 days military duty with the Air Force Reserve in or around this area.

Raymond G. Dvorak  
Cicero, Ill.

• The procedure outlined above applies in this case, except that application for 15 days active duty training should be made after receiving his Air Force Reserve commission with the Orchard Place Air Force Reserve Training Center.

## QUESADA NAMED PENTAGON RESERVE HEAD

Three-star general takes over Reserve and Air Guard reins at USAF Headquarters in move to strengthen civilian components.

Lt. Gen. Elwood R. Quesada, former commanding general of Tactical Air Command, has been assigned as a special assistant to the Chief of Staff of the US Air Force for Civilian Components to accelerate the Air Reserve and Air National Guard programs.

The appointment which was made independent of the formation of the Continental Air Command reported elsewhere in this section, was made in response to an executive order of President Truman, issued October 18, on the subject of Organization of the Reserve Units of the Armed Forces. The Presi-

dent recommended the "assignment of an active, capable, high-ranking officer to head the Reserve program."

The President's order noted that tradition of the US places "great reliance in organized citizens' forces supporting regular armed forces," and specified that the departments of the National Military Establishment should take steps to assist "in building up the strong and highly trained reserve forces which are so vital to defense of the US."

General Quesada will head the Civilian Components Group already existing at Air Force headquarters.

## VITTLES BERTHS STILL OPEN FOR AIR FORCE RESERVISTS

With the job of feeding 2,500,000 people in the British, French and American sectors of Berlin becoming increasingly difficult as dead winter approaches, the Air Force has announced that it is still accepting applications for recall to active duty from Reservists desiring assignment to Operation Vittles. The offer, made late in October, is open to former enlisted men with one of the following skills: Aircraft maintenance, radio, radar, automotive equipment operators and repairmen. Single men up to 34 years of age are preferred. An appeal has also been made by the Air Force for pilots and crewmen "furloughed" by commercial airlines for the winter months. Such personnel will be released as soon as their civilian jobs re-open in the spring, it was announced. Dependents will not be allowed to accompany recalled personnel either to Great Falls, Mont., or to Berlin.

Unmarried men up to 34 years of age who have been discharged more than 90 days will be accepted in all grades up to and including technical sergeant. Married men who have been discharged from the Air Force more than 90 days must qualify for grades of staff sergeant and technical sergeant to be accepted. Dependents of these men cannot be sent overseas.

Air Force men reenlisting within 90 days of their discharge automatically receive their former grade. All men accepted will receive an extra 20 per cent in pay for service outside the US.

## THOUSANDS TO GET PENSIONS

A recent lowering of pension eligibility requirements by Veterans Administration has assured thousands of World War I and II disabled veterans of re-

ceiving service pensions under certain conditions.

Under the new regulations a veteran is eligible to be classed as totally disabled and entitled to a full pension of \$72 a month, if he (1) is 65 years of age or over; (2) has any kind of disability, not necessarily connected with his war service, which can be rated as 10 per cent disabling; and (3) is unable to secure and "follow substantially" gainful employment because of his disability.

Eligibility requirements have also been lowered in the lower age groups. At 55, the disability requirement is 60 per cent.

In all cases, a veteran rated as totally disabled for pension purposes may not have an annual income exceeding \$1000 if he has no dependents, or \$2500 if he has one or more dependents.

It has been estimated that as many as 150,000 additional World War I veterans might become immediately eligible for the VA pension rolls.

## SMITH CONGRATULATES CAP ON SEVENTH BIRTHDAY

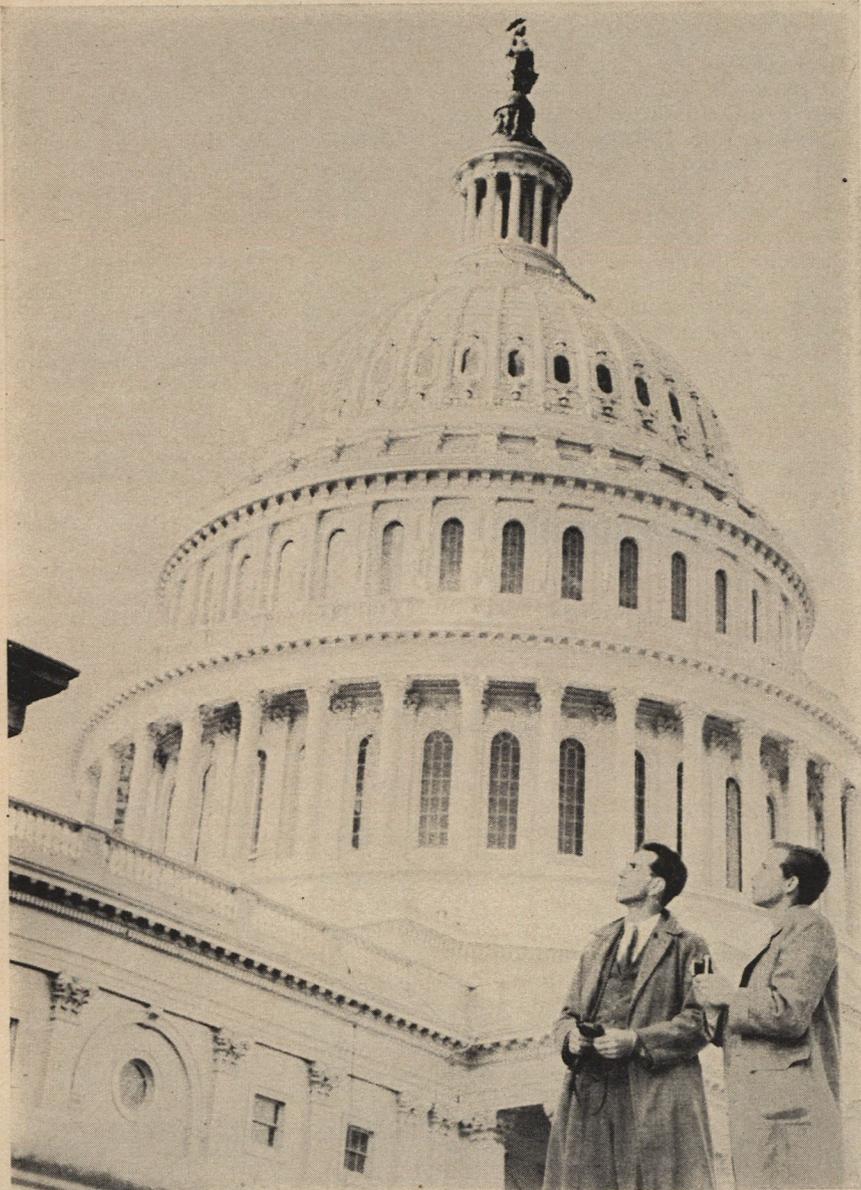
On December 1 the Civil Air Patrol celebrated its seventh anniversary with local celebrations in all parts of the country. Honoring the occasion, President C. R. Smith issued the following proclamation in behalf of the Air Force Association:

"The Air Force Association extends its heartiest congratulations to Maj. Gen. Lucas V. Beau, National Commander, and the more than 135,000 senior members and cadets of the Civil Air Patrol.

"We shall never forget CAP's grand job during the war in many fields of endeavor, especially its submarine patrol activity. Today, as an official auxiliary of the US Air Force, CAP enlists aviation cadets, conducts a widespread training program, and encourages aviation generally. We wish them the best of luck."



# AFA NEWS



Builder of prize-winning model plane "Fearless Fosdick", Rudolph Hergenrother (right) stands in more awe before nation's capitol than would plane's namesake. His companion is Arthur Muldoon, one of the officials of model air meeting.

## *A Report:*

# THE AFA YOUTH PROGRAM

**I**n mid-September 17-year-old Rudolph Hergenrother went to Washington. It was his first visit to the nation's capital, and an eventful one. On the trip from his home town of West Newton, Mass., he was the VIP. The flight was staged just for him. At Bolling Field he was given a special welcome, with camera's clicking and a staff car stand-

ing by. In Washington he did just what he wanted to do, saw just what he wanted to see; visited Air Force bases in the area, the aviation section of the Smithsonian Institution, Air Force Headquarters in the Pentagon and, of course, Washington monument, the Capitol and other well-known sights. As a guest of honor at the Pentagon he talked his spe-

cialty, airplane building and designing, with Lt. Gen. Howard A. Craig, the Air Force's Deputy Chief of Staff for Materiel.

Rudolph Hergenrother hadn't produced a super X-I or anything like that, but his "Fearless Fosdick" had taken first place in the New England Model Plane Meet, sponsored by the Rhode Island Wing of the Air Force Association, and this trip to Washington was the winner's prize.

It was indicative of the importance AFA gives its youth education activities. Model plane building is one phase of the AFA program. It is the backbone of youth activity in Cleveland, where the Cuyahoga Founders Squadron supervises a model plane organization, provides club instructors from among its membership, and holds local, regional, and state contests. In other communities, such as Beckley, W. Va., and Mifflin County, Pa., the program centers in sponsorship and direction of Air Scout units. Aviation scholarships are awarded by AFA in Boise, Idaho, and in Phoenix, Ariz. Aviation students are taken on tours of nearby air bases by AFA's Contra Costa, Calif., Westchester County, N. Y., and Columbus, Ohio, Squadrons. The Mifflin County, Pa., unit shows Air Force films in eight local high schools. Aviation courses in schools are promoted by AFA in a number of localities, including Springfield, Ill., and Dallas, Texas.

Across the country AFA works closely with many organizations, notably the Air Reserve, in youth education. The New England model contest, for example, was held in conjunction with an air show at which the 2234th Air Reserve Training Center of Bedford, Mass., acted as host; the prize trip to Washington was made in a Reserve C-47 flown by Reserve pilots. In White Plains, N. Y., the Westchester Squadron joined with the local Exchange Club to sponsor a model contest. When the Columbus, Ohio, Squadron sponsored a tour of the Lockbourne Air Force Base for 250 members of the Junior Police, the 82nd Troop Carrier Reserve unit acted as host for the affair. The Boise, Idaho, Squadron works closely with the 190th Fighter Squadron of the Idaho Air National Guard. In other areas the Civil Air Patrol, city governments, the YMCA, Junior Chamber of Commerce, CAA, and state and aviation departments work on AFA sponsored youth movements.

In Idaho the AFA youth program is notable for its education of teachers. The idea is that by developing air-minded, air-wise instructors you have taken a long step forward in promoting aviation education generally, and specialists in this field are quick to agree. In its "first things come first" program, the Idaho Wing participates in Air Age Institutes, started in Idaho by the state director of aeronautics and the CAA. These institutes include inspection tours of airports and airplane rides for both teachers and students. An AFA member recently in one day took up twenty-eight teachers, many of whom had never flown before. The Idaho AFA also helped send the winner of an essay con-

test on a prize trip by air to Hawaii and back. The contest subject was "How Best to Teach Aviation in Idaho Schools." The winner was a mathematics teacher.

Far across the nation from Idaho, in Woonsocket, R. I., AFAers have developed what they call a "package program" of youth education which illustrates perhaps better than any single squadron story what AFA is doing and can do in this field. Frank Martineau, AFA commander at Woonsocket, in his excellent report on these activities, states that the Squadron teaches aviation from childhood to manhood under a three-phase program of this type:

► For youths 11 to 15 years of age, a model plane building organization in cooperation with the local YMCA. At the "Y" a group of youngsters had wanted a model plane club but lacked leadership. AFA members Jean Lepoutre and Herbert P. Bailey became the leaders and rounded out an organized plane building program.

► In the 15 to 18 age bracket, an Air Scout program. Joseph Boucher, a former crew chief who is a Wing and Squadron officer in AFA, got back into the Scout movement after a lapse of many years as the leader of the Squadron's Air Scout unit. The Woonsocket Scouts get the feel of controls by flying the CAP's link trainer with hood open. They also use CAP's radio equipment, code practice sender, visual instruction equipment, aircraft instruments, and specialized training films.

► For young men from 17 to 21, a Civil Air Patrol Squadron. Eugene H. Farland, a former B-17 pilot who was active in both AFA and CAP, had been asked to revitalize the struggling Civil Air Patrol in Woonsocket. The AFA unit decided to sponsor the CAP Squadron, staff it and give it a corps of instructors, with Farland as leader. The CAP cadets now learn about aviation from AFA instructors who follow the prescribed training plan of CAP. They get actual flying experience in the liaison-type aircraft allocated to the unit by the CAP Wing (which gives AFAers a chance to fly at little or no cost). Cadets have participated in forest fire patrol as observers who operate the radio and keep in touch with the forestry service control station.

There is no question about the demand for the Woonsocket youth "package." The AFA unit there now has all the boys it can handle. And there is no doubt about its importance to AFA; Squadron interest is at a new high, and all Squadron members are called upon to participate in the youth work.

"This youth program," Martineau concludes, "is doing us as much good, individually and as an AFA Squadron, as it is doing for the youngsters."

"Those considerations make our AFA members feel their contributions in time and effort are well worth while. It has taught us that the key to AFA is to give instead of get. And in giving aviation knowledge to boys who need it, are hungry for it, AFA solidifies its membership, improves local units and strengthens the national organization."

# STATE ROUNDUP



## CALIFORNIA

**Altadena:** In the October issue of "Air Force", Joseph Nadel was listed as the new deputy commander of the California Wing. This was an error, and is corrected to show John W. Hansen, of Altadena, as the deputy commander. It seems that the vote for either Hansen or Nadel to fulfill this office was so close at the recent Wing convention that a subsequent vote had to be taken to give Hansen the necessary majority. AFA made its previous statement according to the original convention election announcement.

**Richmond:** The Contra Costa Squadron recently conducted a tour of the Hamilton Air Force Base by the aviation class of the Richmond High School. The tour was part of the Squadron's plans for increasing interest in aviation by the California high school students. Thirty-nine students participated in this tour, and the Squadron plans to repeat this activity each school semester.

**Oakland:** AFA in the Oakland and Los Angeles areas recently received wide publicity through a radio program called "Quiz of Two Cities". This was a quiz on air power, with the East Bay Squadron, of Oakland, on one end and the Santa Monica Squadron on the other. East Bay's four-man team won by a score of 100-60.

The East Bay Squadron is now busy forming an AFA flying Club. Plans call for a twenty-man outfit, and those interested in joining are urged to contact Wally Thompson at Hangar 1, at the Oakland Airport. Flight training arrangements will be made for those desiring to join, but are not yet pilots.

**San Fernando:** An AFA Squadron has now been formed in San Fernando, with 24 charter members. Stiles B. Merrill is heading the outfit, and the other officers are: James B. Herring, vice-commander; Jack Q. Tomkins, treasurer; Robert W. Salling, secretary; and Vergil R. League, John C. Cox and Robert C. Snider as councilmen. Commander Merrill can be reached at 5446 Colfax Avenue in North Hollywood.

## GEORGIA

**Augusta:** W. F. Shipman of the East Georgia Motor Club, Southern Finance Building, Augusta, has been busy assisting in getting more Squadrons organized throughout the state. Assuming the duties of temporary Wing Commander, he has just completed the organization of the Athens Squadron. It is headed by Homer G. Hale, Jr., and can be contacted by getting in touch with Ben A. Hodges, secretary, at 376 So. Church Street, Apt. 3, in Athens. Other officers of the Squadron are: Raymond E. Lester, vice-commander; James

T. Adams, treasurer; and Theodore M. Stewart, William H. Whitworth and Howard N. Wilson as councilmen.

## ILLINOIS

**Chicago:** Joe Moller, founder of the AFA Chicago Group, consisting of 24 chartered and proposed Squadrons, has left Chicago temporarily and has turned his AFA duties over to J. G. Schatz, who assisted him in putting the Group into operation. Schatz was officially appointed to assume the Group duties by Tom Lanphier just before the latter retired as President of AFA. Schatz can be reached at 410 So. Wells Street.

Charters have recently been given to two more Squadrons of the Chicago Group. One is Squadron No. 80, located at Munster, Indiana, and is headed by Paul L. Marshall, Jr., of 314 Gregory in Munster. The other officers of Squadron 80 are: Jack Dietrich, vice-commander; Jack Robertson, treasurer; C. Burt Monnett, secretary; and Don Vergin, Thomas Green, Howard Ockelman, James Gauthier and Erwin Miller as councilmen.

The other, whose charter was signed by Tom Lanphier at the national convention in New York, is Squadron No. 43. It is headed by Charles F. Stebbings of 102 East Chestnut Street in Chicago. The other officers elected to assist Stebbings are: Lee W. Alberts, vice-commander; Paul E. McElroy, treasurer, Howard A. Moses, Secretary; and John B. Anderson, Jr., Thomas J. Grizzoffi, Miss Leigh W. Wilson and Ralph J. Silverman as members of the council.

## KENTUCKY

**Covington:** Harry J. Johnson, Jr., of South Fort Mitchell, has resigned as commander of the Covington Squadron so that he can devote his efforts to a statewide membership campaign. Johnson, who recently accepted appointment as Wing Commander, urges all those who are eligible for membership in AFA to contact him at 29 Sunnymede Drive in South Fort Mitchell.

The Covington Squadron, one of the most active in the state, recently gained quite a name for itself, as well as a lot of prestige, by staging what was probably the biggest air show ever witnessed in the state, or by nearby citizens of the Cincinnati, Ohio, area. The two day event, staged at the Greater Cincinnati Airport, and at a cost of several thousand dollars, gave many of the natives of Kentucky and Ohio their first chance to inspect and witness flying demonstrations by jets and other late planes.

The Covington Squadron invited Wing Scout Troop No. 403 of the Cincinnati Senior Girl Scouts to attend the show as their guests. The troop's interest in aviation and its enthusiasm over the opportunity to come into close

## ROUNDUP CONTINUED

contact with the latest planes attracted the attention of a crew of the Second Battalion of the 505th A I R from Fort Bragg, N. C., who was participating in the activities. The crew, commanded by Capt. Harry M. Howard, adopted the Scout Troop, which is under the leadership of Mrs. H. S. Ulmer and Mrs. Wm. Butler. The troop is currently engaged in a course of instruction in all phases of aviation, conducted by the local reserve unit.

At a recent meeting, the Squadron discussed the possibility of getting the Air Reserve unit at Lunken Airport in Cincinnati, Ohio, moved to the Boone County Airport in Kentucky. This move is necessary to enable the unit to become a Class A unit. The geographical limitations of the Lunken Airport prevent the two reserve units stationed there from obtaining A classifications. A survey is being made by the Squadron to see if this move can be accomplished.

**Lexington:** The Lexington Squadron has announced plans of an active program. The new officers of the Squadron are: Elmer I. (Buddy) Thompson, commander; Marvin Wachs, vice-commander; and Hunter C. (Billy) Belt, secretary-treasurer. Those desiring to get in touch with the Lexington Squadron may contact Thompson at Dixie Court in Lexington.

**Louisville:** Baldwin C. Burnam, Upper River Road, Louisville, has been appointed vice-commander of the Kentucky Wing by Harry J. Johnson, Jr., commander of the Wing. Johnson also appointed Burnam to head the Louisville Squadron and reactivate its program. All eligible AFA members in the Louisville area are urged to get in touch with Burnam.

### MARYLAND

**Baltimore:** The Baltimore Wac Squadron has resumed its fall meetings, and has elected the following new officers: Lillian Beard, commander; Alene Hilton, secretary; and Rosalie Spisler, treasurer.

The first plans for its fall program call for a series of talks on the reserve program for women, so that a better understanding of the reserve program for women will be attained by those desiring to take an active part in reserve training.

You may contact the Baltimore Wac Squadron by writing Miss Beard at 203 No. Front Street.

### MINNESOTA

**Minneapolis:** The Minneapolis Squadron, though only a little over two months old, recently joined forces with the St. Paul Squadron to enter a full scale float in a city-wide parade there. John E. P. McIlvaine is commander of the Squadron, and the other officers are: William F. Smith, vice-commander; Burda Wекseth, treasurer; Ralph L. Anderson of 2015 Fifth Avenue South, Minneapolis,

secretary; and Carrol S. Geddes, James H. Cavanaugh and Jack F. Burrows as members of the council.

### NEW JERSEY

**Atlantic Highlands:** At a recent meeting of the New Jersey Wing, the election of new officers was held. Those elected are as follows: Irving B. Zeichner, Atlantic Highlands, commander; Dr. Allan B. Cruden, Jr., Glen Ridge, vice-commander; Donald A. Gerhardt, Erlton, vice-commander; Quinton E. Gray, Paterson, executive secretary; Mary Donovan, Jersey City, corresponding secretary; and Warren De Brown, Red Bank, treasurer. Zeichner may be contacted at 114 First Avenue, Atlantic Highlands; telephone AT 1-0005.

**Montclair:** Members of the Montclair recently attended a lecture sponsored by the Institute of the Aeronautical Sciences in New York, in which the development of the XS-1 was reviewed.

The Squadron made plans to sponsor essays in the local high schools, with prizes to the winners to consist of AFA awards and a trip to Washington, D. C.

### SQUADRON ACTION NEEDED . . .

AFA Headquarters would like to get its Squadron records corrected up to date. Many of the Squadrons have held elections during the past several months, but have failed to notify headquarters. In order that immediate contact may be kept with each Squadron and its officers, the name, address and telephone numbers of the Squadron officers, along with the number of paid-up members and meeting dates, should be sent to AFA Headquarters in Washington as soon as possible.

### NEW YORK

**Niagara Falls:** The Buffalo and Niagara Falls Squadrons recently joined forces to bring air power to the entire population of those areas. Both Squadrons devoted their full efforts to stage one of the greatest and most representative aerial displays ever put on in that part of the country. Even international co-operation was exhibited during the event, with the Royal Canadian Air Force sending a flight of Vampire jets to participate in the show. The show was staged under the supervision of a combined committee, with J. A. McCusker, commander of the Niagara Falls Squadron, and C. R. Davis, commander of the Buffalo unit, serving as co-chairman.

The Niagara Falls Squadron decided not to let the publicity given to both air power and AFA die with the closing of the air show. They immediately began an extensive membership campaign. Letters were mailed to every available eligible member, quarter-page paid ads were run in the local papers and many telephone calls were made to hundreds

of prospective members. The Niagara Falls Squadron meets every second Wednesday at the Samovar Restaurant, and those desiring to get in touch with the Squadron may do so by contacting McCusker at 649 Jefferson Avenue, or by telephoning him at 2-1053.

**New York:** Members of the Wac Squadron in New York City are busy trying to figure if they are without a commander, or if they now have an assistant commander. This was all brought about by their commander, Mary Gill, who organized the all-Wac unit, getting married in late October, to Stewart M. Rice of Forest Hills, N. Y. Mary has been active in AFA since its formation, and she has been in on its formation from the start, having served as Jimmy Doolittle's secretary during the recent war, and has been his secretary since the war until her recent marriage. Whether Mary will continue her present capacity with AFA as head of the Wac Squadron has not been disclosed yet.

### NORTH CAROLINA

**Durham:** Walter P. Budd, Jr., of Durham, was re-elected president of the North Carolina Wing for the 1948-49 term. Other Wing officers elected were: Richard Hefner, of Hickory, first vice-president; Dixon A. Lackey, of Asheville, second vice-president; and Roswell W. Hamlett, of Durham, secretary-treasurer. State Directors elected for one year terms were: Gerald Long, of Durham; Ben Childs, of Durham; David C. Dellinger, of Cherryville; Jesse F. Murray, of Durham; and Robert Lineberger, of Lincolnton. State Directors elected for two year terms were: John P. Prentice, Durham; John C. Alexander, Cherryville; Alex Andrews, Raleigh; and Robert S. Northington, Winston-Salem.

AFA members, and those eligible for membership, interested in starting a local Squadron are urged to get in touch with Budd at P. O. Box 708, Durham.

### OHIO

**Columbus:** The Columbus Squadron's Youth Activities Committee, headed by Ernie Khourie, is busy acquainting the young people in the Columbus area with the Air Force, and aviation in general. The committee recently arranged and conducted a tour of nearby Lockbourne Air Base by 180 local boys. The tour became almost a community project, with the Lockbourne AB supplying the transportation, the Columbus Police Department doing the escorting and the officers and enlisted men of the 82nd Airborne serving as guides. Lad Garcia and Marlow Smith, both members of the Columbus Squadron, assisted Khourie with the tour.

During a recent Tri-State Air Scout gathering at the Sullivant Airport, the Squadron presented an award to Frank S. Astembowski, of Akron, high point winner at the Scout meeting.

**Dayton:** AFA members in the Dayton area may participate in local activities by contacting the newly chartered Day-

ton Squadron. The officers of the new Squadron are as follows: Dr. J. H. Meyer, commander; Robert L. Abshire, vice-commander; J. Walter Greason, secretary; Harold E. Miller, treasurer; and Bert Garlikov, Alice V. Yeomans and Lionel A. Mincer as members of the council. Contact may be established by getting in touch with Greason of R. R. No. 1, Box 18, in Vandalia.

**Cleveland:** The Cleveland Squadron is mapping plans for sponsorship of an aviation contest between the Boys Town, the Red Feather Agencies and the Public Schools. This is in conjunction with the Squadron's youth aviation program. Awards of scaled model planes will be presented to the winners. Members of the Cleveland Squadron who would like to contribute to this program, as instructors and supervisors, are urged to get in touch with Erwin Cooper, commander of the Squadron, at 1240 Ontario Street.

**Toledo:** The newly formed Squadron in Toledo is already gaining recognition in that area. Two of its members have been appointed to serve on the Airport Opening Committee, and one on the Mayor's Airport Advisory Committee. New officers elected to head the Squadron are: August H. Duda, commander; Larry G. Hastings, vice-commander; Edward J. Connell, treasurer; and Merle W. Vogan, secretary. The Squadron meets regularly in the "Hangar Inn" and contact with the Squadron can be made by writing Merle Vogan, at 1384 Hillcrest Avenue.

#### OREGON

**Portland:** Another AFA Squadron has been added to the Oregon Wing with the formation of the Portland Squadron, with 41 charter members. Glenn A. Currey was elected to head the unit during the next year. Other officers elected are: Dean M. Owen, vice-commander; Guy W. Hoyt, Jr., treasurer; Dorothy M. Spiess, secretary; and Chester E. McCarty, Ashley Greene and John G. Templeton as councilmen. Information on the Squadron may be obtained by contacting Currey at 3798 No. Melrose in Portland.

#### TEXAS

**Dallas:** Albert L. Harting, former public relations officer in the AAF, and presently engaged in public relations and advertising, has been elected to head the Dallas Squadron for the next year. He succeeds James K. Wilson, Jr. Harting states the principal objective of the Squadron for the next year will be to acquaint the Dallas AFA members with the personnel and problems existing at local airports. Tentative plans call for holding alternate monthly meetings on the property of typical aviation operations. Other Squadron officers elected are: Roy Cowan, vice-commander; Enid Barron, treasurer; William Nicol, secretary; and Ben Habberton, Robert Weichsel, Laurance R. Melton, Dr. Oran Prijean and Howard West as councilmen.

# MY DRY RUN IN A B-29

## OR A LADY IN DISTRESS

By Charlotte Fleshman



I had been warned that a B-29 was designed for combat rather than comfort, that nothing in its huge interior faintly resembled what is known as "the little girls' room."

My first adventure in a Superfortress, as a press representative on one of the Air Force Day B-29 flights in September, was to take me from Anchorage, Alaska, to Charleston, W. Va., a 4500 mile hop with no stops along the way.

The basic physiological problem on a 21 hour flight was challenging and, to put it mildly, acute.

Preliminary research data, wormed out of Air Force acquaintances, added up to this: The famed B-29 had its Chic Sale department in the center section of the plane right out in the open; no swinging doors, no curtains, no anything. In this section would be a dozen men. One person, meaning me, could go up front to the pilot's compartment at adroit intervals and give the men respite from femininity, but there wasn't room up front for 12 people. Crewmen could hide out for a time in corners of the plane, but only at low altitude, for up high they must stay in the pressurized sections of the aircraft. This meant that some of the crew had to be in the center portion at all times. And with them would be the girl who was so modest in high school that she faked a health excuse to stay away from the gym class because the shower stalls lacked curtains.

At Spokane, on the trip north to Anchorage, a sympathetic head nurse, named Capt. Catherine Florence, counseled me to take along my own curtains in the form of bedsheets rigged up to serve, when necessary, as a tent-like powder room aboard the B-29. I gave up the idea. I had long since decided on dehydration as the answer. And in dehydration I had gone all the way.

Then, as the flight proceeded my parched lips wanted to cry out every time the coffee or water thermos passed my way, and my dried skin was flaky and itchy under a heavy wool flying suit, a parachute and a Mae West.

Before leaving Alaska, Lt. Wendell Currier, the pilot, explained with great delicacy that if worse came to worst, I should give him a signal and he would alert the crew for some sort of emergency action. He was politely but firmly assured that this would be unnecessary.

A few hours out of Alaska the pilot suggested, again with great delicacy, that it would be a good time to declare an emergency. He approached the prob-

lem coldly, technically, as an operational matter. We were still flying at low altitude, he explained, and the crew could still be dispersed into unpressurized sections of the plane. Again I assured Lieutenant Currier that I had the situation well in hand.

The crisis came as we approached California, Santa Barbara to be exact. This was the point to turn inland for the last leg of the trip. We were still at low altitude over the Pacific and the pilot repeated his operational argument. Still very much the gentleman, but with less delicacy, he pleaded: "Please, before we turn inland and go to high altitude, while my crew can still go the unpressurized sections."

Lieutenant Currier held a command post and he was plainly worried. I knew now that the crew was worrying with him. Under the circumstances, I couldn't think only of myself. I gave up the fight. "It really isn't necessary," I mumbled to the Lieutenant, "but OK."

I do not know what the pilot said to his crewmen over the inter-phone system but they responded with great precision, and dispersed to "battle stations." Some concealed themselves in the back radio compartment by holding a large piece of cardboard over the porthole in the bulkhead. Others hid their faces behind compartments near the bomb bay. Several of the men crawled into the long, narrow tunnel over the bomb bay.

This was the moment. I turned off the overhead light. When I turned the light back on, not a member of the crew stirred until I had knocked on the bulkhead for them to return.

Now pilot and crew were relaxed again. Now they had the mental attitude necessary to complete the long and tiring flight. We climbed to high altitude, passed over the Rockies and breezed in without incident to Charleston, W. Va., and its divine plumbing facilities.

It took a full 12 hours of almost constant drinking—cokes, water, coffee, and a few highballs—to quench my thirst. And a few days more to get my skin back to normal. Dehydration had been a complete success. In fact, I didn't have the heart to report it at the time, but the crisis over Santa Barbara, Calif., wasn't necessary at all. So dehydrated was I by then that Mother Nature staunchly refused any change in plan. In the dim light of that wonderful B-29, with that wonderful crew crouched in dispersal, I just stood there an appropriate period—and pretended. It was the least I could do to help a B-29 accomplish its mission.



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difficulty forced the flight to "buzz" the runway at Andrews rather than land, repairs being made during the return flight to Ohio.

When there wasn't a nice juicy fog nor a skyfull of rain, snow or sleet to necessitate actual instrument flight, pilots flew "under the hood." This is a short way of saying that an orange polaroid glass was installed over the cockpit windshield so that the pilot, wearing blue goggles, couldn't see a thing outside his "office."

There were plenty of times, however, when the orange windshield and blue goggles made the trip as surplus equipment. The flight route over the Blue Ridge and Allegheny Mountains was especially chosen because it is a fore-caster's nightmare and genuine instrument weather is a not infrequent occurrence. During 1947, for example, official airline records show: *2 January . . . All-Weather Flight 2 landed at Andrews. Ceiling 50 feet. Visibility 1/2 mile. No other aircraft movements.* Then, *10 January . . . All-Weather Flight 2 landed at Andrews on schedule. Ceiling ZERO. Visibility ZERO.*

The airline won a big 100 percent for safety—no accidents, no injuries. And although operated for experimental purposes rather than service, the all-weather lads gave their transport friends a big assist by toting nearly 15,000 passengers a total of more than 5 1/2 million safe passenger miles.

And there's a little story about those passengers. When the operation was first established, the Commanding Officer, Col. Francis Taylor, asked the Hillsboro-Xenia Bus Company to extend its Dayton-Wilmington run on out to Clinton County Airport to take the passengers from the field into town. The bus company said it would be glad to, but it warned Colonel Taylor that there would be no waiting. They had a pretty tight schedule of their own. There was no waiting. Not once did a "Green Ticket" passenger miss the bus.

The airline was dubbed the "Green Ticket Run" because all pilots were required to hold a green instrument card. This Green Ticket rating, indicative of established proficiency in instrument flying, is harder to get—some pilots say—than a 90-day leave. Pilots also were required to complete a rugged training program which included requirements for a minimum of 2000 hours flying time, 30 hours of advanced meteorology, 30 hours of engineering, 30 hours of navigation, 12 hours of CAA rules and regulations, 5 hours of instrument theory, and 8 hours of radio. They also waded through 35 hours of synthetic training on GCA and other instrument landing systems, use of directional finding installations and procedures, general navigation flight canning and execution, and 100 hours of transition flight training. Airline navigators, flight engineers, and radio operators took similar courses involving

advanced theories and practices.

The all-weather airline was the outgrowth of a Pentagon conference called in February 1946 by "Curt" LeMay, then a Major General and Deputy Chief of Air Staff II for Research and Development. The mission given the airline was the investigation and testing of all equipment and devices which could be used to combat weather conditions that normally ground aircraft.

The need to build an all-weather air force had become apparent during World War II when important missions were often scrubbed because of bad weather—not over target areas, but over home bases. Ground troops under attack in areas of clear weather often could not understand why air support failed to materialize. The Battle of the Bulge was an outstanding example of bad weather assisting the enemy by keeping tactical air support grounded.

According to All-Weather Flying Center officials, the success of the project resulted from the intelligent use of war developed devices such as radar, and the perfected employment of automatic approach equipment. It is not denied that without the use of this equipment the project would not have been possible even though the all-weather crews were among the best in the Air Force.

All landings were accomplished by radar ground controlled approach teams who plotted the aircraft over the terminal and "talked" the pilot into position along the glide path. Other radar devices used included radar navigational beacons which were spotted every 100 miles along the airway, and the CPN-18 radar traffic control unit, which kept tabs on the aircraft over a 40-mile range, permitting a gradual let-down as well as assisting in the precision radar landings.

Although Douglas C-54 Skymasters were used for most flights, C-47, C-82, B-17, C-45, and YC-97 aircraft also were flown over the route.

While All-Weather officers believe that the application of the devices used on the Clinton County-Andrews run is the immediate answer to safe, all-weather flying, they further believe that the final answer probably will be some type of automatic unit that will bring aircraft from take-off to landing without the possibility of human error.

An indication of this trend has already appeared in the form of the all-electronic "push button" C-54 built and developed by the All-Weather Flying Center, which made a completely automatic flight from Newfoundland to England in September 1947.

Although the long-term experimental mission for which the airline was organized has been completed and its facilities are being made available to other research projects, All-Weather aircrews remain available to put the Green Ticket Run back in operation to test new devices which may be developed to aid the all-weather flyer.

# Ten Favorites

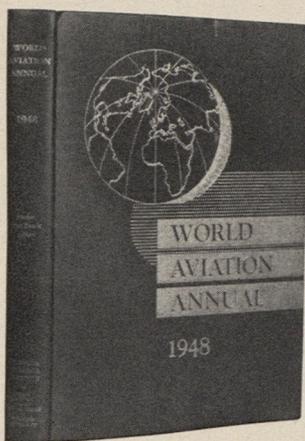
## from the AFA BOOKSHELF

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Here are ten of the books which we have been asked for most often during the past year. Ten best sellers. Look them over. Select the ones you want to give as Christmas presents and order them TODAY. We'll mail to any address in the U. S. you give us. Each book is an outstanding value—a must for anyone with an Air Force past!

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## STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, MARCH 3, 1933, JULY 2, 1946.

OF AIR FORCE, published monthly at Dayton, Ohio, for December 1, 1948.  
District of Columbia, ss.

Before me, a Notary Public, in and for the District of Columbia, personally appeared James H. Straubel, who, having been duly sworn according to law, deposes and says that he is the editor of Air Force and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Air Force Association, 1616 K St. N.W., Washington 6, D. C.; Editor, James H. Straubel, 1616 K St. N.W., Washington 6, D. C.; Managing Editor, Charles E. Root, 1616 K St. N.W., Washington 6, D. C.; Business Manager, Helen Whyte, 1616 K St. N.W., Washington 6, D. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Air Force Association, 1616 K Street, N.W., Washington, D. C., a nonprofit corporation having no stockholders.

3. That the known bondholders, mortgagees, and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

JAMES H. STRAUBEL, Editor.

Sworn to and subscribed before me this 18th day of November, 1948.

(SEAL)

ANN MARIE MUNZERT,

(My commission expires October 14, 1952)

## KITTY HAWK'S LAST LANDING

CONTINUED FROM PAGE 19

Secretary of War who turned it over to the Board of Ordnance and Fortification. The reply of that body: "I have the honor to inform you that, as many requests have been made for financial assistance in the development of designs for flying-machines, the Board has found it necessary to decline to make allotments for the experimental development of devices for mechanical flight, and has determined that, before suggestions with that object in view will be considered, the device must have been brought to the stage of practical operation without expense to the United States."

Again in October 1905, Wilbur and Orville wrote to the Secretary of War: "Some months ago we made an informal offer to furnish to the War Department practical flying-machines suitable for scouting purposes. The matter was referred to the Board of Ordnance and Fortification, which seems to have given it scant consideration. We do not wish to take this invention abroad, unless we find it necessary to do so.

"We are prepared to furnish a machine on contract, to be accepted only after trial trips in which the conditions of the contract have been fulfilled; the machine to carry an operator and supplies of fuel, etc., sufficient for a flight of one hundred miles; the price of the machine to be regulated according to a sliding scale based on the performance of the machine in the trial trips; the minimum performance to be a flight of at least twenty-five miles at a speed of not less than thirty miles an hour. We are also willing to take contracts to build machines carrying more than one man."

Again the Secretary referred the letter to the Board of Ordnance and Fortification: "I have the honor to inform you that, as many requests have been made for financial assistance in the development of designs for flying-machines, the Board has found it necessary to decline to make allotments for the experimental development of devices for mechanical flight, and has determined that, before suggestions

with that object in view will be considered, the device must have been brought to the stage of practical operation without expense to the US."

The Wrights' reply: "We have no thought of asking financial assistance from the government. We propose to sell the results of experiments finished at our own expense.

"So that we may submit a proposition conforming as nearly as possible to the ideas of your board, it is desirable that we be informed what conditions you would wish to lay down as to the performance of the machine in the official trials, prior to the acceptance of the machine. We cannot well fix a price, nor a time for delivery, till we have your idea of the qualifications necessary to such a machine. We ought also to know whether you would wish to reserve a monopoly on the use of the invention, or whether you would permit us to accept orders for similar machines from other governments, and give public exhibitions, etc. Proof of our ability to execute an undertaking of the nature proposed will be furnished whenever desired."

And the rejoinder from the Board: "It is recommended the Messrs. Wright be informed that the Board does not care to formulate any requirements for the performance of a flying-machine or take any further action on the subject until a machine is produced which by actual operation is shown to be able to produce horizontal flight and to carry an operator."

Such documents as these are, in a way, humorous. But in their contents there is also an ominous warning. The type of mind that composed these letters to the Wrights still exists in our military establishment. They are minds stagnant with tradition and abhorrent of change. They are the Maginot and the battleship minds. Today, far more than at the time these letters were written, it is essential that reaction of this sort be weeded out and destroyed—before the military establishment either withers or is itself destroyed at the hands of an enemy aggressor.

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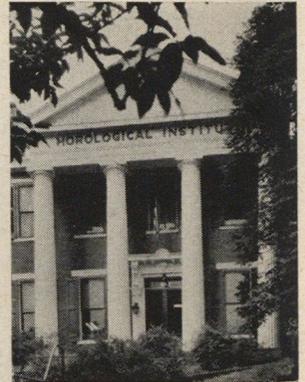
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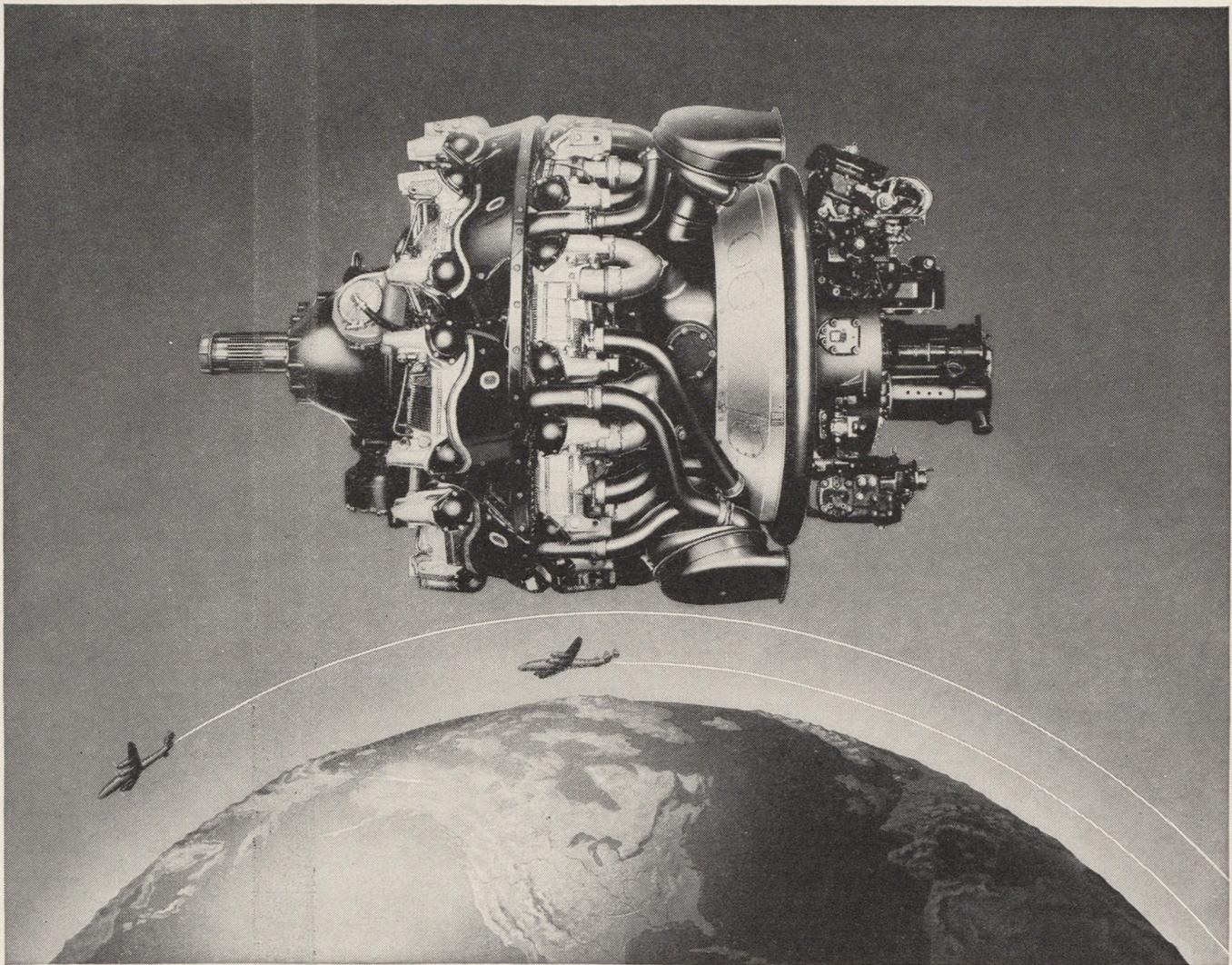
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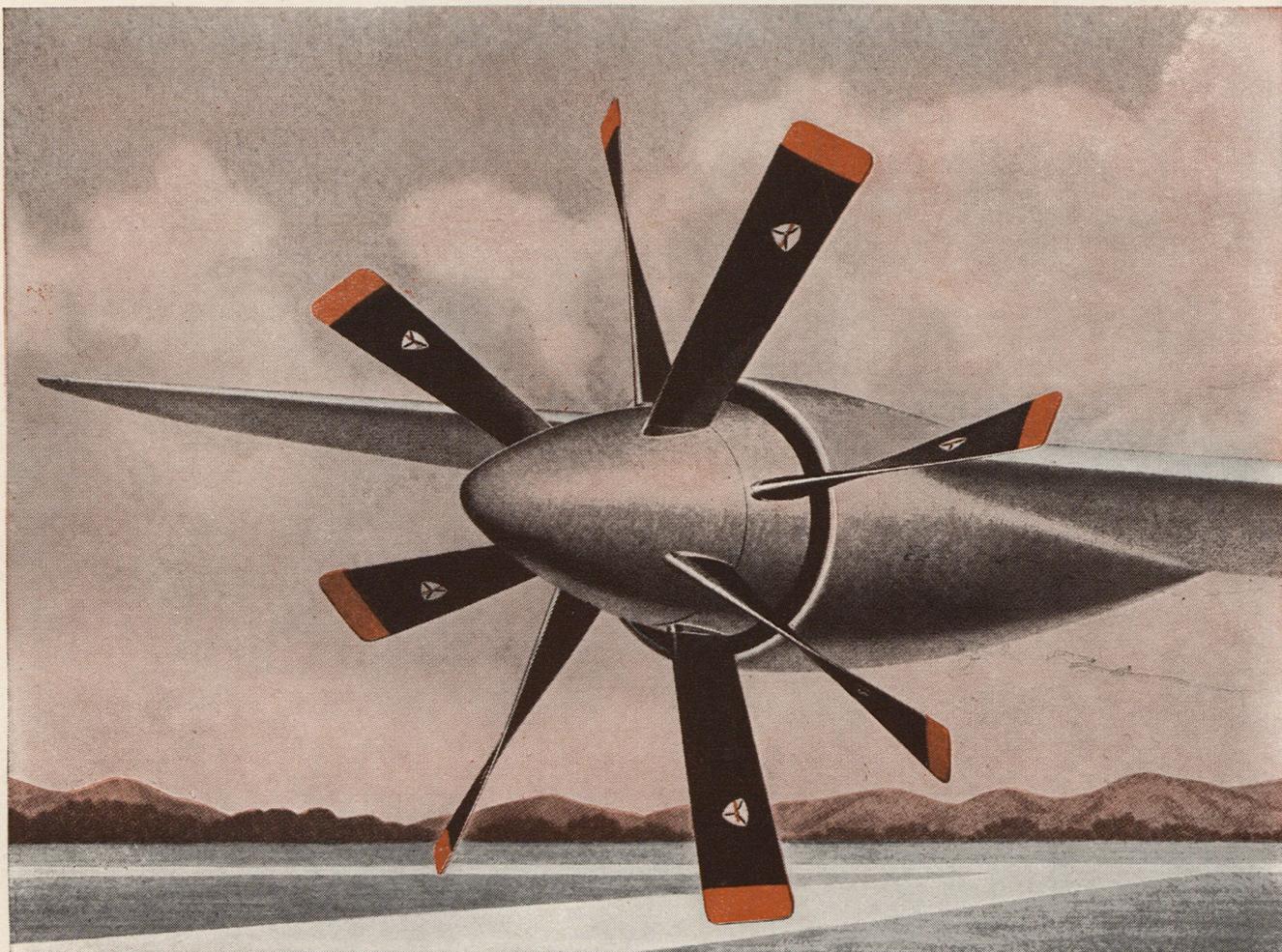


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