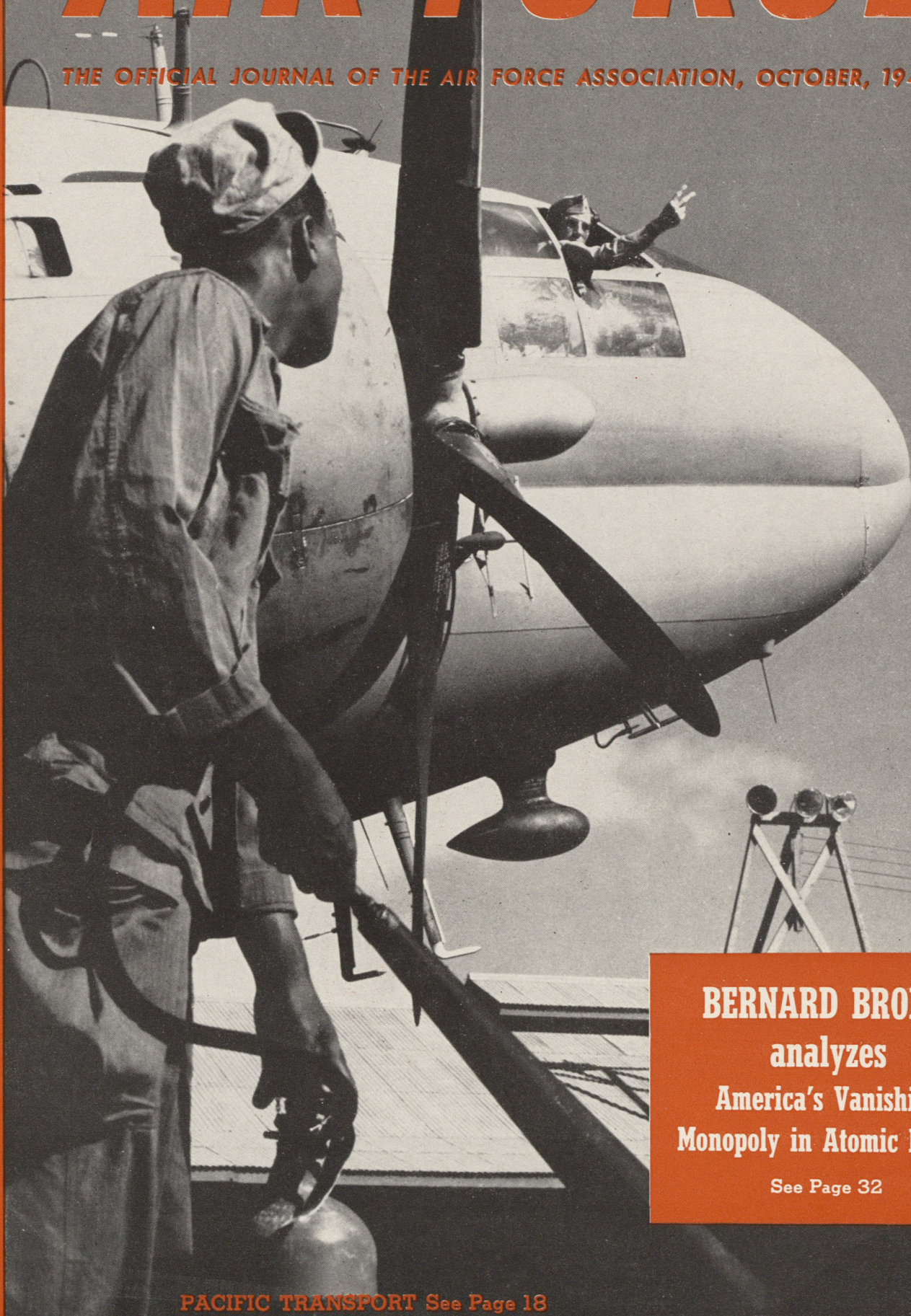




AIR FORCE

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

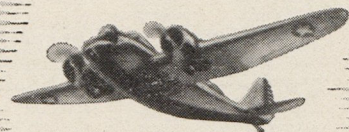


BERNARD BRODIE
analyzes
America's Vanishing
Monopoly in Atomic Bombs

See Page 32

PACIFIC TRANSPORT See Page 18

From High-Speed Bombers to High-Speed Transports MARTIN LEADS THE WAY INTO THE FUTURE!



YESTERDAY: The famous Martin B-10 bomber, faster by 100 m.p.h. than any other bomber of its day and speedier than most pursuit ships, made obsolete nearly all the world's military aircraft; won the 1932 Collier Trophy for Glenn L. Martin.



TODAY: The Martin 2-O-2 as a military transport can carry 61 military personnel or more than 15,000 pounds of military cargo—over twice the capacity of twin-engine equipment used in World War II and still in service. And the 2-O-2 cruises at speeds 100 m.p.h. faster than the World War II planes it replaces . . . yet operates from the same short runways, small airports.

Tomorrow

Martin engineers are constantly at work harnessing higher and higher speeds to the transport and combat needs of our Military Services. In the days to come, look to Martin for rotary wing aircraft and other swiftly developing fields.

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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.



Tough customer

YESTERDAY -

Tougher yet

TODAY

For the backbone of its air fleet the U. S. Navy traditionally puts its faith in aircraft types that have thoroughly proved themselves in service. Today, the battle-proved Vought Corsairs proudly serve as the Navy's front-line fighter-bombers. Advanced far beyond their wartime predecessors, highly developed models of the

F4U will continue to join the fleet well into 1949.

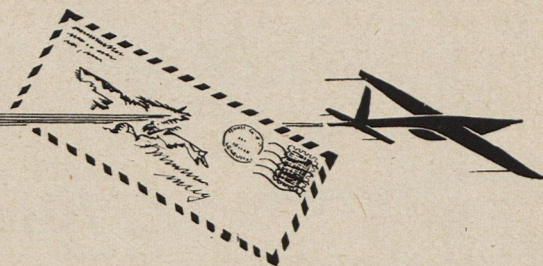
Meanwhile, a whole new generation of Vought airplanes is in the making. Right now they are going through the gruelling tests that will prove them for service with the fleet in years to come.

CHANCE VOUGHT AIRCRAFT

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ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

AIR MAIL

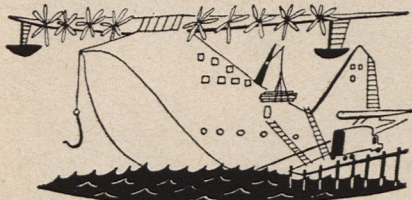


Flying Boat

Gentlemen: Could you tell me what has happened to Howard Hughes and his "Flying Boat?" Has he ever flown it above 500 feet? Is its flying time registered in hours yet?

Sgt. E. C. Sears
APO 182
San Francisco

• So far the Hughes Flying Boat has made only one flight—its initial test of November 1947. Since then it has been undergoing various modifications dic-



tated by exhaustive taxi runs. Next scheduled flight is for "early this fall." It is now under the auspices of the RFC, and is no longer an Air Force project.—ED.

Club for Tigers

Gentlemen: Being a member of the Air Force Association, I enjoy reading the magazine AIR FORCE from cover to cover each month. Couple of months ago I noticed some information on the Flying Tigers headed by their past commander Claire Chennault. Knew such an organization existed for members of his old command in China before it became the 14th Air Force, but I would like to know if at present membership is open to 14th Air Force personnel.

Harold H. Fairfield
St. Louis, Mo.

• Our information indicates that the club is open to all former members of the 14th Air Force. The man with the details is Fred C. Thomsen, 1417 Washington Street, Springfield, Mo.—ED.

Appropriate Recognition

Gentlemen: As you may have noticed from the August 2 issue of NEWS-WEEK, I have initiated a movement to erect an appropriate monument to the five United States Air Force flyers who were shot down over Yugoslavia in 1946. The present inadequate monument, standing only two feet high above ground, reads merely as follows: "Harold F. Schreiber, Blen H. Free-stone, Richard H. Claeys, Captains; Chester J. Lower, Matthew Comko, Corporals, Air Corps. Killed in airplane crash August 19, 1946."

As a former United States Minister to Yugoslavia I feel it important, in addition to honoring the memory of these heroes, to repudiate publicly, through the erection of such a monument, the implied policy of appeasement inherent in the lack of appropriate recognition of the loss of their lives in the performance of duty.

Any contributions for this purpose may be sent to me at: 2422 Massachusetts Avenue, NW, Washington 6, D. C. Formal receipts will be issued and the funds deposited in the Riggs National Bank which has agreed to act as my agent. The accounts in connection with the administration of this fund may be inspected at the bank.

Of the estimated sum required—\$100,000—\$450 has been received. It is urged that small contributions ranging from \$1.00 to \$5.00 be sent so that as many contributors as possible may be responsible for the erection of the monument.

Should the amount collected exceed the cost of the monument, the surplus will be turned over to the Air Forces Aid Society, or to any Army or Navy charity which the donor may designate.

Your readers will undoubtedly be interested to know that I have discussed the project of the monument with high officials of the Air Force who not only have indicated their enthusiastic support thereof but have offered to me their assistance in realizing it.

Arthur Bliss Lane
Washington, D.C.

Greatest Mistake

Gentlemen: I have just received the August 1948 issue of AIR FORCE and so naturally I started to read it immediately. I had no sooner gotten to "Air Mail" when, lo and behold, right in front of my eyes is the greatest mistake ever made in print.

This letter is in answer to Thomas Herve, Jr., of Long Island who, it seems, was trying to find out where the 93rd Bomb Group was. At present we



are located at Kadena Air Force Base on Okinawa. But by the time you get this letter we shall be back at Castle Field. What you incorrectly said was that the 93rd is still part of the 8th

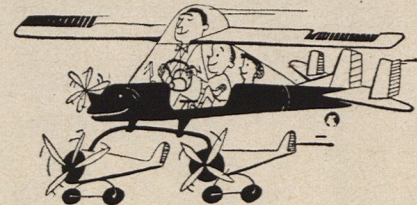
Air Force. I showed the mistake to some of the boys and they said to chew you out. Please don't ever make that mistake again. We are a part of the 15th and wish to remain so. I hope that clears that up.

Cpl. Donald P. Hadland
APO 239, Unit 1

• OK, we're chewed.—ED.

Luscombe 90

Gentlemen: In your June AIR FORCE I came across a picture of the Luscombe Observer-90. The caption says it is powered by two Continental-90



engines. Is it true? In the picture I only see one. Where do they keep the other engine?

Cpl. Jack C. Gore
Terceira, Azores

• Sorry—must have been one of the mornings we were seeing double.—ED.

Glad to Help

Gentlemen: For nearly two years I was attempting to secure confirmation from the War Department of my foreign service with the wartime Air Forces in order to qualify for certain veterans benefits accorded by the Dominion of Canada to Allied veterans who were domiciled in Canada prior to their wartime service.

I wrote to you on January 19, 1948, to secure aid in this matter and was informed on January 23 that the Air Force Association had undertaken to request the information needed from the Adjutant General's office.

As a result of your action the requisite data was promptly secured by the War Department, materially aiding my claim with the Department of Veterans Affairs of Canada.

I am pleased to advise you that I recently received from the Canadian Government payment of War Service Gratuity and Re-establishment Credit to the total amount of \$748.96.

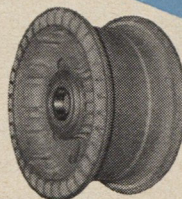
My deepest gratitude and thanks are due you for your help in this matter. I continue my membership in AFA with great pride.

Paul J. Sykes, Jr.
Vancouver, Canada

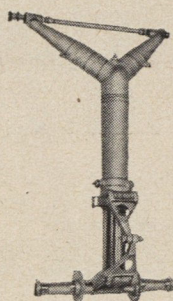
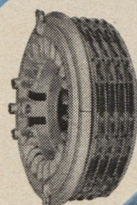
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BUILDERS OF BASICALLY BETTER LANDING GEAR EQUIPMENT

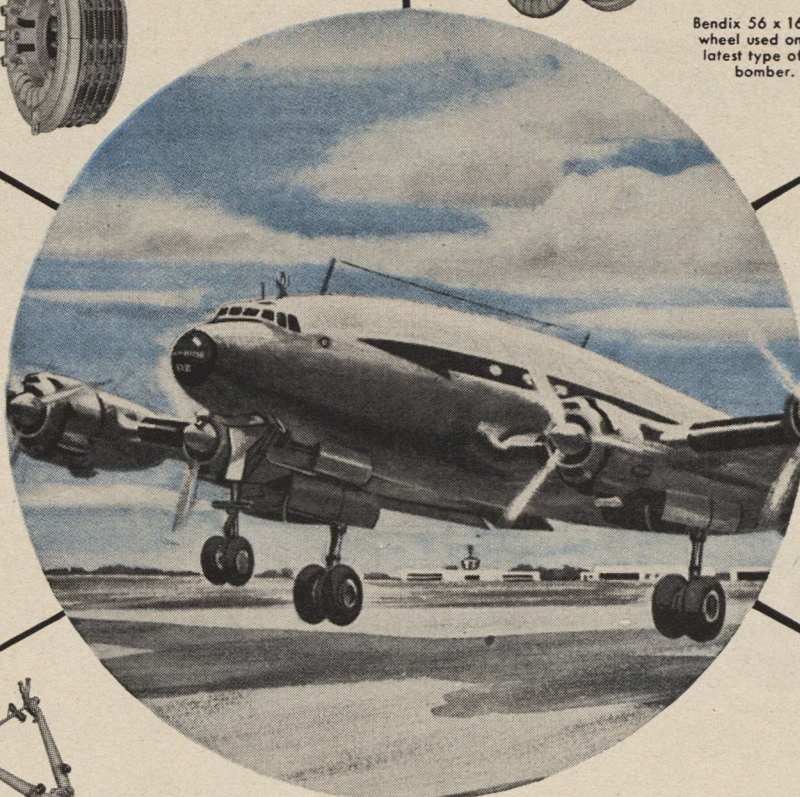
The Bendix segmented rotor brake—this four-rotor brake is designed for the high landing speeds of jet powered bombers.



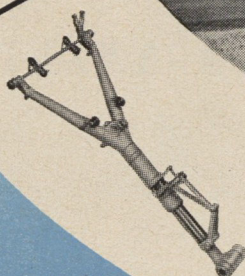
Bendix 56 x 16-inch wheel used on the latest type of jet bomber.



Bendix main landing gear shock strut, used on the newest commercial transport planes.



Bendix pneumatic main landing gear shock strut—designed especially for thin-wing, turbojet, pursuit planes.



Bendix commercial transport nose strut, companion to the main landing shock strut shown above.

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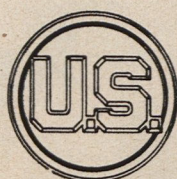


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VOL. 31, NO. 10

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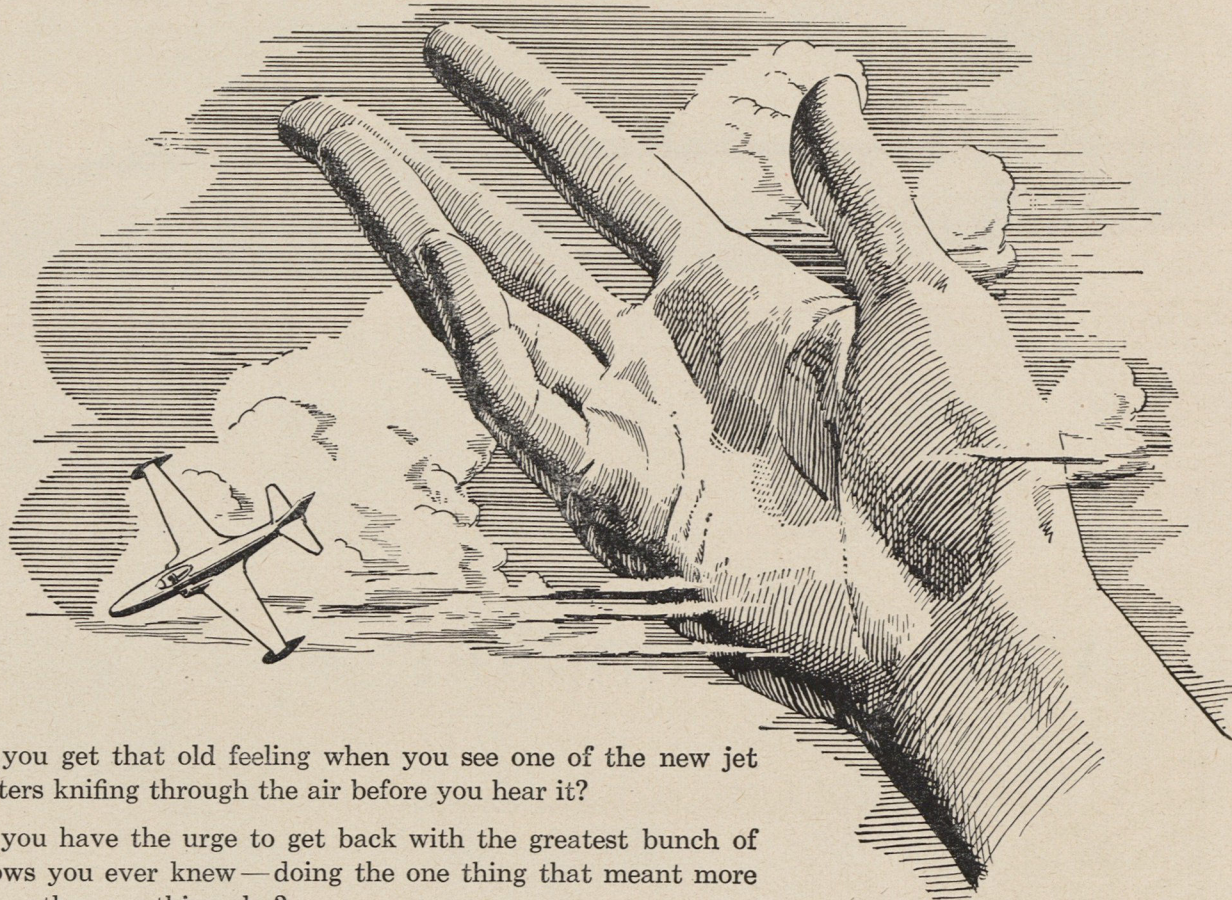
Pacific Correspondent, Charlotte Knight

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of your State.*



***Here's how
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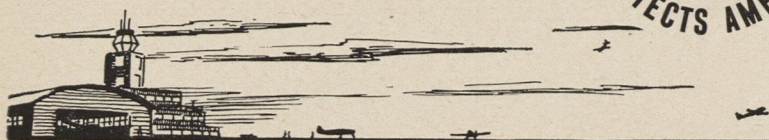
Fellowship ★ Training

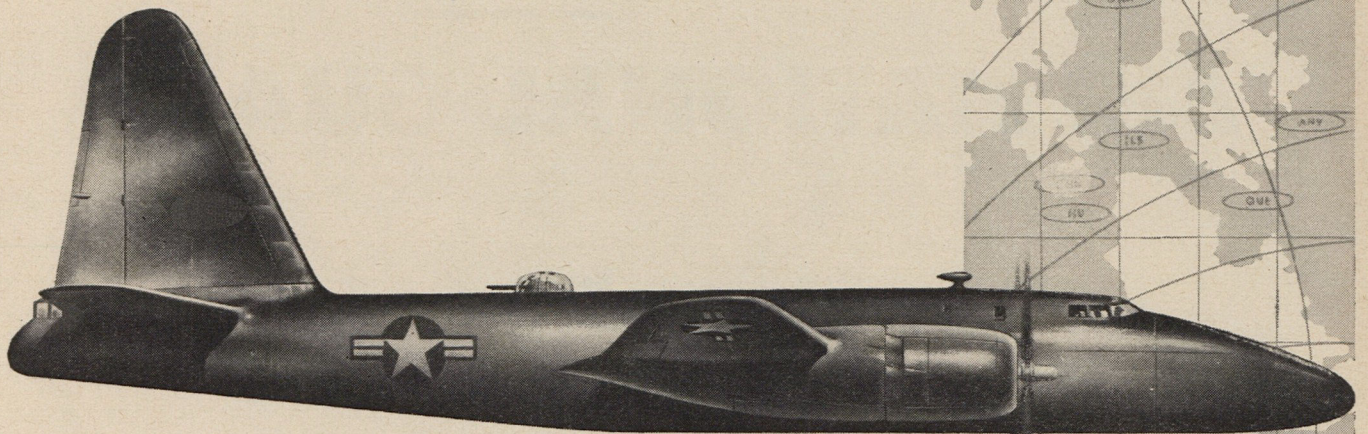
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NATIONAL GUARD

of the United States





A Navy Champion

The Lockheed P2V Patrol Bomber

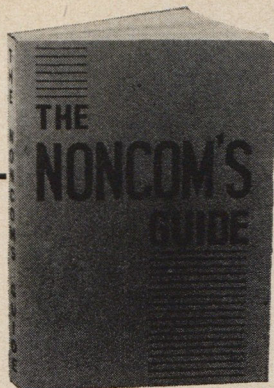
In its fleet of Lockheed P2V Patrol Bombers, the U.S. Navy possesses the longest-range aircraft in the world.*

The Lockheed P2V gives the Navy long-distance sight and security — tireless, swift, reliable.

Lockheed Aircraft Corporation, builder of the Navy's P2V, takes the occasion of Navy Day, October 27, to salute the men of the Navy on sea, on land, and in the air.

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IN

Gentlemen: Please tell me where I can obtain information regarding Reserve training in the ORC, I am a navigator in the Reserve and would like to work to increase my rating.

Francis Mintz
Madison, Wis.

• *Nearest AFBURT to Madison is the 141st at Orchard Place Airport, Park Ridge, Ill.*

Gentlemen: In "Cross Country" in the May issue of AIR FORCE there was a section on direct commission in the Reserve. Although I am on active duty at the present time, our station has no recent information on this. I would like to know what forms, tests, etc., have to be completed.

Victor N. Hill
Liberty Lake, Wash.

• *To be eligible for direct appointment in the Air Force Reserve, you must have had six months in the AUS or one of its components between December 7, 1941, and June 30, 1947, in the grade of warrant officer, flight officer or one of the first three enlisted grades, and must not be over 28 years of age.*

Gentlemen: In February of 1947 I went through a series of tests at the Officers Screening Center, Mitchel Field, for the purpose of obtaining an appointment in the regular Army. I was later advised that my appointment could not be granted at that time due to budget restrictions. In view of the current improved situation and the expansion of the armed forces, I should like to be advised of my standing at this time.

Harry Maginnis
Brooklyn, N. Y.

• *Applications for regular Air Force commissions under the integration program have been retained in Air Force headquarters. At the present time the only method by which Reserve officers may receive appointments in the regular Air Force is under the provisions of Air Force Regulation 36-5 which provides that officers on extended active duty between the ages of 21 and 27 may submit application for such appointments.*

Gentlemen: At the present time I am a sergeant in the Air Reserve. For several months I have been taking the ten series from the 2nd Air Force Extension

School. Next year I'll graduate from the University of Illinois. Please let me know the possibility of receiving a Reserve commission. Is it possible after completing my ten series, or before?

Eugene Stern
Champaign, Ill.

• *Appointments in the Air Force Reserve are not available upon completion of the ten series extension courses. At the present time, appointments in the Air Force Reserve are made under the provisions of Circular 101, WD. Appointments under this circular are also made from former members of the Armed Forces who held the grade of sergeant, corporal, private first class, or private; they may apply for OCS training under the provisions of Circular 101 and receive Air Force Reserve appointments on graduation.*

Gentlemen: Is there an inactive Reserve organization of any type? I go to school and work part-time.

William Beaham
Ilion, N. Y.

• *You may enlist in the Air Force Enlisted Reserve Corps at any recruiting station and participate in training on an inactive duty status. It is not required that you report for active duty training, for this requirement is withheld pending completion of your studies.*

Gentlemen: I have a problem. Upon release from active duty I wanted to sign up with the Reserve. From AFA I received information that F/O could apply for Air Reserve 2nd lieutenant. I sent all data that I had in my possession, also informed them about my change of name. The only answer I received from the War Department was "received application for Reserve and notice of change of name—change of name recorded on war record." No mention of Reserve.

Stanley Miody
Greenwich, Conn.

• *Perhaps it was because you used one letter to cover two subjects—bad procedure in the army you know. It is suggested you send a tracer to Hq. USAF requesting present status of your application.*

Gentlemen: I was discharged as an aviation cadet, after being on that status approximately 18 months, and

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

RESERVE

The SOP of AR and NG

only had 2 more weeks of training before graduation and a commission. I was in Radar Observer (Night Fighter) training. Is it possible for me to obtain a commission in the Reserve? My training lasted for well over two years, and surely I am qualified for a commission, if some of the first three graders I know have received them are. Our training was highly technical and, as you well know, anyone in cadets for two years has plenty of officer training. It seems that the Air Force has forgotten cadets.

Carroll Hallman
Batesburg, S. C.

• *Direct appointments in the Air Force Reserve under the provisions of Circular 101, WD (see Eugene Stern letter above). Hq. USAF is presently formulating policies which will authorize the appointment in the Air Force Reserve of personnel who possess professional and technical specialties.*

Gentlemen: In the article "Summer-time Soldiers" (August), you described training given to airplane maintenance personnel at their summer camp and made the remark that they received "exhaustive study of the maintenance of the A-26 with which this light bomb group eventually will be completely equipped." My question is, will all Air Force Reserve units be equipped with the planes in which they will fly as an operational outfit in case of an emergency again, or is it the light bomb outfits only?

Frederick J. Andres
Highland Park, Mich.

• *Hq. USAF advises us that for the present at least it is not planned to equip Reserve units with the type planes they would use in combat. Reason: Reserve units, unlike Air National Guard outfits, are not organized on an M-Day basis.*

Gentlemen: I have seen recent references in Air Force regarding changes in USAF regulations which permit veterans drawing compensation to serve in the Reserve in inactive status without pay. What are the requirements for such training?

Andrew Trushaw, Jr.
Florence, Mass.

• *Physical standards outlined in AR 140-5 for nonrated and AR 140-0 for rated, with waiver must be met for inactive duty training with AF Reserve. Proof must also be furnished that the disability will not be aggravated by inactive duty training.*

AIR FORCE RESERVE OFFICERS Here's How To Increase Your Retirement Income 34%

YOU can add substantially to your retirement income by volunteering for active duty now.

Suppose you are a first lieutenant, who has accumulated 1710 points with four years of active duty and five years as a member of a reserve component.

At the age of 60, you will be entitled to a retirement income of \$1263.90 each year.

This figure is based on the assumption that you completed 30 years of service, of which 20 years have been satisfactory federal service as a member of the military establishment and the civilian components thereof. Through normal study and training during this period you have become a lieutenant colonel.

BUT—If you, as a first lieutenant, volunteer now for three years, returning later to your reserve component, your point score climbs to 2805.

At the age of 60, you will be entitled to a retirement income of \$1697.85 a year... increasing your retirement income by \$433.95 yearly!

Vacancies exist now for Air Force officers, other than flying officers, of almost all grades. Successful applicants for extended active-duty tours will be recalled in the grade held prior to relief from active duty.

These Air Force officers in all ages and grades are offered a wide selection of professional, technical and administrative duties.

Look Ahead to the Future—ACT NOW!

SPECIAL OPPORTUNITIES FOR THESE OFFICERS

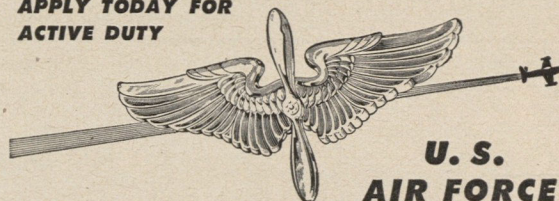
1. Second Lieutenants with university degrees, such as men from Air ROTC, will be eligible to apply for Regular Air Force commissions while on active duty.

2. Qualified Officers of All Grades having either Air Force or civilian background fitting them for duty in one of the following fields will receive speedy consideration:

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| ☆ AERONAUTICAL ENGINEERING | ☆ INTELLIGENCE | ☆ LAW |

All applicants must fill out Air Force form No. 125 obtainable at their nearest Air Force Base, local Air Force Reserve Unit, Recruiting Station, or from Chief of Staff, United States Air Force, Washington 25, D. C.

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THE BREEZE

AFA's GREATEST MOMENT

After it was over you felt that same wonderful mixture of pride and satisfaction that comes at a homecoming game when your team is clicking just right on every play . . . This was a Homecoming that won't soon be forgotten by the thousands of Air Force men who attended, nor by the City of New York . . . This second annual national convention of the Air Force Association on September 24-26 was a milestone in events giving recognition to airpower, and it was the greatest thing that has ever happened to AFA.

MAN OF THE YEAR

W. Stuart Symington, Secretary of The Air Force, became "Aviation's Man of the Year" when he received the AFA's newly established H. H. Arnold Award for outstanding civilian service toward the peace and the security of the United States in the field of aviation. This award to the man who led the historic fight for a 70-group Air Force during the past year was presented along with four other AFA awards for distinguished civilian service to peace and national security: in the field of science to John Stack, Assistant Chief of Research of the Langley Laboratories of N.A.C.A.; in the field of arts and letters to William Lister Haines, author of *Command Decision*; in the field of flight to Herbert H. Hoover, Chief Test Pilot at N.A.C.A.'s Langley Laboratories; and a special award in the field of flight to Jacqueline Cochran, famous world speed record holder.

MEN OF THE HOUR

These awards were presented at the big event of the three-day convention, the Air Force Reunion at Madison Square Garden on Saturday night, September 25, which James Reed Kilpatrick, boss of the place, has called "the greatest show ever put on in Madison Square Garden."

A "man of the hour" at this *Operation Wing-Ding*, which the reunion program was called, was a fellow from Hollywood named Bob Hope. His smash hit performance as Master of Ceremonies was something the Air Force and AFA will always remember for Bob, like all the show people who were there, contributed his time and talents, and this included a full day and night in rehearsal as well as a four-hour, fast-moving show that would wear down any man.

The wonderful people of show business were at the Garden to receive

official recognition from the USAF for the jobs they did overseas in wartime, and Bob Hope was due to receive the Air Force plaques in their behalf. After the riotous climax to the show which found Bob engaged in a bit of fisticuffs with none other than the old Manassa Mauler, Jack Dempsey, Bob got caught in the crowd backstage and was unable to reach the platform in time for the presentation. To cap his week-end contribution, Bob filled three benefit engagements the next day before rushing off to LaGuardia field to catch the AFA's special reunion flagship DC-6 which brought the Hollywood stars to New York and took them back again Sunday night.

When Bob wasn't carrying the show from one great act to another, Jimmy Stewart, AFA Vice President, mastered the hilarious ceremonies to a fare-thee-well.

Backstage, unseen by the 18,500 applauding Air Force men and their wives and friends who packed the Garden, were the two guys most responsible for production and direction of the show: Joshua Logan and John R. (Tex) McCrary. They spent weeks of thought, sweat and outright genius on *Operation Wing-Ding* and they were, as Bob Hope put it, "the guys who made the show."

There were plenty of others who share the glory for this one, and who weren't on the platform that night, people like Raymond Paige and his musicians, Max Wolfe and his technicians, Sam Rausch, Warren Cheney, Henry Morgan, Bill Hammerstein, Jim Awe, Bob Ross, Tom Compere, Sue Cardoza.

ON STAGE

This was the lineup of show business stars and great people on stage for *Operation Wing-Ding*, in the order of their appearance: New York's Mayor Bill O'Dwyer, Jimmy Stewart, Bob Hope, Jerry Colona, Tony Romano, June Lockhart, Katherine Lee, Roberta Jonay and three dancers from Allegro, Patricia Morrisin, Frank McHugh, The Deep River Boys, Ed Sullivan, Morton Downey, The Harvest Moon Ball dance winners, Dinah Shore, Marlene Dietrich, Milton Caniff, Ben Lyon, Melvyn Douglas, Bill Holden, Mark Stevens, Paul Lukas, George Montgomery, Johnny Desmond, Jinx Falken-

berg, Generals Kenney, Vandenberg and Spaatz, Mrs. William S. Knudsen, Wing Commander Johnny Johnson, Bernard Baruch, The Rockettes, Herb Shriner, Lena Horne, Walter Pidgeon, Margaret O'Brien, Carmen Miranda, Jimmy Osborne, Larry Adler, Ella Logan, Gypsy Markoff, Jane Froman, Gypsy Rose Lee, Jack Dempsey, Adolphe Menjou, Clark Gable, General Dwight D. Eisenhower, Joe E. Brown.

COMMAND PILOT WINGS

For the first time in history Command Pilot Wings of the USAF were presented to men not Air Force pilots. The honorary presentations, a highlight of the Reunion in the Garden, were made by General Vandenberg, who pinned the wings of General Hap Arnold on Bernard Baruch; by General Kenney, who gave his wings to Mrs. Knudsen in honor of the late Lt. Gen. William S. Knudsen, wartime Director of Production for the Air Materiel Command; and by General Spaatz, who pinned his wings on Wing Commander Johnson for Winston Churchill. Wing Commander Johnson will present them formally to Mr. Churchill.

MEDAL OF HONOR MEN

Top guests of the convention were eight of the thirteen surviving Air Force Medal of Honor men. They were Col. Pierpont M. Hamilton, Capt. William R. Lawley, Maj. William A. Shoma, Maynard H. Smith, John C. Morgan, Forrest Vosler, Jay Zeamer, and Col. John R. Kane. They occupied seats of honor at the convention banquet on Saturday noon, and they were given special introductions on stage at the Reunion show.

THE CONVENTION BANQUET

The banquet saluting the Air Force was regarded by many veteran banquet-goers as the top event of its kind ever held from the standpoint of organization and direction. This was due largely to outstanding work of the presiding officer and spark-plug of the entire affair, retiring AFA president Tom Lanphier, who left his job in Boise to come to New York and spend several weeks on convention matters.

Banquet highlights included the sincerity, good sense and humor of the principal address delivered by Secretary Symington; the tribute paid to the Air Force Association by Assistant Secretary for Air, C. V. Whitney; the sparkling remarks of Generals Vandenberg

NEXT MONTH—COMPLETE REPORTS ON AIR FORCE DAY AND AFA CONVENTION

and Spaatz; the spontaneous hand given General Kenney.

FOR ONE AIR FORCE

Convention delegates unanimously adopted a Statement of Policy calling for a single Air Force rather than the present duplicity of air forces as evidenced by the USAF, the Naval Air Service and the Marine Air Arm. "We ask not for an independent Air Force," the statement declared, "but we do demand one Air Force for the nation . . . We call upon congress to revise and enact legislation providing for the formation of the National Military Establishment with a three-fold organization—a Department of the Army to which all land movement is delegated, a Department of the Navy to which all sea movement is delegated, and a Department of the Air Force to which all air movement is delegated—by role and mission and organization."

RESERVE AND GUARD

The Air Force Association also went on record in favor of one federalized reserve air component: "in like manner, and again for reasons of economy and efficiency, we see no reason why the Air Force itself should sponsor two civilian air forces—the Air Reserve and Air National Guard. There are just so many planes and so many men trained to fly them, and both are inadequate as long as we divert our reserve strength with two civilian air forces. Therefore, in keeping with our beliefs regarding true unification of the military establishment, we urge that the Air Reserve and Air National Guard be combined into one federalized reserve.

THE NEW OFFICERS

Elected as President of AFA to lead the organization during the coming year was C. R. Smith, wartime Deputy Commander of the Air Transport Command and one of aviation's best known figures. The convention gave the new President a rousing ovation, and in like manner saluted its other new officers: Meryll Frost, Art Kelly and Tom McHale, all vice presidents; Julian B. Rosenthal, Secretary, and G. Warfield Hobbs III, Treasurer.

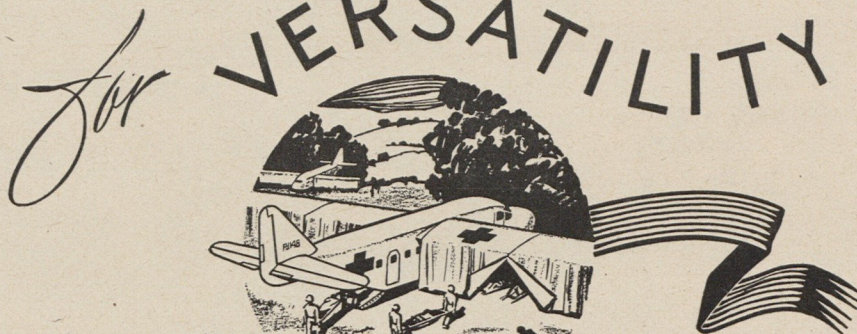
MERGER OF AFA AND ARA

Convention delegates unanimously agreed to proceed with a merger of the Air Force Association and the Air Reserve Association, as specified in the draft of the proposed constitution for the combined organization which was adopted at the convention. Members of ARA will consider the matter at their annual convention this month.

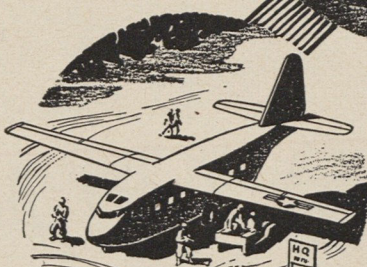
THE WHEEL

Workingest man at the three-day affair was, of course, Gill Robb Wilson, the convention chairman. The well known aviation columnist for the New York Herald Tribune had chalked up countless hours preparing for the big event, and during the convention itself was everywhere doing everything.

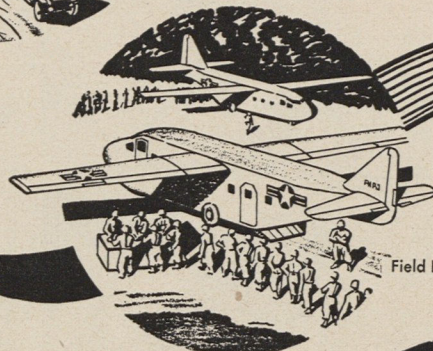
AVITRUC



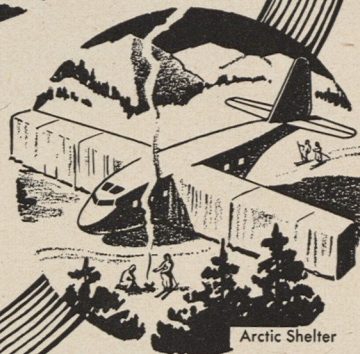
Field Hospital



Field Headquarters



Field Kitchen



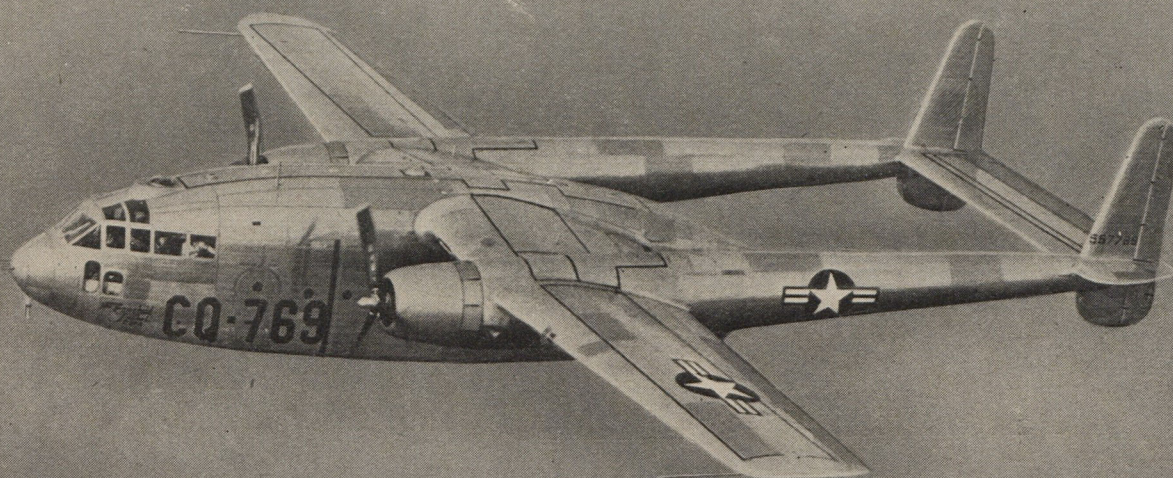
Arctic Shelter

A fast cargo and troop carrier which can be transformed on the spot, quickly and effectively, to meet any emergency requirement.

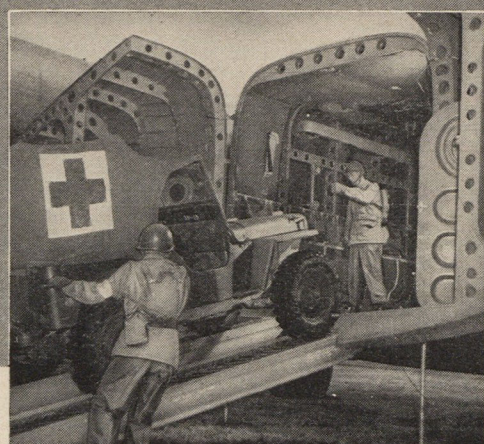
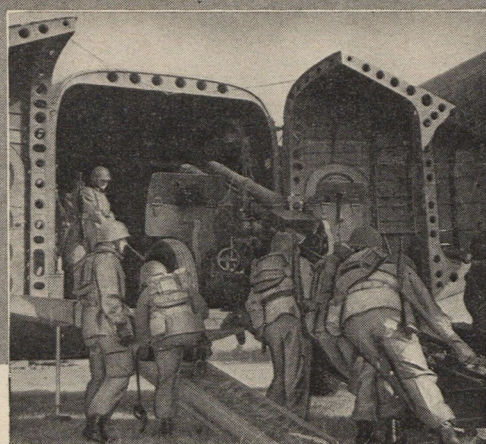
DESIGNED FOR THE JOB

CHASE AIRCRAFT CO., Inc.
WEST TRENTON, NEW JERSEY





Pattern for Swift Mobility



Speed is a prime essential in the modern concept of military maneuver. And speed, today, has to have wings.

In cooperation with the Air Forces and the Ground Forces, Fairchild research and engineering skill help provide those wings.

The rugged, hard-working C-82 Packet is now in service with the Troop Carrier Command as the standard transport for troops and guns, trucks and

supplies. Its fitness for this important assignment was demonstrated in practical maneuvers such as Operation Yukon and Exercise Snowdrop.

Now, Fairchild engineering ingenuity has created the C-119—a new Packet that flies faster and farther and carries an even greater load.

In these two airplanes our military minds have found new answers to old problems, and around them have built a new pattern for swift mobility.

 **Fairchild Aircraft**

Division of Fairchild Engine and Airplane Corporation, Hagerstown, Maryland

ROUND TWO in the FIGHT for AIRPOWER

Will Congress vote money for the second installment of the 70-group Air Force?

Round two of the battle for airpower has begun.

The gong sounded in late summer at the Pentagon, when USAF chiefs presented their 1950 budget, calling for the second installment payment on the 70-group Air Force. Army and Navy officials submitted their new money requests at the same time.

Sparring to date has been behind closed doors, but judging from the reverberations, a renewal of last winter's fight over the defense dollar already is underway. It's the "strong airpower versus balanced force" and "let's not upset the national economy" argument all over again. And ringside observers predict the battle will be a tough one, with a final decision not expected before next spring on Capitol Hill.

But, you may well ask: Didn't Congress vote overwhelmingly last spring for 70 groups, to authorize construction of a modern, all-powerful Air Force of that size? Why is the second installment payment in dispute?

To answer these questions some explanation is required. In the first place, Congress did not authorize construction of a 70-group Air Force. Not legally, at any rate. Both houses of Congress did approve, by wide margins, the money required to start modernizing the Air Force, and undoubtedly most of the Senators and Representatives considered they were voting for the five year program to give the nation a modern air armada of that size.

Strictly speaking, however, they were casting their ballots on the question of whether or not Air Force appropriations for plane procurement should be increased 822 million dollars beyond the Administration's budget proposals. The so-called Clason bill to authorize the planes, men and materiel for a 70-group force did not come to a final vote.

And even if the latter measure had been approved—as undoubtedly it would have if it had been brought up—the action would not bind the new Congress. One Congress cannot tie the hands of succeeding congresses on expenditures.

So the question of the second installment must be considered again on its

By John G. Norris

This is the new McDonnell XF-88, twin-jet fighter designed as a penetration fighter capable of operating deep inside enemy territory. At present it is experimental. Question is will there ever be money to get it on production line?

merits. And several factors make the decision a hard one.

There is, first, President Truman's directive putting a 15 billion dollar ceiling on the 1950 defense budget. This covers all Army, Navy and Air Force expenditures, plus such other spending as stockpiling of strategic and critical materials. It is some 600 million dollars above what was voted for the current year.

Actually, however, it represents a cut. For to carry on the newly expanded defense forces through the fiscal year 1950 at the levels authorized by Congress last spring will cost about a billion dollars more than during the current year. This is because the three services will not reach their new personnel strengths until about the end of fiscal 1949. During 1950, the additional men must be paid, fed and equipped for the entire 12 months.

Therefore, unless more than 15 billions is allowed for defense next year, some of the present programs must be curtailed. Manpower either must be cut back, or funds for aircraft procurement, Navy warship construction, new Army weapons, barracks and quarters,

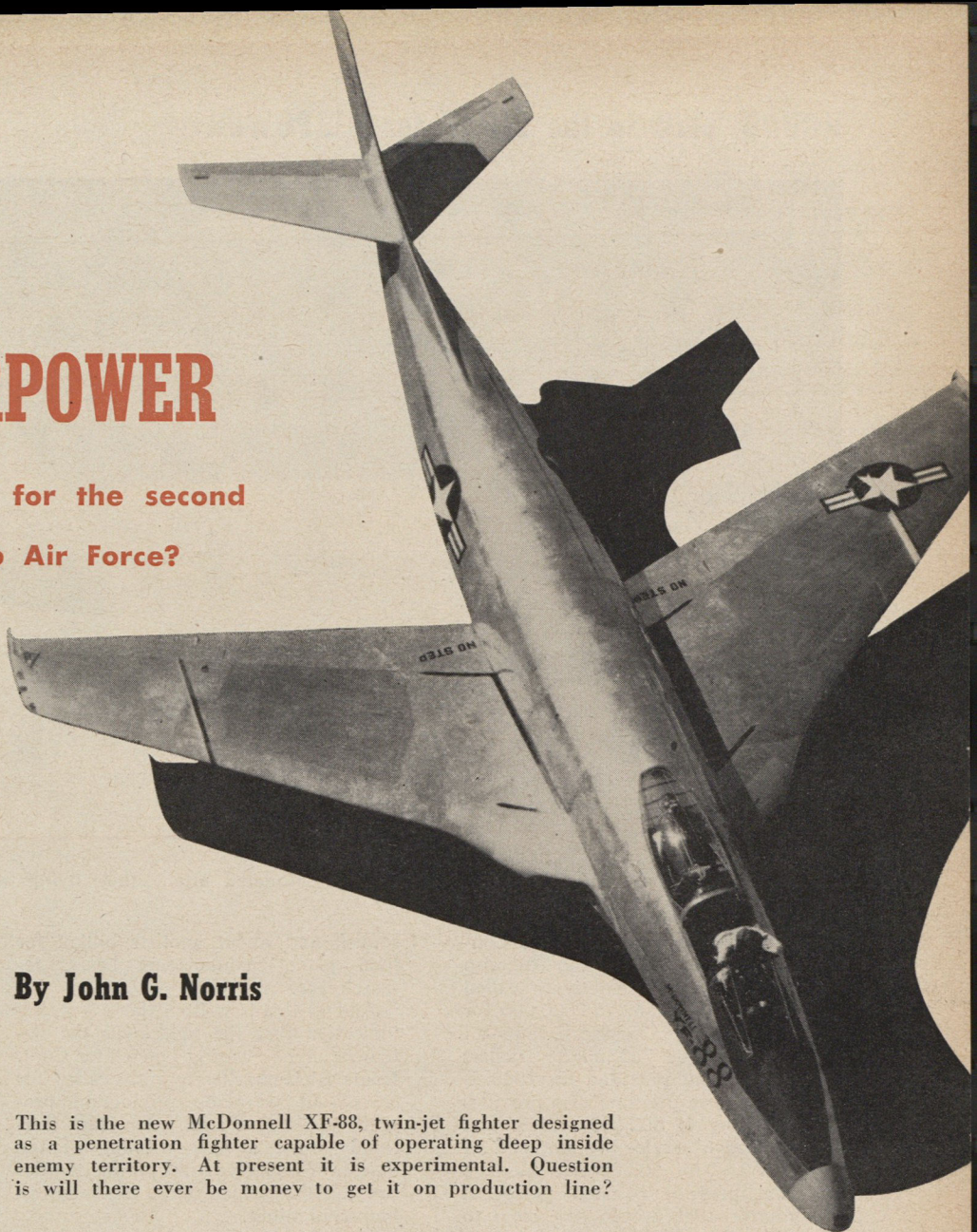
base construction, research and development or other important projects must be reduced.

And all three armed services are asking for increases in all or most of these items. Anyone who has recently visited our posts, bases and stations knows that better housing is a "must." A good case can be made for most of the other projects.

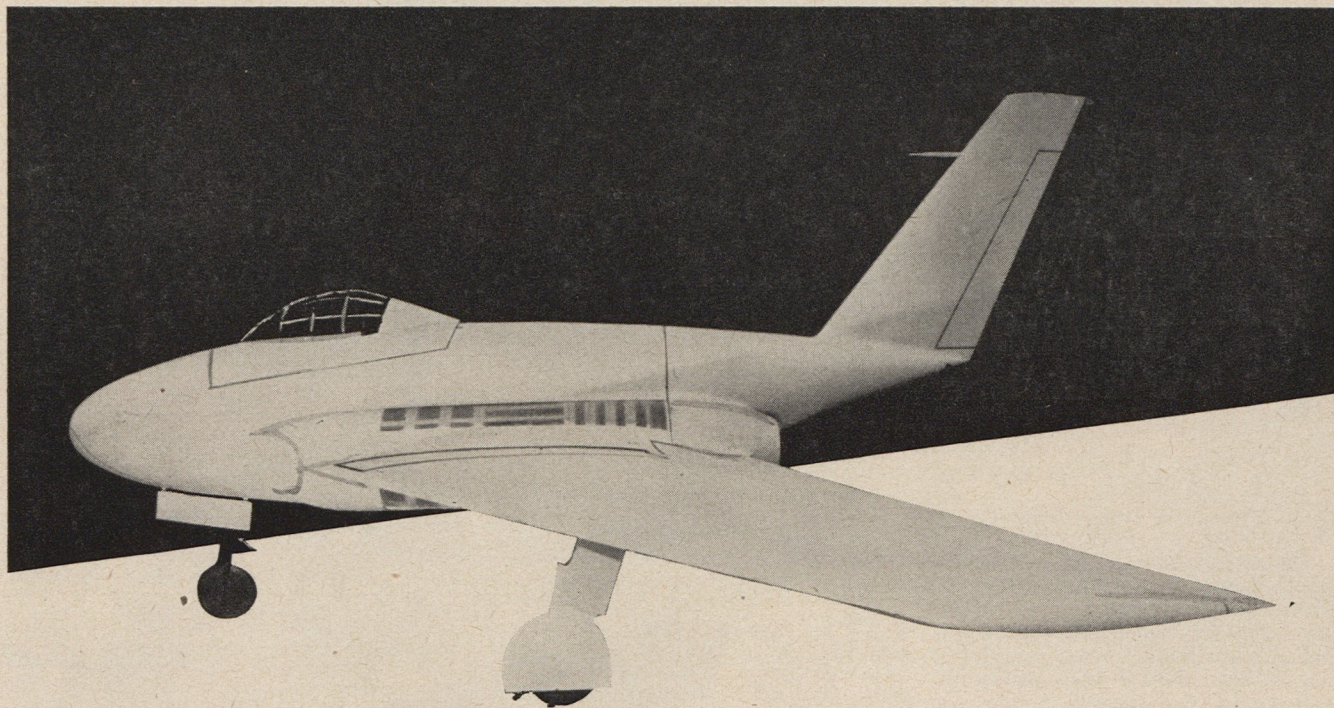
Making the problem even tougher is the fact that the Air Force and Navy plane procurement programs as presented to Congress last year call for larger installments in 1950 than in 1949. Modernization of the air forces necessarily had to start slow. The wheels of the nation's great aircraft production machine running down from wartime speed almost ground to a stop last year.

This year, calendar 1948, even with the expansion program, only about 20 to 22 million airframe pounds of military aircraft will be delivered by plane builders—a drop from the 1944 total of close to a billion pounds. The 70-group program calls for deliveries of 50 million pounds by 1951 or 1952.

Last spring, Lt. Gen. Edwin W.



ROUND TWO in the FIGHT for AIRPOWER (Continued)



Mock-up of Northrop X-4, new jet research ship. Modeled after other flying wings, it is now undergoing engine tests.

Rawlings, Air Comptroller, told a Congressional committee that the 70-group Air Force program tentatively called for appropriation of \$2,738,000,000 for plane procurement in fiscal 1950—an increase of about 700 million dollars over the amount provided for 1949.

The 70-group program also provides for expanding to 502,000 officers and men in active service by the end of fiscal 1950. This 60,000-man increase over the present, planned personnel strength for 1949 would cost close to an additional quarter of a billion dollars.

Next, let's look at the Navy's air expansion plans. Naval appropriations for plane procurement totaled 903 millions this year—just under half what was voted for the Air Force. But the Navy's 14,500-plane program provides for ordering two and a half times as many planes in 1950 as in 1949 at a cost more than three times as great.

This plan—which has been described by Navy chiefs as the counterpart of the 70-group Air Force program—is not likely to be seriously presented in full. But Navy demands for even lower amounts—taken with other Army, Navy and Air Force proposals—will make formulation of the '50 budget a problem.

While the 1950 budget is in preparation—that is, roughly July to January—what each service proposes, what cuts are made by Defense Secretary James Forrestal and the Bureau of the Budget, and what finally is recommended to Congress by President Truman all remain a secret. However, it is reasonable to assume that the original Air Force requests did not differ greatly from the earlier estimates of 2.7 billions for planes, some 2.25 billions for per-

sonnel, and about another billion for fuel, plane maintenance, bases, research, etc.

And as this is written there is strong indication that the fight over the defense dollar is waxing hot. After Capt. Eddie Rickenbacker recently called for an all-out warplane production program to "stop Russia," Secretary Forrestal issued a new warning of the danger of excessive arms production destroying the golden goose of American industrial might.

He told Air Force leaders and the nation's leading airmen at the AFA-Aero Club sponsored Air Force Day dinner in Washington that while a 15 billion dollar defense budget perhaps can be carried out without "controls, priorities and allocations," any substantial expansion of this figure brought by Air Force demands would almost surely bring such government intervention or economic trouble.

This argument was the basis of Forrestal's objection to voting the additional 822 millions for plane modernization and the 70-group Air Force last spring. When Congress approved the funds anyway, the administration withheld part of the money to "wait and see" the effects of the plane orders on industry. Mr. Truman said he would review the situation again in September and December.

Next year the Air Force hopes to get money for about 2100 new planes according to the best available information. Final decision on numbers and types will not be made until sometime next spring or summer, when not only the appropriation totals are definite but more is known of the development of several new types.

At present reading, it appears that the emphasis will be on new jet bombers. Probably the Northrup B-49 Flying Wing and the Boeing B-47, both of which now or soon will have production orders, will be heavily represented. Possibly the giant Boeing XB-52, globe-ranging craft with turbo-prop engines, may be ready and promising.

In fighters, orders probably will get into the "90-class." Existence of experimental contracts for development of the Lockheed XF-90, and Republic XF-91 to replace the F-80 Shooting Star and F-84 Thunderjet, as well as a Convair XF-92 recently were revealed. Also in the picture are McDonnell's XF-85 parasite fighter and XF-88 penetration fighter, as well as the Curtiss-Wright XF-87 and Northrop XF-89 all-weather fighters.

There also will be considerable debate over proposals that the Air Force spend larger sums for new cargo type planes. Orders to date have emphasized combat types, with some funds going for specialized transports like the Fairchild Packet, used by the Army airborne forces, and the Northrop Pioneer, designed for "bush" operations, but very little for big "airlift" craft to supply overseas air bases.

The volume of aircraft orders contemplated for next year under present plans, while small in comparison with wartime production, presents problems. This assures that Secretary Forrestal's views will be listened to respectfully both at the White House and in Congress this winter, regardless of which party is in control.

Studies have shown, however, that the 70-group Air Force is no great burden on the steel industry. At the cur-

rent rate of operations, the nation's mills can turn out all of the steel required for new planes for one year in approximately three hours, though some of it is special steel requiring highly controlled production. The aluminum necessary, when peak plane building rates are reached more than a year from now, should involve only from 15 to 20 days of the aluminum industry's annual output.

However, in other respects the situation today is considerably different from 1940, when the wartime expansion of aircraft production began. Then, our economy was far from "tight." Unemployment was fairly heavy. There had been no inflation of costs. Much industrial capacity lay idle. There were plenty of materials. Furthermore, the types of planes subsequently put into production were powered by reciprocating engines, developed to a high state of efficiency over the preceding 20 years.

These questions will be raised in consideration of whether we can carry forward the second installment of the 70-group Air Force program without upsetting the national economy and proper distribution of our armed forces and whether the USAF is maintaining the right balance between available aircraft and new development.

Two other major factors will help determine the outcome of the new round in the fight for airpower. They are the international situation which shows no sign of clearing, and the leadership of the nation after next January.

In this connection, advocates of a strong Air Force as our chief defensive shield, recall a little noticed declaration by Republican presidential nominee Thomas E. Dewey in September. In his proclamation of Air Force Day in the State of New York, Mr. Dewey said: "We intend to have an establishment of highly trained military personnel

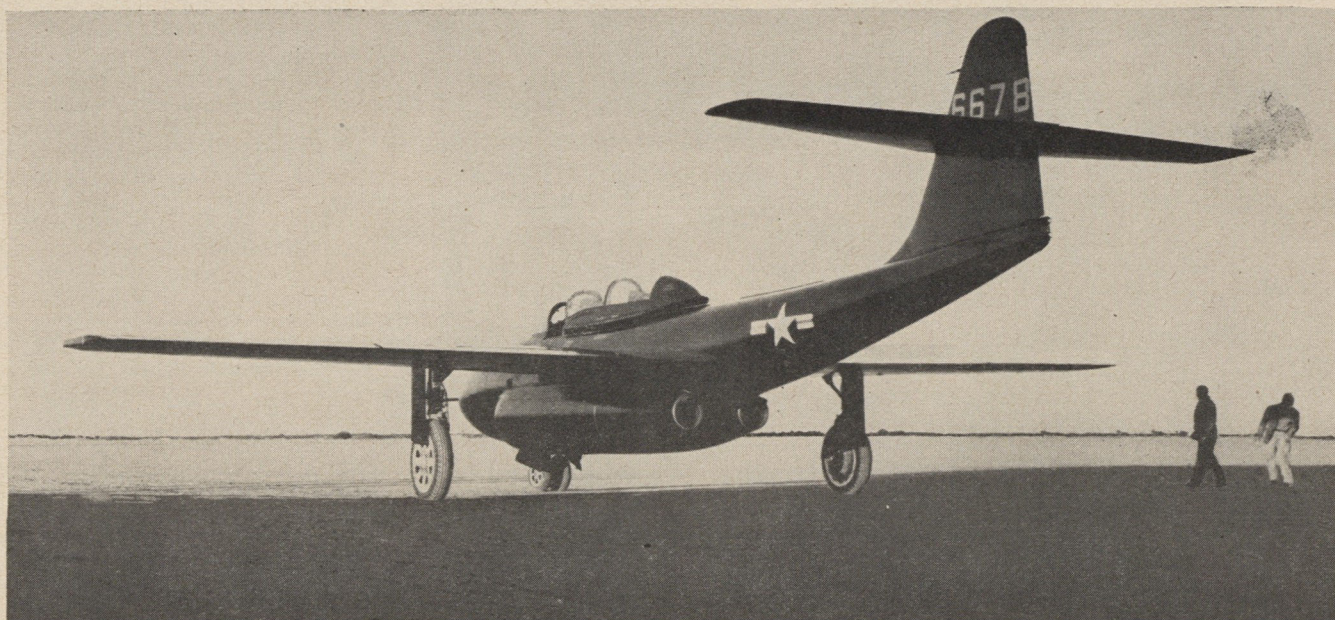
which will be ready for any emergency as the best available insurance against war. In such an establishment, the U. S. Air Force must have an increasingly powerful part. Airpower has become our first line of defense."

Politics played its part in last year's

airpower fight with President Truman and Secretary Forrestal urging the "balanced force concept" and Senate and House Republicans generally favoring the 70-group plan. Mr. Dewey also seems to believe in emphasizing airpower in national defense.



Another plane the USAF would like to buy lots of if it had money is the North American F-86 which tried to bust speed record at Cleveland (above) and failed, but then tried again within the month and made it.



Newest all-weather jet fighter—the Northrop XF-89. Plane has crew of two seated in tandem. Cabin is pressurized.

Towing 'copter to scene of crash is newest trick in arctic rescue

To the lay observer the two things most apparent about airplanes now coming off the production line are these: they're faster and they're prettier than anything that has ever before taken to the skies. Exception to this rule is the plug-ugly Piasecki helicopter, which—although capable of the respectable helicopter speed of 100 mph—is undoubtedly one of the most hard featured craft ever built.

Happily, however, the HRP-1 has proved to be as utilitarian as it is uncomely. Powered by a single 600 hp R-1340 engine (the same power plant used in 'copters much smaller) it has a useful load of one ton, a range of 300 miles, and a service ceiling of 10,000 feet. Designed originally for the Navy, it has since become of as much interest to the air generals as to the admirals. One of the reasons is pictured here.

Arctic rescue, to a polar conscious Air Force, is of extreme importance. Because of cold, remoteness and inaccessibility, it would also be extremely difficult, at least by conventional means. The procedure indicated here may go a long way to solve the problem. Trick of the new technique is in towing the helicopter (with idle engines) to the scene of the rescue. Air flight during the towing is sustained by the autorotative action of the rotors as the plane is pulled ahead. In this way the limited range of the rotor machine is increased to that of the mother ship.

Once at the scene of the accident, the tow can be severed, the helicopter can land under its own steam, load the crash victims, take off, pick up the tow again, and be on its way.

The HRP-1 will accommodate all crew members of all but the largest Air Force bombers. It will hold ten ambulatory personnel or six litter patients plus two ambulatory patients and two crewmen. For the most part, therefore, a single mission is all that's required.

But the HRP-1 is not the end. Almost simultaneously with announcement of the new rescue procedure, Piasecki and the Air Force announced that bigger things were in the offing. For a glimpse of what's coming up in the helicopter field, see opposite page.



Top left, flying banana has spotted a wrecked plane, cut loose from mother ship, and is about to land with supplies. Center, the landing has been accomplished and the injured personnel are loaded aboard. Bottom, the 'copter has taken off under its own steam, re-established contact with mother ship, a C-32, and is fast on its way home.

RESCUE by *Rotor*



When completed, Piasecki's twin tandem rotored XH-16 is expected to be the largest rotary wing type aircraft ever built, capable of the longest range ever achieved by this type of aircraft. With an all-metal fuselage of the general shape and dimensions of the Douglas C-54, the XH-16 will be equipped with a large detachable compartment. In combination

with the main cabin space, this compartment will allow the aircraft to transport a large number of troops or litter patients, or a great amount of military supplies. Also the XH-16 will be used as a rescue vehicle in any type emergency condition. The current Air Force contract with Piasecki is for the completion of two prototypes within next two years.



OPERATION BIRD'S EYE



**On aerial location, the USAF makes film
worthy of Hollywood's most superlative adjectives**

On September 1, a crew of five men from Wright Field climbed into a new experimental photographic airplane—the Republic “Rainbow” XR-12—at Muroc Air Base in the heart of California’s desert and took off on a special mission. Those close to the project dubbed it “Operation Bird’s Eye.”

The plane climbed to an altitude of 40,000 feet all the while heading westward until it was about 40 miles out over the Pacific Ocean off the coast of Santa Barbara, Calif. Here a trio of high-altitude cameras were turned on and began clicking off pictures at the rate of one every fifty seconds, fast enough to get a continuous strip. The cameras never stopped until the airplane—eight hours later—was over New

York City. On one roll of film the Air Force had photographed a path 490 miles wide and 2700 miles long, coast-to-coast, horizon-to-horizon.

Used to make the photographic path were three Fairchild K-17 aerial cameras set in a Trimetragon installation inside the big four-engined Reconnaissance airplane’s belly. In this arrangement one camera shot vertically covering an area of about 100 square miles while 2 other cameras shot out obliquely sweeping an area of almost 80,000 square miles into the resultant 3-frame picture. Each of the cameras carried in its magazine a roll of film 400 feet long capable of providing more than 450 individual exposures. On the historic flight 325 feet of film in each camera were used.

Pieced together in overlapping strip, the picture stretches out about the length of a football field. But on the photograph you can spot clearly the flight path of the airplane—the rough, rocky coastline just south of Santa Barbara, the airbase at Muroc, the Grand Canyon, Hoover Dam, the western desert regions, the Kansas farmlands, the Mississippi River, Kansas City, Indianapolis, Wright Field, Columbus, Ohio, the coal mining districts of Pennsylvania, the rugged terrain of the Alleghenies and finally the Atlantic coastline and the whole City of New York and surrounding area. Detail is such that you could measure the runways of the Muroc Base, determine depth of the Grand Canyon. Or, in the frames showing New York City, viewed



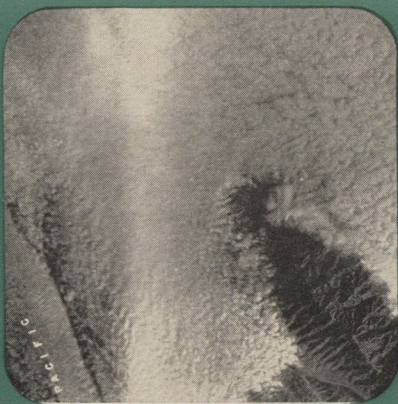
Alamosa, Colo.



Kansas City



Mississippi River



Santa Barbara, Calif.



Hoover Dam

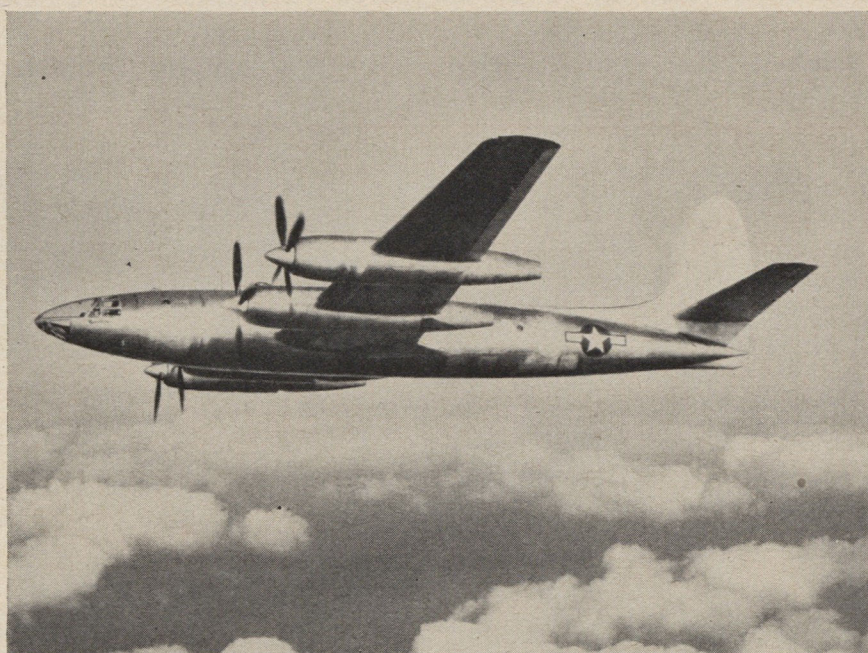


Grand Canyon

through powerful magnifying glasses you can actually see cars in the streets.

Members of the crew who made the flight were Capt. Bill W. Elliott of Dayton, Ohio, pilot; Maj. Delbert McClain of the Aerial Photographic Laboratory at Wright Field, navigator, copilot and project engineer; M/Sgt. Jack H. Sowers of Rockwell, N. C., and M/Sgt. Willard E. Shaw of Hillsboro, Ohio, crew chiefs; and T/Sgt. Richard V. Wing of Battlecreek, Mich., who was the photographer and operated the cameras over the entire route.

In addition to taking the longest photograph ever made from such a high altitude over a transcontinental course, the flight also established another record. It was the first time that fliers had crossed America flying the whole distance at an altitude of 40,000 feet or above. Although they rode in a pressurized cabin aircraft the airmen were forced to use oxygen masks since the pressurization is limited in effectiveness above 30,000 foot levels. This was another reason for the test—to determine how photographic techniques could be carried out with the photographer operating under extreme high-altitude discomforts.



Bird's Eye photo plane was Republic's XR-12, one of world's fastest four-engined aircraft. Ship cruises at 400 mph., has a top speed of 450, range of 4100 miles.



Columbus, Ohio



Allegheny Mts., Pa.



New York City



GI GOLD IN BANGKOK

กรุงเทพฯ

By Charlotte Knight

In two years time, seven Air Force veterans with \$12,000 between them and a lot of nerve have struck it rich in the land of the Chinese junk



Don Muang airport in Siam is conceded to be the busiest field in Asia. Eighteen kilometers from Bangkok, it is used by nineteen scheduled and non-scheduled airlines (not counting MATS), with more to come. The morning we landed there recently, we could see planes belonging to KLM, Trans-Asiatic Airlines, Cathay Pacific, Pan American, CNAC, Siamese Airways, BOAC, POAS—and, parked on a hardstand, the USAF C-47 belonging to the US Air Attache here. The list of scheduled lines operating in and out of Bangkok also includes Air France, CATC (Central Air Transport Corporation), CAT (China Air Transport—this is the Chennault line), Malayan Airways, and SAFE (South American and Far East Airtransport Company), plus a host of non-scheduled one or two plane charter lines which continue to mushroom all over southeast Asia.

The place is overrun with former Air Force men. Ex-Col. Dick Fisher of the 9th Air Force Aviation Engineers, is here with Pan American; so is ex-



Above, canal traffic in Bangkok. On the map below are the seven principle cities surrounding the South China Sea where Davis & Co. have set up shop. Their aim; to make air transport in this area cheap, and to make a buck. They've done both.

Maj. George Hudson, wartime meteorologist. Ex-Lt. Rolland Bushner, former B-24 pilot in England, is now a career Foreign Service officer and recently was promoted to Second Secretary and Vice Consul in the Embassy here. Bob Wade, Sam Christie, and Dave Fowler, all World War II pilots, now fly for POAS (Pacific Overseas Airways, Siam). W. C. Scott and "Cy" Ingles are in the throes of organizing a new airline known as Eastern Air Transport for operations inside Siam. Until this month the Air WAC was represented by Emily Brown, ex-AAF radio operator, who was with United Press in Bangkok.

But of all veteran activities in southeastern Asia, none has been more fictionally successful than Trans-Asiatic Airlines. It's the story of a shoestring airline that hit the jackpot. Guiding spirit behind TAA is a former Army lieutenant, William D. Davis, who, although not a flier himself, knew several AAF pilots in Manila who were willing to take their post V-J discharges in the theater and start an airline to operate between Manila and Hongkong. Each of seven original founders became a director of the corporation, and their combined assets amounted to \$12,000, most of which was spent on preliminaries including a costly trip to the States to fight the battle of airline permits. By the time the boys officially had an airline—on paper—they had only 800 pesos left—and no aircraft. For 25 percent interest in the company, an "angel" was found—a wealthy Manila doctor—who put up \$50,000 with which TAA purchased two C-47s from the surplus property administration, one to be used for flying, the other for spare parts.

Old Manila hands called the TAA crowd "carpet baggers" and predicted

early failure, but in the face of wholesale skepticism and lack of cooperation from all sides, Davis put his single aircraft line into operation, becoming the first Manila airline after the war to carry passengers and cargo into Hongkong, Rangoon, Saigon, Bangkok, Labuan, and Singapore. The almost incredible part of the tale is that the backer was repaid within two months. And now, after less than two years' operation, the company owns six C-47s and two Catalinas, and has run the original capital up to a reported \$696,000. Of the five Americans who now run the company, Wilbur Brucker, a 414th Fighter Group veteran, is the oldest. He is 29. Monson Shaver, who served with 6th Troop Carrier and who now is operations director for TAA, Manila, is 27; Dallas Cederberg, also an alumnus of the 6th, now operations director for TAA, Siam. Ray Murray, the director of communications, is 24, and Davis himself is 26. Rushing in where older and wiser persons feared to tread, the TAA boys have pulled it off in dramatic style sufficient to cause even the once cynical Manila aviation crowd to raise eyebrows. Admitting the airline's success, they bestowed their highest accolade on Bill Davis by awarding him the title of "1947's Aviation Man of the Year" on the basis that "although larger airlines were operating in and out of Manila (as the citation reads) TAA was operated more efficiently, carried more passengers and cargo in relation to its size and maintained a better profit margin than any other Far East airline."

As an aside, it should be mentioned that there is more to be said for the success of TAA than be accounted for in the energy and enthusiasm of its operators. Actually business opportuni-

(Continued on page 42)

THIS PARKER

"51"

THE PARKER PEN COMPANY

JANESVILLE WISCONSIN U. S. A.

9 May 1948

Mr. Walter H. Beech
Beech Aircraft Corporation
Wichita, Kansas

Dear Mr. Beech,

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Our pilot thinks it is the greatest airplane ever built and he has had 6,000 hours in various types of aircraft.

There has never been a mechanical failure of any kind and, with the quality you build into this ship, we consider it the safest sort of transportation. I personally did about 40,000 miles in the Beech myself during the past year, which I mention only to show that I speak as one of the active users.

Sincerely yours,

Kenneth Parker
President
The Parker Pen Company

Kenneth Parker
c

BEECHCRAFT
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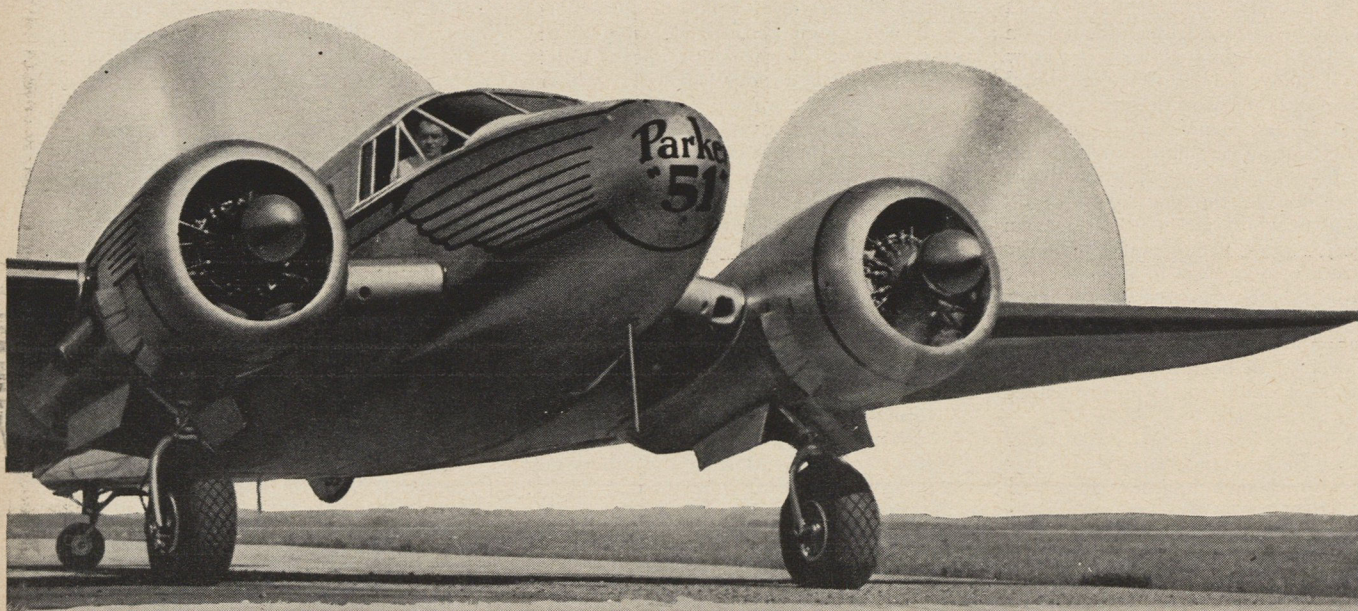
IS WRITING SALES HISTORY



High sales quotas—that *have* to be met—take the closest kind of coördination, Mr. Kenneth Parker, President of The Parker Pen Company, declares. So Parker's twin-engined, nine-place Beechcraft Executive Transport was added as "expediter" to help executives get the job done.

A typical trip covering nine cities started in New York at 6 A.M. Twelve hours later, and 1540 miles away, executives landed at Janesville, Wisconsin, with stops at Burlington, Quebec, Ottawa, Toronto, Buffalo, Detroit, and Chicago. One week's travel completed in a single day by this 200 mph luxuriously comfortable Beechcraft!

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"Phyllis Had the Stuff...."



By Lt. Charles W. Paine

October, 1942: By now the first hysterical fear of an invasion of our mainland had vanished. We were thinking in-

stead of how long it would be before we could regain our losses in the Pacific, and before we could get at the Nazis in their own ball park. We were getting new planes—P-38s in the ETO and B-17s

with tail guns in both the ETO and the Pacific. But "seasoned" as we were becoming, our reactions to war were still fresh. Maybe they were a little naive too, but they were none-the-less real. . .

It was dark, and for a moment I didn't know quite where I was. The mission hut was so small that I could reach out on either side of me and touch the other officers in their beds. I wondered what I was doing awake. Then I remembered I had been assigned as pilot of a B-17 on a bombing operation over Occupied France.

I dressed quickly and gulped down the tea that was brought me. After that I went to the Intelligence Office. My navigator, Lieutenant Thompson, of St. Louis, and my bombardier, Lieutenant Komarek of Muskegon, Mich., were there. We learned that the objective was the Potez plant of Meulte. It was October 3, 1942.

Very shortly after, we got news that the operation wouldn't take off as planned, but we were to stand by. There was a good possibility that we'd get "on with it"—as the RAF says—before the day was out.

We stalled around until about noon, while I got acquainted with my crew. I didn't know them, so I went through the motions of inspecting the ship. I discovered her name was *Phyllis*. It was because of a picture on her front end. It was a picture of a swell girl, but no one in the crew could quite agree as to whose girl it was. The rear gunner, Technical Sergeant Taucher, a coal miner in normal life, said it was because *Phyllis* was two of the crew members' girl. That remark caused indignation among the rest, and the thing has never finally been settled. The ship, so far as I could see, was just called *Phyllis* because she was *Phyllis*.

I went through the usual routine of checking the ship and seeing that everything aboard—including the guns—was OK. They were. I've never seen a sweeter-functioning aircraft than *Phyllis* when we took off.

One thing I found in our favor was that two of the crew—myself and Lieutenant Long, the copilot—were lawyers, and that Lieutenant Komarek, the bom-

bardier, was in his last year of law before he got in the Air Forces. My copilot and bombardier were damn good airmen. The rest of the boys did OK, too.

In the middle of the afternoon, the signal for our take-off came. As is usual at these moments, I was so scared I could hardly walk.

We were in V of Vs all the way in to the target. The main formation was in Vs, and we, who were in the "rear guard," were in echelon of Vs, from left to right, inside the rear wings of the main formation. Our ship was "Tail-end Charlie."

We hit flak on our way in, but it was slight and did no harm. We got well over our targets, in formation and unmolested, when I heard the bombardier yell through the interphone, "Bomb doors open!—Left!—Right a bit!—Right hard!—Right, damn it! Right!"

I kept trying to follow his directions. It was tough because we were in the slipstreams of the ships ahead and it took a lot of rudder to keep *Phyllis* on the course he wanted. At last he said, "OK! Bombs away! Button her up!" which meant for me to get the bomb doors closed. Then he said, "Hit-hit-hit on target!" It sounded fine.

The bombing part was easy. We'd got over the target and dropped them on the nose—by the grace of Lieutenant Komarek. All we had to do now was get back.

But that's when they started to pour it on. The open bomb doors had slowed us down a lot, and we were behind the formation. The German's strategy was obviously to pick on the last ship and shoot it down. Most of the others got no attention at all from them.

But there we were. Behind the others, pulling between forty-seven and fifty inches of mercury—a hell of a lot at that altitude—and trying to catch up, meanwhile taking evasive action. The flak was really being poured on. Heavy flak. I saw it below me, in front, and

then above me. We were bracketed, and I knew that when it came next, they'd have us. They did. We started getting hits and plenty of them.

Things were happening fast, and it's a little hard to get them in their proper order. I'm trying to tell what occurred in about five seconds, but it's going to take a hell of a lot longer than that to do it. I forgot to say that I had seen a dogfight—or what looked like one—ahead and above me. Just a flash of it. That was when we were on the target.

Then came the flak, as I've said before. And then the hits. But after that came something worse. The flak suddenly stopped cold, and I knew we were in for it. That's the toughest moment of a bombing raid—the few seconds between the time the flak stops and the enemy pursuit comes at you. I found time to be scared, but not for long.

Just then all the gunners in the crew started calling through the interphone: "Enemy aircraft at three o'clock, Lieutenant! . . . At five o'clock! . . . At nine o'clock! . . ."

Sergeant Taucher, the rear gunner, was more specific. He yelled: "Hell, Lieutenant, they're coming in! From behind! There's a jillion of 'em! They look like pigeons!"

The other dodge they used was to pretend to come in on one of the other ships, and then do a twenty-degree turn and shoot hell out of us. And while Taucher said their fire came mostly from a range of about 1200 yards, he also said that they were so close when they finished firing that he could see their faces. Mostly they came from the rear, but at least one of them got up under us from in front, stalled, and, as it fell off, rakes us the length of *Phyllis'* belly. I could feel his hits banging into her.

As a matter of fact, I could feel the effect of all their fire. It was like sitting in the boiler of a hot-water heater that was being rolled down a steep hill.

Sometimes you're in more trouble when flak stops than when they're shooting at you. This early mission into enemy occupied France was one of those times

I began to realize that things were getting tough. There was an explosion behind me as a 20-mm. cannon shell banged into us just behind the upper turret and exploded; and I kept thinking, What if it hit the flares? If it hit the flares and ignited them I knew we'd go up like a rocket.

Then I looked out at the right wing and saw it was shot to hell. There were holes everywhere. A lot of them were 20 mm. cannon holes. They tore a hole in the skin you could shove a sheep through. The entire wing was just a damn bunch of holes.

I looked at Lieutenant Long, the copilot. That was a treat. There he was with his wheel shoved clear over to the right in a desperate looking right-hand turn which seemed, at the time, very funny because my control wheel was centered. I started to laugh and then decided there wasn't anything to laugh about. The position of his wheel meant his aileron-control cables had been shot away. That wasn't funny at all.

About that time several other unpleasant things happened all at once. First, the waist gunner, Sergeant Peterson, yelled through the interphone: "Lieutenant, there's a bunch of control wires slapping me in the puss," which meant that the tail-surface controls were being shot up. Second, the right-hand outboard engine "ran away" and the engine controls were messed up so we couldn't shut it off. Third, the left-hand inboard engine quit. And fourth, the ship went into a steep climb which I couldn't control.

The whole left-hand oxygen system had gone out with the first burst of flak, and I was trying to get the ship down to keep half my crew from passing out. Behind me there was a pretty nice little piece of drama going on that I couldn't see. My radio gunner, Sergeant Bouthellier, passed out from lack of oxygen, and the radio operator, Sergeant Parcells, seeing him lying by his gun, abandoned his own oxygen mask and put the emergency bottle over his face. Sergeant Bouthellier revived, just in time to see Sergeant Parcells pass out. He, in turn, took the emergency bottle off his own face, and revived Parcells. After that, on the verge of going out again, Bouthellier called through the interphone to tell me that the oxygen-supply line was damaged. With Lieutenant Long's help I managed to put the ship into a steep dive and leveled out at 20,000 feet. At this altitude, everyone could keep going without oxygen.

To return to the fourth unpleasant thing that happened—when *Phyllis* went into a steep climb I simply couldn't hold her level. There was something wrong with the controls. I had my knees against the wheel and the stabilizer control was in the full-down position. The control column kept trying

to push me through the back of my seat. I motioned to Lieutenant Long to help me, and between the two of us we managed to get it forward and assume normal level flight.

Then I started to think. The enemy fighters were still shooting us up, we had a long way to go to reach England and safety, we were minus two engines, and it took almost full left aileron to hold that damaged right wing up. It was clearly time to bail out of that aircraft. It seemed a funny idea, but I decided it was the only thing to do. So I yelled into the interphone: "Prepare to ditch!"

I called the roll. Everyone answered "OK, Skipper!" except the top gunner, Sergeant Coburn. Sergeant Peterson was badly hurt, but he answered, "OK, Skipper," and even had time to ask me if I was wounded. He said, "How's the ship, Lieutenant?" I said, "OK." He said, "On second thought, what I really want to know is how are you?"

But to get back to what happened: I gave the order to prepare to "ditch" ship, with visions of a German prison camp in my mind. But just about that time Sergeant Coburn, the top gunner, slid out of the top turret and fell to a position between me and Copilot Long. Coburn's face was a mess. He was coughing blood, and I thought he'd been wounded in the chest. It later proved that he wasn't, but he was clearly in no condition to bail out of an airplane.

Things were tough right then. They were still shooting at us, and the coast of France was a long way away. Our target had been about sixty miles inland, and with our reduced speed—two engines out of action—it would take us quite a while to get to the coast. I felt a little sick inside. I yelled through the interphone that anyone who wanted to could ditch right then and there. But no one wanted to. *Phyllis* was still "airborne," as the British say, and I guess by this time they trusted her. Meanwhile, the enemy pursuit kept pouring lead into us, and there's no evasive action worth a damn you can take when you are shot up the way we were.

Lieutenant Long left his controls and went back to give first aid to Sergeant Coburn. Immediately, I had the problem on my hands of keeping *Phyllis* from climbing through the ceiling. The damned stick just wouldn't stay forward, and I kept on gaining altitude. I called for help through the interphone and I'm sure that everyone on that ship thought I was injured. Lieutenant Komarek tried to get up through the hatch to help me; but he couldn't because Lieutenant Long and Sergeant Coburn were on the door in the floor through which he'd have to come. I didn't dare throttle the engines, either, for fear we'd just quit flying.

Phyllis, at this point, had a stalling speed of about 160 miles per hour, in spite of her ambitious climbing tendencies. So I just fought her.

Meanwhile, Coburn was doing his best to bleed to death. Throughout, however, he never lost consciousness, and he kept making funny remarks.

Finally, the radio operator, Sergeant Parcells, came forward and took over the first-aiding of Coburn, allowing Lieutenant Long to crawl back into the copilot's seat. Between us we got *Phyllis* under control.

We were over the Channel by that time, and some British Spitfires took us in tow. The Jerry pursuit stuff gave up and departed for home. We went into a dive from 20,000 feet for anywhere on the coast of England.

The runaway engine gave us a lot of trouble. The electrical system was shot to hell, and we couldn't shut it off. Long tinkered with the fuel valve, but no soap. I was afraid to tinker with the fuel valves. Finally we gave it up. *Phyllis* was still flying, and I didn't want to ask her too many questions.

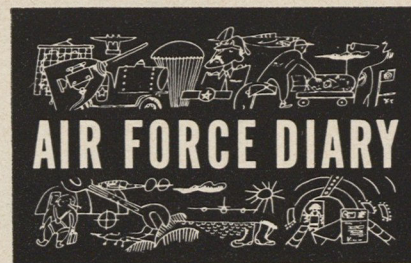
We made a wheels-up landing at the first airdrome we saw in England. We could only make left-hand turns because both Long and I knew that if we ever got that shot-up right wing down we could never pick it up again.

I buzzed the field once and scraped a chimney or two off some buildings at the end of the runway. I knew we were going to have to crash-land because the hydraulics were shot, and I couldn't get the wheels down. Besides, I didn't want to land *Phyllis* normally at 160 miles per hour. She'd have coasted clear across England.

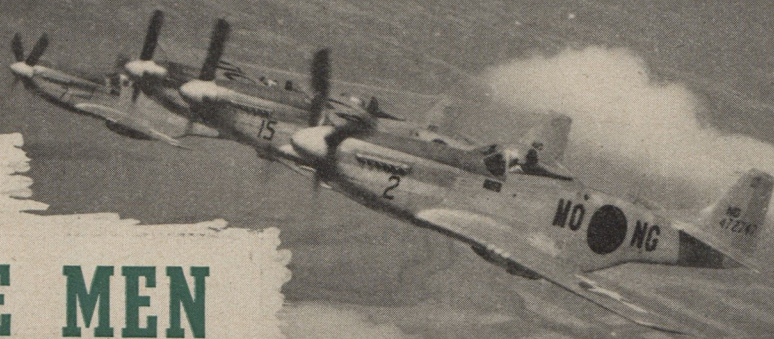
So we belly-landed her—the long way of the runway, and cross-wind. It was a damned fine landing—marred only by the fact that Coburn, the wounded man, kept making remarks about how tired he was of flying. Sarcastic remarks. I promised him that I'd put him on the ground and was lucky enough to do it in good shape. We all walked away from that landing.

As one of the boys said after we got back: "*Phyllis* had the stuff." God rest her soul.

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M-DAY MINUTE MEN



Two years ago the Air National Guard had a total of 17 aircraft. Today it's "ready" with over 2000

By Richard H. Jacobs



No this isn't North Africa. It's Prescott, Arizona, where members of 197th Fighter Squadron are briefed prior to summer mission. Below, four men of same squadron squat beside F-51 which proudly bears oversized squadron insignia. Happily for the Guard, their planes are later models than their hats—judging from man at right.



By the end of October, over 20,000 citizen-airmen in 344 air units from 40 states had participated in the first mass-scale summer maneuvers of the Air National Guard. Best yardstick for an evaluation of training, these intensified field exercises gave conclusive proof that the Guard's air arm is rapidly approaching its objective of being an operationally capable M-Day force.

In the relatively short period of two years it has expanded from an organization of two officers and 150 enlisted men to the present total of 4529 officers, 50 warrant officers and 25,205 enlisted men.

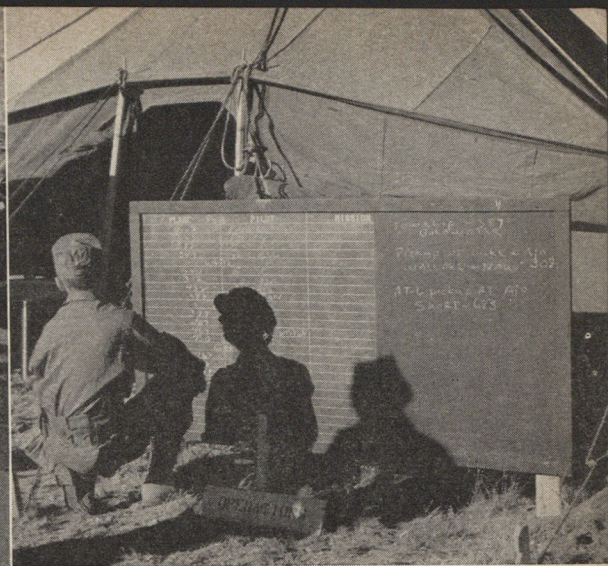
Today, with its 473 units located throughout the States, Hawaii and Puerto Rico, it is only 41 units short of its allotted total of 514 to make it a complete force in being, and its 12 Wings are, for the most part, completely organized.

Over 2000 planes now are operating in its units, in contrast to the 17 aircraft which the National Guard had in 1946. Its most heartening development came last month when five air units received the first contingents of the jet-propelled F-80 "Shooting Stars." Six additional squadrons will receive similar aircraft during the next few months, and by 1952 it is hoped that nearly all Air National Guard Tactical Squadrons—including Light Bombardment Squadrons—will be equipped with jet aircraft.

The overall training of the Air National Guard is conducted by the National Guard organizations of the respective states, under the supervision of the Chief of Staff USAF, through the Air Defense Command, in accordance with standards, doctrines and policies enunciated in the War Department.

Training of the Air National Guard for its national mission has certain objectives in the training of individuals and units. In the training of individuals the objectives are: (1) to develop personnel able to perform effectively duties which may be assigned to them both in peace and mobilization, and (2) to maintain such standards of mental and physical fitness as are necessary for active field service.

The objectives of unit training are: (1) to maintain each unit at a high level of efficiency, capable of prompt fulfillment of both its State and Federal missions, and (2) to enable the Air



National Guard to be integrated into the command in which its use is contemplated on M-Day.

Supervision of training by the USAF is exercised through: (1) preparation of training plans and programs for use by the Air National Guard, (2) use of Air Force training standards, (3) supervision by regular USAF instructors, and (4) by inspections, with remedial action when necessary.

The success of the recent summer field exercises demanded all-out efforts of Air Guard officers and non-commissioned officers. The summer maneuvers were an actual test of the knowledge attained by Air Guardsmen throughout the preceding year and became complicated in many states because of the recent influx of young men with no previous military experience.

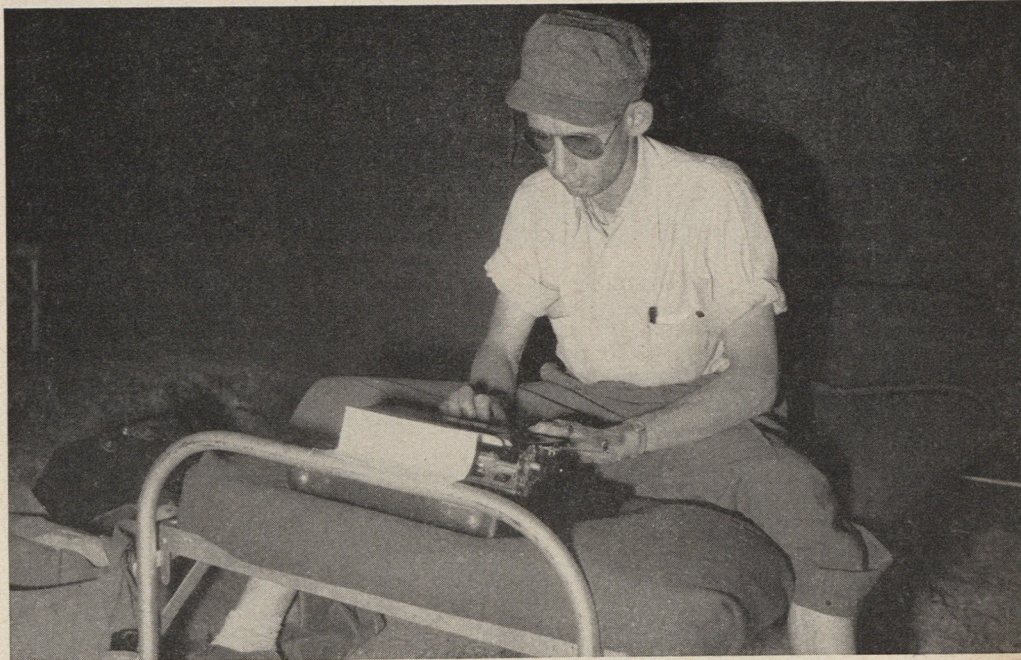
Many of these recruits had joined their Guard units only a few days or weeks prior to encampment. Despite this fact, the field exercises were highly successful and, according to reports made by inspecting officers of both the USAF and the National Guard Bureau, maintenance, operations, military courtesy and discipline were at high levels.

Encouraged by these reports, the National Guard Bureau will make major improvements in armory training programs during the winter months. Realizing the need for an adequate and objective training program for recruits, Headquarters, USAF, is preparing a separate training directive for these personnel to insure that their basic training will be completed as soon as possible. In addition, the overall training program of Air Guard units will be expanded to meet the demands of the mushrooming units. This revised training program will emphasize a progressive type of training. Based on the three-year enlistment period of enlisted Air National Guard personnel, it will specifically provide for: (1) continued training, (2) training of enlisted personnel to be given equal importance with training of officer personnel, (3) more comprehensive and detailed schedule of training program by hours, and (4) ground units and non-rated personnel to be given equal consideration in training as are the tactical units and personnel.

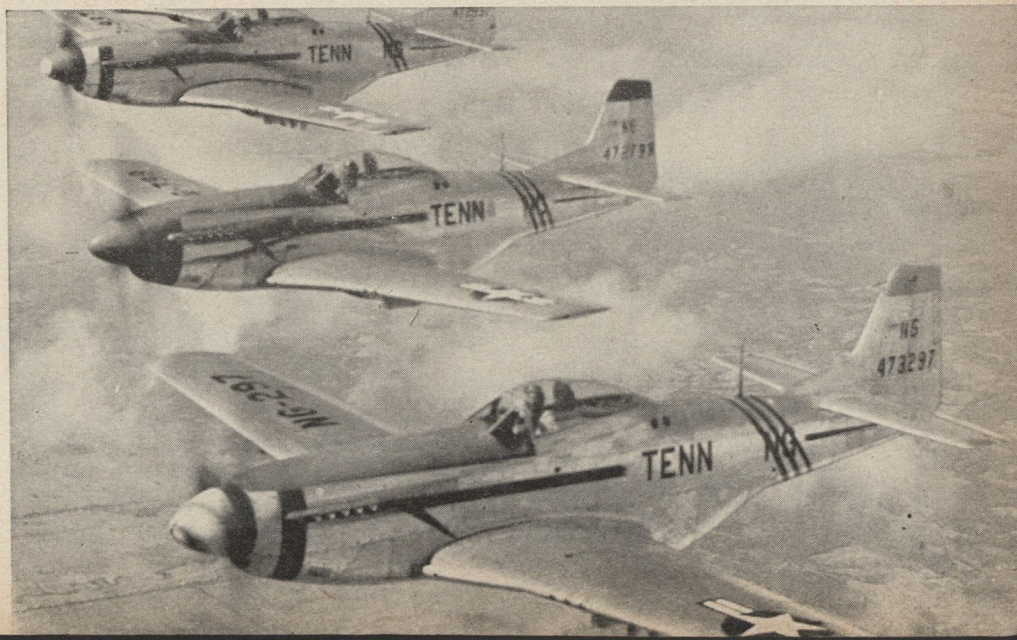
It has been recommended that in revising this directive, a representative

Guard is much better off for enlisted men than the Reserve. Here one of 25,000 e.m. check engine of an F-51.

During summer maneuvers the 197th's Op office was distinguishable only by a blackboard and stenciled sign on ground.



Above, "war correspondent" Al Leach of the Arizona Republic files report of latest 197th advances. Neatness of bed indicates that Leach was once a GI himself. Below, three planes of Tennessee Air National Guard show formation skill. Planes in title picture, top left, are from Missouri as indicated by circle and big "Mo".



M-DAY MINUTE MEN *(Continued)*



Armorerers inspect .50 calibre belts used in 197th's gunnery practice. Squadron used a total of 32,000 rounds. Air Guard training is conducted by state organizations under the supervision of the Chief of Staff, USAF, through the Air Defense Command.



With a bottle of beer and a deck of cards, members of the 197th kneel at the four corners of the first handy foot locker for relaxation at the end of a trying day. When the summer was over, Air Guard units reported exercises were most successful.

group of Air National Guard officers from the States and the National Guard Bureau sit in with representatives of the Headquarters, USAF, in an advisory capacity.

A major reason for the rapid growth of the Air National Guard, whose personnel are limited in local training outlets by virtue of the weekly training period, is the utilization of the schooling offered it by the USAF. Since 1947 approximately 2000 officers and enlisted Air Guardsmen have attended various Air Force service schools. Their enthusiasm has been indicated by the fact that the majority of this number completed their courses of instruction with ratings of excellent or better. Many graduated as honor students and in some cases the Air Force service school requested that the Air National Guard student be placed on duty as an instructor or an advisor because of their high attainment in school.

Extension courses, to be conducted by the numbered Air Forces will be offered to Air Guardsmen this year in order to permit more of them to receive this valuable training without interference to their civilian pursuits.

One of the most vital units of the Air National Guard, and the one which has proved to be the most difficult to organize, is the aircraft control and warning unit. Designed with the idea that the security of this country requires a day-before-M-Day-Force, the aircraft control and warning program is arranged to throw a warning "blanket" over the continental limits of the US. Somewhat hampered by a lack of equipment, the program has found its major problem to be a shortage of the qualified radar and communications officers and non-commissioned officers needed to build the framework of such a highly technical organization. Some units, equipped with only a limited amount of material, have found it difficult to train unskilled personnel. This was especially true at summer encampments where unskilled personnel worked with a limited amount of equipment. A solution to this problem was unearthed by the first Aircraft Control and Warning Squadron to be organized by the Air National Guard back in 1946. This unit, the 113th Aircraft Control and Warning Squadron of Washington, D. C., held its field training with units of the 502nd Tactical Control Group of the USAF at Greenville, S. C. In so doing, personnel of the 113th were integrated with personnel of the 502nd for two weeks of intensified instruction which resulted in actual "on-the-job-training" in their assigned positions. During the first week of training the Air Guardsmen worked side by side with the USAF personnel in corresponding positions, and during the final week of training the 113th men took over the positions, under the watchful eye of the USAF men. According to Maj. Arthur Kimberly, Commanding Officer of the 113th, and inspecting officers of both the USAF and National Guard Bureau, as much training was imparted by the new method

(Continued on page 42)

CALIFORNIA

The California Wing convention, attended by 500 delegates on July 23, 24 and 25 in Santa Monica, was one of the most successful events staged by a state organization.

The convention agenda included: A tour of Warner Bros. movie studio; open house at the Army-Navy Beach Club; a luncheon meeting with General George C. Kenney, Commanding General of the Strategic Air Command, as the guest speaker, James Stewart as Master of Ceremonies, and movie star Virginia Mayo, who was crowned "Miss Air Force Association of 1948," as an honored guest; panel discussions with key aviation leaders; a banquet with AFA President Tom Lanphier, Jr., as the guest speaker, and Jeffrey Lynn as Master of Ceremonies.

At the meeting Thomas Stack, past Commander of the San Francisco Squadron, was elected Wing Commander of California; George Mantell, Deputy Commander; Joseph Nadel, Deputy Commander; Leroy Johnson, Treasurer; and Bert D. Lynn, Secretary. All mail to the Wing should be addressed to Lynn at 5856 West Lindenhurst, Los Angeles 36, Calif.

In honor of the convention the mayors of both Santa Monica and Los Angeles proclaimed the week as "Air Force Association Week." One of the local newspapers carried an eight page Sunday supplement on the meeting. Arthur F. Kelly, retiring Wing Commander, was praised for his efforts during the past year.

Air Force Day activities will be reported in the November issue of AIR FORCE—The Editor.

FLORIDA

AFA members residing in the Tampa area may get in touch with the Tampa Squadron by contacting Hortense K. Wells at P. O. Box 1792. Wells was elected Secretary to replace Alfred T. Hearin who has resigned.

Plans are now underway for the organization of an AFA squadron in the Miami area. All persons eligible for membership in the AFA, as well as those who are already members, are urged to contact S. C. Huffman at 2528 N. W. 29th Street in Miami for the formation of the Miami Squadron.

HAWAII

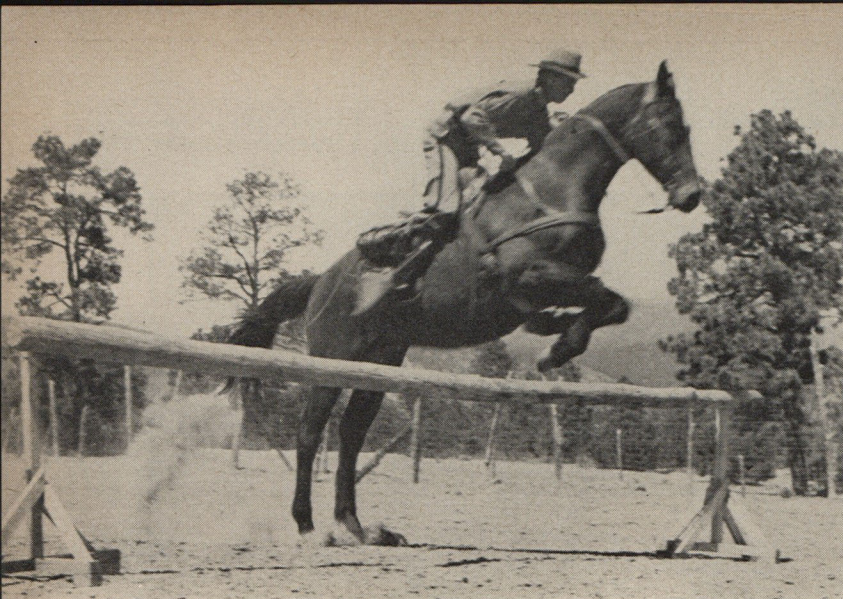
Members of the Oahu Squadron honored Maj. Gen. Ralph H. Wooten at an Aloha luncheon on August 25. The group met to bid farewell to the head of the Pacific Air Command, who left Hawaii September 1 for duty with Air Force Headquarters in Washington. L. T. Nicholls, Commander of the Oahu Squadron, presented General Wooten with a life membership in the Squadron.

General Wooten expressed his appreciation to the Oahu Squadron and the
(Continued on page 48)

Highlight of recent Minneapolis Aquatennial parade was float entered by Minneapolis-St. Paul squadrons of AFA. Queen is Nanette Parks, a Paramount starlet.



In August, squadron and group commanders in New York state met in Albany to elect first wing commander and adopt state constitution. Earle Ribero won the election.



Most jealously kept of all military secrets—the number of A-bombs produced at Los Alamos—is guarded by crack troopers like Bill Campbell, who takes above hurdle in good form.



The Atomic Energy Security Service is composed of 600 men, all of them as alert and carefully polished as Capt. Donald Dickason above. Together they guard a 69,000 acre reservation.



Los Alamos workers who live off the reservation in near-by Rio Grande Valley are checked in and out "by the numbers."

Men of the AEC's Security Service learn how to use a half dozen different kinds of fire arms including the M-3, below. Commanding Officer of this patrol is Lt. W. F. Todd, left.

And this will give you an idea of the marksmanship of the Security Service men. Out of eleven visible bullet holes, seven are bullseyes. Lt. Herbert Hurt does the counting.



A-BOMBS and AIR STRATEGY

Granting that our monopoly can't last, the question is how long will we have more bombs than anyone else, and how will we use them if we must

By **Bernard Brodie**

Associate Professor of International Relations, Yale University

Part II

The incorporation of the atomic bomb into the arsenal of the United States Air Force has not in itself simplified the technique nor the philosophy of strategic bombardment. In some respects it has actually complicated it. For if the dreadful decision is ever made to use the bomb, the question then is "How do we use it?" In the first article of this series which appeared last month, Dr. Brodie pointed out that "Among the many variables which bear upon (the use of the bomb), the most important by far is 'How many bombs can one expect to find in existence any given number of years hence, and how will they be distributed among the nations?'" Dr. Brodie visualizes four possible answers to this question; first, American monopoly expressed in a small number of bombs. Second, American monopoly with a relatively large number of bombs. Third, the end of American monopoly, but with the US still enjoying a large margin of superiority over its major rival, both in atomic bombs and the means of delivering them. And fourth, the end not only of monopoly, but of significant American superiority. In the following article Dr. Brodie discusses the first two of the assumptions.

Immediately following the end of the war the atomic bomb situation could be described as "American monopoly with a small number of bombs". This may be the situation we are in today, depending on, first, our current rate of A-bomb production, and second, the old question of how many bombs is a "small" number. Although we must know the answers to these questions to determine just how long this situation will last, we do know that it is bound

to be very limited in time. For example, even if our present rate of production of atomic bombs should be as low as two a month (a wholly random figure), the continuation of that rate would result in ten years time in the accumulation of the materials for some 240 atomic bombs, which could hardly be called a "small" number.

During this period, the strategy of the situation must conform closely to the strategy followed before the advent of the atomic bomb. In other words, the role and general composition of each of the existing services remains pretty much unchanged. The two questions of chief importance are

► how should the relatively few atomic bombs available be used if war should occur during this period, and

► to what extent and in what way should the services begin to remodel themselves in anticipation of succeeding phases?

This is the period during which we may accept as presumably valid the dictum of General H. H. Arnold that

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"... the great unit cost of the atomic bomb means that as nearly as possible every one must be delivered to its intended target." To make the statement strictly correct, one must substitute the word "scarcity" for the words "unit cost." Once the shooting begins the unit cost paid at some date in the past is of no consequence whatever, but the existing scarcity, which may have been in part dictated by that cost, does make

it necessary to seek maximum effectiveness of each of the bombs in hand.

General Arnold, in amplifying the statement quoted above, goes on to state that the very heavy bomber (i.e., B-29 or larger) is as yet the only way to deliver the atomic bomb, and adds that delivery with such a vehicle can be "certain of success only when the user has air superiority." Since air superiority presumably depends largely upon vigorous fighter plane support of attacking bombers, and since fighters are inevitably of much lesser range than large bombers, the implication is that bombers operating from distant bases are not *by themselves* a sufficiently reliable means of delivering atomic bombs. They or at least their supporting fighters must have bases close enough to the enemy so that the latter can operate over the targets. To be sure, one must consider the likelihood of the independent use of very high speed jet-propelled bombers, but these types too are for the present of substantially shorter range than conventional propeller-driven aircraft of like size.

Thus, a probable basic requirement for the effective use of atomic bombs under the conditions here envisaged would be the acquisition and development of air bases relatively close to the enemy targets. Presumably too, the scarcity of the bombs would militate against their all being expended in one brief bombing campaign. Thus, the advanced bases would, if held from the outset, have to be made secure. And if not so held they would have to be won and developed. In each case not only time is required but also the services of large sea, land, and air forces, roughly comparable in character to those of the last war. To be sure, if it proves feasible to launch atomic-bomb-carrying planes

Ready for any contingency, Security troops below conduct a simulated raid on a building where supposed criminals are hiding. A tear gas riot gun has just been fired at hideout.

After crooks have been forced out of hiding they are carefully searched for weapons. One thing seems sure; if there are A-bomb leaks they won't be the fault of Security Service.



A-BOMBS and AIR STRATEGY (Continued)

from aircraft carriers, the initial use of atomic bombs could come quite early in the war even if we did not already possess bases close to the enemy. But the depth to which carrier-based air forces could penetrate the territories of a great continental power is probably not great.

The conventional land, sea, and air forces would have to be brought into play not only to acquire the means of effectively launching atomic bombs, but—since we are postulating a relatively small number of bombs—to win the war. By definition, bombs which are “scarce” are insufficient in number to be decisive. One can therefore not expect that the major lines of strategy will be drawn with the use of atomic bombs primarily in mind. The atomic bomb will instead be considered a weapon of opportunity, to be used when circumstances indicate its use, and not something which dictates primary preoccupation with creating suitable circumstances.

It should incidentally be observed that if the atomic bomb is used as an ancillary weapon rather than a primary one, one of the chief military advantages ordinarily attributed to it is lost. From the point of view of logistics and of mobilization of war potential, the important thing about the atomic bomb is not that one bomb can destroy a city but that *one plane* can destroy a city. But if it is so scarce that it can be used “only when the user has air superiority,” that is, only when the situation has been well prepared in advance and when the plane carrying the atomic bomb is attended on its mission by a large number of other planes, then one must conclude that it will make strategic bombing more effective without essentially changing the gigantic character of the effort from that which had to go into the strategic bombing campaigns of World War II.

Whether or not the strategy here described would really be applicable to a war fought in the near future, the fact is that our military leaders appear to be accepting it as applicable. If that be so, it is possible that they are under-estimating the strategic effects to be gained from a bolder use of even a small number of atomic bombs. The stipulation that so far as possible each one must be delivered to its intended target has implications which conceivably might diminish rather than enhance the military effectiveness of the bombs available.

To avoid reviving the question—which remains to be answered satisfactorily—of what is a “large” number of bombs, let us assume arbitrarily that by “large number” we mean one measured in three figures. Thus, if our present rate of production were two bombs per month and were to continue unchanged, our accumulation of atomic bombs (or rather the materials for assembling them) would be entering the “large numbers” category about four or five years hence.

There are at least two criteria sepa-

rating this situation from the one described previously in terms of the method of using the bomb. First, the atomic bomb is now the primary weapon of strategic bombing, which is itself the decisive instrument of attack. Secondly, the possession of a large number of bombs indicates the acceptance of substantial wastage in their use. As is true of every missile fired in war, it is still *desirable* that every bomb reach its intended target. But since, as we have seen, the rigid stipulation that it do so is bound severely to limit and circumscribe its use, insistence upon it must frustrate full realization of the gigantic offensive potentialities of this new weapon.

All that is suggested here is the application to the atomic bomb of principles which govern the use of all other implements of warfare. The atomic bomb provides, potentially at least, the cheapest way of destroying enemy cities, but paradoxically, that cheapness can be realized only if the user pushes out of his mind consideration of unit cost of the individual bomb. For only if he does so can he conceive of those bold uses of the bomb which will result in the maximum damage to the enemy in the briefest possible time.

And since we are assuming a situation in which we feel fairly confident the enemy has no atomic bombs, there is little reason why we should hesitate to expend the bulk of the bombs early in the war, before enemy defenses are alerted or at least before they reach their optimum organization. The surprise and shock value of a devastating raid early in the hostilities is bound to be far greater than one of equal magnitude later on. What do these postulates suggest for the strategy of attack?

In the first place, so long as we had long-range bombers capable of delivering the bombs from bases already in our possession, it would be foolish and wasteful to withhold our bombs until we had reached bases closer to the enemy. Closer bases would no doubt enable us to give strong fighter support to our invading bombers and would thus provide both greater security for those bombers and a great percentage of hits with our bombs. But offsetting those advantages would be the time and cost spent in acquiring and developing the advanced bases and the adjustments which that time would permit the enemy. Or perhaps some compromise scheme would be preferable, such as that of using perhaps half the bombs in an initial long-range blow to disorganize the enemy and then using the important advantage gained to seize the advanced bases (which should now be much easier to accomplish) for the more methodical use of the remaining bombs. But what seems on the face of it *not* to be indicated is a concern from first to last with getting every atomic bomb on its intended target.

Now is it feasible to launch an atomic bomb attack upon a distant great power such as the Soviet Union from bases al-

ready in our possession or likely to be available to us within a very few years? On the basis of technical performance even of types of aircraft now in service the answer would seem to be “yes,” and it should certainly be in the affirmative with new types of aircraft already existing in experimental models.

It must always be remembered that, from the point of view of military economics, a plane which has delivered an atomic bomb has paid for itself many times over, and upon making the sortie the plane must therefore be regarded as being at least as expendable as is the bomb itself. This freedom from the necessity of retrieving the aircraft means in effect a one-way flight, and therefore an approximate doubling of what is usually regarded as the “effective bombing range” of the plane. The crew (if there be one) is another matter. Strictly from the point of view of military bookkeeping, it too could be regarded as expendable. Other considerations will, however, influence the enterprise and perhaps prevail; but in any case it is not necessary that the crew members return to their jumping-off point in the same plane in which they departed. All sorts of possibilities will arise for their rendezvous with friendly submarines or other aircraft or for their landing and internment in neutral territory. So long as the principle is established that the plane itself need not be salvaged, an enormous extension of range results, and that extension need not be greatly affected by plans for the rescue of the crew. One must add that there are also other possibilities which may be developed for extending the range of existing aircraft, as for example by refueling in flight.

With these considerations in mind, we may contemplate the facts that a B-29 has made a non-stop flight of 8,200 statute miles, that bombers of considerably greater carrying capacity are far beyond the blueprint stage, and that Moscow is only 4300 miles from the nearest U. S. air base in Maine. Certainly inter-continental warfare, at least as concerns strategic bombing, is not merely a possibility for the future. The seizure of advanced bases close to enemy territory may still present advantages for the successful use of the atomic bomb, but it is no longer an indispensable prerequisite to such use. And, depending upon its costs in men, resources, and especially time, the attempt to seize such bases as a preliminary to the use of the bomb may well prove a strategy of waste.

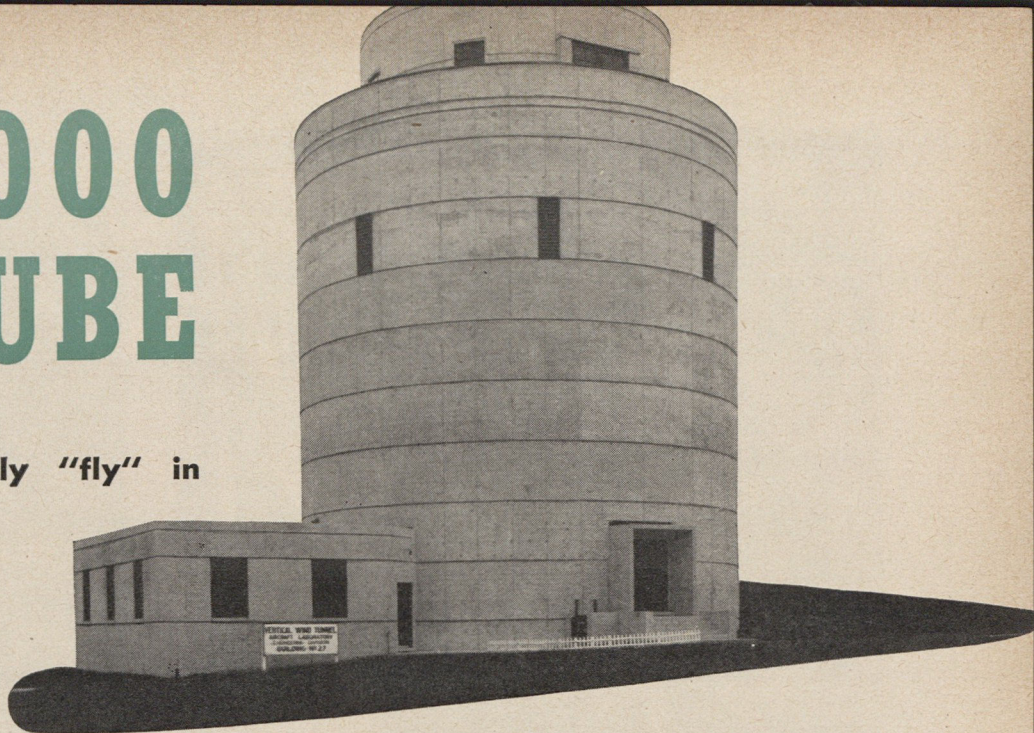
The character of the adaptation required of the military services generally under the situation we are postulating is governed, first, by the fact that the atomic bomb and the system for delivering it are indisputably the major or “decisive” arm and secondly, by the absence of any grave threat of an atomic counter-blow. The first of these factors will demand not only that the mechanics of atomic attack will receive

(Continued on page 46)

\$1,000,000 TEST TUBE

Scale model planes actually "fly" in
the USAF's new verticle wind
tunnel at Wright Field

By Douglas Ingells



Outwardly, Wright Field's new vertical wind tunnel, which has a wider-speed range than any other in the country, looks like nothing so much as it does a silo built to house the gleanings of an especially fat year. On the inside, though, it is the most intricate "silo" ever built.

Completed only recently after several delays in construction, the big wind machine differs from the horizontal type of tunnel in that the model tested is

not mounted on wires or struts. It is actually free, thus making "free-falling" tests possible.

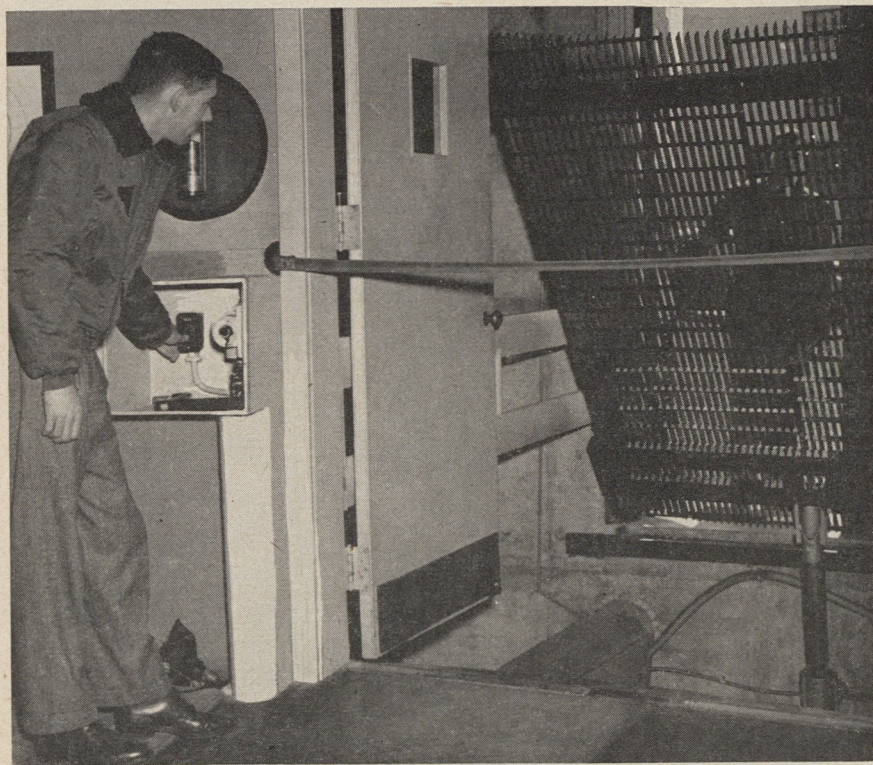
The testing area is a round chamber in the center of the "test tube." In the middle of the chamber is an opening about 12 feet in diameter. In the ceiling above the opening is an electrically driven motor which turns a large four-bladed propeller. The propeller pulls the air up through the opening at controlled speeds up to 200 feet per second

—enough to suspend a model plane in mid-air. The air circulates around outside walls of the inner test chamber. The same air is used over and over again.

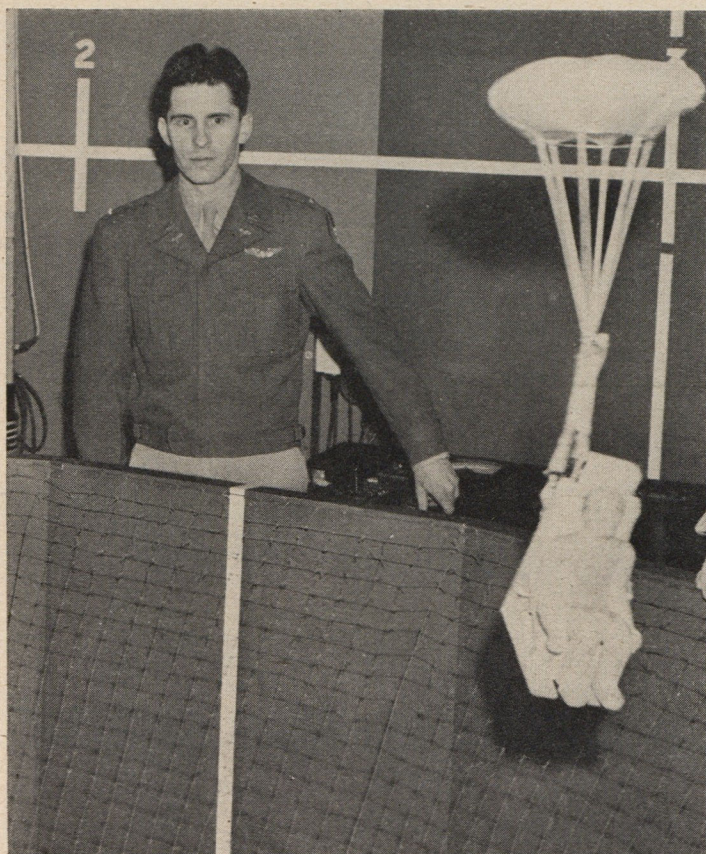
Scale models of planes used in the tests are constructed in Wright's Engineering Laboratories. Inside the model plane is a small mechanism connected to the rudder, elevators and other parts of the craft. This mechanism is actuated by a magnetic field comprised of copper bands which are built in around the wall of the test chamber. A model plane to be tested is simply tossed into the windstream, where it is suspended by the force of the wind.

Two instrument panels, one inside the chamber, and one outside can be used to control the wind velocity and the magnetic field. According to the actuating of the controls, the plane may recover from a spin, land or get in any number of positions.

A transparent glass dome which will hold a cameraman and his camera is located just below the four-bladed propeller. A protective net to keep the tested model from hitting the dome or the prop is suspended below the dome. While the model plane is going through its paces, the cameraman grinds motion pictures of the plane's reaction. Photographs also are taken on a level with the experimental model, by placing a camera on the floor area around the test section. The resulting moving pictures, together with notes taken by wind tunnel personnel running the tests are invaluable to the pilot who will test the full scale plane. The pictures are run off in slow motion and the pilot can tell by simple observation what the plane he is about to test will do in a spin, what the best method of pulling out will be, and how the plane will react in normal flight. The swept back wings which most recent planes are affecting make spinning tests especially



The drawbridge between outer and inner wall of tunnel is lowered to admit visitor. During test, air blown from bottom of tunnel by huge fan is scooped up by ceiling vents, channeled back to the bottom between these walls to be used all over again.



Parachutes too can be tested in the unique tunnel. Above a scale model ejection seat parachute complete with dummy pilot is suspended in mid-air by breeze from below which is controlled by observer.



Frank R. Deis inspects controlling mechanism inside scale model F-80 which is actuated by magnetic field from copper bands which run around wall inside the test chamber.



Paul Doty operates the control panel outside the inner test chamber. From here he regulates the constant-speed motor, fan velocity, power for pitch control of fan, and lights. Inset, an observer watches as Doty puts model of new jet into dive.

\$1,000,000 Test Tube

(Continued)

important, as planes with these configurations are more prone to go into a spin and more difficult to pull out.

A plane's reactions to different loadings, such as auxiliary fuel tanks, are also tried in the new type big blow. For instance a model of an F-80 airplane with its auxiliary fuel tanks may be put into a spin in the tunnel. The tanks can be jettisoned automatically, and the pilot can determine—again simply by watching—what the best way of pulling out will be, and where the tanks can be expected to fall when jettisoned.

Another test which is growing increasingly important in this age of high altitude fast flying is that of determining pressure on a body at various speeds and positions. A person may have difficulty in getting out of a plane in a tail spin because of the terrific pressure thrown on him. Force indicators can be put on a model plane to record weight on any portion of the plane. Also, with the use of a small dummy man which can be shot out of plane, the flight path of the pilot, if he should bail out, can be followed.

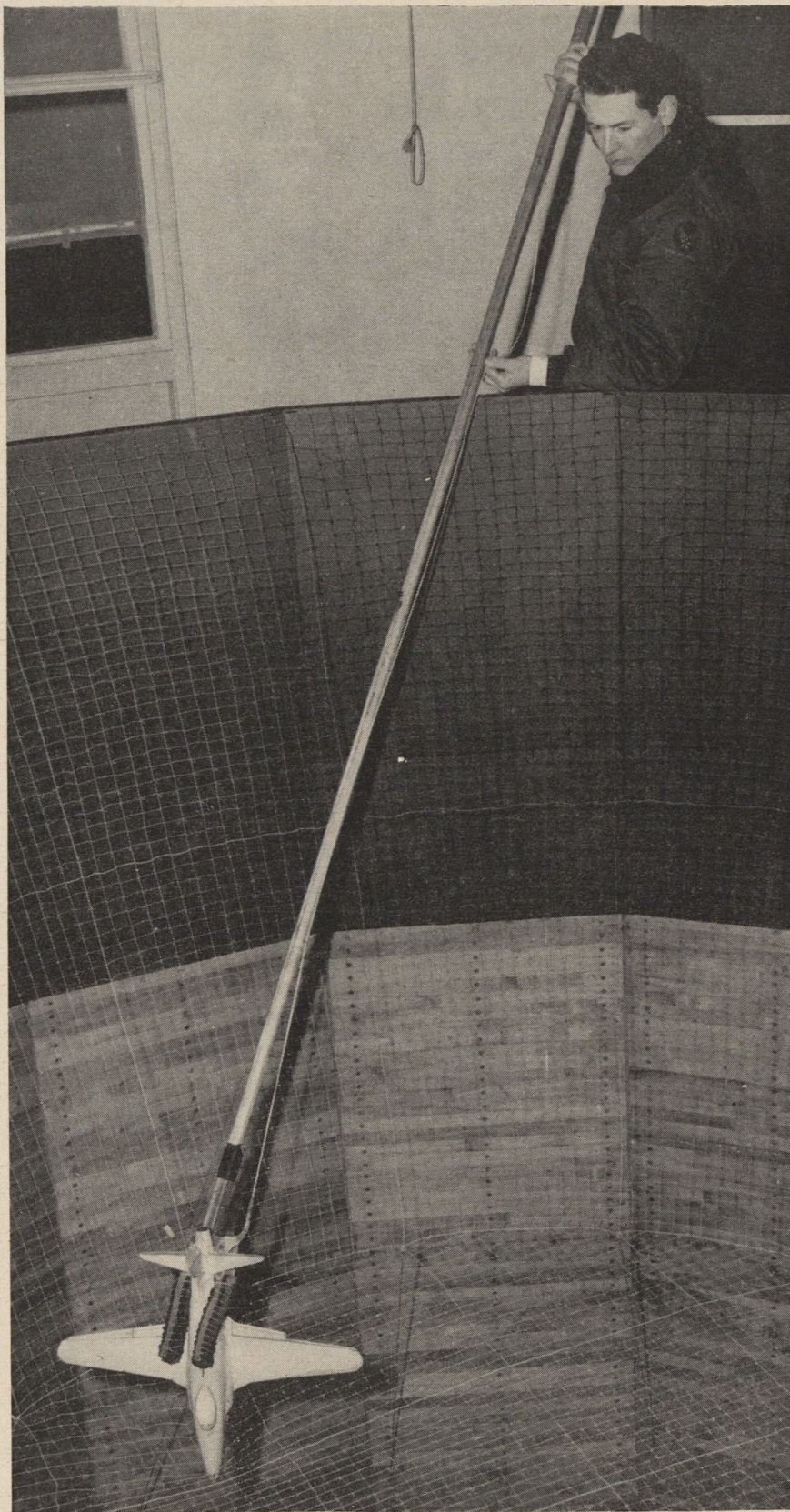
Parts of aircraft and equipment such as parachutes, canopies and ejection seats are also guinea-pigged in the chamber. Before trying a new type full-size parachute the Parachute Branch at Wright Field often brings a scale model to the wind tunnel. This model may be made of a new material or constructed in new radical design. Much material and equipment can be saved by ironing out the kinks exposed in the scale model test before running a test on a full-size parachute. The chutes are tested basically in the same manner as model planes.

Testing of free-falling human bodies is another phase of work which is growing in importance here. With new high altitude planes, it is important to test human reactions to delayed action jumps which are tactically desirable for two reasons: to get the parachutist out of the rarefied cold upper air as quickly as possible; and to offer as bad a target to the enemy as possible.

Dynamic dummies are used for these tests. Whether the man will be able to bend, whether his parachute pack is placed in the best position, whether his shoes might be ripped off by the velocity of the fall—all these can be ascertained in the tunnel.

Another test made from an aero-medical standpoint is the study of pressure effects on various parts of the human body. A dummy is rigged up with tubes filled with air running through its limbs. These tubes are connected to a "Manometer," an instrument which is equipped with glass tubes filled with liquid and which shows reactions to air pressure.

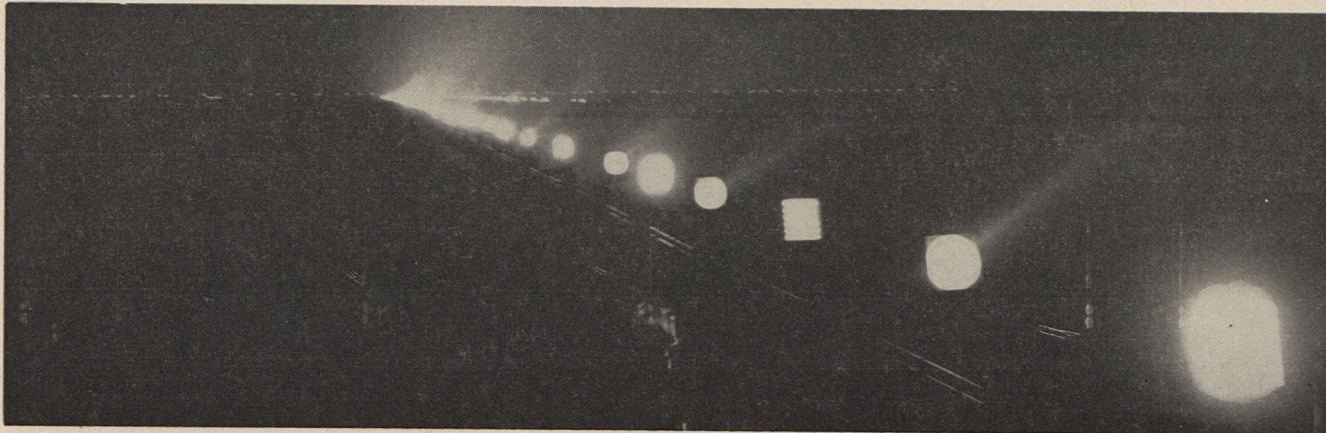
Lt. Robert Crawford is chief of the Vertical Wind Tunnel Unit and he has a small staff of aeronautical engineers and engineering aides assisting him.



Frank Deis retrieves a model from net at bottom of tunnel after test is completed. The retriever gadget, which resembles a groceryman's instrument for reaching high shelves, has a sponge rubber prong on the end to guard against damage to airplane.

Assigned to Crawford's staff are Dr. Wilhelm Kanackstedt and his technical aide, Franz Huber, both former wind tunnel experts in Germany. The two

Germans now are working on modifications for the Vertical Wind Tunnel which will allow more advanced types of tests to be carried on.



BRIGHTENING LOW CEILING BLUES

Bendix introduces new gadget that combines advantages of ILS and GCA

By William S. Friedman

Two decades ago General W. W. Atterbury of the Pennsylvania Railroad got himself into a hybrid deal for a transcontinental travel service where by the passengers traveled in a Ford Trimotor by day and on a train by night. His experience with the "reliability" of the plane phase of this operation prompted him to say that when the public bought a ticket on the railroad, they accepted as an implied guarantee that the trip would be completed. He indicated that the same sort of public confidence was a goal toward which air transport had to strive.

Airplane design has gone from Fords and Fokkers to Constellations and Convairliners in the two decades between, but the cry for schedule reliability still is heard along the airways. The President's Air Policy Commission, in placing the need for increased regularity of service second only to safety in airline operations, reported that "Air travel will never be mass transportation until people are reasonably certain that they can depart and arrive on schedule."

James T. Baine, director of engineering and maintenance for Trans-Canada Airlines, has pointed out how the comedy of the airline scheduling system turns to fiscal tragedy when one realizes that in 1947 US airlines lost \$40,000,000 in revenue from flights cancelled by the weather, with low ceilings being the major factor. This was the difference between a whopping airline loss of \$22,000,000 and what might have been a comfortable profit.

Now there is reason to believe that a method for beating the weather rides in the DC-3 that is CAA's airways in-

spection command plane, designated the NC-9.

In this flying laboratory you find one Randolph Mulherin, chief of CAA's airways inspection staff, and commander of the NC-9; Norman Hodgkinson, copilot; and Bill Rogers, crew chief and radio operator. Here also you find a mechanical character named *George*, who, you soon learn, is a being with strange powers. He can find and bracket a directional radio beam with bloodhound sense, then sniff his way to the Instrument Landing System and follow a landing beam to within a whisper of the ground. Officially, it is called Bendix Flight Path Control. And the men of the NC-9 think it is the appointed savior of the air transport industry.

George is a piece of equipment that links the well established ILS (Instrument Landing System) and the Bendix PB-10 automatic pilot. Signals from the ILS radio receivers are used to compute proper controls for the signal channels of the PB-10. The result is automatic tracking of both range and localizer beams. In addition, *George* computes signals for coincident control of elevators and throttles for the automatic tracking of the ILS glide path at uniform airspeed. Thus, electronic tracking of radio ranges for cross country flight and automatic approaches on the localizer and glide path of standard ILS pattern is made possible.

Double checked by radar tracking through GCA (Ground Control Approach), the Flight Path Control System offers real hope for the solution of that old airline dilemma we have mentioned, namely, schedule reliability.

Bill Stout once said that if an instrument could tell a pilot what to do, it could do the job for him and probably make fewer mistakes. The new system reflects that sort of thinking.

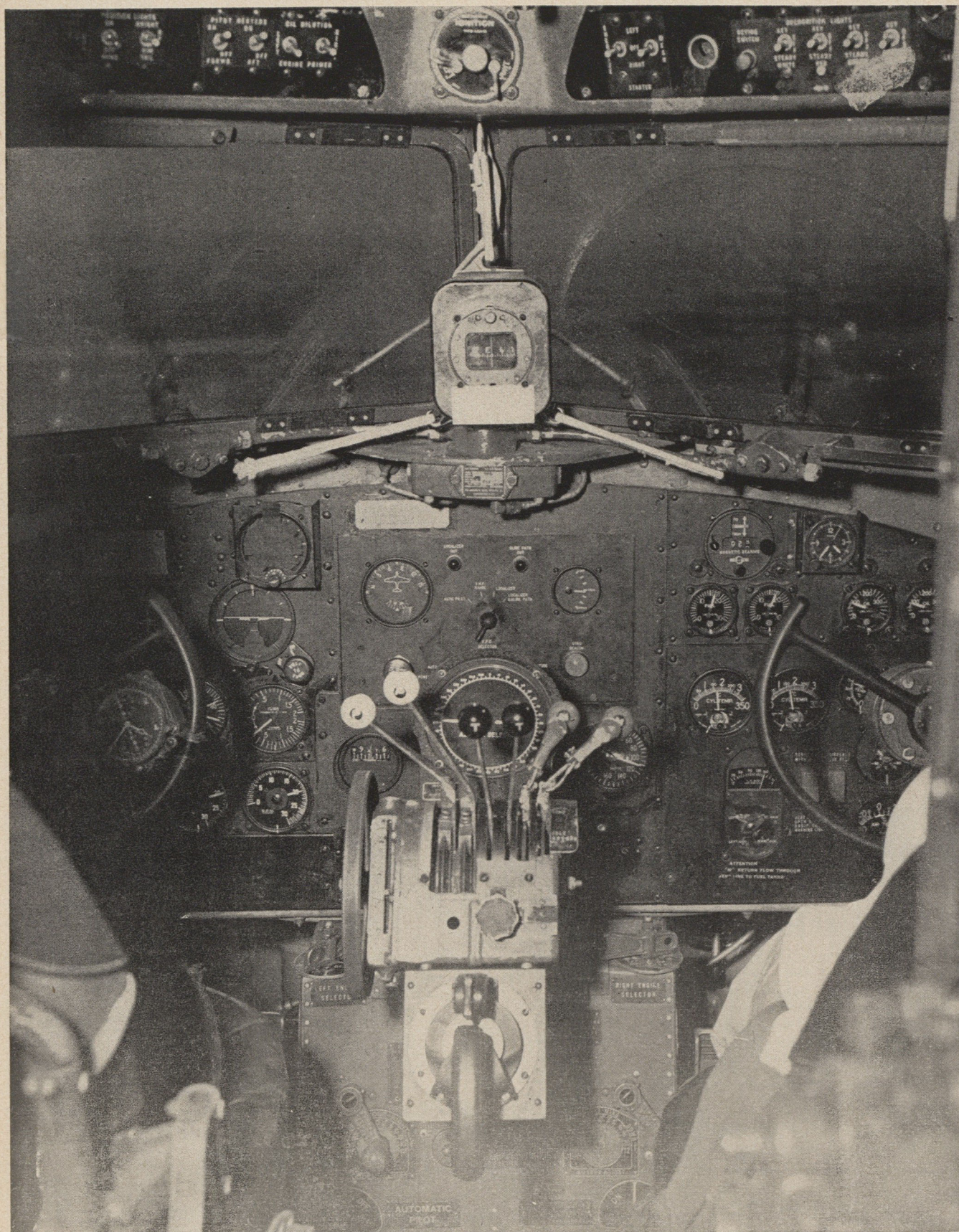
The Instrument Landing System itself is an established part of the airways system. It receives VHF (Very High Frequency) radio beams projected up from the ground in two patterns. One beam, known as the localizer, defines a vertical plane, and is used to line up with the runway. The other beam defines a sloping plane with the ground and is known as the glide path. These beams are projected so that they intersect each other, and for correct operation the aircraft must follow a path that centers both planes.

In the airplane's cockpit an instrument interprets the plane's position relative to these two radio signals in a cross pointer meter. It gets its signals from two separate radio receivers, one tuned to the glide path, the other to the localizer. The system also has a control box through which these sets can be tuned to the frequency of the beams that the pilot wants to track. The readings on the cross-pointed meter are in reality direct current voltages, coming from the glide path and localizer.

Interpretation of these signals can be achieved manually or automatically. The manual system is now classic. The pilot flies his plane until he intercepts the localizer, then at a pre-set altitude and direction, with the aid of marker beacons and CAA publications, he intercepts the glide path and follows it down by reference to the cross-pointer meter. The minimum ceiling for this manual operation is between 200 and 400 feet depending on the rating of the individual airline. This system makes the pilot a very busy individual at a very critical time. When he is saturated with flaps and landing gear, plus tower instructions, he has to keep his eye on the cross-pointer meter.

(Continued on page 40)

LOOK, MA, NO HANDS!



With the Bendix Flight Path Control System in the pilot's seat (and nobody else) the CAA's C-47 approaches the runway at New York's new Idlewild airport where the ceiling is down to about 600 feet. Picture was actually taken at 300 feet. Note tracks of windshield wiper on glass. The

landing was perfect. FPCS links ILS and the Bendix PB-10 automatic pilot. Signals from ILS are used to compute the proper controls for signal channels of PB-10. Result is automatic tracking of both range and localizer beams. Low ceilings thus become a nuisance rather than a real hazard.

Brightening Low Ceiling Blues

(Continued from page 38)

That's more job than two can handle, and the margin for human error is very small.

Automatic ILS (Flight Path Control) not only locates the localizer beam, but brackets it, intercepts the glide path, throttles back the engines to the correct airspeed, and holds the glide until the pilot is ready to take over and flare the ship out for a landing. Under some conditions it can actually land the plane.

Flight Path Control consists of four major components, the Flight Path Computer, the Throttle Servo Amplifier, the Throttle Servo and the elevation compensation Transmitter. The heart of the system is the computer, which contains two main channels, one for the localizer signal, the other for the glide path. They are identical circuits. The output from one is superimposed on the rudder and aileron signal of the PB-10 automatic pilot to track both range and localizer beams. The output from the glide path channel is superimposed on the elevator servo system and is simultaneously applied to a servo monitoring the throttles on the power plant and the elevators, producing a controlled rate of descent for tracking the glide path beam.

If the pilot wants to track a range beam, he turns on the Flight Path Control, waiting until the warning light

(which shows when the system is inoperative) comes on. Then if it is not already in use, he turns on the automatic pilot, and using the controller, flies the plane toward the pre-selected range. He tunes the receiver to the frequency of the desired beam, and waits until the vertical needle on the cross-pointer meter deflects. When he is in the radio field, the pilot turns the plane by means of the controller to the published magnetic heading of the desired beam. He then sets the sequencing switch to the range position, and three things happen; the localizer receiver of the ILS is connected to the proper channel in the Flight Path Control's computer. The course autosyn in the Master Direction Indicator is disconnected from the autopilot and connected with the localizer channel in the computer, and the localizer channel's displacement limiter becomes more sensitive, and its output can be cut down.

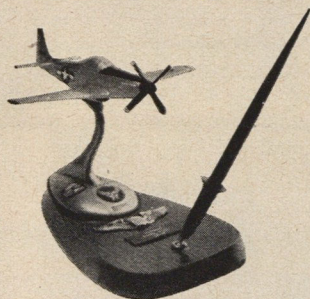
When this happens, a direct current signal, in proportion to the angular displacement of the airplane to the beam is fed into the localizer channel. This signal is ultimately fed to the PB-10 autopilot which produces a displacement of controls in direct proportion to the signal. The ultimate result is the plane's bracketing the beam, and finally settling directly on it. This system is, by the same displacement signal, able to hold the plane on a crabbed course, automatically compensating for cross-wind.

On arrival in the landing area, the pilot sets his switch for the localizer

beam with the plane set at the altitude prescribed for approach to that particular glide path. When the plane enters the glide path range, the horizontal cross-pointer needle swings all the way up against the top stop. When the plane nears the beam, the needle starts swinging back. When this happens the pilot switches over to the glide path and localizer, connected with both phases of the computer. The differential signal from the glide path receiver now operates the glide path channel of the computer to generate a signal for operating the elevator and throttles of the airplane.

Had the needles not been centered when the sequencing switch turned to the glide path and localizer, the computer would have generated a signal to apply both elevators and power using the same displacement principle as was used on the localizer operation. However, a limiting factor is introduced to prevent any unsafe pitching attitude.

With this system a plane can be brought close enough to the ground so that only the flare-out and final landing must be done manually. Under the old manual ILS, 200 feet was the minimum safe ceiling. Now that Flight Path Control is approved for installation in transport aircraft, a minimum of 25 feet is expected as soon as installations become widespread and personnel are properly indoctrinated. With the increased use of high intensity krypton lighting at major airports, this is tantamount to all-weather operation,



- B-29
- B-17G
- P-51D
- P-47N

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for the new illumination can penetrate four times that much "soup" under the worst known conditions.

The arrival of Flight Path Control equipment at the approval and installation also may pave the way for peace in one of the hottest arguments along the airways in a decade: That of the CAA-developed ILS versus the Air Force-developed GCA radar monitoring system. This dispute has many points of validity on both sides. Civilian pilots, with personal responsibility for loads of passengers, are loathe to accept precise landing instructions given by some unknown radar operator sitting on the ground looking at a radar scope. They object to verbal instructions being dinned at them while they have their hands full of airplane. In the international field, so the argument goes, GCA imposes language difficulty.

From the military viewpoint, on the other hand, it is pointed out that the surveying, setting up and indoctrination on an ILS range takes much too long for military purposes, and that the plane-borne equipment of ILS is an unwarranted burden to smaller military aircraft.

The key to possible answer in the dispute arises from the experience of

Randy Mulherin and the crew of the NC-9, veterans of two years' experimentation with Flight Path Control. Randy points out that during the test phases of the equipment, many of the runs were made under bad visibility conditions and the plane was monitored in by GCA. With this radar tracking system as the ultimate in double-checking, the idea of using both ILS and GCA suggests itself. Railroads, it must be remembered, operate an expensive automatic block signal system, and also maintain the lighted dispatcher's board to keep track of the movement of trains.

Proposing any additional expense to the already in-the-red transport industry probably will prompt some hard fiscal objections. However, the President's Air Policy Commission, after exhaustive study of the problems, reported, "Large expenditures for electronic aids to air traffic control, navigation and landing will do more than anything else foreseeable today to build the airlines toward economic self-sufficiency. They will also materially bolster certain phases of the national defense." If the accepted idea that the airlines would pay for what goes into the plane and the government takes care of

what's on ground, can be extended to cover the GCA double-check, there is hope for beating the lowering ceilings.

Since the Air Force has committed itself to GCA, some system might be evolved whereby service personnel and equipment might be dispersed to key airports so that they might block-check Flight Path Control or similar systems that might be evolved at a later date. This would make low ceilings an operational nuisance rather than a real hazard.

For the military, the real profit would be the increased experience of its GCA crews, a real burden of responsibility for riding herd on the lives of the nation's air commerce. To the transport industry, the major profit would be an increased community of confidence between civil and military installations. For the nation, the profit would be a sound and solvent air transport industry which has proved itself a prime portion of the nation's bulwark of security.

All the parts of the network are here and available. It needs only joint effort of government and industry to assemble them and put a civil all-weather airway system to work for peacetime welfare and future military security.

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M-Day Minute Men

(Continued from page 30)

as could be accomplished during the average year of weekly two hour armory training. The success of this experiment may well set the pattern for future training for National Guard technical units, due to the great availability of equipment and qualified instructors of the USAF.

Air National Guard pilots, who have the opportunity to fly a variety of aircraft, are all veterans of World War II, with the majority having had combat experience. As Air Guard pilots they must fly the same minimum of flying hours required of USAF pilots. Most pilots exceed the minimum requirements of 100 flying hours, since most Air Guard units, particularly tactical squadrons, take advantage of weekends to keep themselves at the peak of operation. An average of 1500 to 1800 National Guard aircraft are in the air on weekends when good flying weather prevails.

The types of aircraft now being utilized by the Air Guard are the F-80, F-51, F-47, C-47, B-26, L-5, T-6, and T-11. These aircraft are completely manned and operated by Air Guard personnel.

Flying safety is continually stressed in the Air National Guard. Despite a rapid increase in monthly flying hours, which actually tripled in the first six months of 1948, the accident rate continually has decreased.

This decrease can be attributed mainly to the high standard of flying proficiency requirements.

The rapid expansion and the acceleration of training in the Air National Guard is bringing it closer to its objective of being a complete organization in being ready and capable of fulfilling its mission as an M-Day Force if necessary. If the given problems of logistics, recruiting, and training are solved, this aerial arm of the National Guard of the US soon will become the highly-trained, well-equipped, and well-manned organization it must be as one of America's major aerial defensive forces to protect the peace and security of our continental limits.

G I Gold in Bangkok

(Continued from page 23)

ties for young Americans are probably better in Siam than any place else in southeast Asia—if one has fairly substantial financial backing. In the first place, Siam has proved so far to be more stable than most other countries in these parts. Second, and of great importance, Americans will find more cooperation, friendship and warm hospitality from the Siamese than they can expect to receive elsewhere in this area.

But back to Davis and TAA: Davis is frank to admit that the airline alone could not have paid off with the profits it did so early in the game had not the boys capitalized on trading opportunities especially ripe out this way right after the war. For instance, after "casing the situation" in Hongkong, they organized the Hub Trading Corporation which bought up "distressed" merchandise in Manila (items which had suddenly flooded the Philippine market after V-J) and flew it to Hongkong where the demand for such things as drinking glasses, hotel equipment and such was still great—and consequently so was the profit. Similarly, the company bought considerable quantities of olive oil at Macao, flew it to Manila and sold it at enormous profit.

TAA-Siam was formed in January of this year and Davis' personal headquarters is now here in Bangkok, where he also supervises a rapidly expanding network of affiliated enterprises including import-export businesses of various kinds, the Industrial Development Company, World Travel Service, American Advertising Agency, plus the Siamese distribution agencies for Kaiser-Fraser and the Borg Warner Corporation.

Some of TAA's operations are not unlike a Milt Caniff comic strip adventure. TAA pilots have been flying gold—legally—out of Bangkok to Macao and a few months ago a large shipment worth 24,000,000 Siamese baht was on its way by truck to Don Muang airport when it was stopped by a group of men posing as military police who maintained they were making an "inspection." After ordering the driver and guards to descend from the truck, the impostors got in, drove off and disappeared with the loot, neatly pulling off the greatest gold robbery in years.

Davis ignores his competitors' jibes that he operates for the "coolie trade" and says bluntly that he's in business to make money and does it by leaving off the frills (his planes still have bucket seats), and making plane fares within the reach of those persons who couldn't otherwise travel by air.

The South China Sea, traditional home of the old Chinese junk, has been encircled and shrunk, but it's been robbed of none of its romance. Today's "adventurers" move through a different element—air instead of sea. They have substituted an octant and goodwill for spy glass and cutlass, but the stories they are gathering will make "fairy book" reading for years to come.

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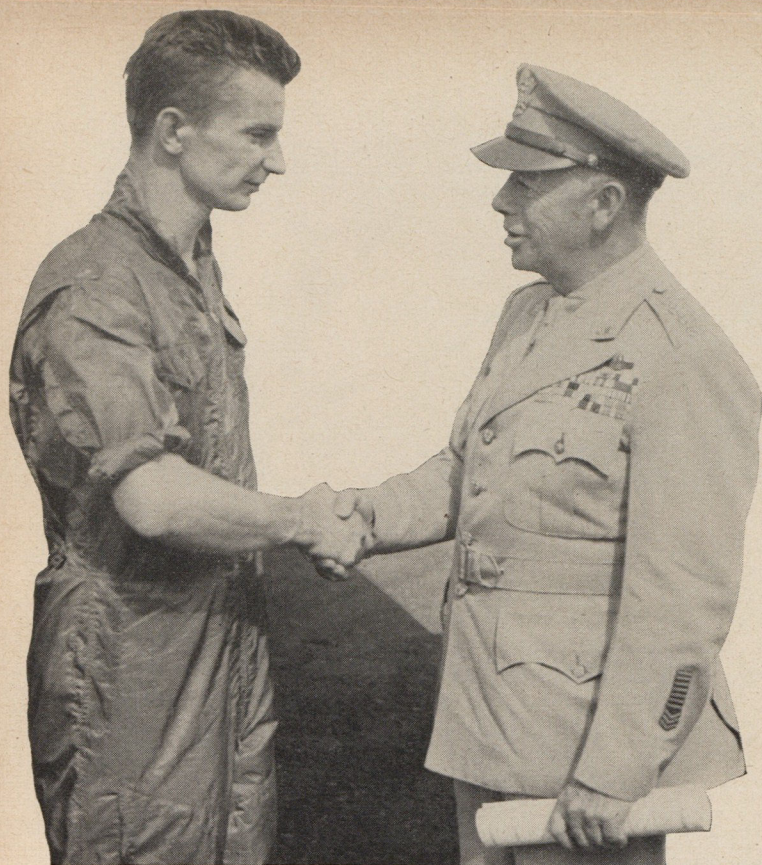
If you're not on a payroll but have a bank account, get in on the Bond-A-Month Plan for buying Bonds through regular charges to your checking account.

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Major R. L. Johnson, who flew F-86 to new but dis-allowed speed record, is congratulated by General George Kenney.



Winner of the Goodyear race was Herman "Fish" Salmon, who flew Cosmic Wind No. IV built by Lockheed's Tony LeVier.



Commander Evan Peter Aurand, US Navy, waves from cockpit of his jet plane after winning the jet division of the Bendix Trophy race. His elapsed time from Long Beach to Cleveland was 4 hours, 13 minutes, 14.9 seconds. Air Force didn't enter.



Jacqueline Cochran placed third in Bendix cross country. Her first words upon arrival, "I'm mad. I wanted to win."

British Vampires, foreground, line up behind US Shooting Stars for display purposes only. Neither were in races.



THE CLEVELAND SHOW

What it lacks in significance is more than made up for in spirit

Before the war they used to say that the Cleveland Air Races did as much as anything, year in and year out, to "improve the breed" of aircraft. And before the war, this was probably true. It would be a difficult theory to support today, however. For since war's end the two major events of the early fall classic—the Bendix and the Thompson—have been won by pilots flying modifications of old military planes. Indeed there have been no other type entries. In this regard the event has become a sort of grown up version of the "hot rod" races.

None-the-less, Cleveland is still the "biggest and the best" air show on earth. There are still as many thrills, spills and chills as there ever were, and the competition is just as keen. Proof of the latter point was evidenced this year in the fact that in the Bendix Trophy Race from Long Beach, Calif., to Cleveland, fourth place winner Ed Lunken crossed the tape only four minutes after first place winner Paul Mantz roared by. Linton Carney and Jacqueline Cochran copped second and third places in the meantime.

In the 300-mile Thompson Trophy race, 7 out of 10 original starters had to duck out somewhere along the way because of mechanical failure of one type or another. Until the 19th (next to last) lap, the race was clearly in the bag for Charles Brown of Indianapolis, Ind., who was at the controls of the cleanedup P-39 which won the 1946 race. But about 25 miles from home a crack in the fuselage of his ship cut off the gas flow short of the carburetor and necessitated a dead-stick, down-wind landing. With Brown out of it, Anson Johnson of Miami Springs, Fla., moved out in front to win the contest in his P-51 with an average speed of 383.767.

Heartbreak of the meet occurred when Maj. Richard L. Johnson made six speed shattering passes over a three kilometer course at marks between 660 and 675 mph in a North American F-86 only to have the record disallowed because of a comedy of errors in timing. Johnson's disappointment was assuaged within the month, however, when he flew the same F-86 at Muroc Air Force Base for a new record of 670.981.

As usual, the Goodyear Trophy race (for "midgets" of 85 hp) was a well-flown contest entailing the traditional rivalry between professional racers and flying service operators in planes that were built by the pilots themselves or their friends. The "Goodyear" is flown as much or more for glory than cash, and because of the stringent limitations on the power plants it hinges perhaps more than any other race on careful design and superior airmanship. This year's contest was won by Herman Salmon of Van Nuys, Calif., who flew the 24 mile course in 8 minutes, 29.41 seconds.

If anybody stole the show, it was a couple of Air Force reservists, William J. Fenton and Robert S. Fitzgerald, who came to town with a pair of AT-6s and put on an act of wingtip-to-wingtip aerobatics, including several maneuvers of their own, that had the crowd gasping. Among the open-mouthed onlookers was General Hoyt Vandenberg who, possibly because he was too stunned to call them out of the sky, allowed the two to complete their performance.

First to greet Paul Mantz, winner of the Bendix race, was his daughter Tenita. Victory marked Mantz' third consecutive win. Average speed from California was 447.984 mph.



Anson L. Johnson of Florida, left, was winner of the Thompson trophy. Here he is congratulated by Roseoe Turner, a three-time winner of the event. Johnson's speed: 383 mph.



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A-BOMBS and AIR STRATEGY *(Continued from page 34)*

overriding priority in development and resources but also that the services not directly concerned with those mechanics nevertheless be oriented towards a strategy which recognizes the atomic bomb as the decisive weapon. Such orientation would involve, among other things, great emphasis on mobility of troops, in order that advantages gained by initial use of the atomic bomb may be promptly exploited. The second factor, in so far as it can be relied upon as a reality (which would depend mostly on the character of our intelligence), would give our services the freedom of action necessary for their proper orientation. That freedom can never be complete, since, whatever the excellence of our intelligence, we would never be justified in proceeding exclusively on the assumption that the enemy had no atomic bombs or means of delivering them.

A strategy which gives first place to offensive use of the atomic bomb implies an implementing but by no means inferior role for the Navy and Ground Forces. For one thing, the amount of resources which the system of atomic attack can absorb will always be ruled by the number of atomic bombs in hand. Then there is the matter of diminishing returns in the use of any one weapon however powerful, and the atomic bomb might by its very successes quickly put itself into a subordinate role. That is exactly what happened to the American submarine in the latter stages of the Pacific war, when the lack of ship targets as a result largely of our previous submarine successes caused us to cut back our submarine-building program. Finally, the fact that a weapon is deemed decisive does not in military parlance mean that it is necessarily conclusive. The enemy may continue to resist though his cities be devastated, and if a final conclusion to the business is desired his territory may have to be invaded and occupied. Or his armies may have to be driven out of countries which they have occupied. In any case, large ground, sea, and air operations extending over months or even years of time might have to be undertaken.

A word should be added about the use of very-long-range rockets as vehicles for the atomic bomb. Some scientists and engineers in the field of guided missiles insist that before we can have an accurately guided rocket of two or three thousand miles range such revolutionary developments are necessary that it is safe to presume that the event is at least twenty-five years away. Others among their colleagues argue that the length of time required depends largely upon the effort put into the job, and that a fraction of the amount of effort that went into the Manhattan District Project would bring the result much sooner. Certainly the atomic bomb is a powerful enough weapon to warrant a good deal of research and development upon special vehicles for its conveyance. But those special vehicles need not take the form

of rockets. Jet-propelled bombers, perhaps reaching supersonic speeds, would be difficult enough for any defense to cope with, and they are certainly much closer in time and would probably be much more reliable than 3000 mile rockets of the V-2 type.

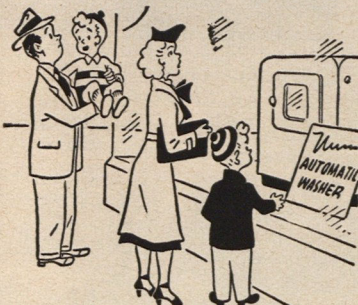
Moreover, it must be remembered that the V-2 in our hands in 1944-45 would not have been nearly as useful to us as it was to the Germans. To us, with our overwhelming air superiority, it would have been a rather wasteful means of adding to our air bombardment strength. To the Germans at that time it was almost the only means of hitting back. The fact that it had certain advantages over aircraft is by no means unimportant, but it would be wrong to conclude, as some senior officers have concluded, that the effective use of atomic bombs must await a development in rockets which happens to be comfortably far off.

Another question which arises is whether we would use the atomic bomb at all in another war if we were confident we had a monopoly. To be sure, monopoly conditions would give us a certain freedom of choice in this matter which would probably be absent if the enemy too had a substantial number of atomic bombs. But, apart from the historical fact that we used the bombs against Japan when we had only two in hand and when we recognized that Japan was already defeated, there is another factor bearing on this question.

So long as the number of atomic bombs in our arsenal is small, their existence has relatively little influence on the composition and strategy of our armed services. In that case we can choose whether or not to use them in the event of war. But the latitude of choice tends to narrow as the number grows. For if the possession of a large number of bombs demand that all our armed services orient themselves towards an atomic offensive strategy, they must either carry out that orientation (in which case they would not be well prepared to fight a great non-atomic war) or pay heavy forfeit in the effectiveness of the bombs available. In other words, we cannot forever go on planning for two drastically different kinds of large-scale war. Considerations of economy and of getting the most possible fighting strength out of our military resources will dictate that we make up our minds at an early date whether or not we will use the bombs in war and adjust accordingly. There is not much doubt about what that decision will be, especially since the general expectation is that—failing the setting up of an effective international control system—our major rival will begin to make atomic bombs within the next ten to twenty years.

Next month, in the third of this series, Dr. Brodie will analyze the third and fourth postulates; the end of American monopoly, and the end of American superiority.

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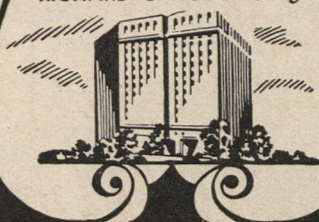
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AFA NEWS (Continued from page 31)

Hawaii Wing Commander, Roy Lefingwell, for their assistance in helping to establish various civilian components sections of the Air Force in Hawaii.

Other distinguished guests at the luncheon were: Vice Admiral John L. McCrae, USN; Lt. Gen. Thomas E. Watson, USMC; Vice Admiral H. B. Sallada, USN; and Brig. Gen. Robert Travis, USAF.

LOUISIANA

Mail for the Shreveport Squadron should now be sent to: J. G. O'Brien, the Commander, at 238 Merrick Street in Shreveport.

MICHIGAN

At the first state convention of the Michigan Wing in Lansing on August 29, Warren Bredahl of Lansing was elected Wing Commander, succeeding Cass Hough of Plymouth who served as the first Commander of the Michigan Wing. One of the major goals of the Wing, as stressed by its new Commander, is the organization of new squadrons throughout the state. The Michigan Wing may be contacted by getting in touch with Bredahl at 219 Durand Street in East Lansing.

MINNESOTA

Minneapolis and St. Paul Squadrons joined forces to enter an Air Force Association float in the recent Minneapolis Aquatennial Parade. They selected Miss Nanette Parks, a movie starlet, to reign as queen of the float, and surrounded her with the prettiest hostesses from the four airlines serving the Twin Cities area. The AFA Squadrons won third place with their float.

The first permanent officers of the newly formed St. Paul Squadron are: Tom Bowen, Commander; Theodore Griggs, Vice Commander; Dale Slette-dahl, Secretary; Mervyn E. Dahlin, Treasurer; and H. B. Shirley, K. L. Johnson, Richard Egan and Ron Cook, Councilman. The St. Paul Squadron may be contacted through Dale Slette-dahl at 311 West Arlington Avenue in St. Paul.

NEW JERSEY

Bernard Lowy, New Jersey Wing Commander, recently presided at the installation ceremony of the following new officers of the Hudson County Squadron: Mary Donovan, Commander; Phil Hoffman, Vice Commander; Florence Sadlow, Secretary; Walter Safranski, Treasurer; and George Sweeney, Al Hoffman, Joe Levine, Gordon Perry, Jean Sobolewski and Henry Ziminski, Councilmen. The Squadron's address is: 474 Bramhall Avenue, Jersey City 4, N. J.

NEW YORK

AFA Squadrons in New York held their first state conference in Albany on August 21, and elected Earl Ribero of Albany to head the Wing for the coming year. The following were elected to fill

the other Wing offices: Robert S. Johnson, Garden City, Long Island, Vice Commander; Frank Wood, Binghamton, Secretary; and Mary Gill, New York, Treasurer.

Ribero succeeded Casey Jones of New York City, who had served as Wing Commander since the Association was formed, and who presided.

The Wing constitution and by-laws were formulated and approved at the conference and several resolutions were adopted for presentation at the national convention. A luncheon was held in the Hotel Wellington for all the delegates and their guests attending.

The Albany Squadron, headed by Ribero, and the Schenectady Squadron, headed by Charles F. Woods, were hosts for the conference. Plans are already underway for a squadron organization campaign throughout the state. Contact may be made with the New York Wing by getting in touch with Ribero at 416 Delaware Avenue, Delmar, or Frank Wood at 1112 Press Building, Binghamton.

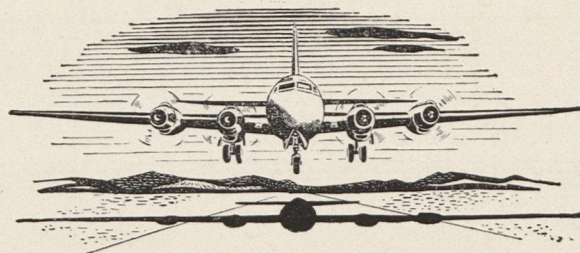
New officers of New York City's Show Business Squadron are: Everett S. Holley, Commander; Ezra Stone, Vice Commander; Norman Frank, Treasurer; and Warren Chaney, Secretary; Laurence Weaver, Tex McCrary, Melvin Siegel, Bill Roach, Sol A. Abrams, George W. Faison, Arthur Winsky, Don Byrne and Tom Dillon, Councilmen.

Bill Roach, who headed the Squadron during the past year, was unanimously elected to the Squadron's newly created office of Honorary Commander.

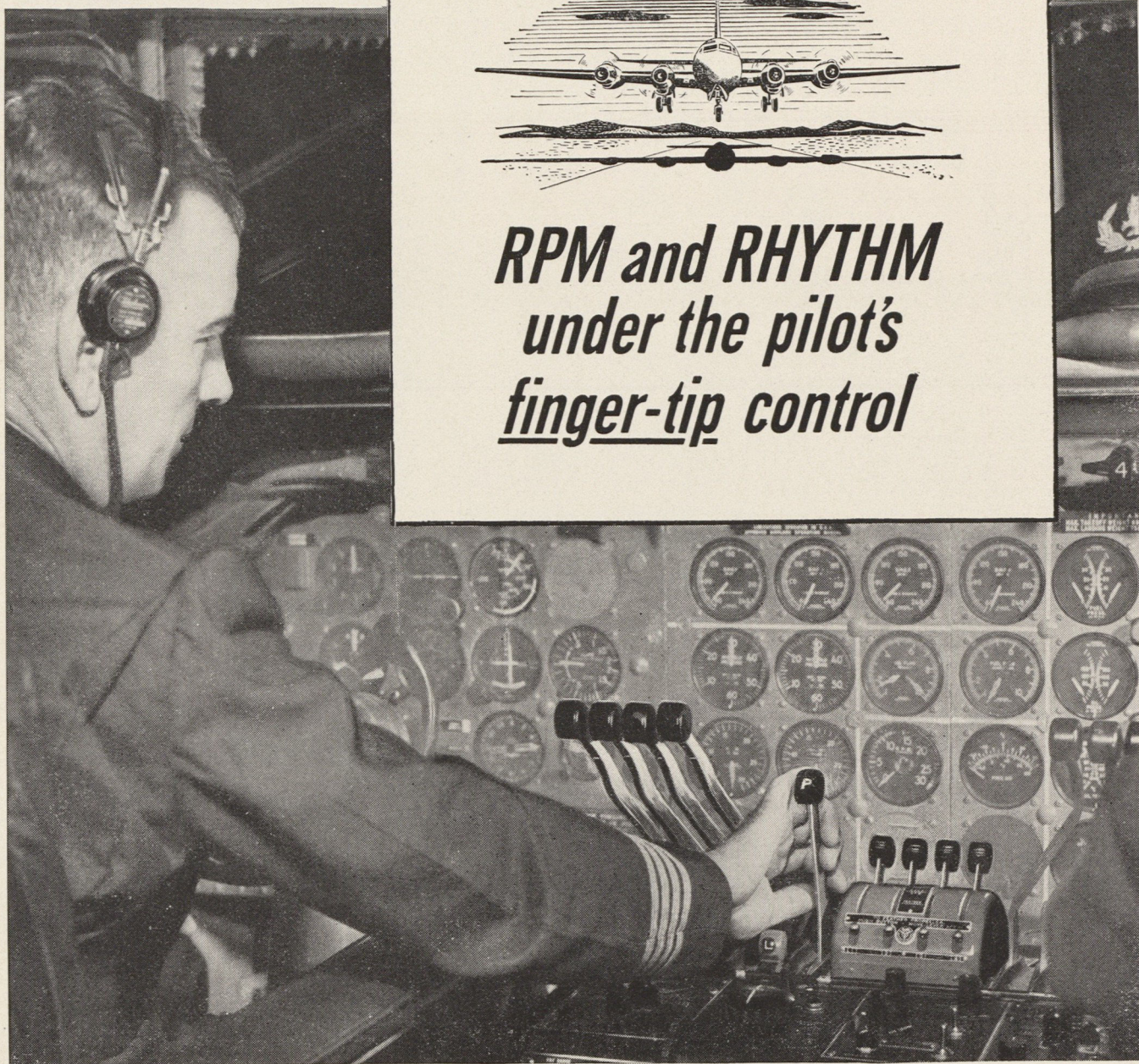
The Binghamton Squadron, chartered in March of this year already has established itself as one of the most active AFA organizations in the East. Recently the Squadron was host at the organizational meeting of the 14th Reconnaissance Squadron (Reserve), to which most of the AFA members in the Binghamton area now belong. A banquet, with Capt. Don Gentile, World War II fighter Ace, as guest speaker, and a dance were attended by more than 300 reservists, their wives and friends. Lt. Col. George Commentator, Commander of the 111th Air Reserve Unit at Griffiss Air Force Base, Rome, N. Y., presented the 14th Reconnaissance Squadron with its official insignia at this meeting.

The residents of the Tri-Cities area will long remember another of the Binghamton Squadron's meetings. On August 18, the Squadron invited Maj. Howard (Deacon) Hively to speak at its meeting in the Remington Arms Building on "Jet Operation." Few of the people in Binghamton had seen a jet plane before that day but when the Deacon demonstrated some of the things the F-80 would do, they all got a very close look at a jet.

Major Hively, who is Operations Officer of the 4th Fighter Group of the Strategic Air Command, talked to the 200 former Air Force men present



RPM and RHYTHM under the pilot's finger-tip control



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... eliminates noisy, tiring, off-rhythm engine "beat."

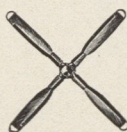
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