THE CARRIER PROBLEM — REPORT FROM SCANDINAVIA

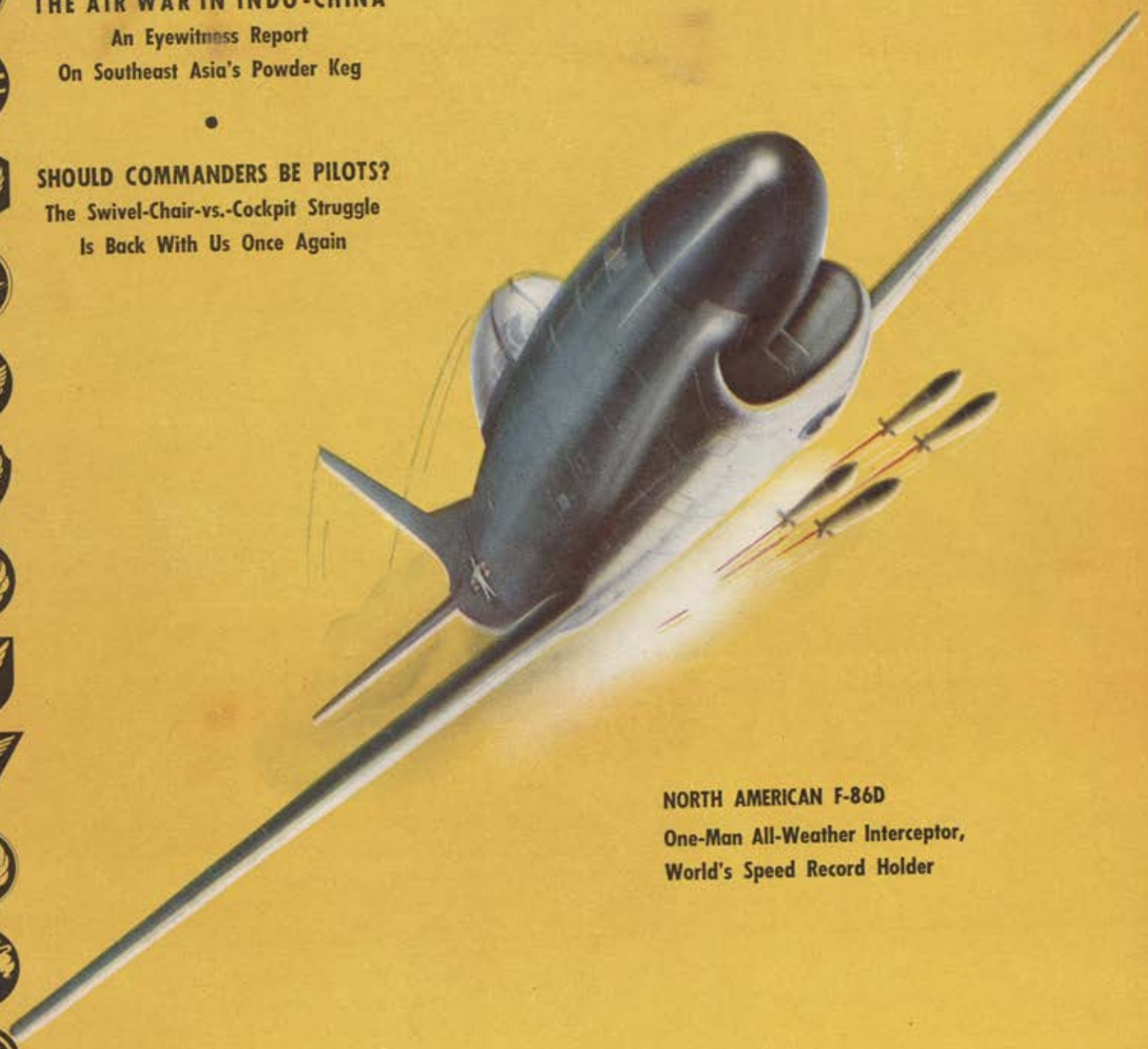
AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

THE AIR WAR IN INDO-CHINA
An Eyewitness Report
On Southeast Asia's Powder Keg

•

SHOULD COMMANDERS BE PILOTS?
The Swivel-Chair-vs.-Cockpit Struggle
Is Back With Us Once Again



NORTH AMERICAN F-86D
One-Man All-Weather Interceptor,
World's Speed Record Holder

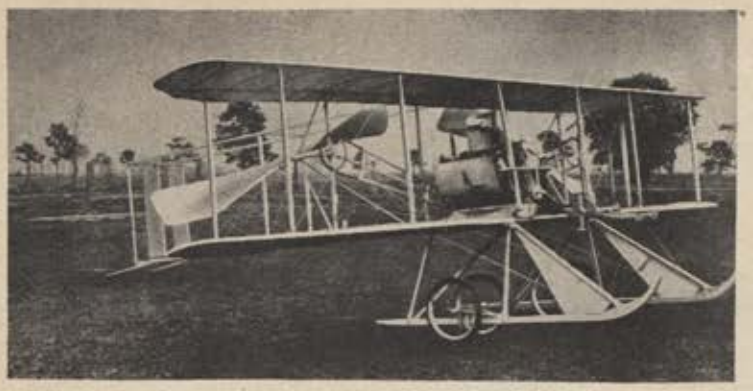
JANUARY 1953 • THIRTY-FIVE CENTS

Missile with a "one track mind" ...Bomber Defense

Defensive guided missiles launched from supersonic aircraft will depend upon electronic marvels that come as close to simulating human intelligence as any mechanism ever devised. Important functions of these "weapons of the future" are typical of those entrusted to systems made by Arma Corporation.

Complex electronic and electro-mechanical controls from Arma are an integral part of many of America's most advanced weapons. In basic research, design, development and manufacture, Arma Corporation has worked in close cooperation with the Armed Forces since 1918—and more recently, the Atomic Energy Commission. *Arma Corporation, Brooklyn, N. Y.; Mineola, N. Y. Subsidiary of American Bosch Corporation.*

ARMA ADVANCED ELECTRONICS FOR CONTROL



THEN and NOW

Dependability Comes First!

SINCE the Navy began flying wheeled aircraft in 1911 with the Wright Brothers B-1, they've always been sticklers for dependability—just as they are today with the "Skyshark," first Turbo-Prop shipboard fighter to join the fleet. And ever since Goodyear built the first Wing Airplane tire for the early Wright ships, dependability has been the watchword here, too.

The Douglas A2D "Skyshark" is the latest in a long line of Navy planes 100%-equipped with Goodyear Tires, Tubes, Wheels and Brakes—selected again for their proved ability to withstand the strains of carrier deck landings and take-offs.

Wherever greater safety and dependability are concerned, Goodyear equipment gets first call—in military and naval service as well as on commercial and private craft. For further details on any Goodyear product for aviation—tires, tubes, wheels, brakes, bullet-sealing tanks, Iceguard equipment and Airfoam Super-Cushioning—write:

Goodyear, Aviation Products Division
Akron 16, Ohio or Los Angeles 54, California

GOODYEAR
AVIATION
PRODUCTS

The plane
that helped
win the war
now helps
win the peace

—the Douglas C-54

Last August nearly 4,000 Moslem pilgrims bound for Mecca were stranded in Beirut 800 miles from the holy city.

In one of the finest demonstrations of international good will, the Department of Defense provided a "magic carpet" in the form of the Military Air Transport Service to speed these pilgrims on their way.

Fourteen U.S. Air Force Douglas C-54s roared into Beirut from Europe and Tripoli and then flew the 12-hour shuttle to Jidda (near Mecca). Four days later the last pilgrim arrived at Jidda with two hours to spare.

The performance of the rugged C-54 on this occasion was in keeping with the history of this great airplane. For it was the C-54 which flew billions of transport miles during the war and performed so nobly on the "Berlin Airlift."

Again the C-54 proves Douglas leadership in aviation. Planes which can be produced swiftly and in quantity, *to fly farther and faster with a bigger payload*, are a basic Douglas concept.

Depend on *DOUGLAS* **First in Aviation**

AIR FORCE
THE MAGAZINE OF AMERICAN AIRPOWER

VOL. 36, No. 1

JANUARY 1953

Shooting the Breeze

One of the better movies last year and one that will be competing with "Above and Beyond" for top honors among 1952's aviation films (see page 30) is a British import called "Breaking the Sound Barrier." Briefly, it's the story of an iron-willed airplane manufacturer who's so dedicated to piercing the sonic barrier that he sacrifices his son and test pilot son-in-law to that end, and alienates his own daughter.

Like "Above and Beyond," it's a moving, human story superimposed on the documentary treatment of how the job gets done. Some of the shots of the jets in screaming dives — especially the Vickers Supermarine Swift, the real hero of the picture — are among the best we've seen. One of the most striking sequences is the non-stop flight from London to Cairo in a de Havilland 110 Vampire, twin-boom jet fighter, which spans the Alps and the Mediterranean in a blur of speed.

But with all its mechanical magnificence, there's something in "Sound Barrier" that doesn't ring quite true, a harsh note that will distract purists in the USAF. The makers of this English picture would have you believe that whipping the sound barrier is a British accomplishment. In the picture, when he's questioned about what's beyond the barrier, the old airplane designer shakes his frowsy head and allows that we just don't know. It's an uncharted course, he says.

Maybe it's supersonic license the British take here, and maybe it doesn't bother Maj. Charles Yeager, USAF test pilot who was really the first person to fly faster than sound (763 mph at sea level). That was back in October 1947 in California, and he was riding a Bell X-1, rocket-powered plane designed for up to 1,700 mph.

Yeager, incidentally, and whole covey of AF brass, were at the first Washington, D. C., showing of the British picture and registered no complaint. But for the record, though we do commend and recommend the movie, we feel Chuck Yeager should come in for at least part of the applause.

FEATURES

DEPARTMENTS

THE COVER

This month's cover, from the drawing board of Charles deM. Barnes, shows how the business end of an F-86D looks when the rockets are unleashed. The D model, one-man, all-weather interceptor which has just broken the world's speed record, comes from an illustrious family. For a rundown on the 86's pedigree, see page 36.

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CORRESPONDENCE: All correspondence pertaining to editorial matter and change of address should be sent to Air Force Association, 1424 K St., N.W., Washington 5, D. C. Allow 6 weeks for change of address to take effect.

RELIABILITY OVER THE YEARS—Five years is just a beginning for Los Angeles Airways, Inc. Now passenger and freight service is planned, in addition to airmail stops at 42 communities. Sikorsky reliability is a major factor in day and night flights, which, since October, 1947, have covered almost 1,500,000 miles with 19,700,000 pounds of mail.

AROUND THE WORLD WITH THE FLYING JACK-OF-ALL-TRADES

HIT AND RUN—U. S. Marine ingenuity and cooperation solved the problem of how to launch a rocket attack on enemy strong points, then shift positions before rocket smoke trails and dust could be used by the enemy as a guide for counter-battery fire. Here a Sikorsky Marine helicopter positions the rocket launcher and ammunition a short distance behind the front lines.

SAVING TIME AND EXPENSE—More efficient use of time is always an objective in modern business. To provide speedy, flexible transportation, the Rockwell Manufacturing Company of Pittsburgh, Pa., has adapted a Sikorsky S-55 to its extensive operations. Now engineers and operating executives go by helicopter from plant to plant. The company says overhead savings will be substantial.

LIFTED TO SAFETY—Hovering over simulated destruction, a Sikorsky helicopter shows its versatility at the Federal Civil Defense Staff College by plucking an "injured man" from the ruins of a "bombed" 5-story building. Civil Defense officials say "There is no limit to the work these helicopters can do . . . in time of war . . . in any emergency."

SIKORSKY AIRCRAFT

BRIDGEPORT, CONNECTICUT

One of the Four Divisions of United Aircraft Corporation

AIR MAIL

A Fitting Tribute

Gentlemen: In the September issue of AIR FORCE I noticed that there were twenty-seven USAF bases named for towns, counties, and one base named for an island. Why not name these for USAF heroes? Also in the same issue the Congressional Medal of Honor winners were listed. There would be enough from this group alone to fill the bill.

Certainly the AF must have numerous men in it who have done as much or more for their country than some of those who already have had bases named for them.

In the past there has been effort in this direction, but don't you think it could be pressed farther so that all, or as many as possible, bases can be named after these men who have given so much? It is the least we can do for those who have given their lives fighting for their country.

W. N. Hewson
Philadelphia, Pa.

• *We're passing the idea along to the base namers in the Pentagon.* — The Editors.

Mrs. America

Gentlemen: In December 1950 AIR FORCE Magazine, there appears on page 41, a photo of "Miss New Jersey Wing, AFA, 1950," taken at the annual convention. The young lady in question was designated "Mrs. America" several weeks ago.

As you see, the New Jersey Wing leads the nation in more ways than one.

Irving B. Zeichner
Atlantic Highlands, N. J.

"Sound Off" Pro and Con

Gentlemen: After reading the article in the November issue of AIR FORCE Magazine, "A Reservist Sounds Off," I also agree with the writer that enlisted Reservists should get an honest deal. (If such a thing is possible.)

I would say that the damage has been done, that is why so few men are reenlisting. I am one of many who will never enlist again. With over eleven years of active and active Reserve service, and only nine years to go for the pension that they promise us, I will gladly give all that up, and stay out forever.

Why does the AFA refer to the Korean situation as war? Our Commander-in-Chief (Mr. Truman) says it is a "Police Action" — or is he wrong?

William Truver
Chicago, Ill.

Gentlemen: The article "A Reservist Sounds Off" is a typical example of criticism by an individual who obviously became affiliated with the Air Force only as a means of evading what to him would have been an even more distasteful fate—carrying a rifle and pack and walking his way through a war. He took advantage of every means to improve his own situation at minimum risk and inconvenience to himself, and is disgruntled that there were no more attractive ways to fulfill an obligation to his country.

Fundamentally, he is "browned off" most of all because *he* had to suffer the indignity of service life in time of war. Somebody else should have had to do these nasty jobs.

Although nobody can quarrel with his right to dislike military service, it is unfortunate that the AFA should see fit to exploit his ill-considered gripes.

The writer of "A Reservist Sounds Off" indicts himself in his statement that he is now "knocking down easy money" as an officer. Any man, civilian or soldier (and if the latter, commissioned or enlisted) who can't find enough useful work to occupy his talents and earn his pay is just plain lazy.

It is high time that Reservists, and reserve associations, quit harping on the false premise that Regulars get all and Reservists get nothing. Let Reservists assume their obligations, and let the AFA direct its efforts toward the betterment of the Air Force, which happens to be composed of both Regulars and Reserves. If the reserve associations and individual Reservists would criticize their professional counterparts as little as those professionals criticize Reservists, we could all work together in the best interests of the service and of the country.

A Regular Master Sergeant
Westbury, N. Y.

"Brain-Washing"

Gentlemen: While it is not my wish to

start a debate on the "brain-washing" issue of the Communists, I would like to state a case that would be substantiated by psychologists or psychiatrists.

The so-called "brain-washing" you speak of is nothing but a form of hypnotism, aided by mechanical means, that would force a *man* (not a weakling) to disavow his own mother or a Cardinal to disavow his own Church.

While under its influence the party hypnotized has no chance to conceal even a thought, and the victim cannot at times know whether a thought was his own or was planted in his mind.

The other element at the hypnotists' command is the use of brutal, cowardly pain inflicted at will on any part of the body, especially nerve centers. This pain, excruciating or just disciplinary, can wreck a man's body or mind by its judicious use.

Frank J. Norris
Former Sgt.-Maj., USMC
Omaha, Neb.

Start 'em Young

Gentlemen: I have been a member of AFA from the very beginning. Here is a

prospective member. He is only five months old but likes AIR FORCE Magazine already.

Eli Goldman
Woodbine, N. J.

Translations for Denmark

Gentlemen: In recent months I have arranged to get AIR FORCE subscriptions for a number of Danish military writers as a means of stressing the American point of view on airpower. Many of your articles are of general interest, and I wonder if you could release copyright for extensive quotation in Danish translation, with due credit. This would, over a period of time, undoubtedly make AIR FORCE Magazine generally known here, particularly among military people. On the other hand, copyright release for Danish publication only would help USIS present the USAF's viewpoint.

In these times, when so much depends upon European confidence in American military power and know-how, every bit of reliable information, such as is carried in AIR FORCE Magazine and *Combat Forces Journal*, is a great help.

Brooks McClure
Press Attaché, American Embassy
Copenhagen, Denmark

• *We'll cooperate.*—The Editors.

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- Numerous products needed in aircraft manufacture from many suppliers are covered by *one* order . . . *one* delivery . . . *one* bill . . . and *one* payment.
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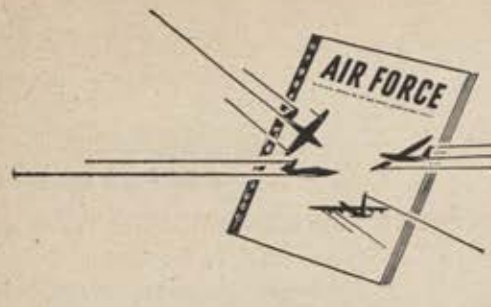

RENDEZVOUS

Where the Gang gets together

DR. B. E. LACHMAN: It is believed that Dr. Lachman, formerly a Captain and Flight Surgeon with the 37th Photo Rcn. Sqdn., 5th Photo Group, 15th Air Force, can supply information which will enable a former member of the same unit to complete claim for disability which has been pending for seven years. Anyone knowing Dr. Lachman's present location please communicate with *Daniel Sadwin 107 Meadow Rd., Woonsocket, R. I.*

LOOKING FOR EARL: I'm seeking the whereabouts of an Earl L. Miller. He was stationed at Sheppard Field, Tex., from 1942 to 1945, then transferred to Chanute Field, Ill. *M/Sgt. A. R. Mackey (Ret'd.), 5902 Steilacoom Blvd., Tacoma 9, Wash.*

WAC OFFICER: Could anyone give me the address of a Capt. or Lt. Annie (or Ann) Mason from Lynchburg, Va., who was my training officer at Fort Oglethorpe, Ga., in 1944? *Mrs. Evelyn MacDonald, 217 N. Second St., Wilmington, N. C.*

TED'S FLYING CIRCUS: Did the 93d Bomb Group (H), 8th Army Air Force, known as "Ted's Flying Circus," ever publish a group history? If so, where can I obtain a copy? *T/Sgt. G. W. T. Hardeman, Hq. Sqdn. Sec., CADF, Box 528, Kansas City, Mo.*

CLASS 41-G: On Sept. 26 twenty-five officers and their ladies attended the annual reunion of Class 41-G, celebrating their eleventh anniversary, at the Officers Club, Andrews AFB, Md. Lt. Col. Robert H. Ficke, Sec'y., hopes that at least a hundred classmates will be in attendance at the next reunion, which will be held Sept. 26, 1953. Those interested in future reunions should contact the secretary for the coming year. *Lt. Col. R. W. Lucia, 601 Monticello Dr., Falls Church, Va.*

RAF PEN PAL: I'd like to hear from an AFA member, preferably a serving pilot, with a view to corresponding on aviation matters, and exchanging aeronautical magazines. I am 20 years old, have just finished training, flying Meteor and Vampire fighters. *Pilot Officer Dan A. Regan, RAF, c/o 40 North Lane, Canterbury, Kent, England.*

AAF CHECK PILOT: Anyone knowing the whereabouts of Capt. Joe Bennett, who was AAF check pilot at Hemet, Calif., primary flying school in 1943-44, please contact me. *Ted J. Mouché, 205 Somerset Block, Regina, Saskatchewan, Canada.*

1ST LT. JAMES F. HOLBROOK: Our son, 1st Lt. James F. Holbrook, was reported missing in action June 3, 1942, somewhere in the China-Burma-India Theater, flying the Hump. Two of a squadron of six planes, led by a Major Leland, made it in. Pilot of one was Captain Klemann, the other a captain whose name is unknown to us. Nothing definite was ever learned and after 2½ years our son was officially declared dead. He was with the 83d Bomb Sqdn., but was, before he left the States, sent to Louisiana and was, we understand, the only pilot from his squadron sent across. We have tried to find out if Major Leland, Captain Klemann, or the other captain ever returned. We would be happy to hear from anyone who knew our son. *Mr. & Mrs. Perry F. Holbrook, Maryville, Mo.*

HARRY W. ADAMS: Mr. Harry W. Adams' many friends in the aircraft industry will be sorry to hear of his passing on October 31, 1952. After serving with the 176th Aero Sqdn. in World War I, he was with the Glenn L. Martin Co., 1921 to 1932, Consolidated in Buffalo, 1932 to 1934, and Douglas Aircraft in Santa Monica, 1934 to 1948. For the last two years he had been with Lockheed Aircraft. Mr. Adams is survived by his wife, Florence, of 5774 W. 85th Place, Los Angeles 45, Calif.

SHANGRI-LA RESCUE: In 1945 a plane crashed in Dutch New Guinea in a valley later called Shangri-La. Rescue of the only survivors, two men and a woman, was made by glider piloted by an American Air Force flyer. Can anyone give us the name of any magazines which carried the story of this episode? Chas. H. Holmes, WALKABOUT, Australian Geographical Magazine, Railway Bldg., Flinders St., Melbourne, C.I., Australia.

To insure appearance in a given issue, Rendezvous items should be in this office approximately six weeks prior to publication. For example, copy for March issue should be in our hands by January 15. — The Editors.

Only Gilfillan GCA Radar Is PROVEN

PROVEN PERFORMANCE

Only Gilfillan GCA Radar has been in operation by the CAA at United States civil airports since 1946. Only Gilfillan GCA is now in 24-hour operation at eleven major CAA airports.

PROVEN PRODUCTION

Gilfillan pioneered the *first* 22-ton GCA Radar, produced 100 during the first year, now produces a Gilfillan GCA every 48 hours. As of the beginning of this year, Gilfillan was the only company "on time" in Radar production and deliveries.

PROVEN SAFETY

There have been more than three million Gilfillan GCA landings. There has never been a fatality due to Gilfillan GCA equipment failure. At U.S. Airports alone, CAA records credit Gilfillan GCA Radar with 77 aircraft "saves."

PROVEN VALUE

Civil and military records list hundreds of Gilfillan GCA "saves," involving thousands of lives, millions of dollars of aircraft and cargo. Gilfillan GCA increases air traffic control efficiency, allows faster, safer all-weather take-offs and landings.

PROVEN SUPERIORITY

Gilfillan GCA was selected over all competitive landing systems by the USAF, USN, USMC, RCAF, RAAF and by France, Great Britain, Union of South Africa, Norway, Denmark, the Netherlands, Belgium and Italy.

In GCA and Radar Research, Design and Production

—the FIRST name is... *Gilfillan*

Los Angeles

AIRPOWER IN THE NEWS

BY JAKE CULPEPPER

NATO AIRPOWER — There are now 95 major airbases built or being built in the North Atlantic treaty nations, from northern Norway to Italy. Fifty-five are fully operational, and all can accommodate jet fighter wings or, in emergency, A-bomb carriers. From thirty to thirty-five other bases are being or have been built in West Germany (not in the Atlantic alliance). Belgium has fourteen bases; Denmark, seven; Norway, seven; France, forty-one; Luxembourg, one; and Italy, twelve.

CRASHES — No pattern of mechanical or structural failure was found in the recent series of four C-119 Flying Boxcar crashes. This leads AF to believe that pilot error and dirty weather over "graveyard of airplanes" section of Alaska were responsible for the disasters, although there were indications that propeller trouble may have caused fourth crash. . . . AF has denied published reports that F-89 Scorpion contracts with Northrop have been cancelled. In a statement of denial, Under Secretary Roswell Gilpatric said cause of several wing failures on Scorpions had been found and that remedial modifications were being made. "The total number of F-89s to be built by Northrop is not being reduced," Mr. Gilpatric added.

OPERATIONS — Nation's first jet ace, Maj. Jim Jabara, is returning to Korea, at his own request, to finish out last 37 missions of his 100-mission combat tour. After downing six MIGs in six weeks in spring of '51, he was assigned to ATRC, Scott AFB, Ill., to help train pilots for combat. . . . Capt. Paul E. Jones, Aragon, Ga., a member of the 51st Fighter-Interceptor Wing in Korea, bagged MIGs number 499 and 500 of the Korean war. The 51st is the outfit which destroyed the first of the MIGs on November 8, '50, when the Russian jets first came over North Korea from Manchuria. Of the 500 MIGs, 471 were downed by Sabres, sixteen by B-29s, and thirteen by other American planes. Sabrejets lost in combat during same period totalled seventy-two.

RESCUE — Air Rescue Service has saved 7,753 UN fighting men in Korea since the war began June 25, '50. Of these, 925 were from behind enemy lines.

ARMY AVIATION — The Army and AF have agreed on a widened role for Army aviation that will increase the number of helicopters and light fixed-wing craft the Army has to about 2,200, as against some 1,800 now. Of the 1,800, many are small and obsolete. But, Army Chief of Staff Collins says, there will be no Army "Air Corps." Army aircraft now include Bell H-13s, Sikorsky H-19s, Piasecki H-21s, Hiller H-23s, Cessna L-19s, DeHavilland L-20s, and twin-engined Beech L-23s. . . . A new type lightplane went to the Army this month. The "Helioplane," powered by a 260-hp Lycoming engine, has a top speed of 150 mph and a low of 35. The all-metal, four-placer has large flaps and leading-edge automatic slats, which enable it to operate with full-load from a 100-yard strip.

ACCUSED — The AF staff sergeant accused of planning to sell secret data on an advanced version of F-86 Sabre to Red agents faces a maximum penalty of life imprisonment if found guilty on charges of "giving intelligence to the enemy." S/Sgt. Guiseppe Cascio, arrested in Japan, was a bombardier in WW II and twice won the DFC. The 34-year-old airman is from Tucson, Ariz. The AF claims that fast work by its investigators prevented any secrets from reaching enemy hands.

HELICOPTERS — The MATS helicopter ambulance service, begun last fall, is now in full operation and more than halves the time needed to rush patients from the MATS terminal at Andrews AFB, Md., to military hospitals in the Washington area. Sikorsky H-19s are used in the evac service which is both faster and less uncomfortable for the patients than the ambulances formerly used.

. . . The first scheduled helicopter passenger and freight service will begin this year in Los Angeles, New York, and possibly Chicago, ATA predicts. Ninety-two communities around these cities now get helicopter mail service. Since 1942 'copter payloads have increased fifteen times, range has increased six times, and cruising speeds have doubled. . . . Early this year an experimental 40-passenger military helicopter will make its first flight.

PRODUCTION — Once the AF goal of 143 wings is met, Maj. Gen. William H. Turner, deputy commander of AMC, has assured the aviation industry, there will be no sudden cancellation of military aircraft production. He cited the production stretchout, the production readjustment program, the Production Acceleration Insurance Program (PAIP), and contract maintenance as "insurance" against the kind of turmoil the industry was thrown into after WW II.

PLANES — The Navy's newest attack bomber, the Douglas A3D, has completed its first flight, at Edwards AFB, Calif. The twin-jet, said to be designed for speeds above 600 mph, stayed aloft thirty minutes in what was described as "an eminently satisfactory" flight. . . . First French plane to fly faster than sound is the Dassault MD 452 Mystere IV. On the test flight the pilot, an American, was described only as a "Major Davies." . . . The Martin Seamaster, high-speed minelayer, has been designated the XP6M-1. . . . A B-47B Stratojet has made a record crossing of the Pacific, flying the 2,434 miles from Honolulu to Travis AFB, Calif., in the unofficial time of four hours and twenty-two minutes. This knocks half an hour from the same bomber's time last September from Travis to Honolulu. Average speed was 565 mph.

TRANSITION — Headquarters of the Air Photographic and Charting Service (MATS) have moved from Philadelphia to Orlando AFB, Fla. APCS, commanded by Brig. Gen. Edwin M. Day, is responsible for all photographic and TV productions for the AF. The group's chart-making functions will continue in St. Louis, where production facilities are located. . . . The B-29 maintenance and overhaul line at Tinker AFB, Okla., is being converted to all-jet service. Maj. Gen. F. S. Borum, CG, says the change-over will be completed about March 30. It was at Tinker that the A-bomb release equipment was installed on the Enola Gay, the '29 that dropped the atom bomb on Hiroshima.

PERSONNEL — New British Chief of Air Staff is Air Chief Marshal Sir William F. Dickson, replacing Marshal of the Royal Air Force Sir John C. Slessor who had held top RAF post since 1950. . . . Retiring January 31 is Air Marshal W. A. Curtis, RCAF Chief of Air Staff.

AWARDS — The Frank G. Brewer trophy, nation's highest award for aviation education, was awarded to CAP December 17 at the Wright Memorial Day Dinner by NAA. Maj. Gen. Lucas V. Beau, national commander of CAP, accepted the award at the banquet in Washington, D.C.

ON-THE-BALL — Alert ground observers were responsible for the jet interception recently of President Truman's DC-6B, the Independence, over eastern New York state. No flight plan had been filed for the plane, which was carrying Secretary of State Acheson from Ottawa, Canada, to New York City for a UN meeting.

ANNIVERSARY — A major event in this year's celebration of the 50th anniversary of flight will be a three-day National Aircraft Show at the Dayton, Ohio, airport, September 5, 6, and 7. It will be sponsored jointly by Air Foundation, Cleveland, and the Dayton Chamber of Commerce, and will feature military and ground exhibits, flying, special events; and record attempts.

CONTINENTAL

BUILDS FOR DEFENSE

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MUSKEGON, MICHIGAN

PEOPLE

In The Air News

Col. Royal N. Baker, jet ace number 21 in Korea, now is credited with five MIG-15s and one prop-driven LA-9. He scored his fifth victory on November 17. An F-86 Sabrejet pilot, he is a group commander with the veteran 4th Fighter-Interceptor Wing. His wife, Sarah, lives in McKinney, Tex., and his mother lives in Shreveport, La.

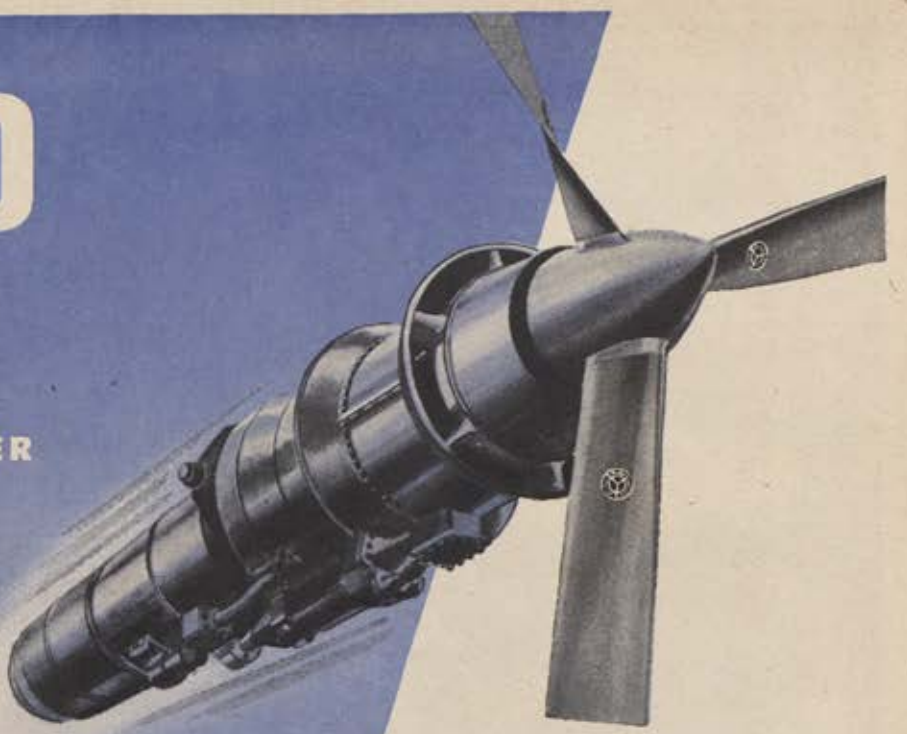
Capt. Leonard W. Lilley, history's 22d jet ace, got his fifth MIG in what he calls a "five-second battle" on his 82d mission after getting the first four MIGs in 18 days last September. Now an operations officer, he's an F-86 pilot with the 4th F-I Wing and has been in Korea since last June. His wife and daughter live in Manchester, N. H., and his mother in Washington, D. C.

John K. Northrop, president of Northrop Aircraft, Inc., since its inception in 1939, has retired because of failing health, ending a 36-year career in aviation. The well-known engineer and designer is succeeded by Board Chairman Oliver Echols. Northrop, a proponent of Flying Wings, was prominent in designing the WW II P-61 night fighter.

James H. Doolittle, Wright Trophy winner, was cited by NAA for his "service of enduring value to aviation" which included pioneering instrument flying, advocating a separate AF, founding AFA, and serving with NACA. He's also been a special advisor to the AF C/S and Sec'y, and headed the President's Airport Commission. He's now chairman of the committee for the observation of flight's 50th anniversary.

TURBO PROP

ENGINE-PROPELLER COMBINATIONS



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Wing Tips

Since the start of the Korean war, the Pacific airlift has hauled the equivalent of the population of the state of Wyoming, all the way from Cheyenne to Seoul.

° ° °

Civil aircraft production has dropped sharply in recent years, from 35,000 in 1946 to only 2,477 last year. Learning to fly is no longer the number one category of lightplane use. Instructional flying dropped fifty-five percent from 1949 to 1951.

° ° °

Last year lightplanes dropped half a billion pounds of poison bait, seed, fertilizer, and dust on America's farm lands.

° ° °

Plane manufacturers will hire more workers in the next year than any other US industry. Aircraft and aircraft equipment are manufactured by more than 70,000 businesses in thirty-three states.

° ° °

The Civil Aeronautics Administration has made an estimate for airline travel in 1960: 40 million passengers, more than double the number carried in 1950.

° ° °

An air-drying device is used to remove excessive moisture from air blown into aircraft cabins to prevent actual snowstorms, icy rains, and fog inside crew compartments.

° ° °

Women are the principal air travel bargain hunters. American Airlines finds that they account for sixty-one percent of all coach travelers but only twenty-five percent of standard fare passengers.

° ° °

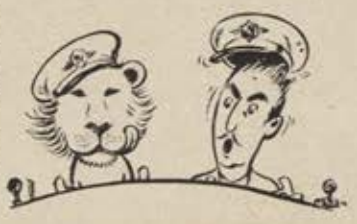
The first trans-ocean helicopter flight last year by two Air Force helicopters set a new over-water distance record of 920 miles.

° ° °

But the helicopter has done even better over land. Recently a Texas test pilot whirled all the way from Fort Worth to Niagara Falls for a new distance mark of 1,234 miles. The trip was made using auxiliary tanks which boosted fuel capacity from thirty to 187 gallons.

° ° °

A lion in the cockpit of a British commercial passenger plane recently delayed a flight from Berlin. The cub popped out of its crate and stalked into the pilot's cabin where it sat and watched the plane brought to an unscheduled landing. There were twenty-one unsuspecting passengers aboard.



° ° °

The total investment in airports in the US is about $10 billion. That includes $6 billion for military fields and about $4 billion for civil airports.

° ° °

Since 1936, the DC-3 has flown more than 7 billion scheduled miles, the equivalent of 290,000 round-the-world flights.

By Wilfred Owen

No Sacred Cows, Please!

An editorial by Arthur F. Kelly, President, Air Force Association

IN THE LAST issue of AIR FORCE Magazine, we presented certain facts regarding two recent activities of our Navy on opposite sides of the world.

We reported that Exercise Mainbrace, a naval maneuver in the North Sea, did not live up to its press notices; and further, that it revealed serious weaknesses in the carrier task force as an offensive weapon.

We reported that so-called guided missiles launched from an aircraft carrier off Korea with maximum publicity and minimum effectiveness were, in fact, obsolete drone aircraft of World War II vintage.

These were not pleasant facts to present or to digest. In both instances the public had been led to believe something other than the truth. For this reason alone, we felt that the facts merited the attention of our readers and of the public at large. We still think so.

Not everyone, however, shares this opinion. Specific replies to our arguments have been conspicuous by their absence, but there has been heavy pressure on the Air Force Association and on me personally, to "lay off" our current analysis of carrier task force efficiency. For the record, we do not think such pressure is in the public interest.

We reserve the right to criticize any individual or agency in or out of government, and in turn respect the right of others to criticize us. We openly oppose the official position of the Air Force regarding the airpower stretchout of 1952 as strongly as we opposed the official position of the Navy in the B-36 hearings of 1948, and would do so again.

It is easy to disagree with the Navy League's stated position that the close air-support mission should be transferred from the Air Force to the Army. But it is impossible to contest the right of the Navy League to maintain that position and to disagree with our findings concerning the carrier task force as a weapons system.

Let me make it clear that we have not, as charged, criticized the Navy as a service or the carrier as a weapon. Both have an important role in keeping the sea lanes open. We have never argued this point. We have questioned the concept of the carrier task force as a reliable and efficient weapons system for such tasks as command of the air and support of the land battle.

If the right to question the validity of a multi-billion dollar investment in weapons, whatever service it may belong to, has gone by the board, then the Nation is in a bad way indeed.

Mr. Paul G. Hoffman, in *The Atlantic Monthly*, pointed out the consequences of this kind of thinking when he wrote, "The cavalry and coast artillery lived on in national budgets well after their usefulness had ended, a not unusual example of overlooked obsolescence. We cannot afford to spend the vast sums needed to develop and adopt new equipment and at the same time cling nostalgically to the outdated and superfluous."

We have no interest in "service feuds." The times are too perilous to fight among ourselves. For the same reason, we have a decided interest in the amount of defense we are getting from our tax dollar. That we feel rather strongly on this subject is evidenced in the Statement of Policy adopted at our last national convention. As a Nation, it asserts, "we cannot afford the waste inherent in our military strategy. We believe billions of tax dollars could be saved if the roles and missions of the several services were based solely on the military requirements needed to defend us against the specific threat, rather than upon the traditional assignments of the services."

There is strong evidence that the carrier task force concept of the US Navy may be compromising, at least, NATO strategy for the defense of Western Europe. This is not merely our opinion. Great Britain officially has said as much. Military leaders in Denmark and Norway are known to be of the same opinion. These developments are reported in the article "There Is No Easy Way Out," on page 21 of this issue.

Great Britain, Denmark, and Norway are under the Russian gun. To them, I am sure, this article, and our analysis of Exercise Mainbrace in the December issue of AIR FORCE Magazine will not add up to a "service feud." To them, the provision of adequate airpower, which is the theme of these reports, may well be a matter of life or death.

To the countries in the shadow of the Iron Curtain it does not matter who delivers the airpower in their support, or how it is delivered — just so it gets there, efficiently, and in time. This must be our own approach, and we must add the requirements of economy.

It matters little whether the needed airpower is delivered by land or by sea. It is important that this airpower be delivered on the most reliable, effective, and economical basis possible with existing weapons. Both carrier aviation and land-based airpower must be judged against these standards.

The taxpayer does not always get the facts of the case. Nor does his congressman. Both are primed with propaganda that says, in effect, each military service can do no wrong. For example, we believe that the public at large would not have become aware of the failure of Exercise Mainbrace or of the guided missile hoax off Korea had we not called attention to them. Ever since Air Force Association began, we have exposed gaps in our military structure, and we intend to keep on doing so. There can be no sacred cows in our defense establishment. The price of beef is too high.—END

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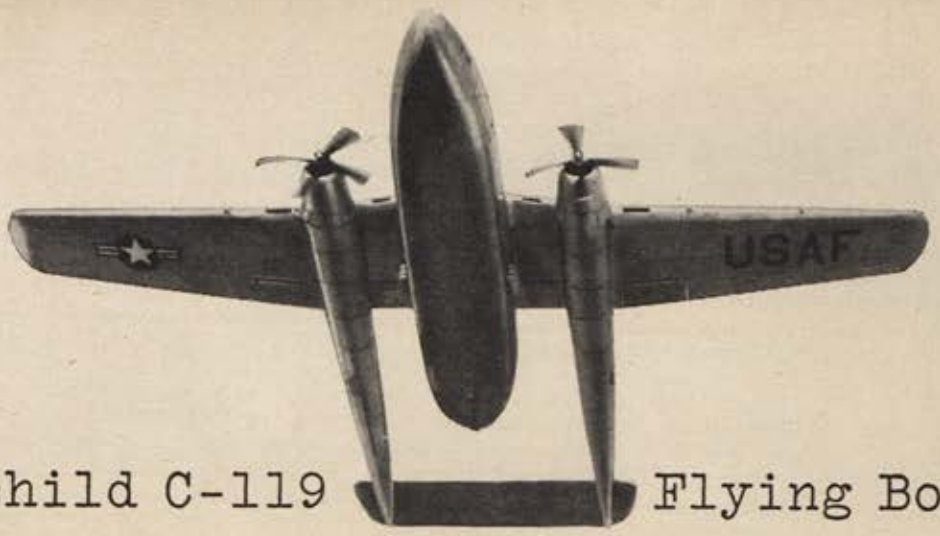

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THERE IS NO EASY WAY OUT—

A SECOND LOOK AT MAINBRACE

Disclosure in this magazine that Exercise Mainbrace, the recent NATO naval exercise in the North Sea, emphasized inherent weaknesses in the carrier task force as a weapons system, produced important reactions in Scandinavia. This is an effort to put these in proper perspective

An **AIR FORCE** Magazine Staff Study

AMONG OUR European allies there is growing opposition to the US Navy's carrier task force concept as an effective means of countering the Russian threat to the security of Western Europe. And the doubts are being voiced mainly by those nations which previous planning had made most dependent on carrier-based aviation for defense. This is the significant aftermath of Exercise Mainbrace.

Great Britain has voiced official opposition to the carrier task force concept and has indicated that she intends to concentrate on land-based airpower. In this instance, Mainbrace merely confirmed previous British misgivings concerning NATO dependence on seaborne aviation.

Denmark now wants NATO bases

Denmark has revealed for the first time an interest in acquiring NATO air bases. This important development, according to a United Press report, is a direct result of Exercise Mainbrace. The exercise, it was stated, convinced Danish policy-makers that carrier-based aircraft could not be depended upon to effectively defend Scandinavia, or prevent enemy submarines and surface raiders from breaking through from the Baltic to the North Sea and the Atlantic.

Norway, although officially committed to abstain from NATO bases except under imminent threat of aggression, also is reconsidering its position in light of the Mainbrace experience.

Two steps toward land-based air

Reliable Scandinavian sources also report two new developments at the joint command level which emphasize the trend toward land-based airpower and away from carrier-based aviation in securing the northern flank of Western Europe.

Admiral Sir William Patrick Brind, of Britain's Royal Navy, northern commander in chief of the Supreme Allied Command in Europe, has stated that he has no long range requirement for aircraft carriers to help secure the northern flank, which is his particular mission.

Admiral Lynde McCormack of the US Navy, Supreme Allied Commander of the Atlantic, who holds a command position equal to that of General Matthew Ridgway, has ex-

(Continued on page 22)

pressed the need for shore bases and land-based aircraft along the northern flank to help keep the sea lanes open and to support carrier task force operations in that area.

Last month a Navy League spokesman denied the charge that weather conditions in the North Sea were a limiting factor in carrier operations. Yet, Admiral McCormack is said to have supported his request for land-based airpower with the explanation that bad weather in northern waters restricted the effectiveness of carriers.

In fact, there is growing evidence that Operation Mainbrace was not only a training exercise, but also an effort to bolster the sagging confidence of British and Scandinavian leaders in the carrier task force concept.

NATO took what it could get

Since the formation of NATO, carrier aviation has occupied a position out of proportion to the long-range evaluation of its importance in the Western Europe defense plan. With the requirement for land-based airpower far exceeding any hope of fulfilling the need, NATO leaders took what they could get. Since carriers and supporting vessels were available, they took them, just as Admirals McCormack and Brind will take them today.

It is one thing, however, to accept available forces as an expedient of the moment, and quite another thing to establish the need for carrier task forces over the long haul. For example, General Eisenhower, when he was Supreme Commander in Europe, put in a request for additional carriers. But first he called for land-based airpower. When it was determined that, due to the demand in Korea and other factors, the supply was extremely limited, he accepted the carriers as a second-best alternative. NATO leaders in Europe have said that the greatest need for aircraft carriers for the defense of Western Europe exists today, based on the fact that from now on the addition of air bases on land, according to the construction schedule in force, will steadily decrease the need for air bases afloat.

To Denmark and Norway, however, the carrier task force may well have seemed to be an easy way out of their dilemma. A basic part of the NATO defense buildup is the construction of a series of air bases stretching from Turkey to the British Isles. Ninety-five major air bases have been built or are being built along this network, and fifty-five already are operational. Denmark and Norway each have seven of these bases on the NATO agenda. However, development of the Scandinavian bases has been, and still is at this writing, blocked by political considerations.

Fear of Russian retaliation

When NATO was conceived in 1948, both Denmark and Norway hesitated to join out of fear of Russian displeasure. Norway in particular came under severe Russian pressure, made all the more potent by the fact that the two countries have a common border. As a result of a series of Soviet protests and blunt threats of retaliation, the Norwegian government in 1949 stated in a note to Moscow that it was joining NATO for purely defensive reasons and that it would permit no foreign troops on its soil as a result of joining the alliance. That promise still stands, and no NATO forces are permitted in Norway except for brief stopovers during maneuvers or other short-term chores.

Denmark did not feel it necessary to make such a promise, but it has treaded lightly on "aggressive buildups." It will take the approval of the Danish parliament if the government decides to invite NATO forces to set up shop in Denmark.

In this ticklish atmosphere, both Denmark and Norway pondered the solution to their security problem. Airpower was essential, but land-based airpower was not desirable for political reasons and, by any standards, it was expensive.

Argument for carrier-based airpower

The argument for seaborne airpower was enticing. It was an argument often expressed, with a somewhat different slant, for consumption here at home. Land-based airpower, so it goes, is dependent upon the construction of costly overseas bases which involve all sorts of "entangling alliances" with foreign nations, and these alliances, in turn, involve a myriad of diplomatic problems. With aircraft carrier task forces, according to this story, you get the needed airpower without either the alliance or the problems.

If the carrier task force can fulfill these claims with reliability and efficiency, the problem of Free World defense is indeed simplified.

The answer is not to be found, however, in the record of carrier aviation in the island warfare of the Pacific during World War II, or in the Korean war of today, with its dearth of both submarine and air opposition. The test must be the ability of the carrier task force to function against the large land mass of Eurasia and against the modern air and undersea weapons Russia is known to possess. The answer may better be found in the reactions of people under the Russian gun—in Denmark and Norway where the problems are close at hand. Exercise Mainbrace underlined these problems.

Mainbrace showed carrier weaknesses

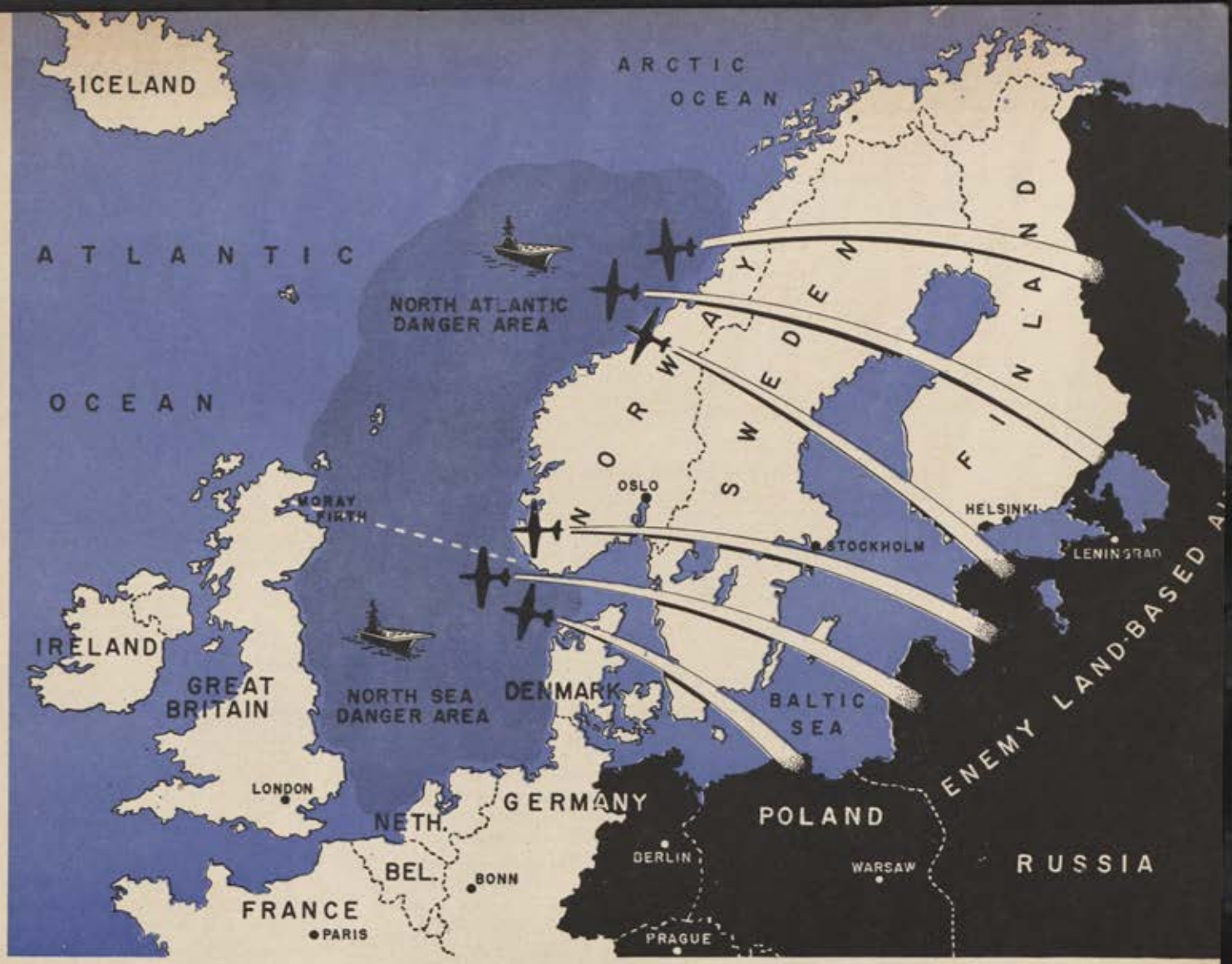
As reported in the last issue of this magazine, Mainbrace was the naval exercise conducted in September by the combined NATO fleet in the waters off Scandinavia. It was designed to demonstrate that the defense of the northern flank of Europe was primarily a maritime task, particularly for carrier task forces. Instead, as this magazine revealed, the operation reiterated inherent weaknesses in the carrier task force as a major weapons system, including: mechanical failures, vulnerability to submarine attack, vulnerability to air attack, vulnerability to weather, the need for frequent refueling of the fleet, and excessive cost in proportion to the firepower delivered.

Reports from Scandinavia reveal conclusively, however, that official observers there were greatly disappointed in Mainbrace. A Danish military leader, whose opinion is believed to reflect that of a majority of his colleagues, after close observation of the exercise reached a conclusion which can be summarized in these terms:

"The modern carrier task force cannot operate successfully in the North Sea. The area is too constricted, the weather is generally adverse, and enemy land-based airpower is close at hand. It appears that a carrier task force cannot operate south of the east-west line running from Moray Firth in Scotland to the southern tip of Norway with enough safety to permit useful offensive operations."

Disappointment of Danish leaders

Danish Army leaders were especially disappointed during Mainbrace by the small number of planes the carriers were able to put over the targets in Denmark – only a little more than 300 sorties in all – and the short time that the planes were able to remain in the area – about twenty minutes or less at a time. Anything less than perfect coordination between ground directors and pilots usually rendered a sortie valueless so far as damage to a selected target



WHAT SCANDINAVIAN OBSERVERS LEARNED FROM MAINBRACE

Scandinavian reports indicate that official observers there were greatly disappointed in Mainbrace. A high Danish military man put it this way: "The modern carrier task force cannot operate successfully in the North Sea. The area is too constricted, the weather is generally adverse, and enemy land-based airpower is close at hand. It appears that a carrier task force cannot operate south of the east-west line (in white on above map), running from Moray Firth in Scotland to the southern tip of Norway with enough safety to permit useful offensive operations." Norwegian observers were equally disturbed by the low efficiency of the carriers in the heavy weather of the North Atlantic.

was concerned. In the opinion of these leaders, if Danish ground forces are to put up a good defense of Jutland, they must have the backing of land-based support aircraft in France, England, the Low Countries, and Denmark itself.

Norwegian military observers reached similar conclusions, although their disappointment with fleet performance off the Norwegian coast arose chiefly from the low efficiency displayed by the carrier force because of heavy weather in the Northeast Atlantic.

Military leaders make views known

These attitudes of the Scandinavian military have been made known to their political leaders. Virtually all Danish politicians are now convinced that bases in Denmark are essential to the defense of their country. Foreign Minister Ole Bjoern Kraft is known to be confident of ready approval when he asks Parliament for permission to request NATO to set up bases in Denmark, and it is reported that he intends to make the request early this year.

Norway will not act so soon, but the shift of opinion in top circles there since Mainbrace is even more significant. Last summer the idea of inviting NATO into Norway was not even under discussion. There were high hopes that the carrier task force strategy would lay to rest the worries of military men about the bases situation.

Some favor reneging on promise

By November the question had been reopened in public discussions, and some of the top men in the government were known to be in favor of reneging on the Norwegian promise to Moscow. Authoritative sources predict that the Norwegian cabinet will be called upon by Foreign Minister Halvard Lange to junk the no-base policy in 1953.

There are signs that the super-cautious Norwegian public is being prepared for the policy shift now. Influential editorialists are pointing out that the 1949 promise to the Russians was made by a government now out of power. It was a unilateral pledge, they say, which does not bind the successor government. Hence, a simple policy change is all that's needed. If so, one of the unexpected after-effects of Mainbrace appears to be that the mouse is finding it necessary to spit in the elephant's eye.—END

INDO-CHINA WAR— A FRENCH DILEMMA

Russian-supplied Reds are putting increased pressure on French forces already short of breath after seven years of tough jungle war

By Colonel John J. Driscoll

PAIX AU Viet Nam! Paix en Coree! "Peace for Indo-China! Peace in Korea!" These phrases, taken from a Communist propaganda pamphlet, illustrate a fact of which the Reds have been long aware but of which large segments of the free world are only now becoming painfully conscious. The blunt truth is that Korea and Indo-China are but two fronts of the same war and must be considered as such if any kind of diplomatic and military sense is to be made out of the situation in the Far East. At the moment Korea enjoys top political priority in the Kremlin but the strategic importance of Indo-China in the Far Eastern picture is difficult to underestimate. The French General Staff, for example, is of the opinion that Russia will not become involved in any major aggression until she has sealed off the Far East. Indo-China is the key.

Recently I spent several weeks in Saigon, with the US Military Assistance Advisory Group to the Viet Nam government of Emperor Bao Dai. While there I had an opportunity to discuss the Indo-China situation with top French and Viet Nam officials and watched, first hand, the difficult jungle war these men are waging against a clever and ruthless foe.

The stakes in Indo-China are high. All of southeast Asia, and India's teeming millions as well, depend to a large extent on rice grown in Indo-China. Since the power that controls the rice bowl controls Asia itself, the fall of Indo-China to the Reds would be a disaster of the first magnitude. Siam would be left defenseless and the conquest of Burma and Malaya would be a matter of time. India and the Middle East would thus be neutralized and, with its back secured by

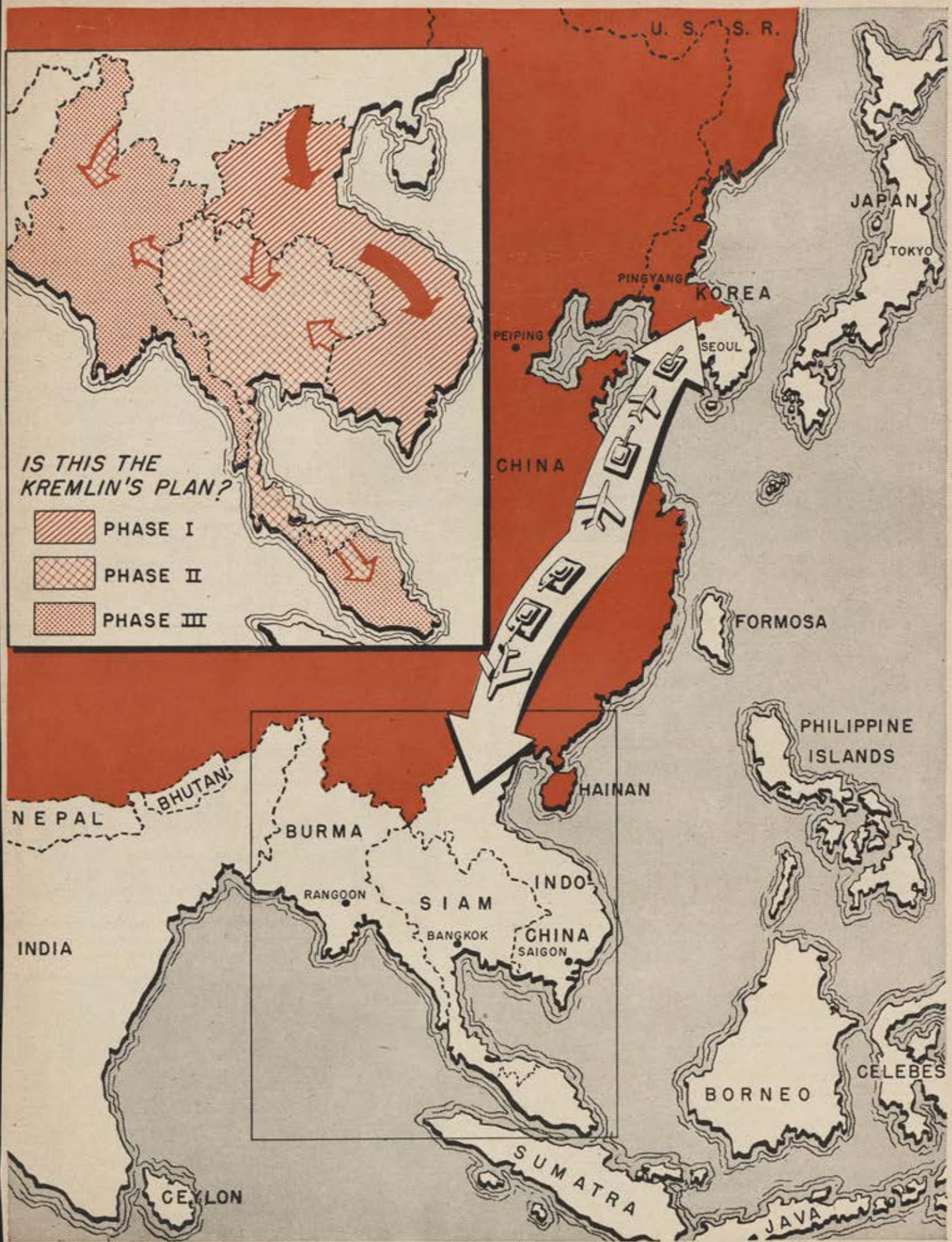
(Continued on page 26)

ABOUT THE AUTHOR

Col. Driscoll (with Gen. L.-M. Chassin, CG French Far Eastern Air Forces, below) had a chance to observe the Indo-China war while serving with a US military mission in Saigon last year. AIR FORCE readers will recall his story about American flyers tortured by Reds, in the Nov. 1952 issue.

TWO-FRONT WAR

There can be little doubt now that the Reds consider the fighting in Korea and the fighting in Indo-China as two fronts of the same war. Their propaganda has admitted as much from the beginning. But until last fall the campaign of the Viet Minh (Communists) against the French in Indo-China was largely one of harassment, characterized by hit-and-run guerrilla tactics. But now Russian-made munitions are beginning to pour through China proper into Indo-China. French troops last November captured stocks of mortar ammunition and trucks which were unmistakably made in Russia. If the Reds were to shift their jets and armor south from the Korean front, the situation in Indo-China would be critical indeed. And if Indo-China were to fall (Phase I, insert map) Siam would be exposed to attack (Phase II), and Burma and Indonesia would be ripe for the picking.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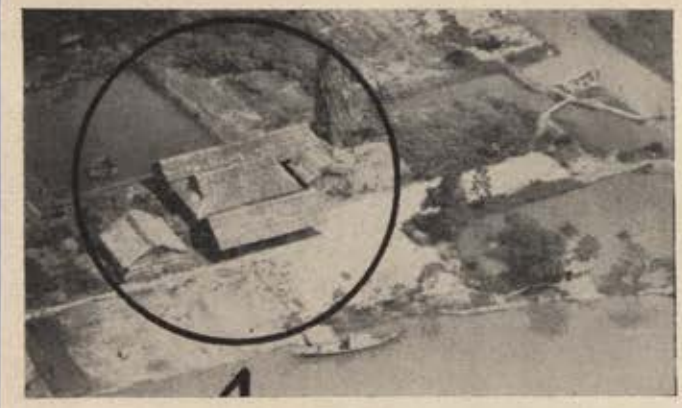
Bulk of the bombing effort in Indo-China is carried out by B-26 aircraft. Maintenance is tough because of climatic conditions and logistic difficulties.

the sealing off of Asia, the Soviet Union could turn aggressive eyes toward the west.

France knows this well. That is why she has continued a struggle which is slowly but surely draining away her financial strength and the cream of her manhood. And the problem is not a local one. Nowhere is the global nature of the conflict with Communism better illustrated than in the way the Indo-China war is hampering the defense effort of the North Atlantic Treaty Organization, half a world away in Western Europe.

French law stipulates that only volunteer recruits or regulars may be required to serve in Indo-China. But seven years of continuous fighting have depleted these manpower sources to a point where regular officers and non-coms must be transferred from Europe to bring combat units up to strength. Consequently, French regiments in Indo-China are top-heavy with high-ranking personnel. Officers alone are almost fifty percent above the war table allotment. The result is that there are enough French officers tied up in the Indo-China fighting to furnish cadres for ten NATO divisions. And they are

JUNGLE FACTORY



Due to the rugged nature of the Indo-China terrain, aerial reconnaissance is the prime source of intelligence. At first glance this looked like just another cluster of native buildings, except for the unusual "tree."

Closer inspection revealed that the "tree" was actually a camouflaged factory chimney. Jungle factories of this sort turn out surprisingly large quantities of crude but effective munitions like the grenades below.

In spite of the fact that the main strategic sources of the Communists are in China proper, ingenious Viet Minh engineers, reinforced by Chinese technical guidance, have set up scores of jungle factories similar to the ones illustrated here. Scattered through the back country, they are well camouflaged and difficult to detect, even from the air. These crude factories, primitive by our standards of precision mass-production, are able to turn out sizable quantities of grenades, mines, ammunition, pistols, etc. These are uncomplicated in design, easy to manufacture, yet effective enough for the task at hand. An example is the native-made recoilless cannon, which uses a conventional blank rifle cartridge for ignition and a handful of black powder as a propelling charge. It fires an over-size shaped charge projectile, muzzle-mounted like a rifle grenade. Its short range is long enough for jungle warfare and the Reds have used it with great success against the reinforced concrete French outpost towers.

being lost at the rate of more than 700 per year — more than the total annual output of the St. Cyr Military Academy, the French West Point.

Over-all French casualties in Indo-China total more than 100,000 since the fighting there began. To these must be added the French losses in Korea. Thus it is that France, which in theory represents the greatest manpower potential among the continental nations, is hard put to find the trained leaders she needs to build her European army.

The French economy, as well as her manpower, is being drained away in the Far Eastern war. One-third of the French military budget — the military budget is a fifth of the total national budget — is being poured into Indo-China. This amounts to more money than France has received from the US in Marshall Plan aid since the end of World War II!

Propaganda leaflets which link Korea and Indo-China are not the only indications that the Reds are fighting a shrewdly conceived, two-front war. Chinese Communist manpower and arms and Soviet materiel have been carefully allocated to both areas in proportion to the size of the forces involved and the scope of the

(Continued on page 28)

Since main Communist supply sources are in China, French bombers are used primarily against communications line and Red troop concentrations.

A unique example of "strategic" bombing in jungle warfare, the camouflaged factory was leveled in a bombing attack. Photo below shows a mortar shell assembly line in such a factory. It was made from captured film.

Another shot made from captured Communist film shows that these crude jungle munitions plants look quite modern and efficient — and they are.

The French Foreign Legion, shown on parade, has enhanced its reputation in the Indo-China fighting. Most are World War II veterans, predominantly German.

Airborne troops have added much to the mobility of the French ground forces. A unit of the 3rd Battalion Colonial Parachutists is ready to load onto a C-47.

Jungle warfare is a curious blend of ancient and modern transportation. The native Viet Namese troops often make use of the elephant for patrol missions.

engagements. And the current Communist offensive in Indo-China was preceded by intensified fighting in Korea – the old Soviet one-two.

Our own aid to Viet Nam, belatedly begun in 1951, has been limited to driblets of materiel supplied through the Mutual Defense Assistance Program (MDAP) which Congress established to aid anti-Communist nations "in the general area of China." Opposed to the handful of MDAP advisors in Saigon, we find upwards of 5,000 Chinese technicians aiding the Red Viet Minh forces with know-how and supplies. Many of these came to Indo-China direct from the Korean front.

At this point it might be well to interpolate an explanation of the words "Viet Nam" and "Viet Minh," easily confused due to similarity of sound and spelling. Viet Nam is an independent state under the protection of the French government. It has 20 million people in the three territories of Tonkin, Annam, and Cochin-China. Viet Minh is a contraction of the name of the Communist party, Viet Nam Doc Lap Dong Minh Hoi (League for the Independence of Viet Nam).

Red aid to the Viet Minh is not limited to purely military fields. Beginning last May, young relatives of Viet Minh veterans – children, brothers, sisters – began to pour in a steady stream into continental China. These so-called students get a free education, beginning, of course, with "brain-washing" and political indoctrination. They are also offered advance courses in medicine, engineering, economics, and political science. One prisoner of war reported that pilot training has recently been added to the "opportunities" for students.

Fortunately for the French, the Sino-Soviet coalition has not seen fit as yet to throw its airpower into the Indo-China war. As a result the French Air Force has been able to operate, on a shoestring basis, with such obsolete equipment as Bearcat and Hellcat fighter-bombers, B-26s, C-47s and old German JU-52 transports. Some of the latter have even been fitted with makeshift bomb racks and used in a bombardment role.

Strategically, the French Air Force is hobbled by the same frustrating political ties which hamper the UN air in North Korea. Since the real rear echelon of the Communist forces is in China, Red supplies cannot be cut off at their source but must be intercepted enroute, a difficult job in the

These French reconnaissance photographs tell the story of an unusual example of aerial interdiction, before and after.

A canal in Communist-held territory is severed by French bombs at the bottleneck where it crosses a river.

rugged jungle terrain. Some strategic targets, jungle type, are available in the numerous small native factories which turn out amazing quantities of arms and ammunition. Communist rice fields also are a major target and the Reds reportedly are feeling the pinch of raids on their food supplies.

Maintenance is one of the toughest problems as far as the air effort is concerned. There are no industrial centers for major repairs and, logistically, the many different types of aircraft the French are using make spare parts a nightmare. Tropical diseases whittle away the strength of the already over-worked ground crews. And even under ideal peacetime conditions maintenance problems would be terrifically complex due to the ravages of the humid jungle climate.

American-made helicopters, Hillers and Sikorskys, have performed manfully in medical evacuation tasks, rescuing more than 300 wounded in a single twelve-month period, plus numerous pilots downed behind enemy lines. And the rapid movement of men and supplies by air has proved a godsend in the ground fighting against a slippery and elusive foe.

Where the French go from here is the sixty-four dollar question. Certainly they cannot continue to pour men and money into Indo-China at the present rate. So they have pinned their hopes on the establishment of a native Viet Nam force, able eventually to take over the job, much as we would like to do with the South Koreans. An intensified training program is under way toward this end.

This is all very well, provided Russian and Chinese aid remains at its present level. But all signs point the other way. Russian-made arms have been showing up in alarming quantities, and the current offensive is reaching serious proportions. Increasing pressure is being brought to bear on French forces already short of breath after seven years of attrition.

And an even darker shadow looms over the northern horizon. Published reports from Hong Kong and Taipeh — sources which in the past have proved accurate — indicate that Mao Tse-Tung has arrayed, just above the Chinese border, upwards of 150,000 battle-hardened troops, including veterans of the Korean war. The French are inclined to think that the current lack of Communist air and armor in Indo-China is solely the result of their pre-commitment to the Korean theater. They fear that a truce in Korea might shift the Chinese order of battle southward.

France has all she can handle in Indo-China right now. If Chinese "volunteers" begin to pour over the border, as they did across the Yalu, the fat will be in the fire. Especially if the volunteers are equipped with T-34 tanks and MIG-15s.—END

Air Minister of France Pierre Montel, with Air Chief of Staff Lecheres.

Emperor Bao Dai, whose Viet Nam government is backed by the French.

Ho Chi Minh, political leader of the Communist Viet Minh guerrillas.

The views are those of the author, not necessarily those of the Air Force or Defense Department.

Back home after dropping the first atom bomb on Japan.

A LOOK BEHIND THE SCENES

COL. Paul Tibbets is no character out of fiction. At right, how he really looks. A few liberties were taken with time and place in the movie "Above and Beyond," and, as Beirne Lay added in a PS to his article, there wasn't room in the completed picture for half the synopsis.

COL. PAUL TIBBETS

Nevertheless, it's a fine picture, the human, dramatic story of the man who helped work the bugs out of the B-29, then in a 29 went on to drop the first A-bomb on Japan. This is the documentary side. On the human side is the story of a marriage that nearly floundered. Combined, you have a picture that won't easily be topped. It's just been released nation-wide.

Beirne Lay, who got the idea, wrote the story, and collaborated on the screenplay of "Above and Beyond," is no Johnnie-come-lately to either flying or writing. In fact, AIR FORCE Magazine has an early (December 1943) claim to him. In that issue is his account of the famous Regensburg mission (over Germany, August 1943). Lay was then an 8th AF B-17 co-pilot. Before that, as a cadet, he wrote the best-selling book "I Wanted Wings," which, significantly, later became a movie. A colonel in the war, Lay was shot down and escaped through enemy lines.

Turned screenwriter a few years later, he borrowed from his wartime experiences in co-authoring "Twelve O'Clock High," the Academy Award-winning picture of 1950. "Above and Beyond" may well be another such winner.

ABOVE and BEYOND...

How it started

By Beirne Lay, Jr.

SOMEONE, PROBABLY a disillusioned screen writer, has described a motion picture producer as "a man who knows everything but can't think of it." Hence the writer. He's supposed to come up with an idea. Unless and until he does so, all the high-powered executives, big box office stars, million-dollar studio production facilities, directors, and cameramen are helpless. Not a wheel can turn. If you think this puts the writer in an enviable position, you're mistaken. A good idea, that carries the seed of potential growth, is rare. The writer searches, suffers, and prays.

The answer to my particular prayer came one evening in the spring of 1951 when Col. Paul W. Tibbets, Jr., dropped by my house near Hollywood. Not for a drink. He doesn't drink. I'd known Tib during the war, and he had a couple of hours to kill before flying back to Wichita, where he was testing the B-47. I asked him if the Air Force had ever removed the security wraps off his personal story as commander of Operation Silverplate—the dropping of the Hiroshima A-bomb. He said it had. That was enough for me. I knew the high-points of his story. A motion picture was there, if it could be dug out and then compressed into the rigidly tight frame of a screenplay.

Step two: the problem of presenting the idea well enough to the studios so that they would buy it. This is the tough one. There's no formula, no hard and fast rule. Some ideas need forty pages, some a hundred pages, to score. Some ideas would never be bought at all unless they had first come to fruition in a successful play or novel. I chose the riskiest presentation of all—a mere three-page presentation, gleaned from the facts which Tib had hurriedly given me before he took off. At the end of this article I am going to give you, verbatim, the three pages on which I elected to stand or fall. For all I know it may have set a record for brevity as a basis for a major motion picture deal. Suffice it that more than one big studio showed immediate interest, and that Dore Schary of MGM, a former writer and hence a creator of ideas himself, bought the story.

Step three: "What have you got?" or, "Now the trouble starts" department. I flew out to Wichita and spent a couple of weeks pumping Tib in the evenings, when he was tired from a long day's work. He didn't pump easy. He's reserved and he doesn't like to talk about himself. He's stronger on action than on dialogue. He had a natural fear of allowing his personal part in a big project to appear to be a one-man job. He wanted the picture to deal as much with such figures as LeMay, Ent, Bill Irvine, and K. B. Wolfe as himself. But my assignment was to get *his* story. I had to convince him that a motion picture is such a condensed medium that you're lucky to squeeze one man's story effectively into a picture. That if you could do that successfully to an audience it would speak for all the men involved.

I interviewed Lucey Tibbets, Paul's wife, who told me her side of the story. When I returned to MGM, I was confident that in telling the moving personal story of these two people, the impact of Operation Silverplate would come to life. We decided to stick closely to the actual facts. And that's the way the screenplay evolved. Minor liberties were

Should he push the button that will kill many thousands?

taken with time and place, but essentially the story comes through on the screen as it happened.

A picture is peculiarly a joint effort. Dore Schary, although he was running the biggest studio in the world, guided the shaping of the material from the first. In many long sessions, he changed hats and sweated as a writer with Melvin Frank, Norman Panama, and me on the screenplay. Panama and Frank, who work as a triple-threat writing, producing, and directing team, were faced with a real challenge when they took on "Above and Beyond." Their specialty had been comedy. But comedy is tough. You've got to be sound dramatically. Audiences will be the judge of Schary's hunch in tossing them a change-of-pace ball.

Here then, is that elusive thing, the "idea," which I framed in three pages and tossed onto the market:

"Colonel Paul Tibbets, United States Air Force, commander and pilot of the B-29 which dropped the first atomic bomb on Hiroshima in 1945, would probably never tell his own true story. He'd like to forget it. In any case, military security has thwarted the release to date, of anything beyond superficial glimpses of Tibbets' historic role. But it is a story so dramatic and so unique that I have been discussing writing it with Paul ever since the end of the war. A week ago, the Air Force told him he was finally free to go ahead.

"I have known Paul since he was a major in England early in the air war. I know why he was eventually selected for perhaps the greatest single load of responsibility yet placed on any young officer in any war. I want to tell his story because it centers on the human caliber of a man who carried out a mission that was enormously and dramatically complicated by the necessity for absolute secrecy in every phase of the project over which he assumed command. That nearly broke up a happy marriage because Tibbets couldn't tell his wife what he was doing or explain mysterious female voices calling his home in the night. That forced him into sometimes humorous, but more often exasperating, impasses with high-ranking generals who deemed his requests exorbitant and to whom he could give no adequate explanation, for security demanded that he accomplish his task by tact and persuasion so that two-and-a-half million other men in the Air Force wouldn't know what he was doing. That required him, for ten months, to carry a myriad vital details entirely in his head, because he was forbidden to take notes of any kind on paper, even if he intended to burn them later. That necessitated his quartering his wife and two small children in a tarpaper shack on the dreariest and most isolated air base in America. That required him, because of the need for personal contact, to practically live in an airplane for nine months, flying between Washington and Utah, in addition to his test flying with the eventual bomb-carrier. That aroused intense resentment, misunderstanding, and often jealousy among his brother officers, who thought Tibbets was 'trying to build his own Air Force,' in the words of one irate two-star general. And that, above all, demanded of him that he work terribly alone in surmounting the series of peculiar and unprecedented obstacles that beset him, with huge stakes in the balance.

Just before taking off for Hiroshima in the "Enola Gay."

Tibbets tests planes, trains crews, works with scientists.

"Tibbets was finally selected from a gilt-edged list of four names that included a brigadier general and two full colonels besides Tibbets, who was a low-ranking lieutenant colonel, reserve. He was chosen as the one man in the whole Air Force most likely *not* to make a mistake. He had made no mistake back in 1942 when he personally flew General Eisenhower and his staff from England to Gibraltar on the eve of the North African invasion, flying an over-loaded B-17 through ice and zero-zero fog—this after three nights without sleep. Nor when he took delivery on the first B-29 from the factory, performed an accelerated service test and presented the Air Force with an untried weapon that was ready to go to war. Nor when he resourcefully trained two girl pilots of the WASP ferrying program to fly a B-29 better than a man and sent them down to a transition school where training was bogged down because the early instructors and students had concluded the B-29 was a dangerous airplane. Tibbets' WASPs shamed the big, strong All-Americans into raising the training rate from one hour a day per airplane to sixteen hours.

"No story needs to be devised for the screen. The story is already there—incredible, unique, human. And untold. I am proud that Paul Tibbets has agreed to collaborate with me, with full Air Force cooperation, in placing his experience on the record."—END

AF VETS IN 83d CONGRESS

As the new Congress gathers on Capitol Hill, AIR FORCE

Magazine salutes those with Air Force backgrounds

IN THE Eighty-Third Congress, which convenes this month on Capitol Hill, two new Senators and three new Representatives with Air Force service are taking their seats among the twenty-one other Air Force veterans who are returning to Congress. Of these twenty-one, four are from the Senate and seventeen from the House. Those going to Washington for the first time as Senators include Barry M. Goldwater from Arizona, and former Governor Frederick Payne, of Maine. The new Representatives are Phil Landrum from Georgia, Richard Poff from Virginia, and John J. Rhodes from Arizona.

Barry M. Goldwater, Republican from Arizona, was commissioned in the infantry in 1930 but transferred to the Air Force in 1941, and served four years as chief pilot for the Ferrying Division of the Air Transport Command, flying out of Karachi, India. He was discharged as a lieutenant colonel and is now a colonel in the Arizona Air National Guard, which he serves as Chief of Staff for Air. The new Senator is still an active pilot and used his plane for campaigning. He has long been a mainstay of AFA and is a Life Member.

Another AFA oldtimer is former Governor Frederick G. Payne, Maine Republican. He entered the Air Force in March 1942 as a captain and served in various administrative posts until his discharge as a lieutenant colonel in the fall of 1944. After serving as Post Inspector at the Nashville Classification Center, he became head of the fiscal division at Southeast Headquarters, Maxwell Field, Ala., and later, assistant fiscal officer at headquarters of the Flight Training Command, Fort Worth, Tex. In 1943 he was sent to Washington and became the Air Force's assistant budget officer, developing procedures later used at domestic and overseas bases. He's a lieutenant colonel in the Reserve.

Freshman Representative Phil Landrum, who's a Democrat from Georgia's ninth district, spent thirty-four months with the AAF in the last war. He enlisted as a private in October 1942 and went to the Miami Beach OCS the next March. He was assigned to cryptographic security and later transferred to intelligence. He joined the Ninth Air Force in England and served with fighter and service groups through France and Belgium before being discharged as a first lieutenant in August 1945.

Richard H. Poff, new Republican congressman from the sixth district of Virginia, spent thirty months in the Air Force in World War II, nine of them overseas. Commissioned in June 1943, he flew thirty-five missions out of England as a B-24 pilot and was awarded the Distinguished Flying Cross. He's now a first lieutenant in the Reserve.

John J. Rhodes, Republican from the first district of Arizona, was called to active duty as a first lieutenant in 1941 and served in various administrative posts in the US until he was relieved from active duty in June 1946, as a lieutenant colonel.

Among the incumbent Senators is Spessard L. Holland, Democrat from Florida, a World War I veteran. He served first with the Coast Artillery Corps, then transferred to the Air Service as an observer with the 24th Aero Squadron in France. He flew on four fronts and was discharged as a captain after receiving the Distinguished Service Cross in 1918. He's a member of AFA.

Sen. William E. Jenner incumbent Republican from Indiana, resigned from his state Senate in June 1942 to enlist in the AAF. He served in England as a ground officer before being retired as a captain in October 1944 because of a physical disability.

Another World War I veteran is Sen. Edward J. Thye, Republican incumbent from Minnesota, who enlisted as a private and spent a year overseas. He was commissioned in

SEN. SYMINGTON

Another new Senator, W. Stuart Symington, Democrat from Missouri, though never in Air Force uniform, is a veteran in a different sense. In 1947 he became first Secretary of the Air Force. The following year he received Air Force Association's highest award, the H. H. Arnold Trophy, and became an honorary member of AFA. Long a champion of airpower, Symington earlier was assistant secretary of war for air. In 1941, as a consultant for the Army, he went to England with a group of aeronautical engineers to study the new power-driven turret on British planes. He returned to build an airplane armament plant, as part of the Emerson Company in St. Louis. In public life since the end of the war, Symington has served as chairman of the National Security Resources board and, in 1951, as head of the Reconstruction Finance Corporation.

FIVE NEW FACES JOIN THE TWENTY-ONE OTHER AF VETERANS IN CONGRESS

SEN. GOLDWATER
REPUBLICAN, ARIZONA

SEN. PAYNE
REPUBLICAN, MAINE

REP. LANDRUM
DEMOCRAT, GEORGIA

REP. POFF
REPUBLICAN, VIRGINIA

REP. RHODES
REPUBLICAN, ARIZONA

France in 1918 and received his discharge as a captain.

Sen. Herman Welker, incumbent Republican from Idaho, enlisted as an AAF private in September 1943. He attended Miami Beach OCS but in June 1944 received a medical discharge after being injured.

In the House of Representatives, Congressman Wayne N. Aspinall, Democrat from the fourth district of Colorado, was in both world wars. In the Air Service of the Signal Corps in World War I, he received flight training at various stations in Texas and was discharged as a cadet shortly after the Armistice. In World War II he was a captain in military government and spent ten months overseas. He is a member of Air Force Association.

Another AFA member is Laurie C. Battle, Democrat from the ninth congressional district of Alabama. He entered the Air Force three months after Pearl Harbor, as a private. After graduating from Miami Beach OCS in October 1942, he attended air intelligence school and was assigned to Fourth Air Force headquarters. Then in June 1944 he was sent on a special mission to Fifth Bomber Command and spent sixteen months in New Guinea, the Philippines, Okinawa, and Tokyo before being discharged in 1946 as a major, his present Reserve rank.

Lloyd M. Bentsen, Jr., a Democrat from the fifteenth district of Texas, enlisted in April 1942 as a private. After service in Brazil, he became an air cadet and later a B-24 pilot in the European theater. He flew fifty missions, won the Distinguished Flying Cross and the Air Medal, and was discharged as a major and squadron commander in July 1945. He's now a lieutenant colonel in the Reserve.

John A. Blatnik, Democrat from Minnesota's eighth district, volunteered for service in August 1942 and spent 3½ years as an Air Force intelligence officer and with the OSS. He was overseas eighteen months, in Italy and Yugoslavia, for eight months behind enemy lines with the partisans in northern Yugoslavia, gathering intelligence and aiding in the rescue of downed American airmen. He received two citations for "heroic and meritorious achievement," and in addition was awarded the Bronze Star Medal with Oak Leaf Cluster, and the Air Medal. Congressman Blatnik was discharged in January 1946 as a captain, the rank he still holds in the Reserve.

Charles B. Brownson, Republican from the eleventh district of Indiana, was commissioned a first lieutenant in the AAF in February 1941 and served as personnel officer at Chanute Field, Ill., before being transfererd to the ground forces in August 1942. Later he was assigned to the 83d Infantry Division and served on General Omar Bradley's staff before being discharged as a lieutenant colonel.

Frank L. Chelf, Democrat from Kentucky's fourth district, served with the Air Force from July 1942 to August 1944, when he was retired as a major because of physical disability.

Shepard J. Crumpacker, Jr., Republican from the third district of Indiana, entered the Air Force as a private in September 1941 and was discharged in March 1946 as a first lieutenant after serving as a maintenance officer. He's now a captain in the Reserve. A member of AFA, he was Commander of the South Bend, Ind., Squadron in 1949.

(Continued on page 57)

SEN. HOLLAND
DEMOCRAT, FLORIDA

SEN. JENNER
REPUBLICAN, INDIANA

SEN. THYE
REPUBLICAN, MINNESOTA

SEN. WELKER
REPUBLICAN, IDAHO

REP. ASPINALL
DEMOCRAT, COLORADO

REP. BATTLE
DEMOCRAT, ALABAMA

REP. BENTSEN
DEMOCRAT, TEXAS

REP. BLATNIK
DEMOCRAT, MINNESOTA

REP. BROWNSON
REPUBLICAN, INDIANA

REP. CHELF
DEMOCRAT, KENTUCKY

REP. CRUMPACKER
REPUBLICAN, INDIANA

REP. DORN
DEMOCRAT, SO. CAROLINA

REP. ENGLE
DEMOCRAT, CALIFORNIA

REP. JOHNSON
REPUBLICAN, CALIFORNIA

REP. NELSON
REPUBLICAN, MAINE

REP. NORBLAD
REPUBLICAN, OREGON

REP. PATTEN
DEMOCRAT, ARIZONA

REP. REGAN
DEMOCRAT, TEXAS

REP. WHEELER
DEMOCRAT, GEORGIA

REP. WILLIAMS
DEMOCRAT, MISSISSIPPI

REP. YORTY
DEMOCRAT, CALIFORNIA

T/Sgt. Curtiss Biggs explains how he climbed through the wing tunnel of a Japan-bound C-124 and put out an engine fire, saving the lives of 135 men aboard.

THE HOT

A South Korean family watches C-46s of the 315th TC Wing in a practice drop.

Some of the men being unloaded from the Globemaster (left) at an airlift base in Japan were at the front 12 hours earlier. Ambulances and busses rush them to hospitals.

This airman wrestled a loose 100-pounder in a B-26 bomb-bay.

WAR STAYS HOT

Diplomats talk truce, but the shooting war drags on for the men holding the air front in Korea

Japanese-bred police dogs are trained by the AF and used in night security watches at all combat bases. Above, a twilight scene at the 8th Fighter-Bomber Wing airfield.

Wrack up another mission for an F-84 Thunderjet pilot. Lt. Col. Francis Vetort, Cedar River, Mich., a group commander with the 474th FB Wing, is welcomed back by his crew chief, A/1C Owen Moore, of Akron, Ohio.

On the prowl. F-84s of the 474th FB Wing set out to hunt Red targets in North Korea. The former ANG unit has chalked up a fine record in its first months in Korea.

Radar dome above airscoop identifies F-86D as all-weather.

Capt. J. Slade Nash (above) set a new speed record in the D.

SABRES ARE A PROLIFIC BREED

Many good fighters have evolved from the basic F-86 design

IT'S GETTING so you can't tell an F-86 without a score card.

Dutch Kindelberger's engineers at North American have milked so many models out of the original Sabre design that even the experts have trouble keeping them straight. Seriously, the several versions of the F-86 are an outstanding example of complete exploitation of a good fighter design. They began with the F-86A, the USAF's first operational swept-wing fighter, and reached maturity with the H, almost an entirely new

(Continued on page 39)

Left, F-86F.

"Air horses" for lifesaving over the sea

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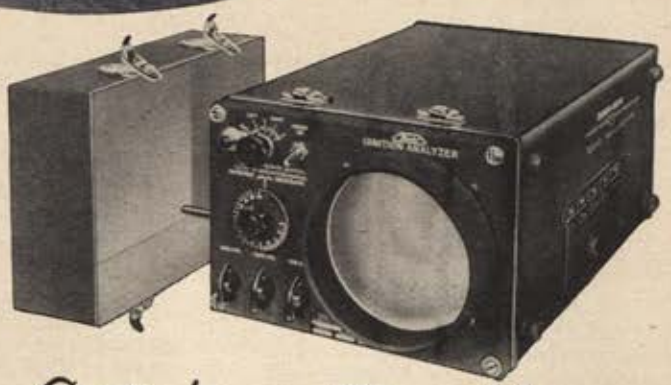

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airplane but with a wing aerodynamically identical with that of the original XF-86A. Between the A and the H have come the B, designed but never built; the C, or YF-93A, a penetration fighter that never went into production; the D, first one-man, all-weather interceptor (see front cover); the E and F, which are holding the MIG Alley line today; and the G, a beefed-up D which never saw the light of day.

The original F-86 began life in 1944, as a straightwing design submitted in answer to an Air Force requirement for a medium-range day fighter that could double as escort fighter and dive bomber. But the straight wing didn't permit the desired 600-mph speed, and German know-how was put to work by adopting the Messerschmitt 262 sweptwing (AIR FORCE, April 1952). The result was the F-86A, which promptly set a world's speed record of 670.981 mph, on September 15, 1948, USAF Maj. Richard L. Johnson, pilot.

Only a month after the Air Force got its first operational A's, work began on the all-weather interceptor version, the F-86D, which only recently set another world's speed record in the best 86 tradition (see accompanying story). The D incorporates a Hughes-developed electronic fire control system and carries twenty-four 2.75-inch Mighty Mouse air-to-air rockets. It will be the closest thing to an automatic interceptor we'll have until the Convair F-102 comes along (AIR FORCE, December 1952).

The F-86E featured a completely power-operated control system, including the so-called "flying tail," a power-controlled, geared stabilizer in which the elevator was geared into the movement of the stabilizer.

Advancing the design still further, the 86F incorporated a bigger J-47 engine and new, 200-gallon, droppable fuel tanks, replacing the 120-gallon tanks.

Last in the Sabre line, the F986H, is as close to an entirely new airplane as you can get without actually designing one. Its fuselage is cut horizontally to allow for the new GE J-73-3 engine, with appreciably higher thrust. Structural changes give it a better ground support capability. The intake duct is considerably larger than those of its predecessors and, together with a deeper fuselage, is a tell-tale indication that the 86 series has run its course.

Next on the list is the F-100, originally called the Sabre 45 because of its 45-degree sweepback, as compared with the 35-degree sweep of the other Sabres. North American is working on a production order.—END

OFFICIALLY, NOT QUITE 700 MPH

Capt. Nash's four runs hit 698.4, 698, 702.6 and 700.4 mph respectively.

WHEN USAF Capt. J. Slade Nash set a new world's speed record in an F-86D last November 19, he had to meet the stiff requirements of the Federation Aeronautique Internationale, the official international timing organization. Many men, including probably Captain Nash himself, have flown faster than the 699.9 mph he chalked up over Salton Sea, Calif. But, for a record, four passes over a given speed course are required – two in each direction. Any tail wind advantage is thus nullified, as an average of the four runs is taken. The carefully surveyed course is five kilometers long, of which only the center three kilometers are used for official timing. The 5-km point was indicated by two cargo chutes, stretched over the ground at either end of the course. At the 3-km points a line of brilliant red panels helped Nash align his course. At no time, from takeoff until the completion of his fourth pass, could the plane exceed an altitude of 500 meters (1,640 feet). And, while flying the measured course, Nash had to stay at or below 100 meters (328 feet). Only because these requirements were complied with did his record go down in the books.—*David Morse*

Special Fastex movie camera equipment timed the official record runs.

Cutting Costs instead of Chips

GENERAL MOTORS engineers have come up with a new and extremely simple way of making turbine engine compressor blades that promises to save our country millions of dollars in man-hours, plant facilities, tools and critical materials.

This new method, developed by Delco-Remy Division in cooperation with Allison, is a cold-forming process that brings the projected cost down to a fraction of the present average cost of blades.

The full importance of this development in terms of our national economy is pointed up by the fact that a single jet engine may use as many as 6,000 blades.

Under blade-making methods now widely in use, excess stock is cut and machined away after high-alloy steel, rich in critical material, is forged or cast into the blade form. Delco-Remy, which has a world-wide reputation as an efficient mass producer of intricate automotive equipment, had learned how to cold-form metal by actually *pushing* it into shape, rather than cutting it.

In this way, nearly all of the material goes into the finished product and there is very little scrap from the manufacturing process. Delco-Remy engineers, in collaboration with Allison, adapted this method to blade processing. Blades made in this manner are rolled from cold flat strip stock with no chips to cut—thus saving valuable time in manufacture, as well as large quantities of precious material.

Blades produced by this process have been tested by Allison in T40 engines and their endurance characteristics have proved comparable to standard forged blades and to cast blades.

Developments like this help to explain why Allison turbine engines are produced at lower cost per pound of weight and per pound of thrust than any other turbine engines in the world.

And they offer further proof that Allison does make good use of its opportunity to draw on the special skills and experience of the entire General Motors organization — including the famed GM Technical Center in Detroit. This backing, plus its own vast engineering resources, provides Allison with unequaled facilities for truly advanced accomplishment in better—and less costly—gas turbine engines.

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WHERE DO LEADERS

You've got to stockpile experience. It can be done only by making a career in the AF more attractive

MUCH SMOKE has been raised over what the Air Force should do with old pilots. It's a young man's game, say some, and the old fuds only get in the way, retard progress, and cause accidents. The biggest objection is to flying pay for "chairborne" pilots who spend most of their time holding down office assignments and fly just enough to keep their hands in. This feeling is based on a major misunderstanding concerning the true requirements for military air leadership, although the Air Force has never doubted that air units should be led by flyers—that only a qualified pilot could know how to use air units most effectively.

Before World War I, the airplane was just another gadget. It helped the Signal Corps deliver messages. It helped the Army observe what was going on. In the war it took on new proportions — bomb dropping and shooting. It became so formidable that another airplane was designed to shoot it down. Thus was born the "pursuit" type, or fighter. And war began to be waged in a new medium. Actual combat, with defeat and victory, could take place exclusively in the air. The airplane ceased to be a gadget and became a machine which allowed war to be fought in the air itself. It forced a revolution in warfare, not only by adding a new dimension, but by providing a new place for war to be fought. And as its role grew in importance, ground commanders, or kiwis as they were called, made many mistakes in judgment and demonstrated more and more ignorance of the capabilities and limitations of this new machine and the medium in which it operated.

By the time World War I ended, pilot officers were thoroughly annoyed at the system which permitted kiwis to command them—kiwis who often, because of lack of knowledge of air problems, unnecessarily risked the flyers' lives and jeopardized air missions. So after the war the pilots agitated for a regulation which would permit only rated pilots to command air organizations. Without it most flyers were unenthusiastic about remaining in the US Air Service. The regulation was not easily sold to the Army, but with the help of Billy Mitchell, it was finally adopted. It has proved to be a wise measure.

But here the airmen stopped. After convincing the Army, they never attempted to convince the general public. The average person agrees that ships at sea must be commanded by qualified seamen of long years' experience on the bridge. But the parallel that aircraft should be commanded by qualified airmen of long years' experience in the cockpit hasn't been clearly drawn. So, periodically, columnists, editors, and gentlemen of Congress challenge the wisdom of spending so much money on the old fud pilots.

Between the World Wars the public almost forgot about military aviation. There were so few operational aircraft that any flight of a dozen or more would stop traffic. As a consequence there was little opportunity for air command. Yet a few air units maneuvered and a number of air commanders were developed in this period. Not enough of them to be recognized as air commanders by the public, however, until we were at war.

There were Arnold, Vandenberg, LeMay, Ken Walker, Spaatz, Eaker, Doolittle, Timberlake, R. B. Williams, Chennault, Hal George, and a few others. These people, all active pilots, performed splendidly as air commanders. Would we be smart to change our method of developing such air leaders now, with war clouds perpetually on our horizons?

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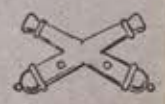
A total of 976 field artillery officers were lost in WW II.



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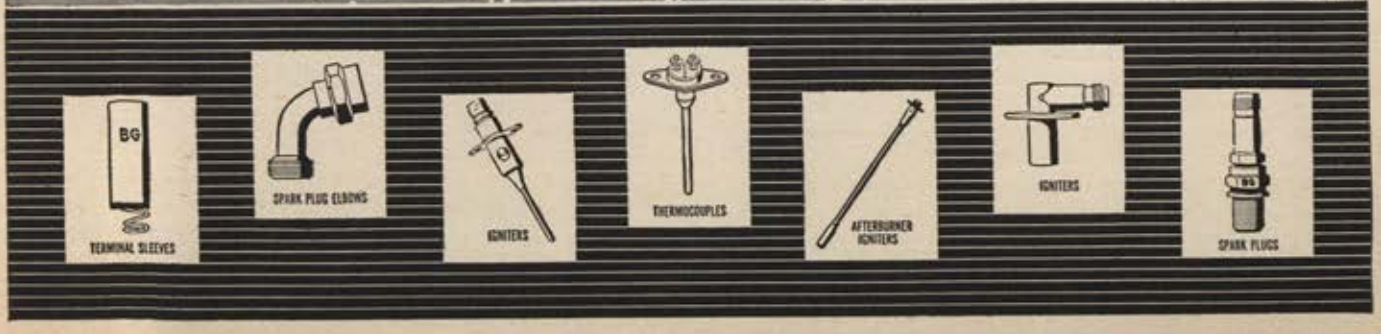

COME FROM?

By Col. Dale O. Smith

Director of Training, Air University

these leaders was "regular and frequent aerial flights." Always this was in addition to other duties and it was often carried out on weekend cross countries at personal expense. To compensate for the added danger—and life insurance companies didn't debate this point nearly as much as the public—they were given added "flying pay" equal to fifty percent of their base pay.

No pilot ever felt he was being overpaid. Commercial pilots received a much higher salary for a much less dangerous type of flying. But pilots of the Air Corps were officers and professional men. Flying was merely one essential of their profession not an end in itself.

When World War II came along, it didn't appear to the casual observer that airmen had it any tougher than the infantry. The doughfoots lived in mudholes and got a mere token of extra "combat pay." Their job seemed just as dangerous as that of the airmen who lived in clean, heated barracks.

Thus the attack on flying pay began and so it continues. The defenders of flying pay have lost ground. The Service Pay Act of 1949 reduced the fifty percent to a sliding scale of from forty-one percent to eighteen percent (for second lieutenants to generals). The problem is still unresolved. There apparently is no conviction in the public mind that an airman is in any more danger than any other fighting man. And the idea that an old pilot chained to an administrative desk needs flying experience, plus pay, seems even less acceptable.

I don't wish to argue the aspect of danger. I would rather leave that to the statistician who understands such things as the equity in life and the actuarial tables. For those mathematically inclined, there are studies which show that the average flying officer will never be paid as much during his total service as the average ground officer, because the average flying officer won't live as long. It's not generally known, for example, that in World War II there were twice as many Air Force officers killed and missing in action, as in any other component of the Army. The Air Force lost 15,100 killed and missing. The infantry lost 6,853; the cavalry, 464; the field artillery, 976; the coast artillery, 138—a total of 8,422.

Among its enlisted men, the Air Force lost in killed or missing in action sixty-nine per thousand as opposed to an infantry ratio of 27.7 per thousand. On a straight probability basis, it seems that life in the Air Force is less habit-forming than Army service. And these figures referred exclusively to combat casualties.

When the guns aren't firing, air casualties continue, only they are euphemistically called "attrition." As many air officers were killed in air accidents during World War II in the US alone as the Army lost in officers killed in action. And this does not include the thousands killed in operational accidents overseas.

The extent of these non-combat losses was not publicized during the war because it would have comforted the enemy and given him valuable strength figures. But by keeping it from the enemy we also kept it from our own public who remained unaware of the blood cost to develop and maintain a modern Air Force.

Any discussion of flying pay must realize that flying, as such, presents a hazard that is distinctly separate from combat hazards. Casualties caused by flying accidents continue to pile up whether or not we are at war. When air combat is engaged, combat hazards are *added* to normal flying hazards. Thus the question of

(Continued on page 44)

AF ENLISTED CASUALTIES WERE MUCH HIGHER TOO

AIR FORCE

Among Air Force enlisted men, 69 per thousand were killed or missing in action in WW II.

INFANTRY

The infantry ratio per thousand enlisted men was 27.7 killed or reported missing in action.

flying pay becomes muddied up when it is considered synonymous with combat pay.

To examine the need for old pilots, however, we must somehow divorce this question from the aspect of danger in flying. Whether flying is dangerous or whether flying pay is desirable is often associated with questions of the "chairborne" oldsters on flying status. Yet we must examine their justification in terms of military worth rather than individual danger or cost.

Do we need these old men on flying status? That is the question. What good will they do us as flyers? Can younger men do the job just as well? After all, aren't younger men better pilots?

I think we can answer the last question with an equivocal yes. Young men are better pilots in the sense that they can make a plane do what they want it to do. But how about judging the weather, or deciding to drop an atomic bomb on this or that objective, or deciding whether to fly by this or that route, whether to close up a formation for protection against enemy aircraft, or spread it out for traversing thick weather, to break radio silence in order to transmit a vital message, to take fighters off one mission to support another, to risk fuel shortage by making a detour or attacking another objective, to devise ways and means to get the returning shot-up birds into socked-in airfields, and a myriad other complex mental activities? How about all this? Would you rather trust it to a young technician skilled at stick and rudder manipulation?

The skeptic will here remark that this doesn't require the older flyer to manipulate stick and rudder. And here the skeptic has a point. But in most flying, the pilot is the man with ultimate responsibility for the airplane and crew. The older pilot would gain little real decision-making experience without acting as pilot or at least as the commander of a flight of aircraft. Sand-bagging as a passenger would not give him this experience any more than would desk flying.

But what about the administrative officer sitting at a Pentagon desk? Will he ever be needed again as a combat leader? Aren't the combat leaders already selected and assigned to their fighting organizations?

If the US Air Force were static and never had to fight a war or suffer casualties, there would be no need to continue drilling our chairborne pilots in air work. But the Air Force is dynamic. It fluctuates in size like an accordion. In 1945 we had about 250 wings. Two years ago we were struggling to get forty-eight wings operational. Today we are shooting at 143 wings. Where do we get our leaders? Direct from pilot schools? It would be folly indeed to build such a green force. They must come from the reserve of older pilots who have spent many working hours at desks.

Warplanes are so complicated today that it takes years to develop the competence needed to command one of them, let alone the ability to command a squadron, group, wing, or division. To command a single B-47, B-50, or B-36, for example, requires 1,500 hours of flying time and six years' experience. Compare this to the 150 hours and one year experience that the B-17 and B-24 combat crew leaders had during World War II.

In war, planes sometimes get hit. How do we replace the leaders who go down with them? They, too, usually come from the office desks. As of February 1952, 2,500 pilots have gone from desk jobs to combat in Korea. The manifold administrative assignments in the Air Force contain the reserve of leaders essential to an ever-changing organization.

Experience and maturity must be stockpiled. They can't be created overnight no matter how much money we allocate for our defense. From this it would appear that we are putting money in the bank when we keep our older pilots on flying status so that they will be available and useful when needed.

Prior to World War II, ninety percent of the Air Corps officers were required to be pilots. This percentage could not be maintained during the ballooning expansion. Indeed, there were fewer than 2,000 air officers with more than three years' experience in 1939. This was the nucleus of a force which grew from 22,000 to 2,372,000 by 1944. It was possible to do this only through extreme specialization. Skills of all sorts were shredded out so they could be taught in a few months. We bought time with money and manpower.

The percentage of officers on pilot and command status dropped to forty percent by January 1944. There was scarcely any reserve of air leaders. Fortunately, Germany and Japan were even worse off in this personnel category and historians say their air defeats were primarily caused by this factor.

When the war ended, planners believed that ground officers were needed in the Air Force at a higher ratio than the pre-war ten percent. Thus the ratio was set at seventy percent flying to thirty percent non-flying as an ideal. But this was never attained.

For one reason or another, young men have not eagerly sought a flying career. Today, of all officers in the Air Force, only forty-one percent are pilots. Our reserve of qualified leaders is dangerously low, and is still receding. This represents a problem which the United States must soon face.

The attitude taken by the public, that a career as an Air Force flying officer is just another job requiring no particular rewards or recognition might have something to do with this unenthusiastic regard paid the career by young Americans. Little prestige, professional status, or economic security accompany the career today.

It is truly paradoxical that we appropriate upwards of twenty billion to the Air Force budget and then unwittingly take pride in reducing the attractiveness of the Air Force career by, among other things, threatening the meager incentive pay which remains to flyers.

But getting back to the "chairborne" reserve air leader, General Cannon has said, "It is essential that our rated staff officer be on a talking basis with the tactical pilots. This is possible only when staff officers are considered as capable and qualified professionally as unit commanders both in the air and on the ground."

This is another cogent reason for keeping up the flying experience of the desk pilots. They do better at their desks! Not only do they represent an essential reserve, but they can perform their staff duties with more profound understanding of Air Force requirements.

If we are to have the airpower we need, we must stop thinking of the air commander as a fly-boy technician trained to jockey one airplane around the sky. We must, instead, begin thinking of him as a professional leader, with flying simply one of many skills necessary for him to pursue this calling. We must think of this professional man as needing years of education and experience, like any other professional. We must think of him leading integrated air forces, designed to perform many tasks, but requiring, above all, a keen intellect capable of making a series of crucial decisions, based upon a sound professional background of learning.

As Secretary of the Air Force, Mr. Finletter, has said in speaking to a group of college presidents, the air officer's responsibilities are so overwhelming that to accomplish our purpose we must officer our Air Force with Rhodes scholar material: they must be those men who make all "A's" as well as the football varsity.

But those outstanding young men will not choose the Air Force career as long as the public considers it a second-rate vocation.—END

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More Punch for F-94s

With the addition of wing pod "sidearms," the F-94C Starfire doubles its punch. Each pod on the Lockheed all-weather interceptors packs twelve 2.75-inch rockets, bolstering the twenty-four Aeromite rockets carried in the nose. The new pods (right) are cylindrical and 9½ feet long. They protude about six feet from the wing's leading edge. They have fibreglass nose covers which are disintegrated by gas pressure built up inside the chamber a split second before the rockets are unleashed. Firing is said to take less than one-quarter of a second. Similar but slightly smaller pods, containing .50 caliber machine guns, have been developed for the A and B models of the Starfire. Beginning this spring, F-94Cs coming off the assembly line will be equipped with the rocket pods. Below is an air-to-air demonstration of the rockets being fired from a Starfire's nose. The rocket cluster speeds ahead of the plane, while smoke plumes swirl around the airplane. In the foreground is a T-33 camera plane.

New Sub Hunter

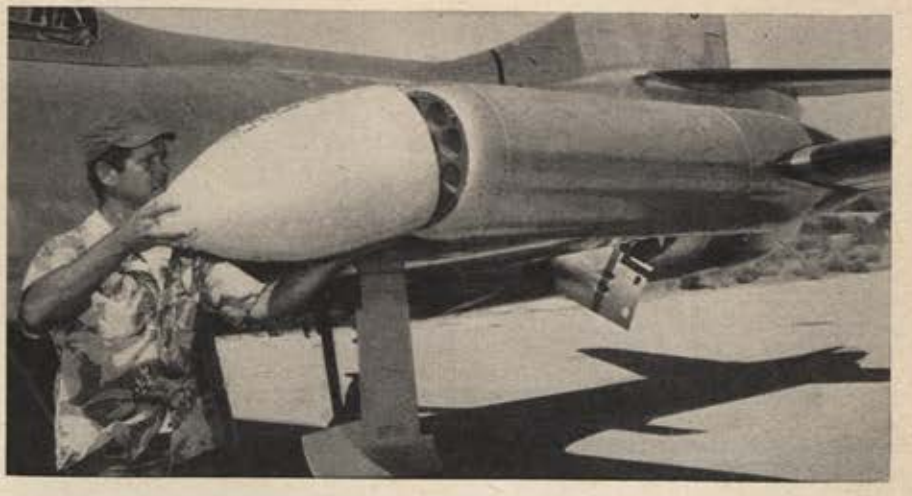
A new Neptune, twelve inches longer than previous models, doubles as a mine-layer and anti-submarine plane. The Lockheed P2V-6 also has smaller wing-tip tanks and smaller radar dome than earlier Neptunes. It's powered by twin Wright turbo-compound engines which, according to Lockheed, give it the range needed for its advanced land base operations. The fire-resistant, stainless steel engine nacelles are a new feature. The P2V-6s can also be used in night torpedo attacks. Meanwhile, production continues on the P2V-5s.

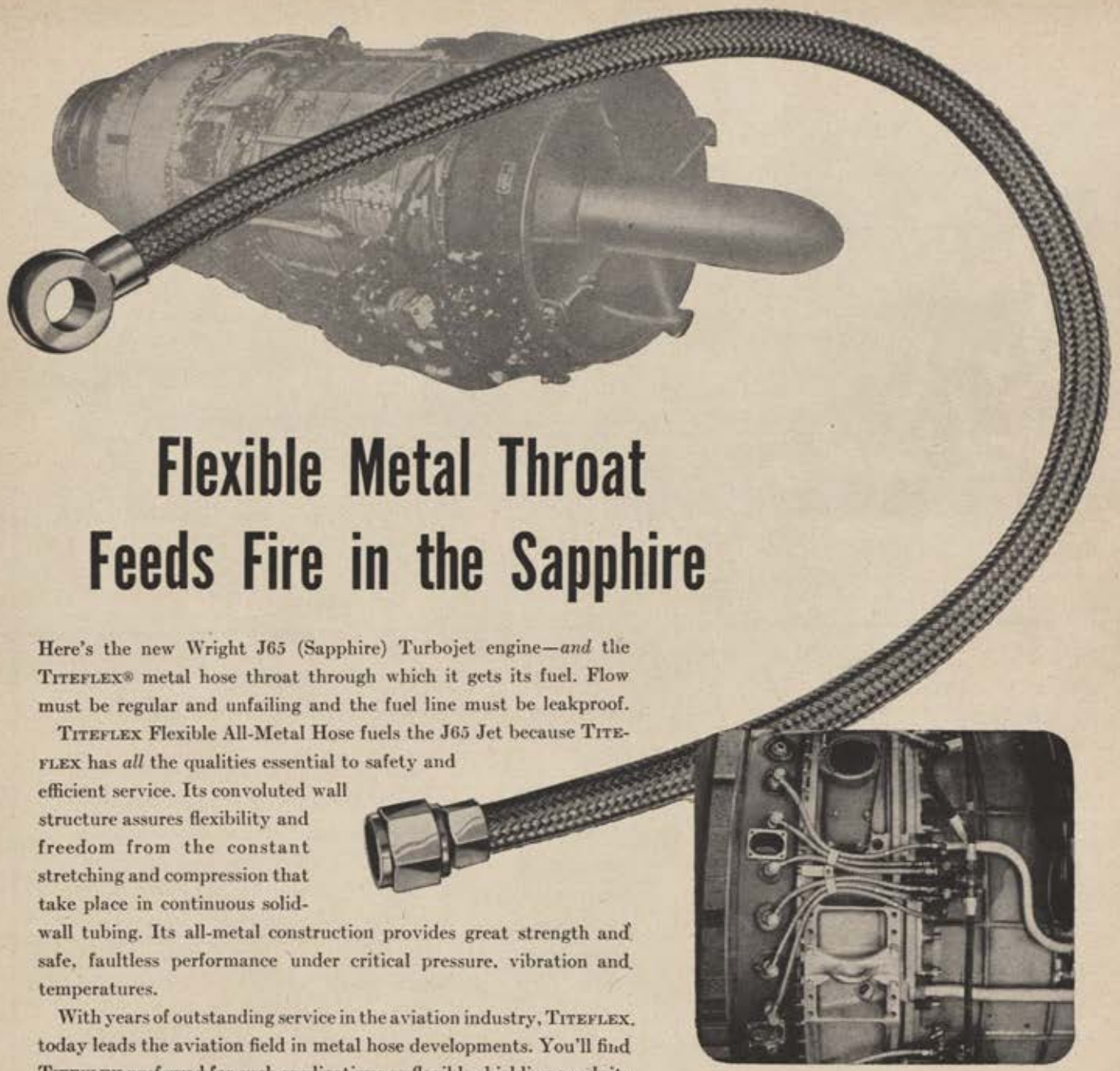
Slip-Proof Footing

Servicing aircraft becomes safer and easier when mechanics work from the corded rubber matting being used at the left by Canadian Pacific Airlines. The Traffic-Tred, made by the American Mat Corp., Toledo, assures slip-proof footing while working on wings. The perforated-corrugated runner is 7/16 inch thick and comes in two-, three-, and four-foot widths.

Flying Blind

To simulate ceiling zero for blind flying practice, a common technique is to cover the canopy with one color plastic and the pilot's eyes with another. That lets the observer see outside but restricts the pilot's vision to his instruments. Blue and amber has been the combination in use, but the School of Aviation Medicine now believes red and green are better. Earlier, green proved unsatisfactory, but now an improved green transmits about ten percent more light. Above, a sample of the improved plastic is fitted to the canopy of a B-25 by a medical researcher.





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Close up of Titeflex fuel injection lines for the Wright J65. Tested for temperatures from —70°F to +600°F and for pressures up to 500 p.s.i.

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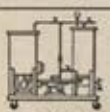

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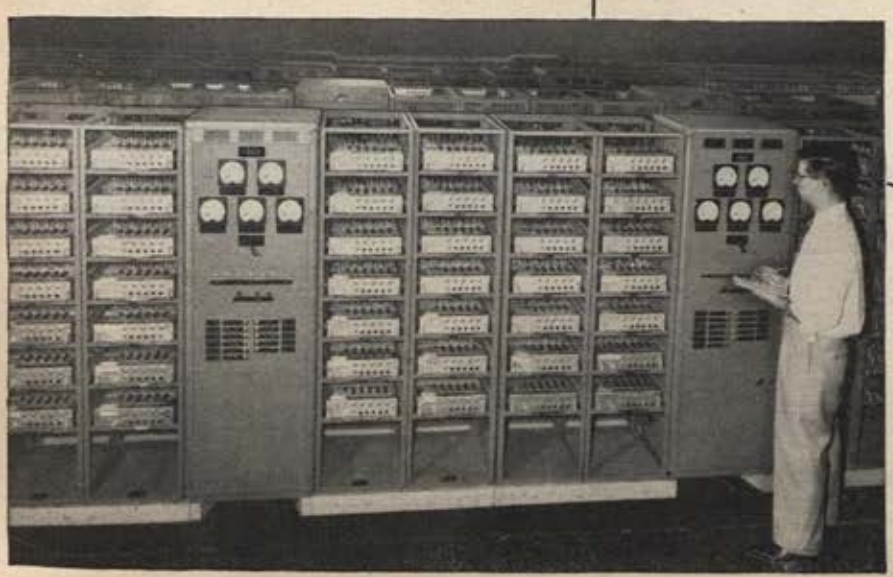

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One problem of the jet age is fiery-hot exhaust gas, which in a wind tunnel is a real headache. At NACA's Cleveland installation, the gas is cooled by the unit at the right. Water is sprayed through the perforated wrought iron pipes to reduce temperature.

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A MATS-man, M/Sgt. Robert Minchow, 30th ATS, Westover AFB, designed and built the C-118 supercharger servicing and bleed unit above, using spare parts plus his own time.

Showing Off the World's Largest 'Copter

Able to straddle two full-size automobiles, the huge XH-17 has made its first formal flights, both confined to the Hughes Company's landing field. Standing more than 30 feet high and with 125 feet of rotor blades, the jet-powered XH-17 is called a forerunner of powerful, cargo-carrying 'copters of the future.

TECH TALK

By Richard Skinner

The Navy's lopped off the tag end of its 1954 production schedule on three types of planes. Production on the North American FJ-2 Fury, carrier version of the Sabre, has been slashed one-third; with smaller cuts for the Douglas AD-5 Skyraider (13 percent) and the Grumman F9F-6 Cougar (18 percent). All three will be replaced by more modern planes, though, the Navy says, not necessarily of the same types. The cuts don't affect any planes on which work has begun.

A California man has obtained a patent on a turbine-driven plane he claims can take off straight up and then fly straight and level at 300 mph. The wings on the small plane (12-foot wingspan and gross weight of 1,600 pounds) are swept back and rise at an angle. The engines, preferably gas turbines, are in the tail and provide forward thrust, while streams of air can be shot downward from air compressors in the wing tips to provide the vertical takeoff power.

The French have come up with what may well be the world's first miniature jet. The 950-pound, two-seater has a span of 23 feet, is 17 feet long and six feet high. It's designed primarily as a trainer. The Turbomeca Palas turbojet gives it a top speed of about 250 mph.

Jet planes may be using tires without inner tubes one of these days. Goodrich has developed airplane tires based on the same principle as the tubeless tires for automobiles introduced about five years ago. They're claimed to be cooler running than conventional types and will provide more uniform inflation pressure. A layer of special rubber inside seals in air, while molded ridges prevent loss of air from around the rims.

"Aeroplast," a sterile vinyl plastic applied by an aerosol spray bomb, has been developed by the AF as a possible substitute for burn and surgical dressings. Since it's transparent, wounds sprayed with it can be easily inspected. ARDC feels Aeroplast would be especially valuable after an atomic attack since it's simple for untrained people to use, can be applied to parts of the body hard to bandage with gauze, and is also cheap, portable, and readily stored. The plastic, sprayed on to a thickness of about 5/1,000 of an inch, adheres only to dry, healthy skin areas and, if necessary, can be peeled off without injuring the wound.

A system of aerial navigation based on gyroscopics has been announced by the Arma Corporation, who claim "unerring accuracy" to any part of the world for missiles or air transports using the automatic control. The controls would be pre-set before a flight, fixing them on a stationary star ("inertial space reference," to use Arma's language), instead of homing on radio or radar beams. Thus the system couldn't be jammed by enemy interference. Further, Arma engineers say, the system wouldn't be deflected from its pre-set course by the high winds of the stratosphere or by other natural phenomena. The guidance system uses a new gyroscope that is said to be smaller, lighter, more compact, and "infinitely more accurate and efficient" than those now used on ships and airplanes.

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IT'S AFA TIME IN THE ROCKIES

Distance and a scattered population are problems that are now being overcome in the Rocky Mountain Region

The Rocky Mountain Region, under the leadership of William Thayer Tutt, Colorado Springs, Colo., hotel manager, has overcome such problems as wide open spaces and scattered population to take its place among the other active AFA Regions. Tutt, with the help of Paul C. Potter, Commander of the Colorado Wing, is developing the three-state Region (Colorado, Wyoming, and Utah) one state at a time.

Potter, better known as "Doc," helped Commander Donald O'Regan, 2475 Yorktown Road, Colorado Springs, rejuvenate his Pikes Peak Squadron. At the same time, Potter and Tutt organized the Broadmoor Squadron, whose commander is Richard F. Love, 1511 East Boulder St. Soon there was a new Squadron in Pueblo, and another in Denver.

In October, officers and members of the Colorado Wing got together in planning and staging the state's first AFA "Wing Ding." This event featured, in addition to the business session, a full day of outdoor sports, including golf, swimming, and riding. A banquet and ball climaxed the evening. The principal speaker at the banquet was Ennis C. Whitehead, Lt. Gen. (Ret.), and the honored guests were Arthur F. Kelly, AFA's President, and Harold C. Stuart, Chairman of the Board of Directors.

A prominent spot in the future of AFA in Colorado was given to D. Warren Jewett, by his election as Wing Commander commencing January 1, 1953. Jewett is the owner of the Pueblo Air Service, Municipal Airport, Pueblo, and asks that all AFAers in the state contact him there for particulars on forming additional Squadrons or participating in the activities of those now in existence.

Despite having only one AFA member per 237 square miles of territory, as compared to New York's one per ten and Rhode Island's one per five and a half, the Colorado Wing was represented at the recent National Convention in Detroit by a turnout topped by only eight other Wings.

Tutt, Potter, and their co-workers are to be commended for their efforts in uniting the Rocky Mountain states for airpower. The latest word from the Mountains indicates that Tutt and Potter will soon "invade" Wyoming and Utah with their organization campaign.

AFA's top leaders are guests at the Colorado Wing convention banquet recently held in Colorado Springs. Standing (left to right) are Warren D. Jewett, newly elected Wing CO; Arthur Kelly, AFA President; Paul C. Potter, retiring Wing CO; Lt. Gen. Ennis C. Whitehead, USAF Retired and principal speaker at the banquet; Mrs. Whitehead; and Harold C. Stuart, Chairman of the Board of AFA.

Col. Francis S. Gabreski, top living US fighter ace, is welcomed to South Bend, Indiana, for celebration in his honor by Elmer Wiseman (left), South Bend AFA Councilman; and Robert Wilson (right), Northern Indiana Wing Vice Commander.

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Toledo (Joe E. Brown), Ohio

CITED FOR

distinguished leadership in planning, establishing and operating the Toledo Ground Observer Corps Observation Post, and for untiring efforts in acquainting the Toledo public with its responsibilities in this vital link of our defense program.

AFA Staff Changes

Ralph Whitener, who has been AFA's Organizational Director since joining the national headquarters staff in June 1948, has been named Program Director of the Association. In his new assignment, Whitener will coordinate those AFA programs which are national in scope.

August (Gus) Duda, Commander of the Ohio Wing before he joined the Washington staff in November 1951, has succeeded Whitener as Organization Director.

(Continued on page 54)

Members and friends of the Fresno, California, Squadron pose for photographs during western barbecue climaxing anniversary party saluting the US Air Force.

Other recent additions to the headquarters staff include John H. Hewitt, as Promotion Director; and Miss Frances Stowe, Administrative Assistant to James H. Straubel, Executive Director. Hewitt was formerly with the Beattie Advertising Agency in Washington, D. C.

Fresno Open House

When Maj. Frank Staebell recently declared open house at his home for the Fresno, Calif., AFA Squadron's anniversary celebration saluting the USAF, more than fifty AFAers and friends gathered at the major's home to hear 1st Lt. Ronald Berdoy describe his experiences while flying an F-86 against MIG-15s over North Korea. Lieutenant Berdoy is from Fresno and has one and a half MIGs to his credit.

Air Force ROTC and recruiting officials were among the guests. Reserve survey team members were also on hand.

The Fresno AFA group, for the third consecutive year, participated in the annual Fresno County Fair. They sponsored a display of modern Air Force equipment and weapons, including an F-84 Thunderjet and a 14-foot guided missile. Some 100,000 persons attended.

Sparkplugging the AFA move in that section of California are S. Samuel Boghosian, Valley Group Commander, and Francis Dolan, Commander of the Fresno Squadron. Dolan's address is 1360 Echo Ave.

Central East Officers

George D. Hardy, Central East Regional Vice President, recently announced the appointment by AFA's President, of two new Wing Commanders in states within his region. They are: Kentucky, Harry J. Johnson, Jr., 15 Elizabeth St., Erlanger; and West Virginia, Thomas E. Bazzarre, Jr., 217 Elkins St., Beckley.

Appointment of these two men fills a gap of long standing in each of these Wings. Kentucky has a great potential, with the tremendous state pride which has always been exhibited by the residents, and Johnson has assured AFA Headquarters that he will make an earnest attempt to justify this faith in the Association. At present, only Covington has an active Squadron, but there is reason to expect several more communities to apply for AFA charters soon.

Johnson is Sales Manager for the F. H. Lawson Co., sheet metal manufacturers, a position to which he returned recently after a tour of active duty as a recallee.

Bazzarre is a Past Commander of the well known Beckley Squadron, and as such, has long indicated an active interest in the formation of additional AFA units in West Virginia. He has announced plans for renewed activity in Charleston,

(Continued on page 57)

AMERICAN CHEMICAL PAINT COMPANY

AMBLER CHEMICALS ACP PROCESSES PENNA.

Technical Service Data Sheet
Subject: Protecting Aluminum with "*ALODINE*"®

INTRODUCTION

Aluminum not only corrodes when exposed unpainted to the atmosphere (particularly in moist, salt-laden air or industrial fumes) but also sheds paint unless the surface is actually changed prior to finishing. Simple treatments involving cleaning, or etching, or both, which heretofore have been used extensively, do not change the chemical composition of the surface and are inadequate. Far from retarding the corrosion of unpainted aluminum, such processes may in fact stimulate it.

In general, coatings integral with the aluminum itself have proved to be far more effective than cleaning and etching treatments for bonding paint and protecting the metal. "Alodine", which forms a stable, durable, non-metallic surface on aluminum, anchors the paint finish, prolongs paint life, and protects aluminum exposed unpainted in moist and salt-laden atmospheres.

CHARACTERISTICS OF THE "ALODINE" COATING	
TYPE	Non-metallic surface, integral with aluminum it protects.
COLOR	Depending on alloy treated, color range is from an iridescent blue-green to a dark slate grey.
THICKNESS	From 0.01 to 0.08 mil. No appreciable dimensional changes occur when aluminum is Alodized.
WEIGHT	50 to 300 mgs. per square foot. Optimum: 100 to 200 mgs. per square foot.
SOLUBILITY	Insoluble in water, alcohol, solvents, etc. Insoluble in most dilute acids and alkalis. However, strong acids and alkalis which attack aluminum may penetrate the "Alodine" film and react with the underlying metal. Slightly soluble in concentrated nitric acid. Soluble in molten sodium nitrate, etc.
ELECTRICAL RESISTANCE	High dielectrical resistance.
HEAT STABILITY	Unimpaired at temperatures that melt aluminum.
FLEXIBILITY	Integral with and as flexible as the aluminum itself. Can withstand moderate draws.
ABRASION RESISTANCE	Approximately 90% of that provided by chromic acid anodized aluminum.
SALT SPRAY	Painted—superior to chromic acid anodizing. Unpainted—comparable with chromic acid anodizing.
PAINT-BONDING	Excellent. Equal to or superior to anodizing.
TOXICITY	Non-toxic.
BIMETALLIC CORROSION RESISTANCE	Shows good resistance against bimetallic or galvanic corrosion.

ALODIZING IS EASY AND EFFECTIVE

The Alodizing process is a chemical one and does not require electrolytic techniques or equipment. Alodizing is simple, foolproof, low in cost, and requires a minimum of equipment. Essentially, the process consists of the following easily controlled operations or steps:

1. Cleaning the work.
2. Rinsing the cleaned aluminum surfaces.
3. Coating with "Alodine."
4. Rinsing with clean water.
5. Rinsing with warm "Deoxylyte" (acidulated rinse).
6. Drying.

After treatments. Alodized aluminum provides an ideal bonding surface for paint, wax, adhesive, or other organic finishes. These should be applied in accordance with the manufacturer's directions. Unpainted or exposed areas will be protected by the tough, durable "Alodine" surface.

"ALODINE" MEETS SERVICE SPECIFICATIONS

"Alodine" applied by immersion or spray complies with the rigid performance requirements of both industrial and Government specifications. The following is a list of Service Specifications which "Alodine" meets at the present time.

MIL-C-5541	U. S. Navord O.S. 675
MIL-S-5002	16E4 (SHIPS)
AN-F-20	AN-C-170 (See MIL-C-5541)
U.S.A. 72-53 (See AN-F-20)	

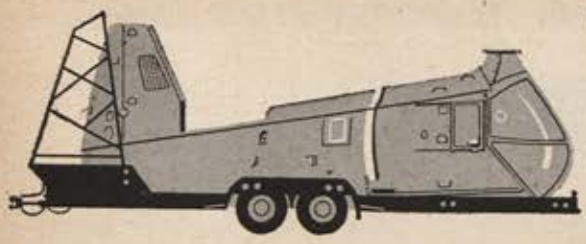
BRUSH "ALODINE" PROTECTS ALUMINUM IN THE FIELD, SHOP, OR HANGAR

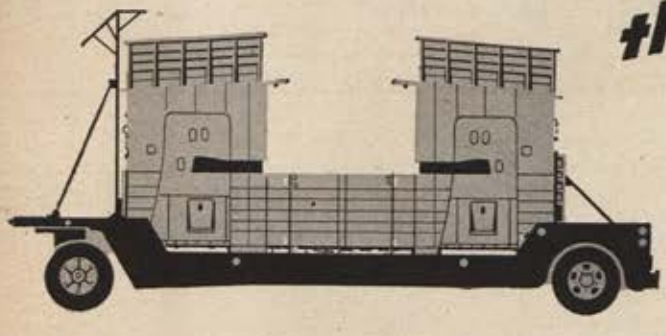
Brush "Alodine" is easily applied in a simple brush-on or flow coat process to large assemblies and surfaces—airplanes, trucks, trailers, boats, housing, building siding, railway cars, bridges, etc.—that are too bulky or too remote to be conveniently treated in tanks or a multi-stage power spray washer. The cleaning and coating chemicals for Brush Alodizing are shipped in bulk or in the convenient Brush "Alodine" Chemical Kit No. 1. This Kit contains enough chemicals to treat about 1,000 square feet of surface and is an ideal package for use at airfields of commercial airlines or of the Armed Services anywhere.

CHEMICALS ACP PROCESSES

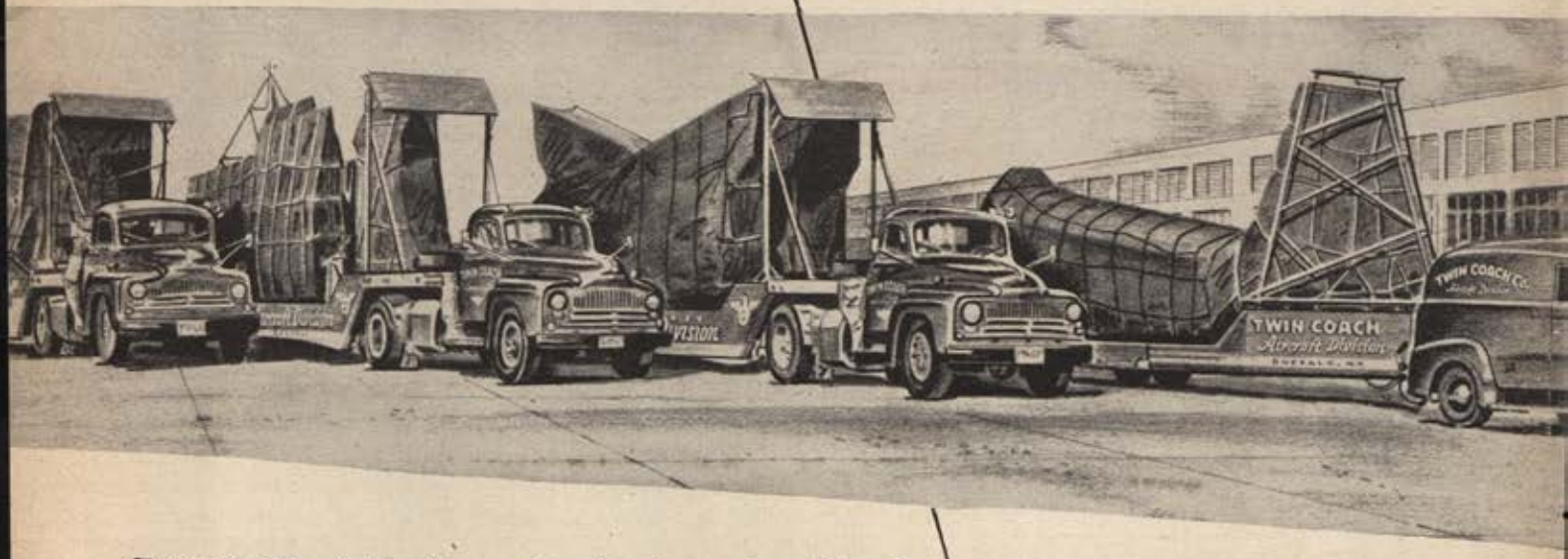
WRITE FOR FURTHER INFORMATION ON "ALODINE" AND ON YOUR OWN ALUMINUM PROTECTION PROBLEMS.

CHEMICALS ACP PROCESSES





the aircraft carriers that never put to sea...



TWIN COACH maintains its own aircraft carriers—a large fleet of modern over-the-road units for shipping complete assemblies.

These company owned and operated vehicles, and specially designed carrying devices, are tailored for individual jobs... eliminate stresses and strains on precision-made parts. This assures prime contractors that assemblies built by Twin Coach arrive undamaged—*on time.*

This smooth efficiency is typical of Twin Coach Aircraft Division plants. It enables prime contractors to set and hold tight production schedules. Modern facilities, modern equipment and *experienced* manpower make Twin Coach a dependable source for every type of major airframe assembly.

A-5580

John Cudmore, traffic manager, has been shipping aircraft assemblies since the days of wood and fabric construction. He is a veteran of 26 years in the aircraft industry.

FAGEOL Twin Coach AIRCRAFT

TWIN COACH COMPANY *Aircraft Division* **BUFFALO, N. Y.**

TWIN COACH PRODUCTS:

AIRCRAFT ASSEMBLIES • MOTOR COACHES • TROLLEY COACHES • SUPER FREIGHTER CARGO TRUCKS • FAGEOL GASOLINE AND PROPANE ENGINES • FAGEOL-LEYLAND DIESEL ENGINES

and the organization of a Squadron in Wheeling. At present, Bazzarre holds the position of Recorder-Treasurer with the city of Beckley.

Johnson and Bazzarre have asked that all interested AFAers in their states contact them regarding local participation.

San Fernando Squadron

Californians have a reputation for doing things fast and in a big way. AFA Headquarters has received evidence of this in the form of two charter applications from the same community on the same day.

The San Fernando Valley Squadron is the newest unit to join the nation-wide network of AFA Squadrons. President Arthur Kelly approved their charter on November 1. Simultaneously, the Ladies Auxiliary unit in conjunction with the Squadron applied for and received approval of an official charter.

The AFA Squadron charter application was signed by thirty-four members, including Bert D. Lynn, past Regional Vice President. Commander of this Squadron is James S. Ellis, 8545 Hazeltine Ave., Van Nuys. The President of the Auxiliary is Mrs. Hazel B. Riley, 10928 Houston St., North Hollywood. As proof of their interest in Wing affairs, the unit immediately announced plans for joining with the other three Auxiliary units in California to apply for a Wing charter.

Report from Ohio

The Cuyahoga Founders Squadron of Cleveland recently presented an interesting program to its members when key personnel of the 112th Light Bomb. Sqdn., gave Squadron members and guests first-hand accounts of the night raids over North Korea that are helping make "Operation Strangle" a success. The ANG outfit was recently rotated from the Far East.

Frank Konestabo, RD #3, Madison, Squadron Commander, announced this was the first in a new series of programs for members in coming months.

New Auxiliary Wing

Of interest to Auxiliary members everywhere, and particularly to those in California, is news of the formation of the latest Auxiliary Wing this past month, the California Wing.

Since the organization of the national program in August, in Detroit, four units have been formed in California, and now comes word of this latest evidence of the interest of these air-minded ladies in Air Force Association.

The organizational meeting was held in the home of Mrs. L. C. Riley, 10928 Huston, N. Hollywood. Officers elected were: Pres., Mrs. Riley; Vice Pres., Mrs. J. S. Ellis, Van Nuys; Secy., Mrs. Jack Stilbert, Roseda; Treas., Mrs. H. D. Wilson, N. Hollywood.

W. J. Bryan Dorn, Democrat from the third district of South Carolina, enlisted in the Air Force in June 1942 after resigning from his state Senate. He served nineteen months in the European theater as a member of the Sixth Tactical Air Squadron of the Ninth Air Force, and was discharged in October 1945 as a corporal. Congressman Dorn won the American Legion's Airpower Award for 1952. He's a member of AFA, and in March 1951 went to Korea and made his exclusive report in AIR FORCE Magazine (May 1951 issue).

Another Congressman with first-hand knowledge of Korea is Clair Engle, Democrat from California's second district. He recently returned to this country after thirty days' active duty there. A Reserve lieutenant colonel since 1949 and an active pilot, Congressman Engle usually flies while covering his home district, the largest in California.

Leroy Johnson, Republican from the eleventh district of California, is a World War I veteran. He was a pilot in the 104th Aero Squadron, going overseas in March 1918 as a second lieutenant. He took part in the St. Mihiel and Argonne drives and received the Silver Star for gallantry. His last flight over German lines was the day before the Armistice. He's now a member of Air Force Association.

Charles P. Nelson, Republican from the second district of Maine, is now a lieutenant colonel in the Air National Guard. He entered the AAF in May 1942 as a second lieutenant and was discharged in April 1946 after two years' service in the European theater, first as an intelligence officer with an Eighth Air Force heavy bomb group, and later as a military air advisory staff officer. He received the Legion of Merit and the Bronze Star, and, although not on flying status, flew several combat missions.

Walter Norblad, Republican from the first district of Oregon, entered service in 1942 and served with both the Eighth and Ninth Air Forces as an intelligence officer. He received the Air Medal for combat flights and was discharged in September 1945 as a captain.

Harold A. Patten, Democrat from the second district of Arizona, entered the Army as a first lieutenant in August 1940, with a cavalry regiment. He transferred to the AAF in 1941 and later spent thirty months overseas, in Africa and Italy, flying seventeen missions in A-20s and B-17s. He received the Air Medal, French Wings, and a French citation before being discharged in November 1945 as a major, the rank he now holds in the Reserve.

Kenneth M. Regan, Democrat from the sixteenth district of Texas, is a veteran of two wars. He enlisted as a flying cadet in the Air Service of the Signal Corps in April 1917. In World War II, he reenlisted, was commissioned a captain in June 1942 and served as post intelligence officer at the Miami Beach OCS until the spring of 1943 when he joined a Third Air Force fighter group as combat intelligence officer.

W. M. (Don) Wheeler, Democrat from the eighth district of Georgia, served in the AAF from May 1942 to June 1946 as a ground officer with overseas duty in England. He had enlisted as a private and was discharged as a captain, the rank he now holds in the Reserve.

John Bell Williams, Democrat from Mississippi's fourth district, enlisted in the Air Force in November 1941 as an aviation cadet. He was commissioned as a pilot the following July. In an operational accident in March 1943 in South America, he was the only survivor of the five men aboard the Army plane he was piloting. In the accident he lost an arm and was retired from service in April 1944.

Samuel W. Yorty, Democrat from the twenty-sixth district of California, volunteered for Air Force duty early in the last war. He served three years as a code and cipher officer and later as combat intelligence officer with the Second Air Task Force in New Guinea. He participated in plans for the reestablishment of the Philippines government and was then loaned to the Sixth Army for a civil affairs assignment on Leyte Island. He spent two years in the Pacific before being released from service in 1945 as a captain.

Three members of the Eighty-Third Congress who hold Reserve commissions as lieutenant colonels in the Air Force but who have never been on active duty include Senator Margaret Chase Smith, Republican from Maine, in the WAF; Representative O. Clark Fisher, Democrat from the twenty-first district of Texas; and Representative William Arthur Winstead, Democrat from the fifth district of Mississippi.—END

TEMCO TRIO...

Modification-Overhaul

A new $5,000,000 AIR FORCE contract . . . the fifth in a continuing series . . . for the assembly-line overhaul of additional SKYMASTERS has already pushed the total of military and transport aircraft modified or overhauled by TEMCO well past the 2,000 mark. The majority of this work is being performed at TEMCO's modern and completely integrated modification-overhaul facilities at Majors Field, Greenville, Texas.

Major Sub-Contracts

TEMCO-Dallas currently is engaged on sub-contracts for the manufacture of major components for the BOEING B-47 Stratojet, the DOUGLAS A2D Skyshark, the LOCKHEED P2V Neptune and the MARTIN P5M Marlin. A subsidiary plant at Garland is busy producing components for the CONVAIR B-36 plus others for BEECH AIRCRAFT.

Aircraft Manufacture

A prime contract for the production of a substantial quantity of McDONNELL F3H DEMON single-jet, carrier-based fighters has been received from the U. S. NAVY. The tremedous project is now underway at TEMCO-Dallas in the recently expanded main plant. The contract award is the culmination of a long program on the part of TEMCO in preparation for building modern jet aircraft.

TEMCO's F3H DEMON contract marks another important milestone in the rapid rise of the company to its present position as one of the major firms in the aircraft manufacturing industry. The three phase operation of TEMCO's business has been made possible by one of the most modern and best equipped set of facilities in the nation. With an even larger job ahead, TEMCO is still expanding to meet the need.

TEMCO®
AIRCRAFT CORPORATION

DALLAS, TEXAS

MINUTE MEN— 1953 VERSION

How the Civil Air Patrol takes over as Air Rescue Service's right hand

By T/Sgt. Frank A. Burnham

CAP ground rescue specialists (above) are skilled in first aid as well as flying. At left, the victim of a crash is loaded into an L-5 to be rushed to a hospital. Many of the Air Force L-5s on loan to CAP are equipped to handle stretchers.

YOU'RE AN Air Force reservist. A few years back you were flying low-level strikes against Rabaul and Hollandia as aircraft commander on B-25 Mitchells, and you were sharp.

But it's ten years later. Only last week you passed your physical and Ops told you to pick up your chute and report to the line bright and early Saturday morning to check out in a sleek Douglas B-26—it was A-26 when you were last on active duty.

You work all day with the IP and finally he gives you the "thumbs up" and tells you to schedule a night instrument problem for the next weekend.

All week it's CAVU but Saturday brings the humid, hazy beginnings of a warm front. By nightfall the ceiling is 2,000; visibility four miles in haze, and there are occasional drizzling showers. Perfect for a nice, tough instrument problem, Ops says, as he signs your Form 23.

A last check with Weather tells you that the tops of the clouds are above 8,000. You'll be flying at 6,000 to clear peaks to the north. By this time you begin to feel a slight shiver of apprehension. But three hours later you're rolling along indicating 240, fighting moderate to heavy turbulence. Your partner, another "weekend warrior," nervously twirls the radio compass handle.

"No dice," he tells you, "interference is jamming everything."

Somewhere along the way your VHF has gone on the blink and try as you will you can't raise a DF station on the HF command set. To make the situation worse this particular aircraft is minus a liaison set.

What a time to lose a fan, you think, but your thought is interrupted as your heart climbs into your throat. Port oil pressure is taking a slow but steady nose dive and the cylinder head temp is going into the red. Instinctively you cut the fuel, mixture, mags, and hit the feathering button while the co-pilot increases power on the remaining powerplant.

The last weather you picked up said your base was closed—the terminal forecast didn't hold. Even if you weren't lost, you couldn't go home. What happens now? You know darned well what happens now. Lost, one fan out, rapidly dwindling fuel supply, rough terrain — you hit the silk.

(Continued on page 60)

This injured AF jet pilot was sighted from the air by sharp-eyed CAP spotters. He gets emergency treatment before being loaded into the ambulance.

The bailout isn't bad. The cool mist against your face actually is pleasant after the heat and tension of the cockpit. You're lucky. You land in a small clearing with only a wrenching of bones. Your partner isn't so lucky. He chose a tree, and a torn branch has left a jagged gash in his thigh. A tourniquet stops the bleeding temporarily and you try to make him warm and comfortable with items from your own clothing.

Now begins the big sweat. Air Rescue Service will be out at dawn. You know that. But those fast, high-flying jobs have been known to miss a chute tangled in a tree. Your lighter picked this time to run out of fluid. No fire. You can't leave your partner. It might take all day to find help and someone has to loosen that tourniquet every twenty minutes because he is just on the verge of consciousness.

The picture is pretty black, but not quite as black as you might think for at dawn a lot of people are going to be looking for you—not just ARS and your buddies, but a cross section of the population of the whole state—people who know every inch of the mountains, every valley and canyon, and who will be flying their puddle-jumpers at tree-top level scouring every inch of ground until you are found. When Flight Service alerted ARS for you they also alerted its foremost domestic operational air arm—Civil Air Patrol, auxiliary of the United States Air Force.

Since the early days of World War II when CAP Capt. Normal Kramer and his observer, 1st Lt. Arthur Mosher, landed their Taylorcraft lightplane on a wind-swept saddle of the 12,800-foot Little Baldy mountain in northern New Mexico to bring aid to the nine survivors of a B-24 Liberator, CAP has been a full partner of ARS in the air search and rescue field.

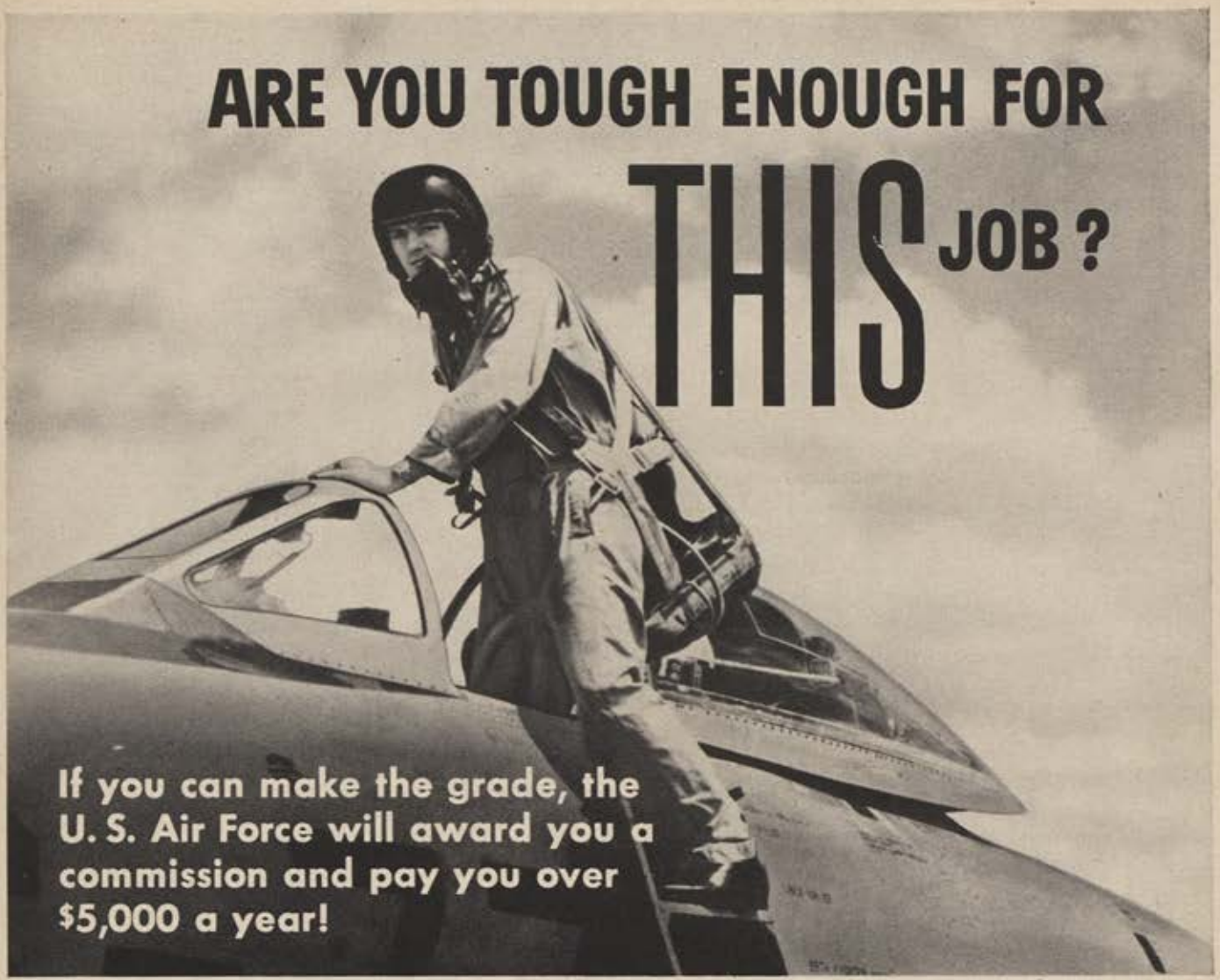
Today, according to estimates of ARS officers, CAP performs seventy-seven percent of the domestic search and rescue mission for ARS, freeing its planes and men for the global task of guarding the world's air lanes. The much decorated 3d Air Rescue Squadron in Korea could not do the job it has been doing if it weren't for the CAP, which has assumed the huge search and rescue load at home.

During 1951 CAP's volunteers flew 4,066 individual sorties—9,108 flying hours—on ninety-five missions at the request of ARS, either together with planes of ARS or as the sole search agency.

During the first ten months of

(Continued on page 63)

ARE YOU TOUGH ENOUGH FOR THIS JOB?



If you can make the grade, the U. S. Air Force will award you a commission and pay you over $5,000 a year!

CAN YOU "take it" 6 days a week? For 52 weeks? Can you meet the high standards required to be an Aviation Cadet? If you can—then here's the chance of a lifetime! An opportunity to serve your country and build a personal career that will fit you for responsible positions both in military and commercial aviation.

It won't be easy! Training discipline for Aviation Cadets is rigid. You'll work hard, study hard, play hard—especially for the first few weeks. But when it's over, you'll be a pro—with a career ahead of you that will take you as far as you want to go. You graduate as a 2nd Lieutenant in the Air Force, with pay of $5,300.00 a year. And this is only the beginning—your opportunities for advancement are unlimited.

ARE YOU ELIGIBLE?

To qualify as an Aviation Cadet, you must have completed *at least* two years of college. In addition, you must be between 19 and 26½ years, unmarried, and in good physical condition.

YOU CAN CHOOSE BETWEEN PILOT OR AIRCRAFT OBSERVER

If you choose to be an Aircraft Observer, your training will be in Navigation, Bombardment, Radar Operation or Aircraft Performance Engineering.

New Aviation Cadet Training Classes Begin Every Six Weeks!

HERE'S WHAT TO DO:

1. Take a transcript of your college credits and a copy of your birth certificate to your nearest Air Force Base or Recruiting Station. Fill out the application they give you.
2. If application is accepted, the Air Force will arrange for you to take a physical examination at government expense.
3. Next, you will be given a written and manual aptitude test.
4. If you pass your physical and other tests, you will be scheduled for an Aviation Cadet Training Class. The Selective Service Act allows you a four-month deferment while waiting class assignment.

U.S. AIR FORCE

Where to get more details:

Visit your nearest Air Force Base or Air Force Recruiting Officer. Or write to: Aviation Cadet Headquarters, U. S. Air Force, Washington 25, D. C.

to the E. E. *or* PHYSICS GRADUATE

with military experience

in RADAR OR ELECTRONICS

Here's a good way to capitalize on your military experience upon your return to civilian life: Hughes Research and Development Laboratories, one of the nation's leading electronics organizations, are now creating a number of new openings in an important phase of their operation.

Here is what one of these positions offers you:

THE COMPANY

Hughes Research and Development Laboratories are located in Southern California. We are currently engaged in the development of advanced radar systems, electronic computers, and guided missiles. You are probably familiar with some of the equipment we are supplying the services.

YOUR POSITION

You will serve as a technical advisor to those using Hughes equipment. In this capacity you would help insure the successful operation of our equipment in the field.

YOUR TRAINING

On joining our organization, you would work in our Laboratories in Southern California for several months—until you are thoroughly familiar with the equipment involved.

WHERE YOU WORK

After your period of training (at full pay), you may (1) remain at the company Laboratories in Southern California in an instruction or administrative capacity, (2) become the Hughes representative at a company where our equipment is being installed, or (3) be the Hughes representative at a military base in this country—or at a base overseas (single men only). Compensation is made for traveling and for moving household effects. Married men keep their families with them at all times.

YOUR FUTURE

You will gain broad experience that will increase your value to us as we further expand in the field of electronics. Furthermore, the large-scale commercial employment of electronic systems in the next few years is inevitable . . . and your training and experience in the most advanced electronic techniques with our company now will qualify you for even more important positions later.

HOW TO APPLY

If you are under thirty-five years of age, and if you have an E. E. or Physics degree, with some experience in radar or electronics,

write to:

HUGHES

RESEARCH AND DEVELOPMENT LABORATORIES

Engineering Personnel Department

CULVER CITY, LOS ANGELES COUNTY, CALIFORNIA

1952, CAP pilots flew more than 15,500 hours on various types of official missions—5,609 hours on ARS-directed searches and 4,653 hours on ARS-supervised SARCAPS.

In New Mexico an F-80 Shooting Star jet fighter was found an hour after CAP planes from Las Vegas and Tucumcari took the air at dawn. In Washington CAP fliers located a lightplane after heavier, high-flying aircraft had searched the area for three days. In Colorado CAP put into the air thirty-five planes a day—fifty-three on one occasion—until a missing B-25 was found.

In one twelve-month period the California Wing of CAP flew 1,749 hours on search missions at the request of ARS, with 1,018 CAP personnel participating.

The importance of CAP to ARS is underlined in a statement by Capt. Jack T. Woodyard, a veteran rescue pilot and operations officer with Flight A, 5th Air Rescue Squadron, Westover AFB, Mass., who says:

"There are no two ways about it, without CAP our hands would be tied. Here at Westover we have six aircraft—four Grumman SA-16 amphibians, one Fairchild C-82 Packet, and one Sikorsky H-5 helicopter. With these planes we have an area of responsibility which extends from Virginia north to the Canadian border and east from Ohio into the Atlantic.

"In this same area CAP has concentrated hundreds of small planes. Flying from every small airport, the pilots of these planes have an intimate knowledge of their individual areas. The answer is obvious."

The Air Force general officer, Maj. Gen. Lucas V. Beau, who serves in the dual capacity of commanding general of the Air Force personnel assigned to CAP and as National Commander of the civilian organization, says this:

"Search and rescue is only one of our missions, but it is the phase which we do best."

CAP BEGINS 12th YEAR

Civil Air Patrol celebrated its eleventh anniversary December 1. In looking to the future, its commanding general, Maj. Gen. Lucas V. Beau, predicted 1953 would be the "greatest year in the history of CAP." Its twelfth year began auspiciously with the presentation, December 17, at the Wright Memorial Dinner, of the Frank G. Brewer Trophy, given by the National Aeronautics Association each year to the organization doing the most to promote aviation education.

CAP's proficiency at the search and rescue game is the result of long training under top ARS rescue specialists. Annually each of the forty-eight state wings together with those in Puerto Rico, Alaska, Hawaii, and the District of Columbia have at least one major state-wide practice rescue mission. These are called SARCAP (Search and Rescue Civil Air Patrol). The problems for these missions are set up by ARS squadrons in their various areas of responsibility and the missions are carefully monitored by ARS specialists.

As the official auxiliary of the Air Force, chartered by act of Congress, CAP now boasts a total strength of 18,166 rated flying personnel, 15,735 pilots and 2,431 observers. It also has 11,030 non-flying senior members and 47,308 cadets (the national goal is 100,000 cadets set by Air Force). There are 1,806 units, including 196 groups and fifty-two wings.

In time of national emergency CAP can throw into the air a fleet of 8,200 planes including Air Force types on loan to CAP, CAP-owned aircraft, CAP member-owned aircraft, and non-member-owned planes committed to CAP use in time of need.

What do the members of CAP get for these contributions to the welfare of the nation? The answer is nothing but the satisfaction of doing a job that must be done—filling a critical gap in our national defense setup.

CAP members also give their lives. During the past three years alone several CAP pilots and observers have been killed in line of duty on administrative flights, ferry missions, training flights, or actual searches. They have joined their twenty-six comrades who died during World War II on coastal patrol and the thirty-eight others who were killed on other wartime missions—all volunteers.

Besides its search and rescue task, CAP relieves other governmental agencies in times of national disaster. In recent years it has been cited for its part in the Texas City disaster (1947), Operation Haylift (1948), the midwestern floods, called the nation's greatest single disaster (1951), and the Tehachapi, Calif., earthquake (1952).

The importance of CAP to ARS in this one phase of its activity can best be summed up in the words of Brig. Gen. Thomas Dubose, commanding general of Air Rescue Service: "I don't think the Air Force could afford to support a search and rescue organization of this magnitude. The saving to the taxpayer should receive a great deal of recognition."—END

CREDITS

Front cover—Charles deM. Barnes; page 17—Arlo Greer; page 29 (Bao Dai and Ho Chi Minh)—Wide World Photos; pages 32 and 33—Harris & Ewing (Rep. Engle, Rep. Rhodes, Sen. Thye, Rep. Williams), Chase-Statler (Sen. Jenner, Rep. Regan), Wide World Photos (Sen. Payne).

THIS IS AFA

The Air Force Association is an independent, nonprofit, airpower organization with no personal, political or commercial axes to grind; established January 26, 1946, and incorporated February 4, 1946.

OBJECTIVES

• To assist in obtaining and maintaining adequate airpower for national security and world peace. • To keep AFA members and the public abreast of developments in the field of aviation. • To preserve and foster the spirit of fellowship among former and present members of the United States Air Force.

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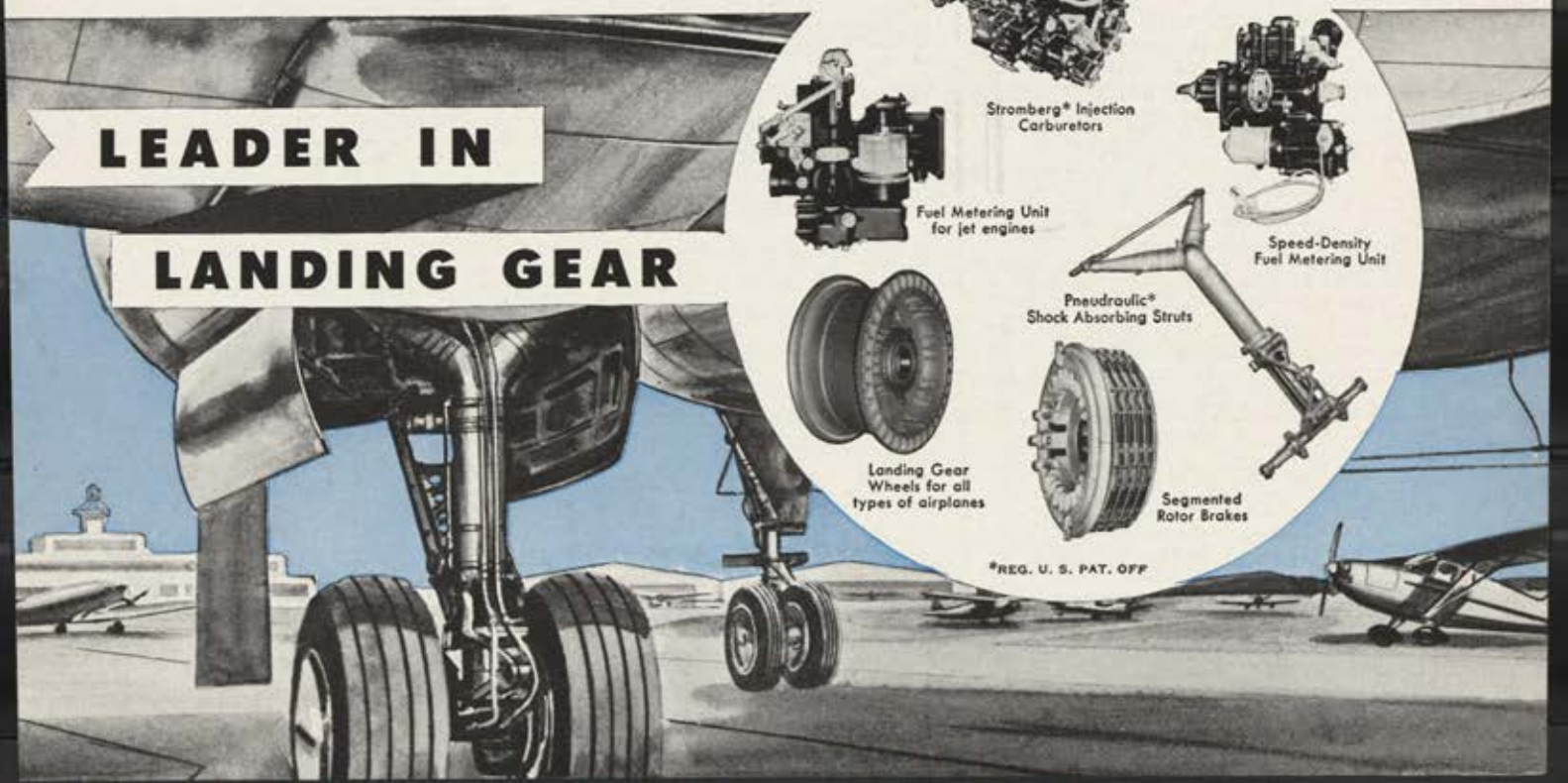

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