AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

REENLISTMENT BLUES
Why We're Losing Non-Coms

JANUARY 1954 • THIRTY-FIVE CENTS

Deep-sea dog fight

Our sea battles of the future may be fought by high-speed submarines on the eeriest battleground of all time—deep beneath the sea. For the first time in naval history submarines are now being designed expressly to track and destroy other submarines while totally submerged.

The detection and missile-guiding systems which make this possible are the result of bringing the magic of electronics to problems of automatic control and computation too complex for rapid solution by man. Working closely with the Armed Forces for 34 years, Arma Corporation has played a leading part in this field in basic research, design, development and production.

Electronics provides a whole new arsenal of defense weapons. In important areas of this field Arma is pacing the developments. *Arma Corporation, Brooklyn, N. Y.; Mineola, N. Y.; Subsidiary of American Bosch Corporation.*

ARMA ADVANCED ELECTRONICS FOR CONTROL

Again Goodyear comes to the fore—proves best in grueling tests!

FROM TOUCHDOWN TO TAKE-OFF THE NEW DC-7

RELIES ON GOODYEAR WHEELS AND BRAKES

FIRST choice of Douglas for the great new DC-7, Goodyear Wheels and Single-Disc Type Brakes are 100% standard equipment on the fastest nonstop, coast-to-coast commercial airliner.

Grueling field tests conducted by the C.A.A. and Douglas engineers proved the remarkable dependability of Goodyear-built main wheels, brakes and nose wheels for the new DC-7 — landing *full gross loads* time after time *well within* certified field lengths.

Flexibility of the Goodyear Brake design was responsible for the achievement of the high-torque design necessary to meet and *exceed* the Douglas field-test requirements.

So now the DC-7 joins the ranks of the nation's foremost commercial aircraft which rely on the time-proved dependability of Goodyear wheels and brakes—now flying on Consolidated 240's and 340's, the Martin 202, 404 and Lockheed's Constellations, as well as on the great forerunners of the new DC-7 — the DC-4's, 6's and 6B's. Goodyear, Aviation Products Division, Akron 16, Ohio or Los Angeles 54, Calif.

GOODYEAR
AVIATION
PRODUCTS

FACILITIES + ABILITIES = EXTRA *plus* IN PERFORMANCE

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

TRIBUTES TO SOME PEOPLE WE ALL LIKE:
from Chrysler Corporation

TYPICAL CAREER OFFICER is Captain Allen Snyder, U.S. Army. Snyder enlisted in 1940, served every enlisted rank, received a battlefield commission after heroic action on the island of Leyte in World War II. Now Faculty Chief of training, 9th Inf. Div., Ft. Dix, N.J., Captain Snyder here instructs a recruit in the use of the flame thrower.

ACTING OFFICER OF THE DECK Albert E. Kizis, Lt.(jg) U.S. Navy, directs a change of course on the bridge of the U.S.S. Tarawa. Kizis, a graduate of the University of Scranton, Pa., attended Officer Candidate School at Newport, N. J. Currently on a two year tour of duty, Kizis can ship over for additional duty as he chooses.

PHOTO BY PHILIPPE HALSMAN

BUCKLING ON GEAR AS HE GOES, Capt. Richard Davis races for his jet fighter during an alert "scramble" at McGuire Air Force Base. In two minutes, he'll scream into the air, carrying live ammunition just in case it's the "real thing." On the alert 24 hours a day, these skilled jet pilots are key men in the program of the Air Defense Command.

UNDER A BLANKET of heavy naval bombardment, Lt. Charles E. Mueller leaps from the mouth of an LVT amphibious landing craft, leading an assault against a fortified beach during air-ground problems at Marine Corps Schools, Quantico, Va. Only 23, Lt. Mueller is already a veteran of six years service, plans to do thirty.

THEIRS IS THE HARD-EARNED JOB OF COMMAND

The Regular Officer in the U. S. Armed Forces today, whether serving at home or overseas, is something unique in the military history of the world, and also in the history of his country.

By birth and instinct a citizen of a peace-minded country, his is the task of command of the toughest and most technologically intricate warfare the world has ever known. His is the job of leadership in morale and in maneuver of his fellow citizens who join him in peace time training or war time urgency. His is often the job of civilian, military, and even diplomatic command in occupied territories far from home.

There was a time when most officers were graduates of the traditional Academies. But today's massive manpower requirements draw much officer complement from OCS, and college ROTC training programs. And war time emergency has seen many capable men commissioned in the heat of battle, to fill the needs of frontline command.

Chrysler Corporation is proud to salute the Officers of the Armed Forces of America. Here they are on these pages, running your Army, commanding your ships, flying the missions that defend your shores. Take a good look at them. For they are the loyal men and women of America who help look after the hard daily business of guarding the country in which you live.

This message about people we all like is presented by your PLYMOUTH—DODGE—DE SOTO—CHRYSLER—DODGE "JOB-RATED" TRUCK dealers, and

CHRYSLER CORPORATION

Enjoy "Medallion Theatre"... dramatic entertainment for all the family... every week. CBS-TV. See your local paper for time and station.

by EDGAR A. GUEST

They are the ones, air, sea and land,
Trained to obey and to command;
Scholars of merit and degree,
Generals and admirals some to be,
Chosen as lads, deserving trust,
Willing to die, if die they must.

West Point, Annapolis are schools
Where honor's held by rigid rules.
This their high purpose and their plan,
To train the boy to be a man.
That done, to serve his country's need,
His comrades he'll be fit to lead.

They are our nation's chosen best,
Tested by every human test
For knowledge, courage, strength of will,
Devotion, patience, judgment, skill.
At first cadets, but every one
Men to command as time goes on.

Admirals, generals, captains all
Ready to answer duty's call
'Til peace shall come and war shall end,
On them for freedom we depend.
Men (in salute I raise my hand)
Trained to obey and to command.

If you would like a reprint of this poem, suitable for framing, write Chrysler Corp., Dept. RS4, 341 Massachusetts Ave., Detroit, Mich.

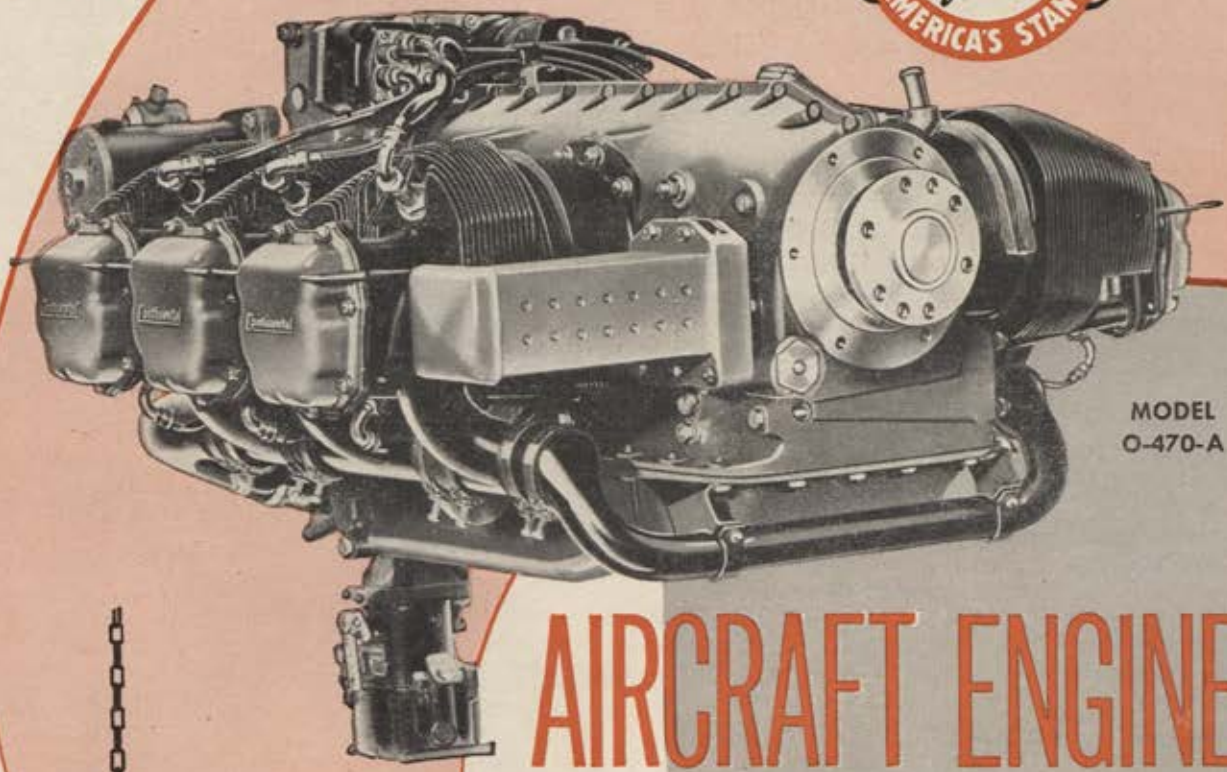
THE LIAISON OFFICERS for the defense advisory committee for women in the services leave the Pentagon with Lt. Col. Emily C. Gorman, deputy director of the WAC. Representing the Navy, Army, Marines and Air Force, these officers are typical of the many women who have voluntarily entered the armed forces, finding a rewarding career while making their special contribution to our defense.

FAST COAST GUARD RESCUE BOAT speeds victim to shore as Chief Bos'n John J. Gibbs, Commanding Officer of Rockaway Lifeboat Station in New York, supervises resuscitation. Under the Treasury Department in peace, the U. S. Coast Guard performs many vital functions of rescue, patrol, and law enforcement on the high seas.

This advertisement appears in **LIFE** *January 18, 1954*

CONTINENTAL

CONTINENTAL MOTORS · Powerful as the Nation · AMERICA'S STANDARD



MODEL
O-470-A

AIRCRAFT ENGINES

POWER MORE EXECUTIVE AIRPLANES THAN ALL OTHER ENGINES COMBINED

ONLY CONTINENTAL BACKS YOU WITH ESTABLISHED WORLD-WIDE SERVICE

Continental Motors Corporation

Aircraft Engine Division

MUSKEGON, MICHIGAN

AIR MAIL

Electronic Pilot

Gentlemen: If I ever saw a man whistling in the dark it was Brig. Gen. Dale O. Smith in his November article "Pilots or Robots." General Smith is a gentleman who is obviously an avid aviation enthusiast and consumed with pride over his rating as a pilot. Now science comes along with many types of electronic controls and servo-mechanisms and the like and threatens to engulf the functions of a pilot. This to General Smith is untenable and poses a real threat resulting in his exposition which appears to be a "desperate rationalization process" to convince himself, more so than others, that the human pilot is here to stay. I am indeed sorry to disagree with the good general, but I firmly believe that the human pilot will become even more extinct than the dodo. For it is inevitable that electronic controls will ultimately replace the human flesh-and-blood pilot, do the job better and safer and with far more efficiency. General Smith is quite correct in stating that the function of *thinking* will never be replaced by a machine, but having been a pilot myself in World War II I fail to find that flying required thought processes except of the most elementary kind that *could* be replaced by robots.

The fierce pride that military airmen manifest in flying is exemplified in a circular I read just prior to World War II inviting college men to become Flying Cadets. The literature compared military flying to *the learned professions*! Perhaps some military pilots fancy themselves as "professional men" but they'll never occupy the lofty perches of *real* professional men such as physicians, engineers and scientists. Even the airplane flown by the pilot is the creation of the professionals but who, to the uninitiated, lack the "glamour" which seems to surround the pilot.

I deeply sympathize with General Smith's anguish over the threat of being replaced some day with a lot of radio tubes, electronic gadgets and so forth, because I share his feelings, but in a different way. Since childhood I have been fascinated with the steam locomotive but which of late has been inexorably replaced with the unsightly and unglamorous diesel locomotive. This has bothered me no end. And in spite of my continuous rationalizations of the worth and merit of the steam locomotive, American railroads continue to replace them with diesels.

One wonderful asset General Smith possesses will always stand him in good stead is his Ph.D. degree from Stanford University. No machine will ever replace that because his degree, in the final analysis, represents *thinking*—quite safe from the inroads of any machine.

Henry S. Tugender
Brooklyn, N. Y.

• *For more about "Pilots or Robots," see page 36.**—The Editors.*

Non-Coms

Gentlemen: My sincere congratulations to M/Sgt. Norman Winfield on his story "Why Not a Professional Non-Com Corps?" published in November AIR FORCE.

One hundred percent correct is my comment on the article. The top grade non-coms make or break the Air Force. Responsibility and dignity must be returned to them or the US Air Force declines.

I hope General Twining and his staff will take cognizance of this fine article and do something about it.

Lt. Gen. George E. Stratemeyer
USAF (Ret.)
Winter Park, Fla.

• *See page 28 for another article by Sergeant Winfield.**—The Editors.*

Background Material

Gentlemen: I would like to take this opportunity to tell you of the excellent reception that your October issue had at the fall meeting of the Scientific Advisory Board to the Chief of Staff, USAF. Arrangements were made to distribute copies to all members of the Board and their invited guests, which included the Commander of ARDC and all of his senior Center commanders, as well as the commanders of ADC, AMC, and many other senior staff officers from Hq., USAF.

The comprehensive analysis of airpower trends conveniently reproduced in this form provided splendid background assistance to the Board and its guests in their deliberations at this meeting. AIR FORCE Magazine is to be commended for its continuing championship of the cause of US airpower, undiluted by narrow partisan considerations and special interests.

C. N. Hasert, Executive Secretary
Scientific Advisory Board
Washington, D. C.

Editorial Bunk?

Gentlemen: I want to put in a couple of helpful suggestions for improvement of the magazine and the insurance coverage. I've been a member of the Association for over five years and think the magazine is not as good as it was during the war when there were few editorials and mostly operational news coverage and combat stories. The magazine appears to be trying to reach those outside of Air Force circles instead of keeping interest in Air Force matters alone for members. In other words, I think most of the editorials are poor unless based on actual facts; and besides, we don't have to be reminded that we need a larger Air Force—the members know what we need and don't need.

I usually agree with some of our Senators more than I do with the AIR FORCE Magazine, and that shouldn't be. For instance, three Senators, just returned from an around-the-world inspection tour of Air Force bases, say there is no necessity for long-range bombers such as the B-36 because we will always have a base somewhere to strike from, or at least refuel, and the B-36 would be duck soup for jet fighters in daytime. I personally think the B-47 jet bomber, the F-86, and the new North American F-100 are the answer, and I've been in aviation continuously since 1939 and at present am flight engineer on a scheduled airline. In any case, a number of other members and I would like to see more operational news and less bunk editorials in the magazine!

Concerning insurance, AFA has no coverage for those discharged Air Force personnel who choose to continue in aviation in commercial airline flying or in private flying. Why should we be penalized for continuing in our first love?

Bob Schisler
Redwood City, Calif.

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The Most Trusted Name in Ignition

meets the operating needs of every plane

No single type of ignition equipment is the final solution to every operating problem. That's why Bendix approaches each new assignment with an open mind. The particular type of ignition system recommended is decided on the basis of meeting individual requirements for economy, performance and dependability.

Of one thing you can be certain, from the broad Bendix experience and unrivaled facilities will come ideas and products tailored to your needs. For piston, jet, turbo-jet or rocket engines every component part of your ignition system will meet the uncompromising standards of quality established by Bendix over a quarter of a century ago.

This combination of facilities and skill is ready to go to work for you in the solution of any ignition problem from planning to finished product.

AVIATION PRODUCTS

Low and high tension ignition systems for piston, jet, turbo-jet engines and rocket motors . . . ignition analyzers . . . radio shielding harness and noise filters . . . switches . . . booster coils . . . electrical connectors.

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Shooting the Breeze

WE WERE pleased not long ago with what the Air Force's "Public Information Letter," which goes to USAF Commanders and Public Information Officers, said about the merger of the Air Reserve Association with AFA. The newsletter acknowledged that the merger makes AFA the only private organization in the country devoted chiefly to the advancement of military aviation. It went on like this:

"The Air Force Association is, of course, recognized as a leading exponent of airpower—but it is more than that. It is vitally concerned about all aspects of national security and world peace. It also is both friend and critic of the Air Force. As such, it can take an independent view of air policies, based on views of its experienced membership. It is no mere 'pressure group'—rather, as both advocate and critic, it serves to bring issues into the open for discussion."

"AFA," the newsletter went on, "serves another important function by acting as a meeting ground for active, Reserve, and former AF member as well as others closely interested in airpower. It embodies a fellowship of military airmen, past and present. Its magazine, AIR FORCE, is widely read by airmen."

Then the newsletter pointed out that "Air Force members are urged to cooperate with AFA in reaching objectives compatible with AF policies." We couldn't have said it better ourselves.—END

AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

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THE COVER

No more shade 84 for Mort Rosenfeld, who's the staff sergeant on our cover this month. He got out of the Air Force the day after S/Sgt. Ed West of Bolling AFB snapped his picture. His reasons for not signing on for another go? They're all spelled out on page 28—"Cause of the Pause." Mort spent most of his AF time as an artist-illustrator in Graphics, Hq., MATS at Andrews AFB, but says he'll be happier back with the New York commercial art studio where he worked for 2½ years before he enlisted. From Brooklyn, he studied four years at New York's Art Students' League.

MEMBERSHIP IN AFA

AIR FORCE Magazine is mailed monthly to all members of the Air Force Association. There are several ways you can become a member. If you were in the Air Force or its predecessor services, you're eligible. The $5 yearly dues include the magazine. Or if now on active duty, you can be a Service Member. Those interested in airpower can become Associate Members for $5 per year. The cost for CAP and AF-ROTC cadets is $3 per year. Details of membership in AFA on page 68.

CUT OUT AND MAIL TODAY

Air Force Association
1424 K St., Northwest
Washington 5, D. C.

1-54

Sign me up as marked below. I enclose a check or money order for the amount indicated.

- ☐ Membership in AFA (includes year's subscription to AIR FORCE Magazine) $5
- ☐ Service Membership in AFA (includes magazine subscription) $5
- ☐ Associate Membership in AFA (includes magazine subscription) $5

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Engineers mount cameras and X-wing on supersonic rocket to test new design.

On California desert, rocket begins flight reaching 3 times the speed of sound.

Desert craters fade away as camera records speed effect on new experimental wing.

Here, another wing design flaps violently from the pressure of the supersonic speed.

Lockheed Scientists Shape the Forms of

Lockheed's Expanding Science Center Improves Today's Planes and Develops New Designs for

FIRST IN THE NATION'S ALL-WEATHER DEFENSE. Lockheed F-94 Starfires are jet interceptors loaded with electronics for almost automatic flight. Starfires protect vital U. S. cities, even in darkness or bad weather. For 8 years, Lockheed has built more jets than any other manufacturer.

Parachuted to earth, rocket camera is recovered with film data vital for the future.

Future Flight

the Era of Automatic Flight

The above film strips take you behind the scenes to show Lockheed scientists testing new wing designs for future aircraft many times faster than today's. This is an example of advanced research at Lockheed's expanding Science Center. Scientist-engineers work with nuclear energy, pilotless aircraft, electronics systems, new metals for the era of automatic flight.

Lockheed discoveries in *pure* science are matched by Lockheed progress in *applied* science. Lockheed's science of design has produced a radar-laden team of protecting military aircraft—flying radar stations, almost automatic interceptors, anti-submarine patrol bombers. Skill in science of production enables Lockheed to produce 12 different models simultaneously—and all models are on schedule!

SCIENCE CENTER—*Future forms of flight are studied here in Lockheed's new Engineering and Science Building.*

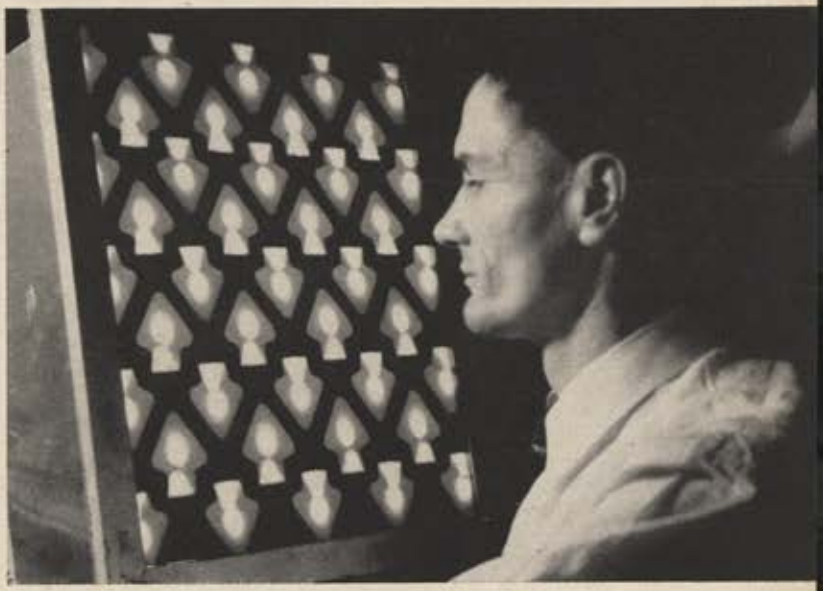
Announcement

Important news in the U.S. aircraft industry this month was establishment by Lockheed of a new Missile Systems Division, a separate organization integrating 10 years of research and development in the field of electronics and pilotless aircraft. Important progress in current top-secret work at Lockheed prompted decision to establish new division in expanding field of automatic flight.

FIRST! FLYING RADAR STATION. Lockheed Super Constellations, with radar humps, provide Navy and U.S.A.F. with new concept of defense—a new method of detecting an enemy hours in advance through applied electronics.

FIRST! ELECTRONIC SUB PATROL—Advanced models of Lockheed P2V Neptune Bombers give U.S. Navy long-range sub patrol with destructive power and advanced sonic devices.

TOMORROW'S METALS. Planes 10 to 25 years from now, currently under study by Lockheed, will require new materials to withstand tri-sonic speeds. Here, Lockheed scientist checks X-ray film of new metal.



COMING SOON—*Look for other dramatic new Lockheed models soon, including XF-104 Day Superiority Fighter.*

Lockheed

Lockheed Aircraft Corporation, Burbank, California, and Marietta, Georgia

LOOK TO LOCKHEED FOR LEADERSHIP

AIRPOWER IN THE NEWS

CEILINGS — Many airmen and officers in Air Police, Food Service, and Motor Vehicle units—about 28,000 of them—will be shifted to more critical career fields. AF says that transfer of men from those support outfits is necessary "to meet reduced manpower ceilings and to increase combat efficiency." The shakeup also includes 1,145 officers and 1,576 airmen currently assigned to Hq., USAF.

AF-ROTC — 125,000 young men enrolled in the AF-ROTC program at 207 colleges and universities across the nation last fall. Enrollment figure shows a decrease of about 15,000 students as compared to last year's 140,000 cadets. AF blames decrease on new requirement for majority of cadets to take flight training following graduation, plus the end of fighting in Korea.

ARMY AVIATION — AF has ordered an additional 100 Cessna L-19 military liaison planes to be delivered to the Army Field Forces. . . . Army's expanding air program now operates 2,500 aircraft, which are assigned to Infantry, Artillery, Armor, Signal Corps, Corps of Engineers, Medical Service Corps, and Transportation Corps units.

MORE RECORDS — An AF Boeing Stratojet flew from Limestone AFB, Me., to Brize Norton, England, in four hours, forty-three minutes, beating the previous best time for the North Atlantic run by several minutes. . . . Test pilot Scott Crossfield flew the Douglas Skyrocket 1,327 miles an hour or 2.01 times the speed of sound.

AIR MUSEUM — AF's first jet bomber, the Douglas XB-43, used at the AF Flight Test Center since 1947 and the converted P-51 Mustang fighter used by Capt. Charles F. Blair on his non-stop polar flight from Norway to Alaska are headed for the National Air Museum. Planes donated to the Museum, a part of the Smithsonian Institution, are currently stored in a hangar at O'Hare International Airport in Chicago until the long-dreamed-of Museum is actually constructed. . . . Library of Congress says that budget cuts were the reason for its recent dropping of the old Aeronautical Division as a specific unit and transferring its books and papers to the Science Division.

AFAS — 33,075 AF members and their families, or both, were helped by Air Force Aid Society during FY '53. There were 1,294 grants (gifts) averaging about $153 each. Loans totaling $2.2 million were shared by 32,000 people. The Aid Society collected more than $3 million during the year, more than two-thirds of which was from loan repayments.

WAF — WAF squadrons, as such, will cease to exist by July 1, 1955. All permanent party WAF will be assigned to their outfit of duty assignment. USAF has given up hope of a large peacetime WAF and has established 6,000 as the maximum authorized strength after mid-1955.

SHORT SNORTS — Number of four-engine planes contributed by civil air carriers to Civil Reserve Air Fleet has been increased from 294 to 308. . . . AF has acquired a host of young friends—some 167,000 youngsters took part this year in on-base activities during National Kids' Day. . . . Air Training Command will play host to the USAF world-wide gunnery meet at Nellis AFB, Nev., next spring. . . . Five advanced multi-engine flying schools will open soon at Harlingen, Mather, Keesler, Connally, and Ellington AFBs.

UNITED STATES AIR FORCE

UNITED STATES MARINE CORPS

UNITED STATES NAVY

BRITISH ROYAL AIR FORCE

ROYAL CANADIAN AIR FORCE

SOUTH AFRICAN AIR FORCE

ITALIAN AIR FORCE

DANISH AIR FORCE

PORTUGUESE AIR FORCE

ROYAL AUSTRALIAN AIR FORCE

BRITISH ROYAL NAVY

ROYAL NETHERLANDS NAVY AIR FORCE

ROYAL NETHERLANDS AIR FORCE

ROYAL NORWEGIAN AIR FORCE

BELGIAN AIR FORCE

24 NATIONS DEPEND ON GILFILLAN GCA RADAR

500 Gilfillan GCA Radars safely land aircraft at air bases and airports throughout the world. The reason for this global acceptance lies in the dependability of this finest of radar landing systems.

IN GCA AND RADAR RESEARCH, DESIGN AND PRODUCTION– THE FIRST NAME IS...

Gilfillan

LOS ANGELES

((RADAR))((RADAR))((RADAR))((RADAR))((RADAR))((RADAR))

GCA

The GUN that salutes the greatest age of progress...

LIKE "the shot heard 'round the world", the firing of the first successful electron gun in the first commercially practical cathode-ray tube, at the Du Mont Laboratories, will echo to the end of time.

For that gun of science, devised by Dr. Allen B. Du Mont, gave *vision* to a new age. Its beam of electrons could portray a *picture* of almost any thing or action, visible or invisible, great or infinitely small. *And the new tube could reproduce that picture at almost any distance!*

Here was a new tool of limitless profit for business, industry, science and national defense. It could be used, as in the Du Mont cathode-ray oscillograph, for instantaneous measurements, *accurate to hundred-millionths of a second*, for precision production or scientific research.

It could also be used for such "impossible" tasks as remote control of the atomic pile... achieved by 3-dimensional television, pioneered by Du Mont in 1950!

And of course modern popular television, accomplished through this Du Mont electron gun, has already changed the habits of millions. It is still a young industry! Du Mont produced the first all-electronic home television in 1938... the first self-focusing tube in 1951! And Du Mont vision is continuously "*first with the finest*" in television advances.

THE ELECTRON GUN, developed by Du Mont, pioneers the telectronic age.

Write for free 48-page booklet, "THE STORY OF TELEVISION". Allen B. Du Mont Laboratories, Inc., Home Office, 750 Bloomfield Ave., Clifton, N. J.

Now what of your future... and of Du Mont's... in this "telectronic age"?

The future of telectronics is opening quickly, with Du Mont developments leading the way.

Imagine completely automatic factories, operated by remote telectronic controls! Picture telectronic operation of complex railway and communications systems! Think of better medical research and diagnosis, through telectronic measurement! *All are made possible by new instruments.*

And in national defense too... from airborne radar, sonar and loran to guided missiles... see the astonishing future of telectronics as the future of our security.

Now Du Mont, the most respected name in television, is winning increasing stature in all fields of telectronics... television receivers and broadcasting equipment, telectronic instruments and tubes, television network, government service. *That is why the Du Mont plant capacity has increased from 299,149 square feet in 1946 to 1,055,456 square feet in 1953!*

VISION IS THE DU MONT® DIMENSION

RESEARCH DIVISION Latest telectronic advances and photomultiplier tubes.

CATHODE-RAY TUBE DIVISION Television and industrial cathode-ray tubes.

NETWORK DIVISION Over 205 stations offering greatest dollar values.

RECEIVER DIVISION Finest quality television receivers.

TRANSMITTER DIVISION Television pickup and transmitting equipment.

INSTRUMENT DIVISION Cathode-ray oscillographs, electronic instruments.

First with the Finest in Telectronics

By Wilfred Owen

And now we have the new convertible plane, by Douglas. You can't drive it with the top down, but it can be converted in a few minutes from a transport carrying seventy-six passengers to an airfreighter that can haul nearly thirteen tons of cargo.

° ° °

Approximately 20,000 women are employed by America's scheduled airlines.

° ° °

A typical major aircraft manufacturer produces enough blueprints every month to paper 2,000 five-room houses.

° ° °

There are 16,000 women in the United States who know how to fly—and seven of them hold licenses to operate helicopters.

° ° °

A game warden in California stocked 2,864,000 fish in

662 lakes by airplane. It took 105 hours compared to all summer by previous methods.

° ° °

When the main runway at Jackson, Michigan, began to settle, engineers began excavating to find the trouble. Fifteen feet below the surface they found an abandoned coal mine with a shaft that went down sixty-five feet.

° ° °

The first transatlantic jet transport crossing took place last spring. A Royal Canadian Air Force Comet jetliner made the hop from London to Ottawa.

° ° °

The French are holding university classes in the air to permit students to learn about atmospheric disturbances and cosmic rays first-hand. Airborne classes are now a per-

manent part of the curriculum at the Sorbonne in Paris.

° ° °

There are 300,000 civil defense plane spotters in the United States. The oldest is eighty-six and the youngest seven.

° ° °

At the new 350-room LaGuardia Hotel, across the parkway from LaGuardia Airport, N. Y., guests will be protected from aircraft noise by soundproofing that will add twenty percent to the cost of the building. According to the designer, an aircraft thirty feet from your bedroom wall will sound like the rustling of leaves.

° ° °

The Flying Tigers once moved the personnel and office equipment of a large oil company from San Francisco to New York in one weekend.

° ° °

America's magic carpets are being used by practically every airline in the world. Special weaves and designs, together with

the use of synthetics, save more than twenty ounces per yard of aircraft carpeting, and American fabrics are also fire-resistant.

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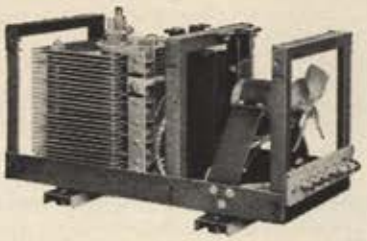

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● **AC Input:** 195-210 volts; 380-420 cycles; 3 phase. ● **DC Output:** 50 amps.; 24-31 volts; resistive-inductive load.
● **Ripple:** 5% maximum ● **Weight:** 19 pounds
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Over 300,000 pounds of precision production...185 feet from wing tip to wing tip... drawing its unique speed and ceiling from eight powerful jet engines! That's the Boeing B-52... built to serve as a deterrent against aggression...as a weapon of offense, if needed by our strategic air arm!

In the "tradition of rugged dependability" established by Boeing's famous Flying Fortresses and Superforts, Boeing has selected Federal's 3146-BS Airborne Power Supply to provide the B-52 with a DC output of 50 amperes, 28 volts.

Federal's 3146-BS is only one of a complete line of rugged, compact and efficient airborne and ground power supplies developed to meet aviation's growing trend from *generated* DC to 400-cycle AC...to furnish *dependable* DC power where required. Federal equipments are designed without expendable parts that require frequent replacement. And all are powered by Federal Selenium Rectifiers...*first* in the field...outstanding for long service life and trouble-free performance!

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PEOPLE IN THE AIR NEWS

Maj. Charles J. Loring, Jr.

Just two days earlier, the major had talked over the transpacific telephone to his wife in Fort Meade, Md. In a few days it would be Thanksgiving, and speaking to his wife made Korea a little closer to home. Besides, he had flown his fiftieth ground-support mission, was now eligible for rotation. Then came the call for a mission: enemy artillery near embattled, bloody Sniper's Ridge was harassing our troops. On Nov. 22, 1952, leading a four-plane element of F-80s, the major took off. In pressing the attack, his plane was hit and crippled. Deliberately he turned left 45 degrees and dived his plane into the gun emplacements, destroying them and killing himself. On May 5, 1953, he was awarded the Congressional Medal of Honor. "His selfless and heroic action completely destroyed the enemy gun emplacements and eliminated a dangerous threat to UN ground forces," the citation read. But, fearful that if the major were a POW the Reds would make reprisals against him, the announcement was withheld. Finally, more than a year later, it was officially announced that President Eisenhower had made the award to **MAJ. CHARLES J. LORING, JR.**, second Air Force man of the Korean war to win the nation's highest award.

Since 1924 **DR. LESLIE A. BRYAN** of Illinois University's Institute of Aviation has conscientiously and unselfishly endeavored to promote aviation through education. Appointed director of the Institute in 1946, he has supervised the training of more than 7,000 students. The University's aircraft fleet now has thirty-seven planes in which faculty and staff members have flown nearly three million air miles. Last month AFA-member Dr. Bryan received from President Eisenhower at the Wright Memorial Day Dinner in Washington, D. C., December 17, the Frank G. Brewer Trophy—America's highest recognition in the field of air youth education and training.

USAF's new Chief Scientist, under Special Assistant to the Chief of Staff Lt. Gen. James H. Doolittle, is **CHALMERS W. SHERWIN.** Educated at Illinois's Wheaton College and the University of Chicago, Sherwin has published several papers on the recoil effects of neutrino emission. Since 1951 he has been closely associated with the University of Illinois's Control Systems Laboratory, directing its research in military electronics. In 1948 he received the AF's Certificate of Merit.

Lockheed Aircraft Corp. has established a guided missile division to deal exclusively with the problems of automatic flight. In announcing the formation of the new division Lockheed said it had "long recognized that electronics some day will be as essential to flying as the pilot, whom, in fact, electronics are beginning to replace." Heading the division "beginning to replace" pilots was veteran pilot **ELWOOD R. "PETE" QUESADA,** retired USAF Lt. Gen. and one of WW II's outstanding aerial experts in tactical warfare.

Sherwin

Quesada

Presiding over **VICE PRESIDENT RICHARD M. NIXON'S** F-86 cockpit procedure recently was **CAPT. RALPH PARR,** one of the

(Continued on following page)

Nixon and Parr

Capt. John Herrick and Germany's Willy Messerschmitt

top jet aces of the Korean war (ten kills). The occasion was Nixon's inspection of AF bases in Korea during his round-the-world trip. Parr is the last of the Korean aces still on duty there.

One of aviation's poineers who recently made the Kitty Hawk pilgrimage was **WILLY MESSERSCHMITT.** The wily German who designed some of WW II's best fighting aircraft met a remote acquaintance—**CAPT. JOHN W. HERRICK,** pilot of the C-47 carrying the pioneers. Herrick, a "jug" (P-47) pilot in WW II, briefly shared the sky with one of Messerschmitt's ME-109s. He was shot down, became a POW. At Kitty Hawk they renewed their tenuous acquaintanceship in the airman's sign language that needs no dictionaries (see cut).

JOHN R. ALISON, AFA-board member, and former Assistant Secretary of Commerce for Air, was recently elected administrative vice president of Northrop Aircraft Co. He will be responsible for administration of industrial relations, public relations, flight operations, quality control, and will head the company's electronics facility.

The last Korean missions were in sight. It was 3:30 p.m., the last day of the Korean war, when **CAPT. JOHN K. RHOADS** nosed his Lockheed RF-80 off the runway. As operations officer of the 67th Tac Recon Wing's Polka Dot squadron, Rhoads headed north to snap aerial pix of three North Korean airfields. At heavily defended Sinuiju, Rhoads got his photos, turned south for Sinanju on the Chongchong river. Suddenly an F-86 pilot of his fighter escort shouted: "You're on fire, better get out of it!"

"Think I'll try to make the water," said Rhoads who had no intention of giving up his valuable film. Seconds later the RF-80 blew, Rhoads didn't get out.

Rhoads

"We'd better head for home," said the '86 pilot. Five hours later quiet descended over Korea. Capt. Jack Rhoads had seen his last mission; had become the last AF-man killed in the Korean war.—END

Salute to the

STRATEGIC AIR COMMAND

New official insignia of the Strategic Air Command . . . the long-range air arm of our nation. The shield depicts through the mailed fist a powerful potential for defense, at the same time stressing the olive branch of peace. The clouds and field of blue sky symbolize the global capabilities of this mighty striking force.

The insignia which identifies the Strategic Air Command's F-84 Thunderjet fighters serves as a definite symbol of U. S. Air Force might, for aircraft such as the Thunderjets have established their role as an integral and versatile part of strategic air power. Group flights on the same day, such as from the U.S.-to-England and from U.S.-to-Africa, both non-stop . . . using in-flight refueling, emphasize the valuable role the F-84 is playing in SAC as a strategic jet fighter airplane with amazing mobility. ➢ ➢ For these accomplishments and other assuring demonstrations of our air power, credit must fall to the laudable teamwork of each individual in the Strategic Air Command, and to their Commander, General Curtis E. LeMay.*

★AUGUST 20, 1953.
TURNER A.F.B., GEORGIA TO NOUASSEUR, AFRICA, (31ST STRATEGIC FIGHTER WING)
TURNER A.F.B., GEORGIA TO LAKENHEATH, ENGLAND, (508TH STRATEGIC FIGHTER WING)

REPUBLIC AVIATION

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Makers of the Mighty Thunderbolt · Thunderjet · Thunderstreak

World record para-drop—more men,
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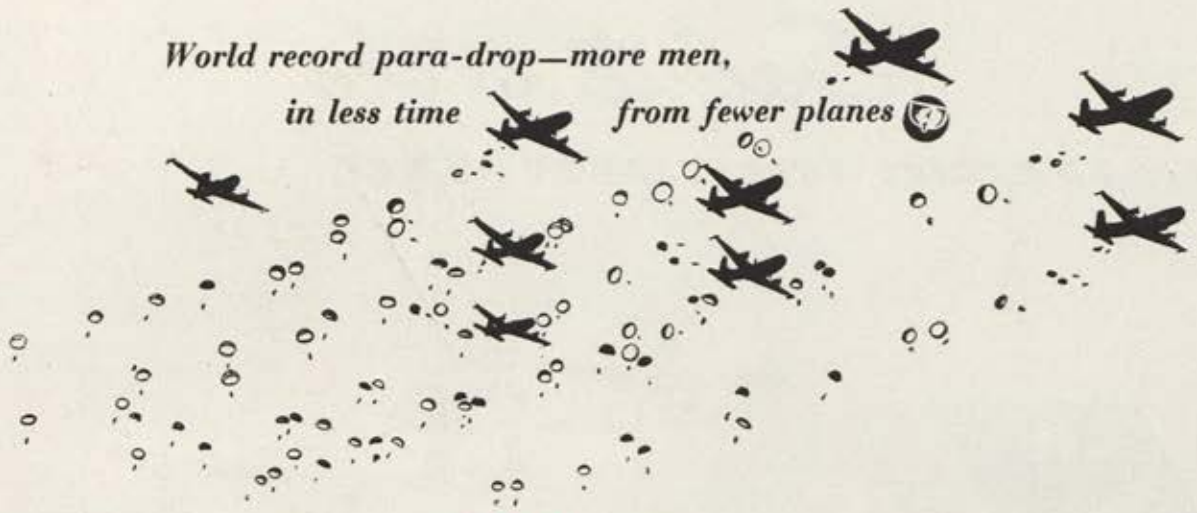

with the—Douglas C-124 Globemaster

Nine Douglas C-124 Globemasters of the 18th Air Force, 62nd Group, 7th Squadron, cruised above Fort Bragg. Seconds later, more than a thousand paratroopers had hit the silk . . . were floating down on the drop zone.

For this record-breaking drop, Globemaster—the Air Force's largest operational transport plane—was a logical choice. Clamshell doors, located in the nose, make loading of troops or matériel fast and easy. Load space is two stories high . . . gross weight at take-off, 87½ tons. A single Globemaster can transport 200 armed troops across the Atlantic—deliver 25-ton loads of tanks, cranes, loaded trucks to fill immediate needs at bases anywhere in the world.

Performance of the C-124 Globemaster is another example of Douglas leadership in aviation. Planes that can be produced in quantity to fly *faster and farther with a bigger payload* are a basic rule of Douglas design.

Enlist to fly in the U. S. Air Force

Depend on DOUGLAS **First in Aviation**

Good Neighbors—Made, Not Born

Scott AFB and Belleville, Ill., show how the military 'town and gown' problem can be solved

Civic leader Hill gives Gen. Harper plaque for ATRC.

THE AIRMAN was married and his one-stripe pay didn't go very far. One day he took his car into town for minor repairs. Mechanics were scarce so he pitched in to fix it himself with the garage's equipment. The owner saw his work and offered him a part-time job. The airman, going to tech school on a six-hour shift, had some spare time so he jumped at the chance to earn extra money.

A couple of days later, though, a stranger came in looking for him. "You'll have to join the union to work here," the stranger said.

The airman didn't see how he could join the union when he was in the Air Force. He quit, with bitter comments on the town's attitude toward servicemen.

This incident occurred in Belleville, Ill., a community of 30,000 people just a few miles from Scott AFB, where some 20,000 Air Force personnel are stationed. Similar problems come up all the time in any civilian community near an air base. Differences arise over housing, or recreation, or traffic violations, or any of a hundred other things. Without a planned effort to solve them, these problems can multiply to do the Air Force and the community great harm.

"Stationing large numbers of young men on military bases near communities of moderate size creates many problems, not only for the young men but also for the communities," says Gen. Nathan F. Twining, USAF Chief of Staff. "The normal pattern of existence for both the men in uniform and the nearby community is disturbed."

Four years ago an article in a Sunday magazine labeled Belleville one of the worst serviceman's towns in the country. "We weren't really that bad," reports Walt Wagner, executive vice president of the Belleville Chamber of Commerce, "but we realized we weren't doing everything we could. We set out to straighten things out."

Together with base officials, the city set up what is now known as the "Belle-Scott" plan. Each month responsible leaders of the two communities—military and civilian—get together and go over the problems.

When the base commander reported on the airman who wanted to work in the garage during his spare time, Mayor Harold V. Calhoun looked around the table. "That's one for you, Jack, as our union representative," he said. "What's the gripe on this airman working in town? We know you don't have enough mechanics to go around."

"We don't actually object to his working," the union man explained. "But we don't want any airman undercutting our members. We have to be sure they're getting the proper wages and working conditions."

Once both sides understand each other, it's easier to settle problems. In this case the union member and the base commander agreed that an airman who receives permission to work on off-duty time will clear with the union before going to work.

Last month, in a day-long celebration with General Twining as a guest, the people of Belleville expressed appreciation to the Air Force and especially to Lt. Gen. Robert W. Harper, Commander of the Air Training Command, whose headquarters are at Scott, for the success of the "Belle-Scott" program.

General Twining sounded the keynote. "Much is being said these days about the price, in money, that must be paid for continued military strength," he commented. "There is a tendency to overlook the disturbed human relationships and the personal sacrifices that result from keeping more than three million men in uniform.

"The people of Belleville have discovered how many things need to be done, and how many things *can* be done, to eliminate friction and misunderstanding between a military base and a community . . . to enrich the lives of both the men in uniform and their neighbors."—END

By Allan R. Scholin

Belleville's various groups salute ATRC and its 43 bases. At right, Women's Club honors Parks AFB.

BEST BULK CARGO CARRIER IN BUSINESS TODAY!

Flying bulk cargo from rear bases to the front lines is more than just a *flight* in itself. For other aircraft there must be other added equipment: Loading with special cargo handling equipment at point of departure — plus the often prohibitive cost of dismantling pieces too big to get into the plane — plus the danger and costly delay of unloading and re-assembling at destination. The combat proven Fairchild C-119 is built to avoid these "extras." Designed specifically as a bulk cargo carrier, the "Flying Boxcar" hauls every conceivable kind of military cargo *without* dismantling and *without* special loading equipment — resulting in it being the best general cargo carrier in military use today.

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CAN'T WE GET
More Defense for Less Money?

FOUR MAJOR POLICY OBJECTIVES FOR THE IMMEDIATE FUTURE

1.
To deter an aggressive nation from resorting to war, and thereby preserve the peace.

2.
To provide us with an effective military force, armed with the most powerful weapons, that will enable us to win a war if war cannot be prevented.

3.
To preserve the friendship and the confidence of our allies, by developing the right kind of forces and by convincing them that these forces will assure them greater protection.

4.
To preserve a sound national economy.

THIS issue of AIR FORCE Magazine marks the beginning of a new and, very likely, a fateful year for our national security and the world peace to which each of us is pledged. This year, 1954, has been catalogued by many as the year of decision as regards our position and that of the Soviet Union in an uneasy world. Of all the perplexing problems which confront us in this year of decision, none is more puzzling or more vital than the kind of military establishment we need to obtain and to preserve a lasting peace. The unleashing of the awesome forces in the nucleus of the hydrogen atom has made the problem an extremely personal one. We can no longer delegate the question of survival to others—not even to our elected or appointed representatives, civil or military. Hence, it is refreshing and encouraging when one finds a private citizen who is willing to grasp this nettle and to attempt to resolve the fearsome dilemma which has become as much of a problem to each of us as how the rent is to be paid this month. On the following pages, C. R. Smith, president of American Airlines and a USAAF officer in World War II, examines our national security from the citizen's point of view. In his own words, his purpose "is a simple one." He raises, "in layman's language, the questions which trouble all of us." Although a director of AFA, Mr. Smith is the first to point out that his views are his own and are not to be construed as those of AFA or of AIR FORCE Magazine. We do, however, feel that they are well worth discussion.—The Editors.

Can't We Get

More Defense for Less Money?

National security and world peace depend on the answer. Here a private citizen speaks out on the most vexing problem we face today

By C. R. Smith

ALTHOUGH the national defense program involves many debatable issues, they are not divisive issues, so far as most of us are concerned. Practically everybody is for an adequate defense. The trouble begins over questions of definition.

When is a defense system ever adequate? Are the military forces now in place or being built the right kind of forces? Is there another and better way to construct forces which will guard our welfare and survival and still be within the national capacity to foot the bill, without ruinous damage to the American way of life?

These questions, you will agree, are among the most serious facing the American people. Any one who follows the day-to-day news from Washington must by now realize that no easy answers will be forthcoming. The experts, both professional and lay, are plainly divided among themselves. A controversy is making up over the nature of American strategy itself. An increasing number of thoughtful men are swinging to the belief that there is something wrong with the prevailing approach to strategy, dominated, as they believe it to be, by the traditional surface approach. They argue, and convincingly, that it fails to reflect the enormous advances stemming from the revolution in weapons, particularly atomic weapons, and the coincidental development of long-range aircraft.

We are dealing here with professional considerations of an intricate nature, and I approach them with hesistancy. I am, like most of you, a business man. To the extent that I have had any military experience it has been in the field of logistics. But at the same time, as a citizen, I have given a good deal of thought to these matters. About half of my time is spent in travel over this country. Travel brings me into touch with well-informed people, many better informed than I in military natters, who share the same concern over the state of the national security.

They are concerned, first of all, for patriotic reasons. They are also concerned for economic reasons. The annual bill for national defense has become the most important single factor regulating the national economy. Everybody wants adequate defense—whatever that may be. But, in addition, all thoughtful citizens want a sound economy preserved.

What I have to say will not be taken, I trust, as one man's view of how this strategic and/or economic dilemma can be resolved. Rather it is a composite of ideas gradually formed in my own mind in the course of talks with numerous responsible individuals with whom I have discussed the problem. These ideas are not advanced as the solution. My purpose is a simple one: to raise, in layman's language, the questions which trouble all of us, and to move out into public view those weighty issues which are apparently deadlocked and immobilized by the opposing views of the different military services.

It seems to me to be fairly self-evident that so long as American strategy, and the military forces arrayed in support of that strategy, continue to rest upon existing assumptions, this nation cannot afford to meet the annual defense bills without something important giving way in the American scheme of things.

I say it is self-evident for two reasons: First, the United States, in the nature of things, must continue to bear, among free nations, the heaviest share of the economic responsibility for world defense. Its proportion of the total cost is certain to remain very high.

Secondly, it is impossible for the nation to meet the separate demands and expectations of the Army, Navy, and Air Force, let alone those of our allies, and still stay within a reasonable budget.

The costs are spread out for all of us to see—a total of about one hundred ninety billions appropriated, and about one hundred eighteen billions spent, since the beginning of the post-Korean buildup in the summer of 1950. However, these are only the costs of the military services. The national defense budget includes a lot of other things as well; for example, foreign aid of some thirty billions appropriated since the end of the last war, and a current annual expenditure mostly for military aid, of around six billion.

Then there is the atomic energy program. This, in itself, has represented some thirteen billion in appropriations to date and may total eighteen billion by the end of 1957. New policies will no doubt promote in years to come a widening industrial diversion of the energy thereby being created. But in the immediate future, as in the past, this vast investment will be for weapons. It is difficult to imagine any substantial change in this policy until the national stockpile is adequate for all contingencies, or unless an acceptable agreement is meanwhile reached with Soviet Russia—a hope all reasonable men will entertain, but not at the expense of their vigilance and common sense.

These various outlays—for United States military forces, for foreign military aid, and for atomic energy—should properly be budgeted in one piece as the going cost of national security. They add up to quite a sum—about fifty billions a year in the current or fiscal year 1954 budget—and perhaps something less in the fiscal 1955 budget now in preparation.

These sums take about two-thirds of the total Federal budget. They represent about one-eighth of the gross national product—the aggregate value of all goods and services produced by the work of our one hundred sixty million citizens.

These costs, I concede, are not yet crisis costs. If an acute emergency were upon us, the nation could, of course, divert a much higher proportion of the national product to defense, as indeed was the case in World War II. Nevertheless, the figures are sobering. In the four years of all-out war, 1941 to 1945, the United States spent about three

hundred thirty billion dollars. At the rate of fifty billion dollars a year for national defense, we will equal the cost of World War II in something less than seven years.

The sinister circumstance attaching to these figures is the baffling nature of the present emergency. Events do not seem to be rushing, as was the case before World War II, to an inexorable climax. This time of danger, although global, is insidious and persistent—with alternating lulls and tensions—something hitherto unknown to American experience.

When the present military build-up was begun, after the outbreak of the Korean war in 1950, the strategic assumption in this country, as well as by our principal European allies, was that Soviet action on a world scale was imminent. In September 1949, Soviet scientists had successfully tested an atomic device, thereby breaking the American monopoly in this previously decisive form of national power.

In the face of this and other developments American military planners marked the year 1954 as a date of acute danger, a date when the Soviet stockpile of atomic weapons, and the growth of the Soviet long-range air forces designed to carry these weapons, in combination with the Red Army's vast preponderance on the ground, would, in the absence of rapid rearming of the West, conceivably tip the world military balance of power in the Soviet Union's favor.

For all most of us know, that assumption may still be valid. Nevertheless, the present Administration seems to be proceeding on a somewhat different line. It has evidently discarded the view that Soviet world action is imminent. The new strategic assumption seems to be that we are in for a world struggle of indefinite duration and of uncertain pattern—a test which may go on for years without a major collision between nations.

The difficulty is that the military forces now in being were brought into place under the earlier and evidently now discarded assumption. This country has today some three and a half million men and women in the three military services. Secretary of Defense Wilson and his civilian aides have promised to bring these figures down, but the whittling process is obviously proceeding slowly. To maintain the forces at the level which the military still deems essential will require over the next year, by enlistment and draft, an intake of about a million young men and women.

There is already a heavy drain on American youth. Extended indefinitely, it could be a strangling weight on American society, removing the young and virile from the scientific and productive processes which are our principal sources of material strength.

Here is a really serious cost of our present strategy—its incessant demands on the nation's youth and manpower. Is it not sensible to question whether adequate security can best be provided merely by numbers of men? Has the time not come to re-examine the old criterion—divisions, divisions, divisions—in light of the effectiveness of new weapons?

There is another point that to me is significant about the forces now in being. It applies particularly to the Army and Navy and, in lesser degree, to the Air Force. These forces were assembled, trained, and armed at a time when the American stockpile of atomic weapons was measured in limited numbers, when the value of such weapons was imperfectly understood and when American military planning was still under the influence of doctrines developed during the last great war. Of the three and one-half million men under arms, almost two-thirds are in the Army and Navy, the traditional agencies of surface strategy.

Yet at the same time these forces were being rushed into being, the government also set in motion an enormous expansion in the production of atomic weapons. The firepower which that outlay is beginning to make available, chiefly for delivery by air, is in itself so revolutionary in its implications as to compel all thoughtful men to question the judgment of tremendous appropriations for the simultaneous creation of two types of military forces—one consisting chiefly of surface forces armed, for the most part, with gunpowder and TNT; the other, primarily air, armed with atomic weapons.

Like most of you, I imagine, I have no access to atomic secrets. In my brief service in the Army nobody ever saw fit to give me a "Q" clearance, for I had no need to know about our atomic developments. However, I do read the newspapers, and from these and other public sources it is possible for a reasonably observant reader to discern that something tremendous is going on.

From the atomic or fission-type weapons first used in war at Hiroshima and Nagasaki have come an ever-widening family of weapons, of different sizes and energy yield.

To the list is now being added the so-called thermonuclear or fusion-type weapons, popularly known as the hydrogen bomb. The atomic weapon was so powerful, in terms of energy released, that a new word was invented to measure it—the kiloton, corresponding to 1,000 tons of TNT. Similarly, the thermonuclear weapon is itself so powerful compared to its fission predecessor that it, too, has given rise to a new order of measurement—the megaton, meaning the energy equivalent to one million tons of TNT. The average explosive power of the Nagasaki and Hiroshima weapons was about twenty kilotons, equal to 20,000 tons of TNT. The energy release from the device used at the 1952 thermonuclear test at Eniwetok has been estimated as four megatons—equal to four million tons of high explosive.

It is difficult for the human mind to grasp these orders of magnitude. But an imaginative friend of mine, a retired military officer, has devised a startling illustration:

He asks us to imagine a cube, one inch square and one inch through, as representing the equivalent of a ton of old-fashioned TNT. The average bomb load carried by a single B-17 or B-24 bomber in the famous

(Continued on following page)

The Author

C. R. Smith, president of American Airlines, Inc. since 1934, is a 54-year-old Texan. During World War II he was Chief of Staff to Lt. Gen. Harold L. George of the Air Transport Service. He entered service a colonel, came out a major general. In 1948-49 he was president of AFA. This article was originally a speech given at the annual meeting of the Tulsa Chamber of Commerce, December 1, 1953.

bomber offensive against Germany was four tons. Thus the weight of the potential destruction carried by a single airplane ten years ago could be represented by a column four inches high.

Hiroshima and Nagasaki introduced a tremendous leap—what the physicists call a "quantum" jump. Eight years ago the weight of the explosive force transportable by a single bomber, expressed in the same terms, became a column sixteen hundred and sixty-six feet high, three times the height of the Washington Monument, plus one foot.

In military circles the bombs of the Hiroshima-Nagasaki era are now known as the "model T" bombs. The "conventional" model of the atomic bomb has now three times the capability of the earlier model, represented by a column nine times as high as the Washington Monument, plus three feet.

[In his speech to the UN in December President Eisenhower revealed that "atomic bombs" today are more than twenty-five times as powerful as the weapons with which the atomic age dawned."—The Editors.]

What happens when the four-megaton power of the thermonuclear weapon is similarly expressed? Our column literally vanishes out of sight. It soars a full sixty-three miles into the upper atmosphere—plus, my always precise friend assures me, sixty-nine feet.

That much has the potential power of destruction transportable in a single bomber increased in the span of one decade. The four-inch column, standing for the destructive power of a World War II bomber, would be lost in the grass at the base of the sixty-mile-high column representing the relative destructive power of its imminent counterpart.

These columns are symbols of the new facts of military power with which we Americans must live from this point on.

To me they mean that if another war should ever be fought it will have little relationhsip, in its decisive actions, to wars of the recent past.

The revolution in atomic weapons has conferred upon the bomber a potential destructiveness so vast as to make the effective power of traditional weapons—the infantryman with the rifle, the battleship, all the surface array of weapons—seem almost insignificant by comparison.

With such weapons available, not only to this country but also to our principal adversary, it follows logically that the decisive actions in another major conflict would almost certainly come at once. The outcome may be settled, one way or the other, in the span of a few months, possibly weeks.

The fact that the United States for the first time in its history has become vulnerable to serious military action over its own soil clearly foreshadows the end of the traditional mobilization philosophy upon which our strategy has heretofore rested. Another war could no longer be won, as was the case in the two great wars of the Twentieth Century, by the intervention of forces mobilized, armed, and deployed months after the outbreak of war. Our power to deter an enemy, or to win a war against an enemy that in his recklessness refused to be deterred, must henceforth rest upon ready forces, so placed and deployed that no sudden onrush could hope to overcome their capacity for instantaneous and crushing retaliation.

This telescoping of the time element, deriving from the tremendous power of new weapons, seems to me to teach yet another lesson: it is that the decisive air battle would be fought to conclusion long before the traditional surface forces, except those already in position near the enemy's frontier, could be brought into action on a scale that could affect the outcome.

Hence the idea of maintaining a huge land army, to be deployed across the seas in the event of war, seems to have less and less relevance to the new facts of military power as we are coming to understand them.

It has been argued that an international agreement prohibiting the use of atomic weapons may yet be reached, and it would therefore be folly for this nation to do away with so-called "conventional" forces in favor of new kinds of forces shaped around atomic weapons.

Desirable as such an arrangement would be, the hope scarcely accords with the realities. The Soviet Union has shown no disposition whatever to join in such an accommodation concerning atomic or any other weapons. Nor, in the absence of a true international disarmament in which we could faithfully repose our trust, can I see how we could possibly hope to gain from a foreswearing of our right to use, in self-defense, our primary element of technological advantage.

It is time that we ceased to regard our mastery of the atom as a windfall. It is time that we began energetically and imaginatively to bend this resource to our needs and purposes.

Believing this, I am troubled, as are others of like mind, when I examine the composition of the American military forces. My perhaps untutored impression is that our military establishment is trying to pursue three strategies simultaneously:

A COMPREHENSIVE LAND STRATEGY *patterned upon the great campaigns in Western Europe, which are unlikely ever to be repeated;*

A SEA STRATEGY *modeled on the great oceanic campaigns of the Pacific war, when, in fact, no important surface naval force is arrayed against us; and*

AN AIR STRATEGY, *which while shaped around atomic weapons in the strategic sense, is nevertheless heavily grouped in support of ground forces.*

I am reminded of the statement by Lord Tedder, Marshal of the Royal Air Force, before the House of Lords, London, April 15, 1953, in connection with his discussion of "that vigorous difficult but healthy process of selection which alone ensures real economy, economy of force" when he said:

"My Lords, one is concerned about this because one remembers what happened before September 1939. No effective selection was made, we tried to be strong everywhere, and only succeeded in being weak everywhere, at sea, on land, and in the air, with the result that we spent the first three years of the war fighting in the last ditch, fighting not to win the war, that came later, but to avoid losing it."

I do not intend my statements to suggest that the Army should be disbanded, the Navy scrapped, and everything put into airpower plus atomic weapons.

In the situation now developing, surface forces are bound to have new and important roles and missions. But what has never been satisfactorily defined, what has not been convincingly explained, is how the surface forces, as presently constituted, would fit into a rational strategy as determined by the technical and geographical circumstances that now confront us.

The Army today numbers about 1,500,000 men. The obvious reason for so large a force is the Army's traditional responsibility for fighting land battles.

But where, in the future now rushing upon us, is the United States Army ever likely to fight decisive battles that would justify so prepon-

derant a measure of our armed manpower? Where, in the kind of tests likely to be forced upon us, can so large a force be effectively and economically employed in land engagements?

Certainly not overseas. The enemy's known accumulation of mass-destruction weapons, his rising air capability to deliver them, clearly spell the end of mass invasions on the model of the North African, Normandy, and famous Pacific assaults.

If a large city could be levelled by one or several atomic or thermonuclear weapons, how much more vulnerable would be the vast grouping of ships required to land an army on a distant shore?

No sensible man can imagine this nation ever risking again such an expedition so long as the enemy retained an air force and a supply of atomic weapons. Nor is it possible to conceive of the Soviet Army being able to land, supply, and fight a large action on the American continent.

The first requirement is rapidly receding, the second is altogether improbable. It is therefore difficult to accept the current justification for so large a standing army. If its mission is neither to invade a hostile shore in force, nor to defend American shores from a full-scale invasion, nor—let it be hoped—to be committed piecemeal from one end of the earth to the other, then the Army's size and composition should be re-examined in light of the mission that it could be reasonably expected to carry out.

Such a re-examination would, I am sure, produce a considerable saving in manpower and material.

It seems sensible to conclude that comparable savings can be made in the Navy. One of the principal stated missions of the Navy is to safeguard the sea lanes for the movement of the Army overseas. A substantial part of the Navy's resources are earmarked for that purpose and the Navy's claim upon national resources, both men and material, is justified largely on the basis of that mission.

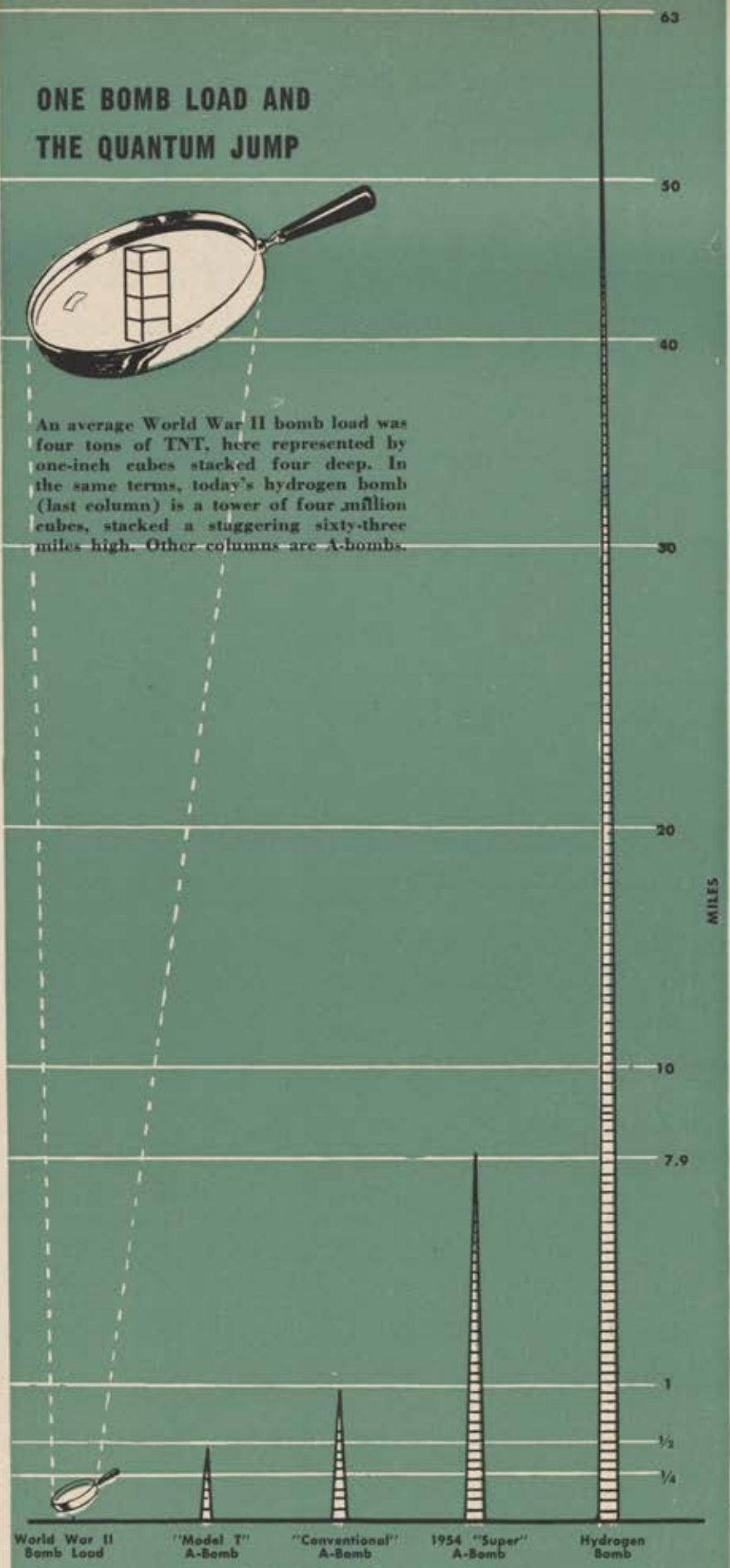
But if it is demonstrated that the Army can no longer undertake large-scale invasions, then this particular mission of the Navy will be correspondingly reduced in importance. If that judgment is accepted there should follow a proportionate reduction in the Navy's demands upon the economy.

What about the Air Force? A principal mission of the Air Force is to support with adequate tactical

(Continued on page 33)

ONE BOMB LOAD AND THE QUANTUM JUMP

An average World War II bomb load was four tons of TNT, here represented by one-inch cubes stacked four deep. In the same terms, today's hydrogen bomb (last column) is a tower of four million cubes, stacked a staggering sixty-three miles high. Other columns are A-bombs.



In ten years, the bomb load a single aircraft can theoretically deliver on target has increased from four tons of TNT to the equivalent of four million tons of TNT, in the H-bomb. Above, each column consists of one-inch cubes. Each cube represents one ton of TNT. The height of each column shows the relative destructive power of the various weapons. The original A-bomb ("Model T"), 1,666 feet of one-inch cubes, dwarfs the World War II bomb load but is dwarfed in turn by the H-bomb's power.

THE NEW LOOK—HOW NEW?

WE MUST be realistic and objective in our approach to national security. There is no place for emotion, promotion, or indifference. . . . In order to do objective planning for the future, we must start with an objective evaluation of our present forces and the concepts for their future use. We must be certain to squeeze out of our system anything which is wasteful in the present, or which will be useless in the future."

Everyone can strongly agree with these words of Deputy Secretary of Defense Roger M. Kyes, spoken during the Second Airpower Symposium of last August. But Mr. Kyes went on to say: "Such a review is being undertaken by the new Joint Chiefs of Staff. . . . I have a strong conviction that these competent men who are our Joint Chiefs have the courage of decision, the spiritual strength to rise above usual limits of mental and emotional capabilities, and the wisdom to emerge from their studies with sound national war plans which will be a credit to themselves, and to our nation."

Had Mr. Kyes expressed a fervent hope—or prayer—on this last point, all could have joined in a loud AMEN!! However strongly one might hope that Mr. Kyes' conviction is proven justified by the course of future events, certain basic facts compel the realist to decline joining Mr. Kyes for the present.

To do so is not to doubt either the courage, or the spiritual strength, or the wisdom of the Joint Chiefs. Rather, we should strongly reaffirm our constant faith in the competence, high integrity, and sincerity of purpose of the Joint Chiefs—*past*, present, and future. However, our responsibilities to the nation, and past experience in these matters, should force upon us a greater realism about the incredible complexity of the issues which the Joint Chiefs must resolve, and the conflicts inherent in the organizational framework in which the Joint Chiefs work.

Let us look briefly at the military picture facing the United States. It is compounded to a complexity greater than ever before in history by the following major factors:

- Great deficiencies in Intelligence with regard to Soviet *intentions*, which will introduce great uncertainties into all military planning—until such time as a member of the Politburo succeeds in defecting to the side of the Free World.
- The long-term nature of the Soviet threat, forcing us to maintain *modern* forces-in-being of greater magnitude and cost than ever before in "peacetime," for an indefinite time to come.
- Sweeping technological revolutions in the destructiveness of weapons and the nature of weapon delivery systems.
- The absence of realistic and coherent national policies governing conditions under which we will use nuclear weapons in the event of further Soviet-inspired aggression against the Free World.
- Large uncertainties in realistic knowledge of the operational effectiveness of nuclear weapons when used on a large scale in actual combat.

These factors are basically responsible for the enormous difficulty of the Joint Chiefs' tasks. They require continual study and analysis in a calm, objective atmosphere. However, no such study or analysis is possible today, either by the Joint Chiefs or by their staffs.

- The Defense Department organization imposes on each of the Joint Chiefs (except the Chairman) conflicting responsibilities. As a member of the JCS, each must take a broad national view of the problems considered. On the other hand, as chief of one of the services, each Joint Chief has a responsibility for that service's effectiveness. As service chief, each has focused upon him enormous "pressure from below," to fight for a maximum share of Defense responsibilities and resources. Since Defense resources are limited, the Joint Chiefs are always faced with conflicts between their national and service responsibilities, as they "distribute shortages" of men, materiel, and and dollars.
- Each Joint Chief and their staffs are only superficially informed about the capabilities and limitations of the other two services. The knowledge required to make responsible decisions about the size and nature of the Army, for example, is not possessed by Navy or Air Force officers who have had no *working experience* in the Army. Since the National Security Act of 1947 prohibits transfers of officers between the three military services, this situation holds true all the way down the line and it is not improving.

All of these factors then—in spite of the Joint Chiefs' competence and determination—produce a situation in which compromises and half-measures characterize many basic decisions affecting national security. This situation deeply troubles the ablest men in the services, including the Joint Chiefs—past and present. For today, built into our military system, we have *uncontrolled* rivalry between the three services, which leads directly to *uncontrolled* competition for Defense manpower and resources. As a result, we have a hodge-podge military force structure, built around at least three strategies and consisting of insufficient forces to fight and win just one of the three different kinds of wars for which we appear to be preparing. We have *politically* balanced forces, instead of *tactically* balanced forces, which are shaped to fight in the framework of a *flexible* but unified national

We need a permanent civilian group, financially and politically independent, to evaluate military effectiveness vs. the cost of proposed forces and weapons

By T. F. Walkowicz

strategy. This is the background which has led many responsible men to seek changes in the organization of the JCS and in the Defense structure. Many responsible men in all three services are now ready for these changes—but *many* of their civilian protagonists are not. The unprecedented military experience of our present Commander-in-Chief, the forceful civilian leadership in the Pentagon and the Security Council, and the awful economics of survival in the air-atomic age may yet combine to lead the nation to some basic reforms. For this, let us all pray.

In the meantime, let us examine one important aspect of our national military planning picture—*the objective evaluation of relative military effectiveness vs. cost of various weapons systems.*

About the time of the B-36 controversy, Dr. Vannevar Bush and others proposed the establishment of the Weapons Systems Evaluation Group, under the JCS, to do this job. Much the same general assessment of the Joint Chiefs' basic difficulties as that outlined above, led Dr. Bush to propose an organization which might at least furnish the JCS with objective analyses of weapons effectiveness vs. cost.

The basic concept of WSEG was eminently sound, and Dr. Bush deserves great credit for skillfully inducing the Joint Chiefs that the concept ought to be tried. Here, at least, was the basis for some hope that the impact of impartial assessment of competing weapons systems would hasten the reorientation of our military force structure on a "maximum military effectiveness for minimum cost" basis.

WSEG's great promise was initially justified. Under the capable leadership of Dr. Philip M. Morse, wartime head of the Navy's Operational Evaluation Group, WSEG undertook an evaluation of the Strategic Air Command, during the heat of the B-36 controversy.

The SAC study was an impressive achievement. A mixed team of officers and civilian scientists *of the three services* completed the study in record time. The study considered realistic estimates of Soviet air defense strength, both actual and projected; it used typical operational missions taken from SAC's top-secret war plan; it used weapons effectiveness data from AEC tests and bombing accuracies obtained on SAC's simulated-combat missions. Its conclusions did not agree entirely with those of the Air Force. However, those conclusions were accepted by the Air Force and they were of appreciable assistance in the elimination of some gaps in SAC's logistical planning and overseas base structure.

With the exception of an air defense study, little or nothing of equal competence and objectivity has been done by the WSEG since then. For example, a Logistics Study was initiated several years ago. By now, the study should have produced much useful data on the relative costs of various types of military forces. However, this particular study has not progressed very far.

Some military men argue that WSEG's ineffectualness is unimportant, because each individual service has its own weapons evaluation group. True, the Navy has a very effective Operational Evaluation Group—but its work is largely devoted to improving the effectiveness with which existing weapons are used in service. The Army has its Operational Research Office, under the capable leadership of Dr. Ellis Johnson; but the organization is new and, at least once, was forced to modify a report which reflected favorably on the weapon of another service. The Air Force relies on RAND, an independent organization which is by far the most effective of all weapons analysis groups; but altogether too often RAND's objective studies are pushed aside to make way for the intuitive judgment of strong operational commanders.

Here is what AFA has to say about this entire problem in its statement of policy: "The establishment of national strategy is a job of incredible complexity, *involving particularly questions of the relative effectiveness of various weapon systems. The Joint Chiefs of Staff need professional help with this part of the job*—help which ordinarily should come from the Weapons Systems Evaluation Group. Unfortunately, this segment of the Department of Defense has not been uniformly objective or effective in all of its studies; further, all of the military services have either prevented objective evaluation of their weapons or have failed to implement the results of sound evaluations. The Air Force Association believes that this situation is likely to continue so long as the Weapons Systems Evaluation Group . . . is dominated by military men."

The military services should be more anxious than all others to seek objective, sound answers to questions concerning the future development and present composition of our military force structure. After all, there is general agreement that the nation needs adequate offensive and defensive power on the land, on the sea, and in the air. Furthermore, no sound military man advocates the one-weapon philosophy of defense; rather, there is general agreement that our military forces must have great flexibility, that they should be designed primarily to deter the outbreak of both general and peripheral wars, that they should be adaptable to cold war needs, and that they should be capable of fighting peripheral or general wars with maximum military effectiveness at minimum loss of

(Continued on page 49)

CAUSE OF THE PAUSE

Too many AF non-coms are singing the reenlistment blues. Here's what the Air Force can do to change the words and music

By M/Sgt. Norman Winfield

THIS article is not based on figures or statistics—but it is based on facts. Gallup pollsters and graph architects might disagree since I have no percentages to quote or multicolored graphs with fall-away pages and ambulatory "peaks" and "valleys" to exhibit. Let 'em—I may be as welcome as a bastard at a family reunion but I think I have some facts in my satchel.

Let's try to find out why they don't reenlist. This article, then, will be an attempt to discover the cause of the pause—*why* the troops are not stepping up to "take on another stack" when their current enlistments expire. I use the term "current enlistment" with malice aforethought since the men of whom I'm speaking are not the "force-ins" who picked the Air Force to avoid service in a less desirable branch, nor those who picked the AF as the lesser of a lot of evils.

No, I'm talking about the men with ten, twelve, fifteen years of service; the men with four or more stripes; the guys who have been around; the men on the top of the enlisted pile.

Why aren't the first Three Graders reenlisting?

Don't reach for the charts, boys. The answer is simple to discover and recourse to statistics is unnecessary, unless one has a morbid fascination for depressing figures. Men are not reenlisting in the Air Force simply because they have been convinced that the AF "deal" is not so hot. In fact, too many regard the whole thing as a losing proposition from start to finish, and they back up their feelings by refusing to re-up.

To better understand the nature of the beast, let's start at the beginning, do some adding and subtracting, and try to come up with something like a balanced account of what goes on in the land of the naked and unvarnished fact.

Our first Three Graders, in common with the greatest (repeat—greatest) part of the Air Force are, by and large, high school graduates. Moreover, they had to pass a physical examination of certain standards in order to qualify for enlistment. These two qualifications make them not only unique in the history of military organizations, but also insofar as the population of the US as a whole is concerned.

Figures extracted from US Census Population—US Summary year of 1952, reveal that only 20.2 percent of American people age twenty-five or over, are high school graduates! Compare this with an Air Force average of almost one hundred percent. The story is much the same with respect to physical qualifications.

Take a batch of civilians at random—pluck a parcel of 100 or so from the group and run them through a routine physical. You won't need a supercharged imagination to see that today's airman is, in fact, a man far above the common, run-of-the-mill citizen.

This is the raw material with which the recruiter, and through him the Air Force, must contend. Like it or not, these are the men the Air Force needs, whom the Air Force cannot continue to educate and train and then lose through mismanagement. Let me repeat, these are unique men and the standards used to evaluate soldiers of the '20s no longer are valid. The Air Force cannot afford to shrug its shoulders and let them go, by default, taking their technical training with them. For they are valuable and, like anything of value, they are not found under every bush.

Why don't they reenlist? The answer, I maintain, is, "Why should they?"

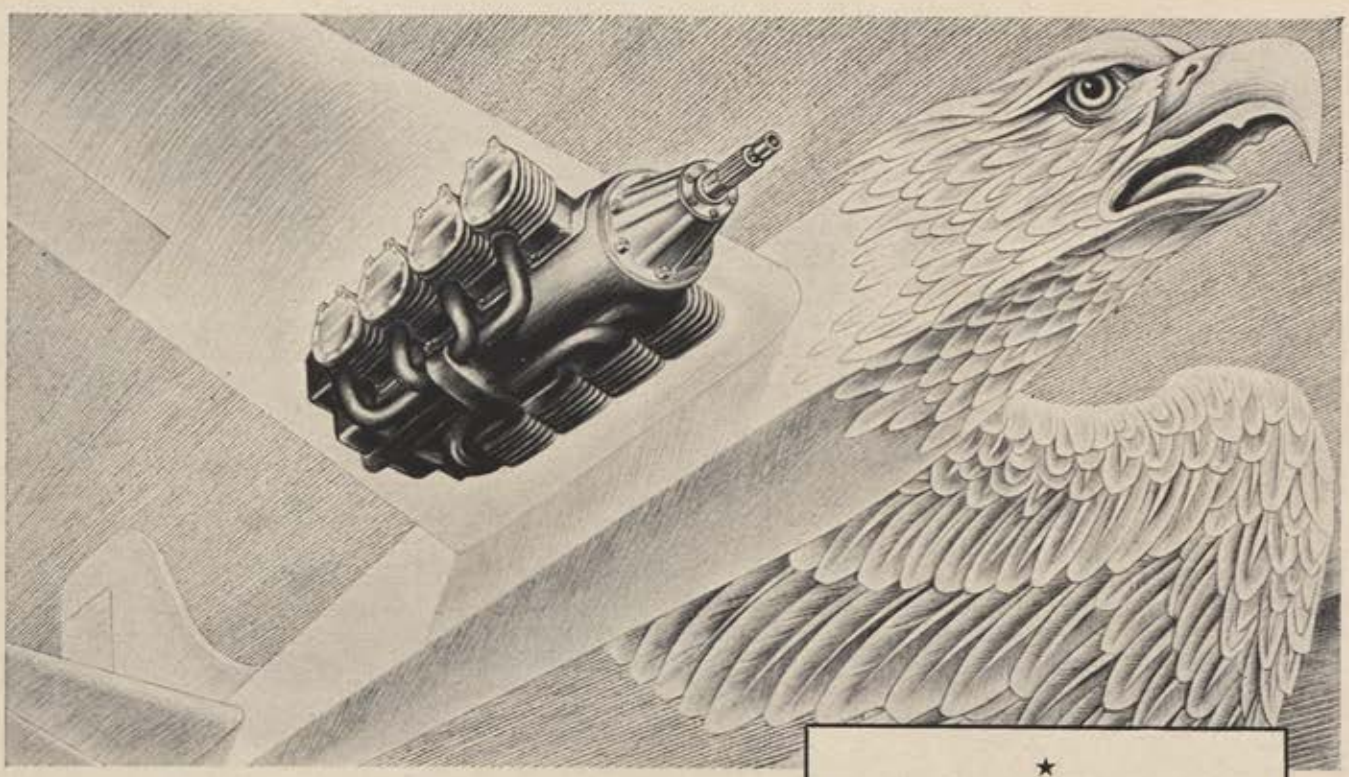
Let's take the most numerous variety of Air Force non-com, the staff sergeant. As a rule he's single. He lives in barracks, eats in the mess hall (dining hall, in the new book), and enjoys the solitude of an isolated station, more often than not located in a godforsaken, blighted area.

Nothing to brag about, and nothing, most certainly, for him to rejoice in. He lives in "temporary" barracks which are now ten years old—patched-up, propped-up and otherwise tinkered with but not improved. They are frame structures, ancient and inadequate, hopelessly expensive to heat, and each an incipient firetrap.

Lighting is primitive, plumbing facilities old and tired and swamped under by the demands of a fifty percent overload. Our non-com's privacy consists of the right to shut his eyes should he feel the need to be alone.

(Continued on page 30)

Disgusted with double-decking. Is this a reason for reenlisting?



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Even the rude necessities of civilized life, like adequate wall lockers with realistic dimensions, reading lamps, and chairs, are all too often absent.

This is his home—he lives here. How long does it take a man to find out that he can get a livable room at the "Y" for seven dollars a week? To a man disgusted with double-decking, this represents a tremendous improvement in his standard of living. And it also represents a negative reason for reenlisting. "Why should I live like a sardine?", he asks himself. When he finally admits, "No reason at all," he's on his way out.

Suppose he is stout-hearted enough to bear with the barracks. Let's take a look at the mess hall—the military counterpart of the dining room. Since food is intimately concerned with his body and his body is presumed to be on intimate terms with his mind, isn't it fair to presume that the mess hall has a profound effect on his urge to reenlist?

And it does. If he doesn't like the mess hall, he doesn't like his outfit—and by progressive increments of logic, he doesn't like the AF (chow). And if he doesn't like the chow, the best-laid plans of mice and men and recruiters must inevitably be frustrated.

What doesn't he like about the mess hall? For one thing all but a few are a sleeper jump from the barracks, so he has to buck the weather every time he wants to eat. Regardless of the weather, if he wants to eat he has to take a walk.

Once in the mess hall all the standard jokes about military chow come back to haunt him—only they never were funny to a hungry man, and they get less funny as a man gets older (the older he gets, the more valuable he becomes to the AF). He gets indifferent service. He chomps on a monotonous (but nutritious) menu under the implied or expressed suggestion that he finish up and get out. Seconds or a repeat on a favorite dish are either forbidden or available only after degrading beggary. In some mess halls he can't even smoke!

This is our sergeant's dining room. It is also part of his pay—and if he doesn't get a fair shake in his chow, he is getting short-paid. It doesn't take long for our high-school-graduate-turned-airman to find out he can do better.

The solution to both these problems is expensive, but it must be faced sooner or later and the later it's faced the more it likely will cost. To those who say that building model barracks and mess halls would run into millions—billions even—all I can say is, "You're so right."

There are lots more reasons why men balk when confronted with the dotted line.

What about the PX? Almost extinct and getting weaker with each issue of the newspapers. Nowadays, PX prices are about the same, or higher, than those in town. The sergeant gets no special sales with "Prices Slashed up to Fifty Percent." He gets no trade-in on used gadgets and he gets no "Long-Range, Easy Credit Terms." About the only bargain he gets in the PX is cigarettes and in some states this means an advantage of only a penny or two. The PX and its ever slimmer advantages are also supposedly part of his pay.

But what about the married non-com? While many staffs are married men with families, the percentage rises with the number of stripes. This is only natural. These men, by dint of training, service, and plain old experience, make up the most valuable human property the Air Force has. Sooner or later the non-com finds it out for himself. If he is a little slow on the up-take his wife will point the facts out to him—and the little woman has a tremendous amount of influence when re-upping time rolls around.

Why doesn't he reenlist? Let's take a look at a few more thorns in his bed of roses.

Medical care? If he's lucky enough to be stationed near a military installation he can probably get it—if the troop load is not too great. Not only does the married non-com not get medicare for his family, but the medical officer, who needs something to exercise his medical skill more complex than the normal, routine disorders of young men, suffers for lack of practice. Medical officers themselves would like to see a few cases where the practice of medicine is indicated.

Quarters? Try and get 'em. A married non-com transferring into a new station enters into an ulcer-building, bankroll-debilitating chase in a frantic effort to get a roof over his family. Wherry housing has relieved the situation to some extent but not enough so that the housing picture could be called adequate. As for on-base family quarters, few bases have them and these for the most part are no bargain—not when a rental allowance in excess of value received must be surrendered. Near-by civilian housing is too often barbaric—some troops live in garages and chicken coops—and too high-priced.

What responsible man, and a non-com is presumed to be responsible, wants to see his family debased by shanty-town surroundings. Mamma calls the shot on this one too.

The little woman has tremendous influence at re-upping time.

Unnecessary transfers? Special Orders are filled with them. And the men who cut the orders know as well as the men affected that there is no need for many personnel (military word meaning people) movements. Cases are common where two men, each with identical AFSCs, are interchanged on an "even-Stephen" basis. These dislocations, with their pocketbook-bustin' cost, have an eroding effect on a man's motivation to reenlist.

Frequent and prolonged temporary duty? Expensive to the man in cash, it is also expensive on a long-range basis since it frequently affects his chances for promotion. As the quote goes, "Give it to someone who is doing something for the outfit." Ironically, certain AFSCs are more TDY-prone than others, and it is these that are the very lifeblood of the Air Force—armament, mainte-

Men in the Air Force are sensitive to the rumblings in Washington.

nance, air crew—these are the ones hit most often.

Security? This is one of the shaky planks in the AF career structure. Since the end of World War II the services have been at the whimsical mercy of Congress. The whacking sound of the economy axe, constantly audible in the background, unnerves a man and destroys his confidence in the security of the Air Force. Only a Philadelphia lawyer with a talent for legislative acrobatics could hope to keep abreast of the on-again, off-again changes forced on the AF by a Congress apparently trying to sniff the wind, keep its ear to the ground, and straddle the political fence all at the same time.

Men in the Air Force read the papers and the news magazines, and they are sensitive to the rumblings in Washington. This is not a criticism of Congress but a frank interpretation of the way an airman thinks. Why should he devote a good number of his best, most productive years (he only gets one time around on the calendar, just like anyone else) to an important branch of the government which is a perennial target for anyone with a rostrum?

His security then, is a fleeting thing, subject to reapproval by every change in administration. Count this out as an incentive to reenlist. The Air Force cannot alter this condition but it can present its case so that legislators are not too hasty to whet the economy razor.

To digress a little, but apropos the issue, servicemen are included in the multitude of taxpayers which the legislators seem to hold in such vociferous esteem.

Also under the general heading of security is what turned out to be the notorious "indefinite enlistment." This has proved to be an ill-considered plan which should have been knocked in the head after a short trial period. Right from the start, the first batch of men who signed up got their fingers burned when there was a long delay in paying the $360 promised. It was later straightened out but not until after considerable damage had been done. Those who "saw the advantages of an indefinite enlistment," as the advertisements called it, actually were hard put to discover even one advantage.

They lost re-up terminal leave pay, which could amount to as much as $700 per three-year hitch. They lost travel pay. They lost eligibility for mustering-out pay and federal and state bonuses. This last item has been adjusted but the man must wait until his final separation after twenty or thirty years of service and, while no one is planning to die tomorrow, the odds are against a man living until retirement—and collecting what went to everyone else years ago.

I have never met a satisfied "indefinite." Instead of being rewarded for their career-mindedness, these men were actually discriminated against. Their option to resign, touted as one of the benefits of an indefinite term of enlistment, contained a built-in booby trap. A man who resigned lost a grade if he reenlisted again. Moreover, their right to resign wasn't as copperplated as they thought. Resignations were at the pleasure of the Air Force and not the man. Some of these things have been changed too, but not before the damage was done—and done to the best element of the enlisted corps. (Incidentally, I am not an indefinite reenlistee.)

What started out as a "Regular's" enlistment developed into a grim caricature of the original. The indefinite enlistment program should be scrapped forthwith. It was tested in the market place and it found almost no takers—and business has been falling off steadily. Consumer acceptance is necessary to the success of a product. But it did its damage and had its bearing on the pale reenlistment rate.

A chip off this block can be found in the ordinary term of enlistment. Regardless of what it says in the fine print, it ain't necessarily so. Enlistments can be extended with no sweat. This has its depressing effect on the re-up rate.

Advancement? Sure, plenty—if you are less than 26½ years old. After that, face it, you're an old, old man. Even in civilian enterprise, where the going is supposed to be much rougher, the magical age when a man is "rockin' chair" bait is commonly about forty—higher if you have brains and initiative.

Did I hear someone say Warrant Officer? This rung on the promotion ladder has not been built yet, but measurements aplenty have been taken in the past four years and are still being taken. The Air Force is not at fault in this matter as their personnel allocations must conform to the requirements of a budget. The failure of the Warrant Officer program, with its start-and-stop gait, has had its dampening effect on reenlistments. Consider a not-so-rare case—a master sergeant, age thirty, with twelve years of service, at least one war behind him, and a high skill level at his trade. Give this man the pressure of a family and complicate it with a few of the items pointed out in the preceeding paragraphs and you can see what damage has been done here.

Career? Opportunities are very good—you have a choice of *quitting* after twenty or thirty years. This is not supposed to be the object of the game but conditions, as they exist, have made this the logical goal. "It all counts on the twenty, boy," the wise ones say. Do your ten—nine—eight, etc., and be done, that's the word. In a more common phrase ". . . don't stick your neck out and you'll do the twenty standing on your head."

This may sound sour and unproductive of "right" thinking—or it may sound like bitter truth, nasty to taste but good for man or beast alike—depending on what you want to find. I think it an honest, sincere effort to present facts as they are—to stick my neck out for what I think is right. —End

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Sergeant Winfield has written other articles for Air Force *in recent months on AF non-com problems.*

And another key man leaves the AF.

Longest nonstop Jet fighter flights

Colonel Dave Schilling's 31st Strategic Fighter Wing and the 508th Strategic Fighter Wing commanded by Colonel Cy Wilson have each set another American airpower record.

The 31st made their mass jet flight across the central Atlantic—4,470 miles over water from Turner Air Force Base in Georgia to Nouasseur, French Morocco.

The 508th flew 4,485 miles nonstop from Turner to Lakenheath, England – the longest transocean nonstop jet fighter flight ever made.

As in earlier record-breaking mass refueling flights, both wings flew Allison-powered Republic F-84G Thunderjets. The 508th was in the air 11 hours and 20 minutes; the 31st landed after 10 hours and 21 minutes.

Many Air Force men—crew chiefs, pilots, mechanics—helped write this U. S. jet fighter power record in the books. Their efforts, backed up by Allison's engineering, design and production skill, have scored another Allison power record in the air.

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airpower Army forces deployed in the field. A considerable portion of Air Force resources are allocated to that mission, and they are so justified by the Air Force in the budget placed before Congress. If it be concluded that large ground forces cannot be landed overseas once war is joined, then, as with the Navy, this part of the Air Force role should be correspondingly reduced.

Where does that leave our promises to the North Atlantic Treaty Organization and the European Defense Community, not to mention our allies elsewhere in the world?

Our commitments in Western Europe alone are substantial. Some three hundred eighty thousand US troops and airmen are stationed there—too few to be a decisive factor, too many to be called merely a token force.

The United States will, obviously, respect any commitments that it has made, however much changed circumstances may have altered the original necessity. The President has recently announced, for that matter, that no reduction in US combat forces stationed in Western Europe is presently planned.

Hence, the immediate prospect of any troop reductions in that area, save through the cutting down of supporting elements, is dim indeed. But in the long run it is certain to be different.

Our experience with European nations has taught us that, when the chips are down, they can be extremely realistic. If sound military judgment should indeed hold that another massive landing of American ground forces is rapidly ceasing to be a feasible central element of a coalition war plan, European strategists are likely to recognize the same logic.

So the question arises: What kind of program will produce an adequate defense force, armed with the right kind of weapons, that will be within our capacity to pay for it, considering that the present crisis may go on for years?

It seems to me that any rational program for the present and immediate future should have at least four major policy objectives:

OBJECTIVE ONE: To deter an aggressive nation from resorting to war, and thereby preserve the peace;

OBJECTIVE TWO: To provide us with an effective military force, armed with the most powerful weapons, that will enable us to win a war if war cannot be prevented;

OBJECTIVE THREE: To preserve the friendship and the confidence of our allies, by developing the right kind of forces and by convincing them that these forces will assure them greater protection;

OBJECTIVE FOUR: To preserve a sound national economy.

Concerning objective one—the deterrent to war—there are many wise military men who say that the American atomic advantage is all that has stood between the non-Communist world and another great war. Only a few months ago the same Lord Tedder whom I quoted a moment ago told his British countrymen:

"For nearly a hundred years wars were prevented from spreading and peace was kept by an effective deterrent—the British fleet in being. These days are over, but there is no doubt that during the recent critical years the peace has been kept by a new deterrent—the American strategic bomber force and its atomic weapons."

Winston Churchill, who certainly knows something of war and strategy, has on other occasions said as much.

I believe that the lesson to be drawn from the postwar trend of events is that the Kremlin has not been deterred, and is not likely to be deterred in the future, by conventional military forces. What it fears and will continue to fear is the American capability and the growing capability of the British to counter an attack with immediate and crushing retaliation. This being so, logic argues that we put our blue chips down on those elements of technical strength which Russia fears most and which provide the best promise for peace.

On the second of these points—the ability to win a war if war should come—we find military men divided into two schools of thought: those who hold that the decision would come quickly through an exchange of atomic blows and those, especially among the older services, who argue that it would be a prolonged struggle, to be decided in the end by the soldier on the ground advancing with a rifle in his hand.

But is it sensible to accept the latter view, when we are told by the highest authorities that one hundred atomic weapons, accurately placed, could destroy more than a third of our industrial capacity and kill millions of people? Given this power to destroy, is it rational to believe that the soldier with the rifle in his hand could intervene in the struggle in time to have a decisive effect on it?

There is no evading the conclusion being forced upon us. It is that the deterrent force represented by atomic weapons and the capacity to deliver them is also the only sure war-winning force.

With regard to point three—preserving the confidence of our allies—the problem facing our diplomacy is to convince our allies that a departure from the present conventional strategy would not mean a decrease in their security. On the contrary, would not a different strategy actually bring forward in their defense something far more effective, yet easier to support, which would be better for them in the long run, no less than for ourselves?

If this new strategy is rational, then we can expect the European strategists, who tend to be entirely realistic in matters of this kind, to accept it on the basis of logic and self-interest.

Finally, as regards objective four—preserving a sound economy—it stands to reason that the Federal budget cannot be balanced today, and will not be balanced in the foreseeable future, unless military appropriations can be greatly reduced.

An increasing number of well-informed people, both inside and outside the military establishment, are convinced that the military budget can be greatly reduced, with an actual gain in our global military capability, by going to a strategy based upon those weapons systems wherein our margin of technical advantage is greatest. In fact, do we not need to conclude that no other strategy is really open to us?

First things first. The first thing that has to be done is to sort out the roles and missions of the military services. Once that is done, it should be possible, within a reasonable time, to bring down the United States military establishment from 3,500,000 men to 2,500,000 men and to reduce the over-all military budget by at least $10,000,000,000.

You may believe this estimate a modest one. Perhaps so; some well-qualified military men believe there can be greater savings.

Let me say now, in conclusion, that I do not appear before you with the idea that this discussion will provide the answers to strategy, forces, and the budget. But this much I do believe: Unless we as a nation, and we individuals as citizens, begin to think our situation through, there will be no real savings and there will be no balancing of the budget. Most serious of all, our national security may be increasingly in danger.—END

Yugoslavia

WHERE COMMUNISTS FLY OUR JETS

A potentially strong link in the western world's chain of defense wants to be modern, at least militarily

By Lt. Col. F. Clarke Newlon, USAF

THE GIRLS sang a shrill, monotonous song of the Balkan hills as their sickles bit into the tall yellow wheat. They worked in a line, and their bright skirts and petticoats swung over soft leather shoes that turned up impishly at the toes. Each girl grasped a handful of the grain, clipped it near the roots with her sickle, turned to lay it in a neat windrow, and then turned back.

A flight of Republic F-84 jets flashed overhead, sound and contrails marking their course. The girls stopped their work to look up. The jets banked gracefully to the west and the girls bent to their work.

Tomorrow the sun would dry the wheat and it would be raked, bound, and shocked by hand. Then it would be forked onto an ox-drawn cart, moved to a barn, and threshed by hand. Meantime the jets would flash in and out of the sky from the big Batajnica base, fifty miles away, intent on the training program that was producing more jet pilots. They were needed to fly the additional jet fighters arriving every month in Yugoslavia.

The Yugoslavs have had jets only a few months. First to arrive were a handful of Lockheed T-33 jet trainers, followed by the first Republic F-84 Thunderjets. The two-place trainers were in the air every day and every hour that weather and daylight allowed. And as fast as the pilots became proficient they graduated to the single-seat fighters. More 84s arrived and more continue to arrive while the Yugoslavian Air

USAF jets are no longer a novelty over the Yugoslavian countryside.

Force advances its schedules to keep up. Col. Nikolic Mihailo, commanding officer of Batajnica, puts it this way, "We have quite a number of jet fighter planes. We have more than enough proficient pilots to man them. We have enough pilots waiting for jet training—and enough cadets coming out of training—to fly as many jets as we can get."

There are sixteen million people living in the six states which make up Yugoslavia today—Serbia, Slovenia, Croatia, Montenegro, Macedonia, and Bosnia-Hercegovina.

Until recently there were none too many chinks in the curtain behind which President Tito guarded his Balkan citizens from the influences of the West. Then last spring and summer there came a distinctly noticeable up-swing in the temperature of cooperation between Yugoslav officials and ours. Doors which had been closed were opened. Our military people in the mission began to get frequent requests for information on the operation of American-donated equipment. They were allowed to see what the Yugoslavs regarded as highly classified usage of that equipment.

President Tito and his military leaders organized a war game late last summer which put enough troops, equipment, efficiency, and morale into the field to impress observers from six NATO nations. There wasn't much air used because it was not primarily designed as an air maneuver, and besides, the weather was so bad the ground troops had to fight their own war.

Batajnica, the big air base a few miles out of Belgrade, is at present the only jet training field. Batajnica might be called the "Randolph Field" of Yugoslavia. It resembles Randolph on a slightly smaller scale, from the front driveway to the big control tower which commands the operations. Another base at Petrovac, just out of Skoplje, capital city of Macedonia, will take jets and probably will be utilized for them if and when there are too many for Batajnica to handle. Other training, both flying and ground crew, is carried on at Mostar, Bosnia-Hercegovina, from a field completely surrounded by formidable mountain peaks.

In addition to the American jets, the Yugoslavs fly two experimental models they constructed themselves —the 451M and the 452M, each powered with two French "Palas" engines of approximately 350 pounds thrust each. The 451M has been in the air many times; the 452M was flown for the first time on July 24, 1953. Both were shown to the outside world for the first time on May 21, 1953, at the observance of the eleventh anniversary of the Yugoslavian Air Force. The Yugoslavs have also built a tiny reciprocating engine (single) plane in which the pilot lies prone, and they are building a similar model of the 451M.

They have also built their own two-engine navigation trainer and their own propeller-driven fighter which resembles the British Spitfire. Beside these they have an assortment of other planes of various designs, capabilities and origins—relics of the war but many of them still flying.

The Yugoslavs, our training people say, make good pilots and good mechanics. Show them one time and they know thereafter.

Lt. Gen. Zdenko Ulepic, commander of the Yugoslav Air Force, hopes to see the day not too far away when his country is building its own jet fighters, probably under license. He is not interested in strategic bombers at the moment. He feels the YAF should have fighter-bombers and fast interceptors primarily.

Yugoslavia is making, for western defense under the American Off-Shore Procurement Program, more than five million dollars worth of ammunition. Yugoslavia makes its own reciprocating engines and its own airframes, its practice bombs and plane parts.

"Why not entire jet fighters under license?" asks General Ulepic.

The answer to that probably lies in the future. It involves such things as costs of installations, of training workers, of tooling, and of the availability of raw materials. Most of all it involves the strategic advisability of such a move.—End

Twin French-built jets power the Yugoslav-designed and flown 451M.

Yugoslav-built 452M first flew last July on YAF's eleventh anniversary.

Not Pilots OR Robots, but

Pilots AND Robots

IN TOMORROW'S AIR FORCE

says this Air Force research and development expert

By Lt. Col. Peter J. Schenk, USAF

IN THE November issue of AIR FORCE Brig. Gen. Dale O. Smith has written a timely and thought-provoking article on the role of the pilot in future air war. Though I myself am a non-rated officer who has specialized in scientific and engineering activities, I can sympathize with General Smith's point of view. There has been a good deal of fanciful speculation lately about automatic weapons and push-button warfare. Nonetheless, I think that General Smith has given undue credence to some of these predictions—unsupported as they are by scientific facts and the laws of nature. In his spirited defense of the human pilot, General Smith has, in my opinion, gone too far in the other direction. Actually he has weakened his case by making the pilot a superman, while at the same time down-grading automatic devices. I don't wish to detract from the basic premise of General Smith's article, that the human pilot is by no means obsolete. I do wish, however,

RC-121C

to set the record straight on some of the things that machines can and cannot do. Both pilots and robots have their place in Air Force operations of tomorrow. But to attain the qualitative superiority in air weapons which we must have, we must first achieve a wise balance between human judgment and automaticity.

I challenge General Smith's premise that guided missles have been "generally accepted as the exclusive vehicles for future air war." I don't know a really perceptive and thoughtful Air Force officer, scientist, or well informed layman, for that matter, who agrees with this premise. I have found little evidence of the trend that General Smith obviously, and rightly fears: "that we are today choosing a road which we must follow inexorably" or that we may be "committing our whole destiny to this kind of [automatic] air warfare."

For example, we are not cutting back pilot training programs disproportionally. On the contrary, our major source of commissioned officers, the Air Force ROTC program, has just undergone a basic reorientation under which greater emphasis is placed on pilot training than ever before. In fact, the great majority of senior ROTC students who hope to receive commissions and serve as officers upon graduation must be pilots.

General Smith takes issue with a statement in the December 1952 issue of AIR FORCE Magazine, to the effect that we may well be building our last manned interceptor. He hinges his case around the difficulty of "jamming" human control of the interceptor, as opposed to the relative ease with which automatic electronic controls can be jammed. What he forgets is that any human pilot, unless his senses are aided electronically, would have his hands more than full in merely controlling the aircraft. At the speeds and altitudes of modern air combat, even our day fighters must rely more and more on radar-computing gunsights. The pilot's eyes can no longer see far enough, or his brain react fast enough, to make the lead angle computations, for example, at closing speeds well above 1,000 mph. Just having a pilot will be of little avail, if his radar-extended senses and his computer-aided brain are neutralized.

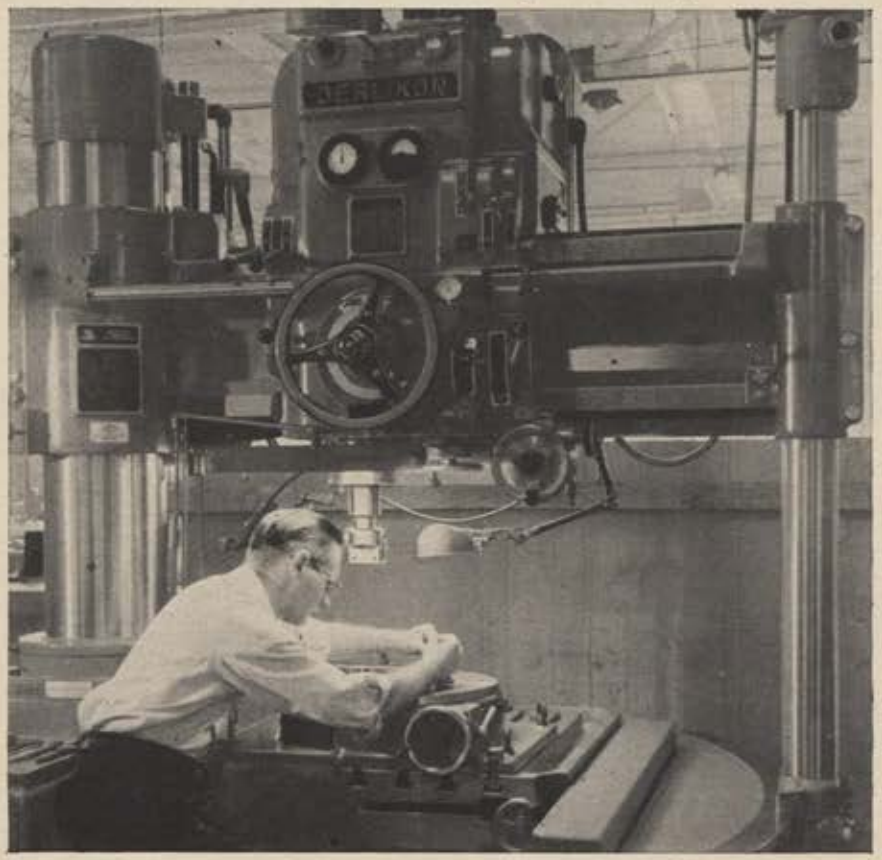
I believe, therefore, that we may well have come to the "end of the evolutionary line" in manned interceptors designed *for the prime purpose of seeking out and destroying enemy bombers.* This does not mean that we will not need complex, manned command and control aircraft, such as the RC-121C radar-equipped Lockheed Constellation. I can visualize a crew of fifteen or twenty men, watching radar scopes, plotting enemy and friendly air activity, and directing the air battle from a nearby vantage point.

For that matter, I have heard no serious suggestion that the day fighter be replaced with a guided missile. Nor can we do away with the light artillery spotting plane, hedgehopping over the front lines. Nor indeed is it likely that logistic transports and troop carrier airplanes will soon or ever be pilotless.

As I see it, there are only two valid reasons for removing the human pilot from an air weapons system. The first is if a machine can do the required job cheaper, better, and more reliably. The second is when we encounter environmental conditions under which a human pilot simply cannot exist. The temperatures, accelerations, and other forces characteristic of the high speeds and altitudes of modern air combat are a severe hazard. The protection we must give the pilot so he can survive these conditions exacts an increasingly greater performance penalty, because the added weight and complexity cut down range, speed, and altitude. Finally we reach a point when possible enemy tricks against an unmanned but otherwise higher performance weapons system do less damage to our overall performance than the high cost of adequate pilot protection. At this point, it pays off to switch to the unmanned weapon system.

(Continued on page 40)

DEFENSE PRODUCTS *of High Quality at Low Cost* DELIVERED ON TIME



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AC SPARK PLUG DIVISION GM GENERAL MOTORS CORPORATION
FLINT, MICHIGAN

AIRBORNE EXPLORER—Rugged dependability of Sikorsky helicopters in wilderness operations is again being demonstrated in northern Canada, this time by Hudson Bay Mining and Smelting Co., Ltd. Here the company's big S-55 is unloaded on a narrow ledge at 6000 feet, where crews are making an extensive geophysical survey.

AROUND THE WORLD WITH SIKORSKY HELICOPTERS

ARCTIC ANGEL—Greenland Eskimos, displaced 80 miles further north by the air base at Thule, are aided by Danish technicians flown in by Sikorsky helicopter. Such mercy missions are routine for Thule-based Air Force H-19s, which have flown as far as 200 miles into the icy Arctic wastes of Greenland on daring rescue flights.

INTERNATIONAL SERVICE—Airline passengers whose transatlantic flights begin or end at Brussels can now have the additional advantage of SABENA Belgian Airlines' international passenger helicopter service, in big S-55s, from Brussels to Antwerp and Rotterdam; to Liege, Maastricht, Cologne and Bonn; and to Lille.

NEWEST SERVICE—A big Sikorsky S-55 is the newest aircraft to join the National Airlines fleet. The 10-passenger helicopter currently is based in the Miami, Florida area, headquarters of the airline's North-South trunklines. National's Sikorsky is the first large helicopter thus far put into operation by a major scheduled American passenger airline.

SIKORSKY AIRCRAFT

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I must grant the point that the human mind is more versatile; that it can exercise creative imagination in dealing with situations not built into its memory. But the price one pays for this is that the human mind is slower, less accurate, and has less capacity for dealing with separate bits of information under some circumstances. There are times and situations when the electronic brain will do better—particularly in tedious, repetitive or essentially "bookkeeping" operations, such as keeping track of air movements. There are other times and situations when the human brain's ability to exercise judgment and to react to new situations is of paramount importance. Obviously both situations occur in air war, and both kinds of brains have a very real application, now and in the future.

General Smith has obviously had a lot of fun with his marvelous intercontinental missile, fresh from the pages of science fiction. Permit me to get into the act on the other side of the fence.

THE AUTHOR

Lt. Col. Peter J. Schenk is one of the AF's top men in electronics and air defense planning. Now executive assistant in a top AF R and D office, he was formerly at Cambridge Research Center. The views in this article are the author's own, not necessarily those of the Air Force.

First, General Smith highlights the limitations of the automatic weapon controller on the ground, far away, who launches defensive guided rockets and sits back to await results. To be sure, the controller on the ground, because he is so far from the scene of action, cannot have as detailed or immediate knowledge of the results of his defensive maneuvers. On the other hand, his "field of view" is much greater—while his detailed knowledge of a single air duel may be less precise, he has a better understanding of the over-all air situation in a larger sector than the airborne fighter pilot with his exceedingly local and limited view. Furthermore, General Smith has apparently overlooked the difficulties of getting his piloted interceptor to the vicinity of the approaching attacker. This must be done rather accurately, and under ground control, to come within the limited range of the interceptor's own sighting equipment and its airborne weapons.

And we must not forget that it will take time to bring the airborne interceptor to the vicinity of the invader—almost certainly more time than the ground-launched automatic missiles would have taken in getting there.

Next, the manned interceptor is given credit for being able to try a variety of defensive armament as each in turn is neutralized by the attacker's countermeasures. This I find rather difficult to believe. After all, the airborne interceptor is strictly limited in the weight, space, and complexity of armament that it can carry upstairs and still retain the basic aerodynamic performance necessary to locate and intercept the attacker in the first place. While the pilot might devoutly wish for alternate armament to try on for size, it is doubtful that he could be properly equipped with it. Conversely, the ground controller of automatic weapons might have to wait a little longer to discover the results of his various tactics, but he has a potentially limitless amount and variety of weapons at his disposal, in readiness on the ground.

There is another good-sized flaw in the assumptions that underlie General Smith's hypothetical air battle—that a means has been found to solve the frictional heat problem. To the best of my knowledge, sustained speeds of Mach five or ten *in the atmosphere* will generate so much heat that even unmanned missiles won't work. The obvious answer then is to make the missile travel *outside the atmosphere* on a ballistic trajectory for most of its flight path. Now, you cannot very well chase an object on a parabolic flight path outside the atmosphere with a winged aircraft—there is not enough for conventional control surfaces to react against. If we go one step further and say, "Why not an inhabited rocket for defense?" then we're really in the realm of science fiction.

In other words, an intercontinental missile, to hit Mach five, will have to go outside the atmosphere—where it can travel even faster and with far less effort, maybe close to Mach twenty. A missile of that type on a parabolic trajectory can only be dealt with by another missile launched from the ground, carrying a tremendous bang to destroy the attacker while he is still a good way out.

Let me nit-pick some more. General Smith bases his case that the close-in airborne observer will find out more about the air battle on the principle that the effectiveness of radar falls off as the square of the distance between radar and target. He neglects to mention another important principle, however, about the effect of radar antenna size—also a square law. The airborne radar is limited to rather small antennas—perhaps a foot or two in diameter. An antenna on the ground can have apertures up to a hundred feet, and because there is practically no limit, comparatively speaking, on weight size and input power, a good deal of the disadvantage of distance can be overcome. In addition, the much wider field of view of the distant ground radar can actually be a great advantage. As General Smith himself points out, war is not a simple multiple of individual fights. The over-all strategy of the attack is of great significance.

To return to General Smith's basic premise, however—"The machine will never replace the man." I couldn't agree more. But guided missile defense systems—or attack systems, for that matter—must still use men to plan, to judge, and to decide. They don't use men for functions which they perform poorly—because men are weak, fallible, inefficient, become bored and make mistakes, or cost too much to protect against the rigors of their environment. Man has feet and knows how to walk, but need we insist that we walk to work each day if the distance is ten miles?

The increasing use of automatic air weapons has brought on a most significant change, however. It is my contention that in modern air war, being a skilled pilot has no more to do with a "balanced understanding of air war" than insisting that General Eisenhower had to know how to load and fire a 155-mm howitzer in order to plan the invasion of Europe. A truly balanced understanding of air war is not nearly so dependent on the ability to make perfect three-point landings in a C-47 as it is on sound understanding of the capabilities and limitations of the complete range of modern air weapons. This involves more than an appreciation of the technology of automatic weapons. Even more important is an appreciation of the subleties of war as an art, rather than as a science; an understanding of the frailties of human nature which motivate and direct the automatic weapons of today and tomorrow. I emphatically do not believe that pilots have a monopoly on this understanding. Without detracting from the all-important job of the pilot in the Air Force of yesterday and today, and this continuing importance in tomorrow's Air Force, no doubt the day will come when at least some of our top air strategists will have grown up out of the ranks of the non-pilot officers.—END

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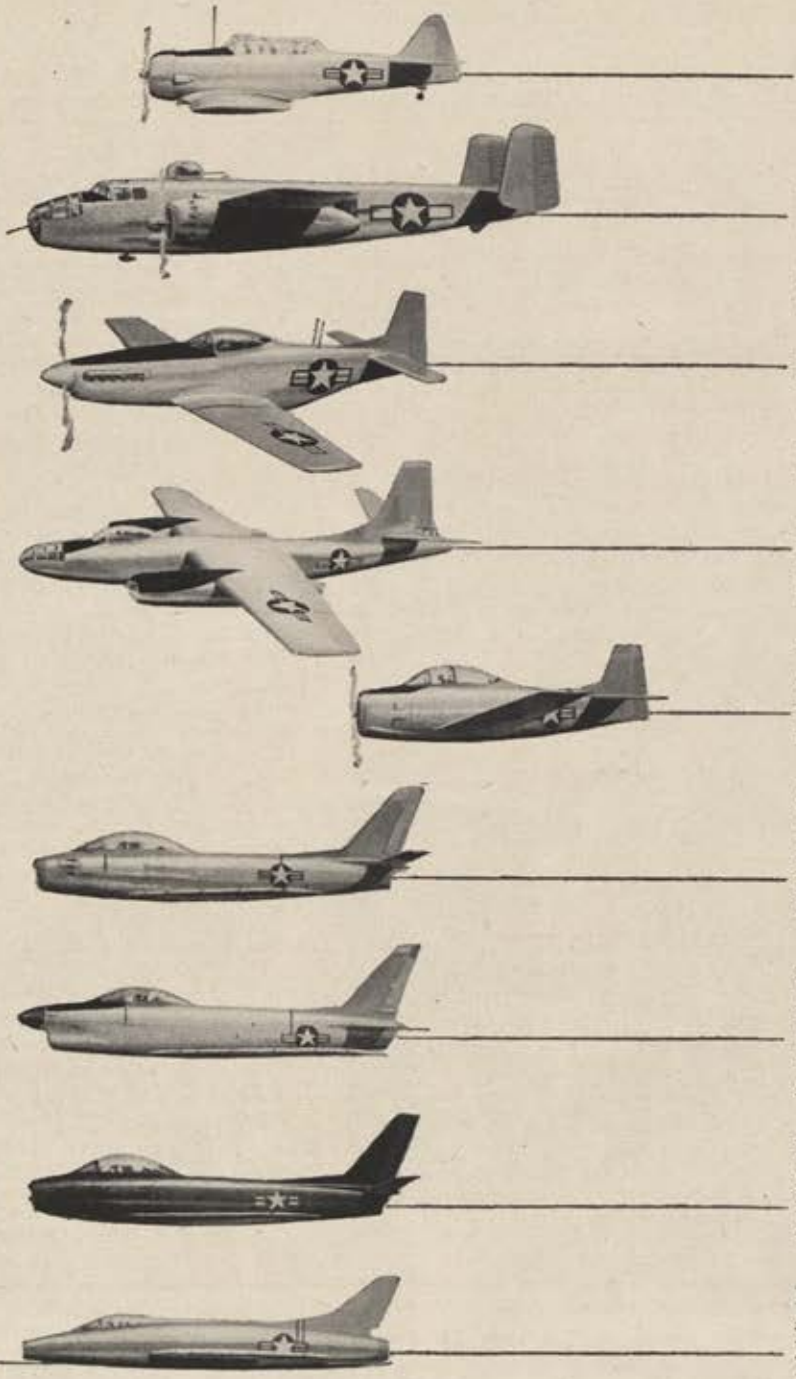

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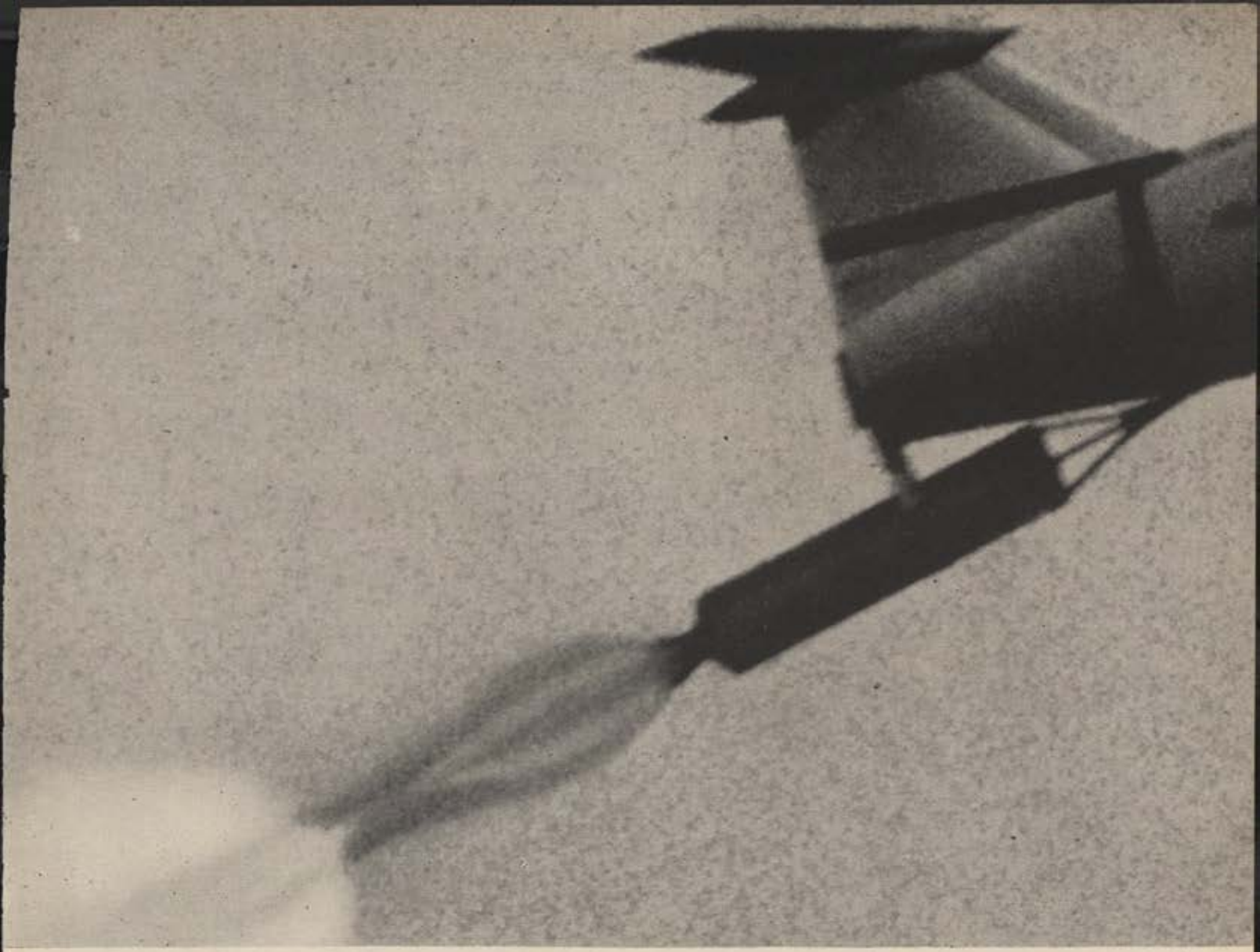
Germany has built more successful rigid airships than all the rest of the world combined, approximately 130 in number, and is commonly accepted as the foremost airship nation in history.

(Continued on page 45)

LET'S HAVE YOUR JET BLAST

In "Jet Blasts" you can sound off on any subject you want. Each month we'll pick the letter or letters we feel will interest our readers most and pay $10 for each one printed. Please keep letters under 500 words.—The Editors.



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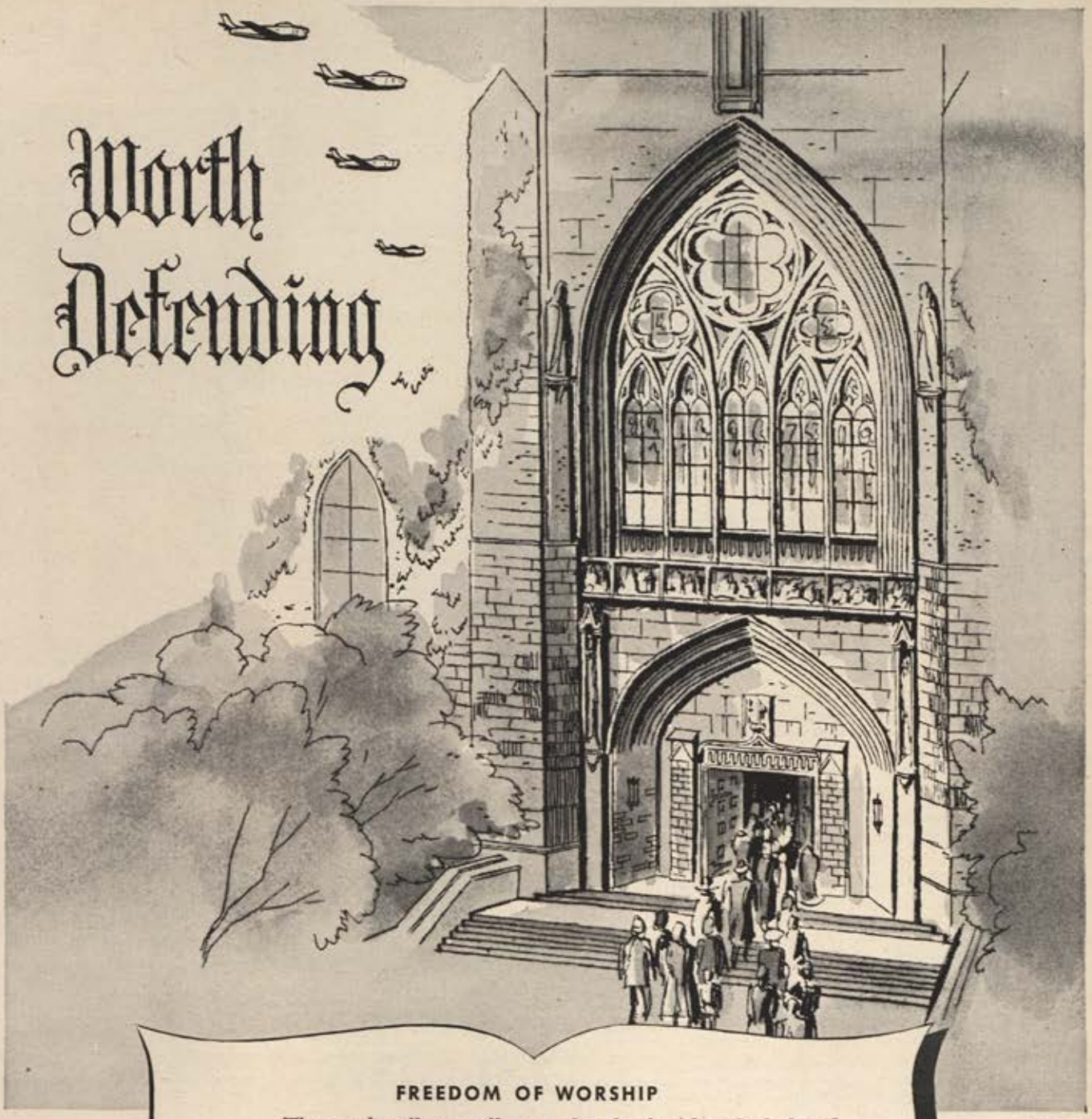

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The responsibility for spark-plugging an effective airship program now lies with the United States more than any other country. Not only are we one of the few nations with the necessary industrial capacity and technical skill, but we are the *only* country having an abundant supply of helium, of which we do have the world's monopoly. These inherent capabilities of the rigid airship demand that we again make use of this proven vehicle.

Edwin J. Kirschner
Washington, D. C.

(The preceding article represents the personal views of Mr. Kirschner, not the views of the United States Air Force, of which he is an employee.)

Where to Cut Back

If cuts in defense spending are inevitable, the least intelligent place to save is on the training of personnel. The best plane is no better than the man who flies it. The effectiveness of a guided missile depends on the skill of those who design it. When any administration considers separating well trained personnel or cutting back training programs, it may be cutting us out of a chance at survival.

In our continuing competition with the Soviet Union, the United States faces the prospect of a progressive numerical disadvantage. Already the USSR leads us by fifty million people and their population is growing faster than ours.

Since the United States cannot win a numerical race, it must seek the advantage of quality. Quality does not come cheaply; inherent abilities must be developed through long training and experience.

A warning can be read in the report on Project Tinker Toy, a program developed to find a method of mass producing electronic devices: that this project was needed to overcome the shortage of trained electronic technicians.

History is full of the stories of nations which wrecked their futures on neglected resources. The National Planning Association, in a special report on "Manpower, Our Basic Resource," showed that the USSR is graduating 30,000 engineers a year as against 23,000 by the United States. Granted that the Soviet Union lacks our vast reserve of well-trained people and that the quality of our education is superior, but our lead is diminishing daily.

The penny-wise, pound-foolish philosophy that has cut out many special inducements which once made a military career attractive has cost us too much already, by driving out well-trained, experienced personnel. The five billion dollar Air Force cut seems like the supreme blow. Cuts in reserve train-

(Continued on following page)

ing are equally as self-defeating.

It once was common to find many enlisted men and officers attending schools and universities on their own time (and money) to train for a bigger place in the National defense. It seems rarer now, and no one can blame them for losing interest in a service which thwarts this ambition.

We must face up to the fact that a defeat would cost far more than the few billion saved by penny-pinching. A well-educated, well-trained, experienced defense team may produce the miracle of strength needed to insure peace.

Gordon F. Shea
College Park, Md.

Government Insurance

Prices and incomes have been rising steadily for the last decade, and a decline seems unlikely as long as international tension remains high, politics notwithstanding. Inflation hurts most the fixed income groups such as widows and dependent children who must live on the income from insurance policies. Yet during this time when food and housing costs have doubled, servicemen have been unable to secure more protection for their families.

When National Service Life Insurance (NSLI) went into effect during World War II, a limit of $10,000 was placed on the amount of protection each serviceman could provide for his dependents through government insurance. This was apparently considered adequate at that time. Even if we grant this assumption, the $10,000 would not meet a family's needs in 1953.

Many servicemen have no other method of providing for their families than through NSLI. Many went into the service from high school or from occupations not covered by Social Security. Also, during a war many men are barred from satisfactory insurance coverage by commercial companies through war clauses. Therefore, many GIs killed during war can only leave a fixed income or inheritance which decreases with every rise in living costs. The $10,000 government insurance policy no longer meets the needs of the serviceman.

The insurance limit should be raised to at least $20,000 to allow for the inflation which has already taken place. Anything less would be unrealistic.

Veterans who have kept their NSLI in force should also be allowed to increase the value of their policy because of the likelihood of many of them being recalled to service in any new crisis. By paying premiums on increased government insurance, the veterans would make it less likely that the federal government would have to aid his dependents in case of his death.

Frederick Johnson
Washington, D. C.

SHARP FOCUS

Opto-mechanical range finders give modern Army tanks the assurance of supremacy in combat. On-time delivery of these critical range finders and other ground weapon fire control devices* is but one example of the production agility of the precision team of men and machines at Northrop Aircraft, Inc. Northrop today is producing many vital defensive weapons, including guided missiles, target aircraft, and long-range Scorpion F-89 all weather interceptors, a major bulwark in our far-distant perimeter air defenses.

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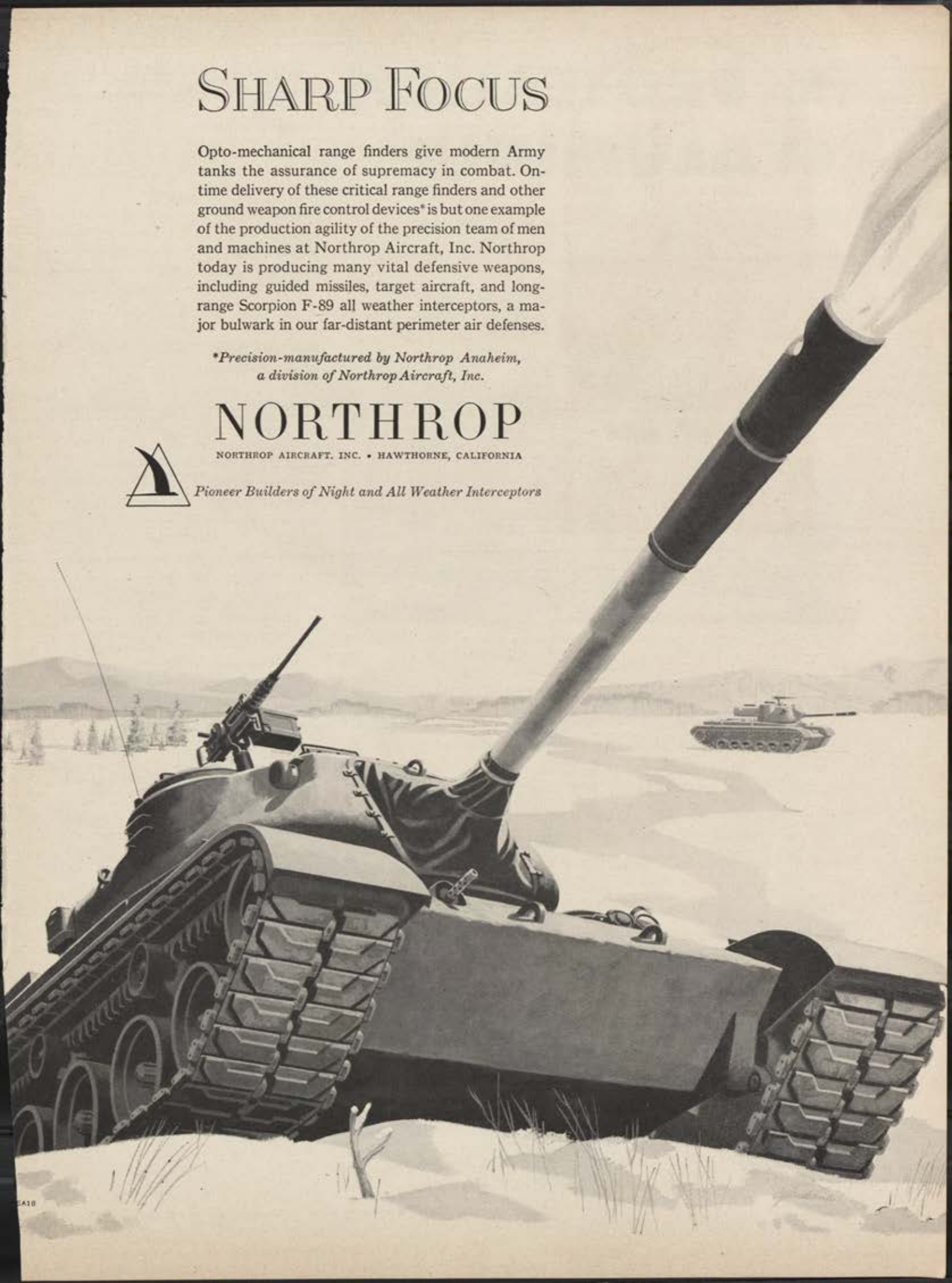

The PROTECTION of ALUMINUM

Drawing courtesy of Piasecki Helicopter Corporation, Morton, Pennsylvania

THE H-21 Piasecki Tandem Helicopter—the "Work Horse"—is ideally suited for rescue work in areas inaccessible by other means, and in all kinds of rough weather.

For durable paint adhesion and high corrosion-resistance aluminum parts of the "Work Horse" are Alodized. The "Alodine" protective coating chemical bonds paint, extends paint life, and protects unpainted aluminum.

Because of its economy, effectiveness, and ease of application, the Alodizing process is finding wide-spread use in the aircraft field and in other industries fabricating products of aluminum.

Alodized aluminum meets the requirements of Military Specification MIL-C-5541. Write or call for coating and process data on "Alodine."

"Alodine" Trade Mark Reg. U. S. Pat. Off.

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"ALODINE" PROTECTS BOTH PAINTED AND UNPAINTED ALUMINUM

"Alodine" forms an amorphous non-metallic surface on aluminum which is thin, tough, durable, continuous with and a part of the basis metal. The "Alodine" film (or skin) anchors paint, prolongs paint life, and protects aluminum exposed unpainted to the atmosphere.

ALODIZING IS EASY AND EFFECTIVE

The Alodizing process is a chemical one and does not require electrolytic techniques or equipment. Alodizing is simple, fool-proof, 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" skin.

"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.

MIL-C-5541	U.S. Navord O.S. 675
MIL-S-5002	16E4 (SHIPS)
AN-E-19	AN-C-170 (See MIL-C-5541)
AN-F-20	U.S.A. 72-53 (See AN-F-20)

life and cost in national treasure. However, because of the factors outlined above, basic disagreements continually arise, first over questions of *what kind* of forces we should develop and, second, over questions of *how much* of each kind of military force we should have.

For example, the development of the art of naval warfare should certainly be pushed as rapidly as the march of science places new techniques at our disposal. But, granting that *one* super-carrier should be built and tested to develop fully the art of naval aviation, do super-carriers and carrier task forces represent the course of naval development which should receive major emphasis? Where does the atomic submarine, which can surface to fire missiles and refuel hydro-ski fighters (carrying A-bombs), fit into the naval development picture? Based upon *objective* analyses of the *strategic situation*, how many super-carriers and how many atomic submarines should be built?

Similarly, granted that large-bomber development should be continued, does the B-52 really represent the optimum aircraft for major emphasis in long-range bombing? Where does the refueled, nuclear-weapon-carrying fighter, which can range deep into the USSR, fit into the strategic bombing picture? If we need some B-52s because of the political insecurity of our overseas air bases, what *objective* analyses support General LeMay's estimates of the numbers required?

Of course, no group of weapons analysts can answer completely the basic questions of what kind of weapons should be developed and how much of each of the elements of our military power—land, sea, and air—we should buy.

The answers to these vital questions will always rest heavily on the broad military judgment of the Joint Chiefs. However, can anyone soundly argue that really objective assessment of "military effectiveness vs. cost" of competing weapons systems wouldn't be of great help to the Joint Chiefs?

Time is growing short. We must face up to certain basic facts of life in the air-atomic age:

- We can neither deter aggression nor win a major or peripheral war, if either should be forced upon us, without having *and using* overwhelming air-atomic strength-in-being.
- Atomic disarmament, without simultaneous—enforceable—disarmament in conventional weapons and guarantees against Soviet-inspired subversion and infiltration, can only lead to disaster for the Free World.
- If Soviet intransigeance intensifies the atomic arms race and eventually leads—God forbid—to all-out war, the final outcome will be decided in a matter of weeks *only* by opposing *atomic air forces*. Following the cataclysmic carnage which would be visited upon mankind during this initial and decisive phase of a nuclear war, the "winner" would need primarily to occupy quickly the key control centers of enemy power. For this purpose, assuming that we would "win," rowboats, bicycles, and suitable air transports would be more appropriate than some of the sea, ground, and airpower we are building today.

We need immediately to break the current impasse between developing the kind of air-atomic strength (Navy and Air Force) which will insure our survival, and simply buying bigger versions and greater quantities of World War II-type equipment. Another Finletter-type Presidential Commission on Air Policy could help with this task, and simultaneously rally greater public confidence in the Administration's Defense program.

Beyond that, we need a permanent civilian organization, financially and politically independent, devoted to a continuing evaluation of effectiveness vs. cost of proposed weapons and forces. Call it, if you will, a National Institute of Weapons Evaluation. Set it up as a non-profit corporation in Washington; give it full access to military secrets of the highest classification; let the most competent military men *advise* it; let the Secretary of Defense be responsible for its administrative housekeeping; but give it a strong Board of Trustees which can prevent it from becoming the captive of any service, "civilian" partisans of any service, the Administration, or any political party. It should be clearly understood that this proposal only suggests a highly objective, independent, advisory body which in no way infringes on the authority and responsibilities of the Joint Chiefs and Secretary of Defense, but rather would help them do their jobs more effectively.

Give this group authority to perform objective studies of the military effectiveness vs. cost of future weapons systems and forces.

To insure realism, let this group witness joint maneuvers —in fact, give it a role in planning and assessing results. Finally let this group present its studies *as advice* to the Joint Chiefs *and* the Secretary of Defense *only*. Then we would begin to know where the money is going down the drain for equipment and forces that will never be used in combat. Then we would have a sensible basis for choosing future weapons and deciding on quantities required. —END

THE AUTHOR: Mr. Walkowicz, formerly an Air Force Regular officer in research and development, is now in private business. The views expressed in this article are the author's own, not necessarily those of the Air Force Association or of AIR FORCE *Magazine.*

MOBILIZATION NEWS

BY JAKE CULPEPPER

A JET RESERVE — AF Reserve has entered the jet age with the recent selection of nine pilots to handle transition training of Reserve pilots from props to jets. Three three-man instructor teams have been organized with a Korean jet veteran as a member of each team. AFRCTCs to which these instructor teams are assigned are the 234th at Hanscom AFB, Mass.; the 2242d at Selfridge AFB, Mich.; and the 2346th at Hamilton AFB, Calif.

AF-ROTC — During the first four months of FY '54, 3,584 AF Reserve officers were called to active duty, of whom 2,295 or sixty-four percent were AF-ROTC graduates. Only nine Reserve airmen received active duty orders during this period. Of the AF-ROTC graduates, fifty-four percent entered pilot training while three percent were to become observers, and twenty percent were handed technical training assignments. About 4,600 AF-ROTC graduates were available for active duty as of October 25, 1953, and 2,100 more will be commissioned by April 30, 1954. About 900 per month will be ordered to active duty for the rest of FY '54.

THE MEN — Shortage of Reserve wing airmen is causing Air Force personnel officials sleepless nights. During FY '53 less than one-half of one percent of the Regular airmen separating at end of their term of service were recruited immediately for AF Reserve. Nearly 65,000 Regulars who were separated during FY '53 had no obligated Reserve service. Only 300 of these joined Reserve. Recruiting of prior-service airmen by AF Reserve during last FY totaled 7,600. This number includes veterans of all services. Meanwhile, AF is going ahead with its plan to allow 14,000 non-prior-service men to fill the Reserve unit slots.

PROMOTIONS — For a Reserve airman to be promoted, he must meet AF specialty and time-in-grade requirements, and a position vacancy must exist in the next higher grade and corresponding AF specialty unless assignment is to a Specialist Training Center on non-pay status or to a VART unit. Promotions are limited to one-grade advancements at a time. After July 1, 1949, inactive duty points required for promotion line up this way: To M/Sgt., 50 points; T/Sgt., 50; S/Sgt., 50; A/1C, 38; A/2C, 38; and A/3C, 32. Minimum time-in-grade for promotion are: M/Sgt., 24 months as Tech; T/Sgt., 21 months as Staff; S/Sgt., 18 months as A/1C; A/1C, 12 months as A/2C; A/2C, 8 months as A/3C; and A/3C, 6 months as basic airman. Time-in-grade served on extended active duty after July 1, 1949, will be credited as double time. Time-in-grade-alone, however, is no guarantee of promotion. Airmen promotions within a VARTU will not exceed these AF-wide assigned VARTU strength percentages: To M/Sgt., ten percent; to T/Sgt., sixteen percent; to S/Sgt., twenty-four percent; to A/1C, twenty-five percent.

AN EXEMPTION — Commissioner of Internal Revenue has ruled that transportation expenses of Reservists and Guardsmen to and from training meetings under certain conditions are deductible for income tax purposes. For details, write AFA's Personal Service Department.

BULLETIN — ConAC Surgeon's office is publishing periodically a new Medical Training Bulletin available to Medical Service Officers of the AF Reserve. To be included on the mailing list, write directly to ConAC.

RETIREMENTS — AF Reserve officers (not on active duty) recently retired under Public Law 810: Brig. Gen. Merian C. Cooper, Col. Clarence E. Bissell, Col. Reed E. Davis, Col. Edward A. Rein, Lt. Col. Paul E. Freydig, Lt. Col. Raymond King, Maj. Burdette Wright, and Capt. Orville Isaacs.

MY COUNTRY, 'TIS OF THEE

WITH FREEDOM'S HOLY LIGHT...

A place to worship one's God . . .

to maintain one's faith . . . unhindered . . . to express opinions, confident that any may disagree with what you say, but will defend to the death your right to say it.

This is the strength of a mighty nation . . . whose natural resources

and giant industries . . . are incomparable assets

to the world at large . . . and to peace within our time.

This is America . . . Let's preserve it!

Character is the vital measure of a nation's strength and stability . . . and as with the state, so it is with those who contribute to its maintenance and safety. ➢ By 1927 American aviation had begun to fulfill the promise of its ultimate stature in defense, transportation and business utility. ➢ Air Associates, comprised of research and development, manufacturing and marketing was founded in answer to those needs. ➢ Today, the character of our organization is the motivating force which makes available the finest aviation products the world has ever known.

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NUMBER TWO IN A PATRIOTIC SERIES • REPRINTS ON REQUEST

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Towering high above Rochester, N. Y. are the masts of our stations WHAM, WHFM and WHAM-TV. From them, Sid Caesar, Stella Dallas—and scores of others—are welcomed daily into the homes of Western New York, neighboring states and Canada.

But entertainment is only half the job these stations do for us—and for *you*. Less than a block from our main plant, their million-dollar studios make up Rochester Radio City—our broadcasting research laboratory. Through these stations we keep abreast of the latest wrinkles in broadcasting technique—and build receivers designed to deliver finest performance.

Since the very early days of radio in 1922, we've been in AM broadcasting; in FM, which we helped to develop, since 1939; and in TV, as the first station in Rochester, since 1949. And coincidentally we've pioneered some of the greatest advances in the world of home entertainment: automatic volume control, the coaxial cone speaker, and *"Panoramic Vision,"* to mention just a few.

What does all this mean to you?

You may not be planning to buy a new home receiver right now. You may never purchase a minute of time on any radio or TV program. But when you're considering *any* product bearing the Stromberg-Carlson name—whether it's a sound system, telephone equipment, electronic carillon, radio or television receiver—you can be sure it's backed by one of the oldest and most thorough engineering traditions in America.

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BOARD OF DIRECTORS NAMES '54 COMMITTEES

The National Air Reserve Council also meets, adopts operational policy

MEMBERS of Air Force Association's new Board of Directors got together, for the first time officially, on November 21 in Washington, D.C.'s Statler Hotel. The Board established a National Air Guard Council to "plan, coordinate, recommend, and direct, under the general supervision of the President and Executive Director of the Air Force Association, programs and policies for improving the organization, administration, training, and combat efficiency of Air National Guard forces."

The Board also studied and approved a plan to set up committees on both the national and local levels which will coordinate programs in the areas of Youth Education, Civil Defense, Reserve Forces, and Civil Aviation. San Francisco won the Board's recommendation as the site for the 1955 Convention and Reunion. That city had put in its bid for the '55 affair during the Convention in Washington last August.

The National Air Reserve Council also met in the Statler the same day as the AFA Board and afterward met informally for the first time with the Board. This group was the governing body of the Air Reserve Association before ARA merged with AFA.

Chairman Frank T. McCoy, Jr., Nashville, Tenn., reported that the Council had adopted an operational policy, which was approved by the Board, as follows: "Matters of a major policy nature concerning the welfare, organization, training, etc., of the Air Force Reserve will be referred to the President, Air Force Association, with such recommendations as the Council may deem advisable, for submission to AFA's Board of Directors for appropriate action. Reserve matters and problems of a unit, local, or individual nature will be referred to the Executive Director (Assistant for Reserve Affairs) for prompt attention and necessary action."

Members of the National Air Reserve Council are John P. Henebry, Park Ridge, Ill.; Paul S. Zuckerman, New York, N.Y.; T. B. Herndon, Baton Rouge, La.; John Lerom, Washington, D.C.; A. B. McMullen, Washington, D.C.; T. W. Ward, Altadena, Calif.; Raymond J. Mead, Rochester, N.Y.; Kendall Hoyt, Falls Church, Va.; Harold Mears, Knoxville, Tenn.; Frederick Rudesill, New Orleans, La.; Maurice Smith, Kansas City, Mo.; and Willard D. Powell, Long Beach, Calif.

George C. Kenney, AFA President, announced the appointment of the following committees:

Executive Committee: Chairman, George C. Kenney, Scarsdale, N.Y.; Arthur F. Kelly, Los Angeles, Calif.; Gill Robb Wilson, New York, N.Y.; C. R. Smith, New York, N.Y.; Thomas G. Lanphier, Jr., La Jolla, Calif.; James H. Doolittle, New York, N.Y.; Carl A. Spaatz, Washington, D.C.; and Julian B. Rosenthal, Lake Success, N.Y. (ex-officio).

Constitution Committee: Chairman, Julian B. Rosenthal, Lake Success, N.Y.; Warren DeBrown, Red Bank, N.J.; and Randall Leopold, Lewistown, Penna.

Squadron Activities Committee: Chairman, Thomas F. Stack, San Francisco, Calif.; Stanley McWhinney, Lansing, Mich.; Morry Worshill, Chicago, Ill.; Michael Kavanaugh, San Francisco, Calif.; Bernard Barrett, Campbell, Calif.; George D. Hardy, Hyattsville, Md.; John J. Currie, Paterson, N.J.; and D. Warren Jewett, Colorado Springs, Colo.

Finance Committee: Chairman, Samuel M. Hecht, Baltimore, Md.; C. R. Smith, New York, N.Y.; Arthur F. Kelly, Los Angeles, Calif.; Jack B. Gross, Harrisburg, Penna.; and Richard S. Wolfe, Columbus, Ohio.

Membership Promotion Committee: Chairman, Dr. Cortez F. Enloe, Jr., New York, N.Y.; John R. Alison, Redwood City, Calif.; Merle S. Else, Minneapolis, Minn.; Arthur C. Storz, Omaha, Neb.; Howard Halla, San Francisco, Calif.; Norman Miller, Dayton, Ohio; George A. Anderl, Oak Park, Ill.; and Alex Morphonios, Miami, Fla.

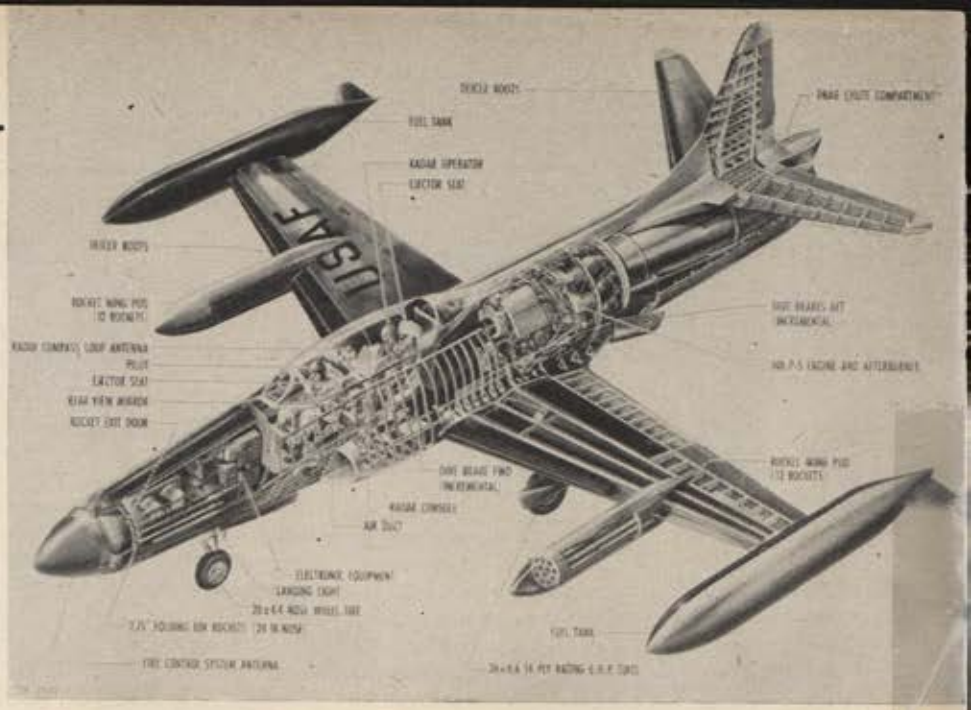
Permanent Headquarters Housing Committee: Chairman, C. R. Smith, New York, N.Y.; Samuel M. Hecht, Baltimore, Md.; George D. Hardy, Hyattsville, Md.; and James H. Straubel, Falls Church, Va. (advisor).

National Wing Advisory Council: Chairman, Randall Leopold, Lewistown, Penna.; Morry Worshill, Chicago, Ill.; David Levison, Brooklyn, N.Y.; Michel Pisani, San Francisco, Calif.; and Roland E. Frey, St. Louis, Mo.—END

Members of AFA's National Air Reserve Council who met in Washington included (from left) T. B. Herndon, John P. Henebry, T. W. Ward, Harold Mears, Frank T. McCoy (chairman), A. B. McMullen, Kendall Hoyt, and Maurice Smith. Later the Council got together informally for the first time with AFA's Board.

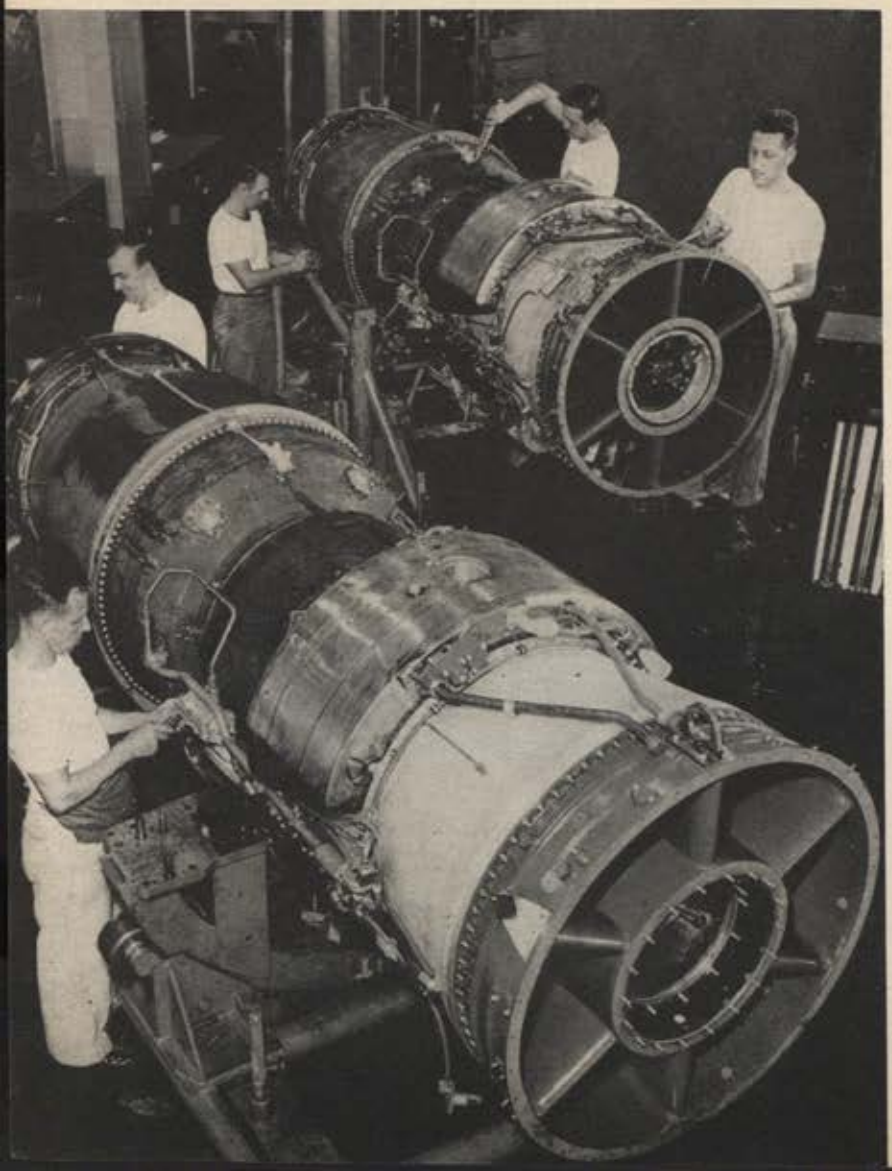
XL-19B Soars Highest

Above, a Cessna XL-19B, new holder of the world's altitude record for lightplanes. Powered with a Boeing XT50-1 turboprop engine, the XL-19B broke the old mark of 30,203 feet on a flight from Cessna Field, Wichita, Kan. On the hop it climbed to a record-breaking 37,063 feet.



Cutaway Shows Lockheed F-94's Innards

This is the heart of Lockheed's F-94 Starfire, an AF all-weather interceptor. Capable of speeds of more than 600 mph, the Starfire's armament consists of forty-eight 2.75-inch rockets—twenty-four in the nose, and twelve in each wing pod. (Note rocket tubes in above cut.) The F-94 carries almost 1,300 pounds of electronic equipment. This enables its crew to intercept and destroy an enemy without seeing him.



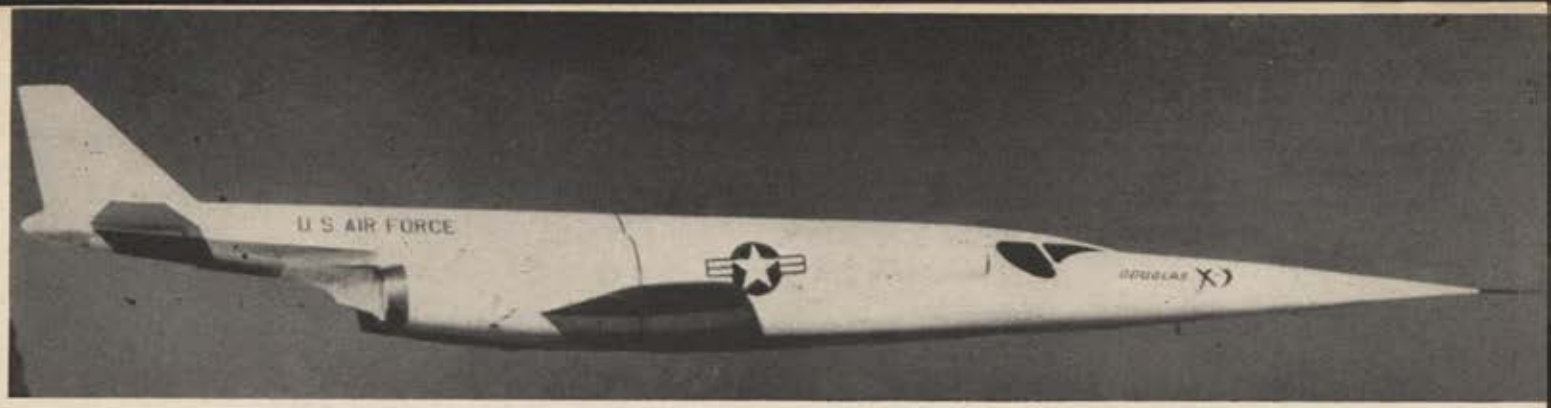
J-57 Production Line Rolls

Shown coming off Pratt & Whitney's production line at East Hartford, Conn., are giant J-57s—one of our most powerful turbojet engines. The picture (left) is one of the first released of the 10,000-lb.-thrust engine which will power US's latest jet aircraft. The J-57 is an axial-flow engine with in-line dual compressors which give a high compression ratio and aid in fuel economy. It has the lowest specific fuel consumption of any turbojet in production for the AF. At present the J-57 is slated for six aircraft: F-101, F-102, B-52, A3D, F-100, and the F4D. The latter two—North American's F-100 and Douglas's F4D—are co-holders of world's air speed mark.

TECH TALK

The O-15 camera system familiar to many an Air Force air crewman is becoming obsolete. Its replacement, the O-30. Made by Bolsey Corp. of America for ARDC, it is five cameras in one. The manufacturer says the parts—magazines and power packs—are interchangeable; changing them has the same effect as changing the irises and corneas of the human eye. Interchangeable components simplify immeasurably the problem of maintenance and stocking of spare parts.

Because one-fifth of the world's land area lies ice-locked, and because we are more and more conscious of our arctic frontiers, the study of permanently frozen ground—permafrost—draws increased attention. Two scientists from ARDC's Cambridge Research Center conducted one such on-the-spot study. They wanted further information on permafrost's action on roads, railroads, airfields, and other permanent installations. By setting off explosions in the frozen earth and re-



First Pictures of X-3, Flying Stiletto

How high? How fast? The Air Force, the National Advisory Committee for Aeronautics, and the Navy wouldn't comment when these first pictures of Douglas's X-3 were released. The first aircraft designed (at ARDC's request) for supersonic flight, the X-3 began flight tests October 1952 at Edwards AFB, Calif. Results are open to speculation, but original goals mentioned a speed of 2,000 mph, and an altitude of 200,000 ft. (38 miles). At such heights where speed of sound approximates 660 mph, the X-3 would indicate Mach 3. The X-3 or Flying Stiletto gets its name from its long, needle-nosed fuselage (above and right). Unlike other planes in the experimental "X" series, the X-3 is powered by two axial-flow turbojet engines—Westinghouse J-34s (6,800 lbs. thrust) with afterburners—instead of rockets. And, it flies from the ground up—others were launched from mother-craft. Grossing nearly 30,000 pounds (more than a DC-3) the X-3's wing span is only twenty-two feet, eight inches—less than a gooney bird's tail span. Titanium is used extensively throughout its construction. It has a refrigerating unit of "tremendous capacity" to protect the pilot and some 1,200 pounds of research instruments from excessive temperatures of high-speed flying. More than 850 "pin hole" orifices record various pressures over the plane's surface, and 185 electric strain gauges measure air loads and stresses. Temperature is recorded at 150 different points.

New Gear for Firemen

Latest vogue for firefighters is this aluminized, fibreglass protective clothing shown above. It was recently demonstrated at a world-wide Firefighting and Crash Rescue Conference held at Lowry AFB, Colo. Representatives from the Far East, Alaska, England, and Germany attended. The suit will be worn over the conventional white duck fire-fighting suit. The helmet, similar to those worn by welders, has a removable facepiece that can be replaced in case of accident. Eventually, all US firefighting services will use the suit.

By Everett E. Dodd

cording and studying the resulting seismic waves they determined the frostline's penetration. One method was refraction where the velocity of compressional waves was measured by detectors known as geophones. The other was by reflection. Using the principle of radar, instruments were set to record the time elapsed for a seismic wave to travel vertically in the earth.

Last month a new answer to blind landings and airport congestion was revealed by ARDC's Cambridge Research Center. It's the Volscan. Five years in development, Volscan is said to be a completely automatic landing system, designed to pick up aircraft, track and check their positions, alter, if necessary, their course lines, and arrange their landing order. With Volscan, 120 planes can be landed within an hour at precisely spaced intervals. It's three times faster than present manual methods, and eliminates the danger of human error or guesswork, says ARDC.

Giant Rings

Shown (right) being lowered onto a trailer van is a 28-foot diameter, stainless steel expansion joint. It's one of thirteen (varying from five to twenty-eight feet in diameter) that go into NACA's huge, new, supersonic wind tunnel at Cleveland. The joints, manufactured by Solar Aircraft Co., are components of the tunnel's bellows system. They'll enable it to "breathe"—expand and contract with heat and pressures created within. Too large for freighting, shipment from San Diego to Cleveland presented a problem. Solution: to Cleveland via the Panama Canal to New York, the Erie Canal and on to Cleveland. There professional house movers took over. Just crating the joints, which are flexible, cost $6,000, of which $500 was for nuts and bolts.

CHICAGO 41 PLANS 3d AIR FORUM

Airpower Forums are just one of the many programs planned and carried out recently by this active Chicago Squadron

Chicago's Squadron 41 is well along with plans for the third in its series of Airpower Forums. The principal speakers are slated to be Wing Commander George Wilson; Howard Markey, past president of Chicago's Air Reserve Association chapter; and Julius M. Simmons, of Chicago's Argonne Laboratory.

Ray Gran of 4031 W. Monroe St., Chicago, is the Commander of this Squadron, which has been particularly active in planning and carrying out airpower programs and which pioneered the Squadron Airpower Forum.

Chicago 41's Youth Aviation Education series is another of the programs this unit has sponsored. The latest in this series included the presentation of a perpetual trophy to be given to the winner of the Midwestern States Championship airplane model meet.

Typical of the speakers lined up by the Chicago unit for meetings is Otto Eiler, a former *Luftwaffe* pilot, who addressed a recent meeting. And in October, the Squadron gave valued assistance to the Junior Chamber of Commerce Air Fair.

The annual Squadron party for paraplegic veterans at Hines Veterans Administration Hospital was planned for December 12, followed by a party for all children of Squadron members on December 20.

Program Chairman of the Squadron is Norman Lauer, a past Commander of the Squadron.

Great Lakes Region

The quarterly Regional Conference of the Great Lakes Region was held in Chicago November 8, with thirty-one representatives of Wings and Squadrons present. In addition, five delegates from Minnesota attended, led by Wing Commander Edwin Kube. Regional Vice President George A. Anderl, Oak Park, Ill., presided over the session.

The gathering heard comments on unit activities and programs from eighteen Squadron Commanders or their appointed representatives. Two National Directors—Morry Worshill and J. P. "Jock" Henebry—were present, as was AFA's Executive Director, James H. Straubel.

Among the Wing Commanders who were present, besides Kube, were Glenn Sanderson, Michigan; George Wilson, Illinois; and Robert Logan, Indiana.

SQUADRON OF THE MONTH

Santa Monica Squadron
Santa Monica, Calif.

CITED FOR

its many outstanding airpower projects which bring to the community a knowledge and appreciation of the mission of the Air Force Association. To the "Golden Eagle" Squadron—California's first chartered unit—AFA gives this official commendation.

Activities in Boston

The new Boston Squadron kicked off the social season this fall with a banquet on the roof garden of the city's Hotel Shelton. Thomas C. Stebbins, Northeast Regional Vice President, chose this occasion to present the Squadron Charter to Commander Philipe F. Coury, 77 Readville St., Readville, Mass.

The Hon. Laurence Curtis, US Congressman from Massachusetts, delivered the evening's principal address. In his remarks, he welcomed the Squadron as an official and active part of the Boston community effort for airpower, and expressed his belief in the importance of airpower for national defense.

Keynote speaker was Prof. W. Barton Leach, a special consultant to the AF Chief of Staff and a member of Harvard Law School's faculty. He advanced a strong argument for more realistic thinking, based on today's dan-

(Continued on page 59)

Morry Worshill accepts Michigan Wing award for his services as Great Lakes Regional V-P. From left are Bob Emerson, Wing Deputy Commander; Worshill; Glenn D. Sanderson, Wing Commander; Stanley McWhinney, National Director.

Philipe Coury, left, Boston Sqdn. Cmdr., and Mildred Buck, Secretary, accept Charter from V-P T. Stebbins.

Chicago Group display set up during 50th Anniversary celebration at O'Hare Field. Behind the counter are, from left, George Anderl, Regional VP; Tom Noesges, Squadron 41; and Don Spoerer, Chicago Southwest Squadron Cmdr.

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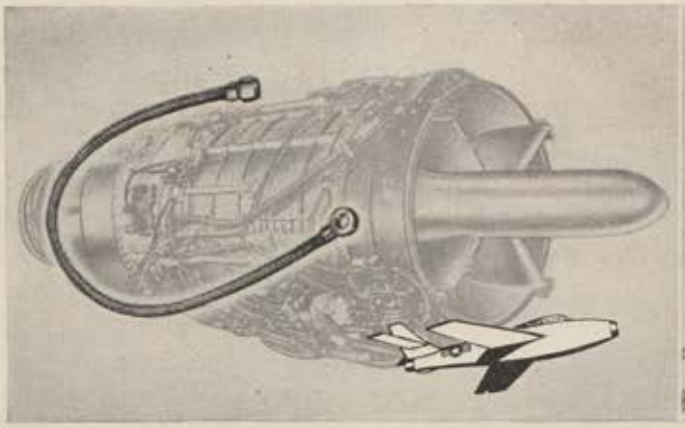

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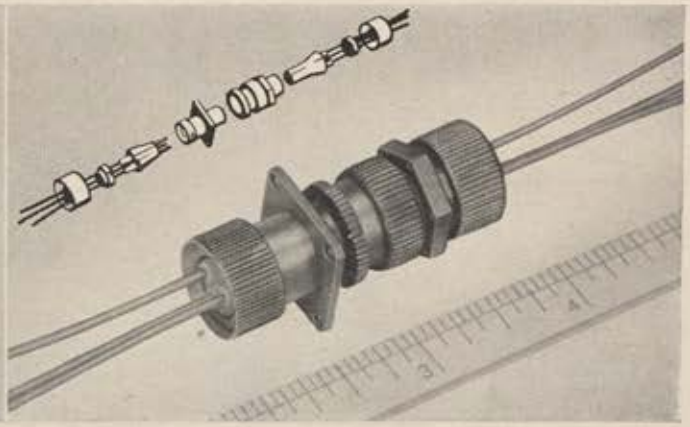

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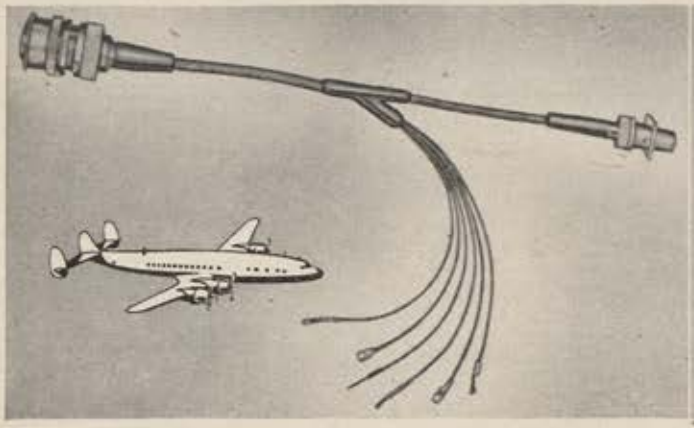

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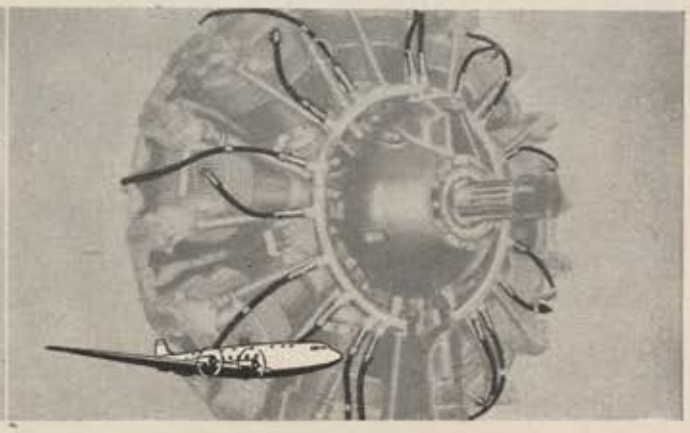

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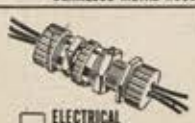

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At the Hollywood premiere of the Warner Brothers film "Island in the Sky," actor John Wayne, center, accepts California Wing Citation of Merit from Regional V-P James McDivitt, left, in behalf of himself, his co-producer Robert Fellows, and director William Wellman (2d and 3d from the left).

gers, in relation to the nation's airpower needs.

The pilot of the B-29 that dropped the atomic bomb on Nagasaki, Japan, in August 1945, Col. Charles Sweeney, now Commander of the 102d Fighter-Interceptor Squadron (ANG), was introduced as an honored guest.

The Boston Squadron's future plans indicate it will take an active part in the city's aviation affairs, and Squadron Commander Coury invites all area members to participate.

Toledo Finds Quarters

Members of Toledo's Joe E. Brown Squadron are busily turning a 30 x 60 foot cement-block building into an AFA Headquarters. The building is on the site chosen by the city for its new Class V airport and will be dedicated next spring at the same time as the new airport. Squadron Commander is Dean W. Huffman.

Above, trophy awarded by Chicago Sqdn. 41 to winner of Midwestern States Model meet. Winner in '53 was Andy George, Springfield, Ohio.

50th Anniversary in L.A.

AFA's Greater Los Angeles Squadron won top honors for static displays during the recent Fiftieth Anniversary of Flight celebration in that city. The unit showed a rebuilt Sopwith Snipe aircraft, a veteran of World War I dog-fights over London. The plane was brought to this country by film actor Reginald Denny who flew it in such Hollywood movies as "Hell's Angels," "Dawn Patrol," and others.

The Snipe had been stored in the basement of the Los Angeles County Museum before the Squadron, under the direction of Vice Commander Nicholas Gyopyos, dug it out and rebuilt it.

Mr. Denny, during his appearance at the Squadron's display area at the Air Fair, was introduced to a German WW I pilot, Max Holtzen. The two discussed their experiences at length and attracted much attention to the AFA booth.

Units Back Air Fairs

Units in the Chicago area and San Diego, Calif., got together with their respective communities in sponsoring Air Fairs to commemorate the Anniversary of Flight. In Chicago, Group Commander John Carr and AFA Director Morry Worshill, working with the Junior Chamber of Commerce in October, put

(Continued on following page)

on the biggest aviation event seen in the Windy City since AFA's 1950 National Air Fair.

The two-day affair included a luncheon at which Under Secretary of the Air Force James H. Douglas was the principal speaker. Others present included Chicago's Mayor Martin H. Kennelly; Merrill C. Meigs, Vice President of the Hearst Corporation; and Chicago Public Works Commissioner Virgil Gunlock.

The Fair opened at O'Hare Field as two AF Republic F-84s screamed overhead after returning from a pass over the Wright Memorial at Kill Devil Hill, N. C. On hand too was the AF's precision flying team, "The Thunderbirds." Fifth Army, the Illinois ANG, the 4706th Air Defense Wing, 97th F-I Squadron, and 2471st AFReserve Training Center provided static and flying exhibits.

Assisting in the promotion of the Air Fair were AFA Director "Jock" Henebry, Lt. Col. Wade Roberts, O'Hare Base Commander Colonel Tope, and AFReserve Wing Commander Colonel Greenfield.

In San Diego, the Squadron, under the direction of Commander Bob Kirby and Group Commander Edward Kranch, also lined up a full program and then went one step further as Kranch received the job of laying out the complete flying operations plan for all aircraft that participated in the show.

Kranch also was at the microphone of the public address system used during the day, and the Squadron got many "plugs" that might not otherwise have been heard.

New Squadrons Forming

At presstime, several new AFA Squadrons were being organized. All AFA members in the areas listed below are urged to contact the leaders listed for their city.

In Erie, Penna., Don Allshouse of 3117 W. Ridge Road, Erie, heads the slate of temporary officers for the new Squadron there. The first meeting was held in November with Wing Commander Carl J. Long, Pittsburgh, presiding. The charter application was expected to be made at the next meeting.

In Florida, five new Squadrons were being formed and a sixth getting ready for its first meeting. Here are the new units and their local leaders: In Jacksonville, Thomas F. McGuire, 118 E. Bay St., Jacksonville; in Orlando, Harold W. Bremer, 2301 Depauw St., Orlando; in Tavares, Dr. J. Basil Hall, Lake Co. Health Dept., Tavares; in Sarasota, Ben S. Brown, 2471 Paulstan Court, Sarasota; and in West Palm Beach, Ray E. Whitehurst, 1712 So. Palmway, Lake Worth.

Santa Monica Squadron's James Czach and Dr. Heinz Haber, space travel expert, shown at Squadron meeting.

Each of these units held organizational meetings in November, and all were expected to apply for charters by the end of this month. The sixth Squadron will be formed in Daytona Beach, with its first meeting this month.

Ozark Squadron Meets

Jack C. Hansen, Commander of Missouri's new Ozark Squadron, reports that at the unit's first meeting these committees were formed with chairmen as follows: Programs, Arden Eichler of Owensville; Entertainment, Kenneth Bernhardt of Gerald; and Membership, Robert Otto of Gerald. Hansen, who lives at 212 W. Madison, Owensville, Mo., invites all area AFA'ers to participate in Squadron activities.

Father Mullally Honored

The Right Reverend William F. Mullally, St. Louis, Chaplain Division representative on AFA's Board of Directors, has been elevated to the rank of Monsignor in the Roman Catholic Church. He served as Parliamentarian for AFA's 1953 National Convention.—END

CREDITS

Front cover—photo by S/Sgt. Edmund G. West; pages 13, 25, 63, and 64—Arlo Greer; page 21—Hugh Brown; page 23—Harris & Ewing photo; pages 28, 30, and 31—Vernon Nye; page 34—photo by F. Clarke Newlon; page 53—Chase, Ltd., photo.

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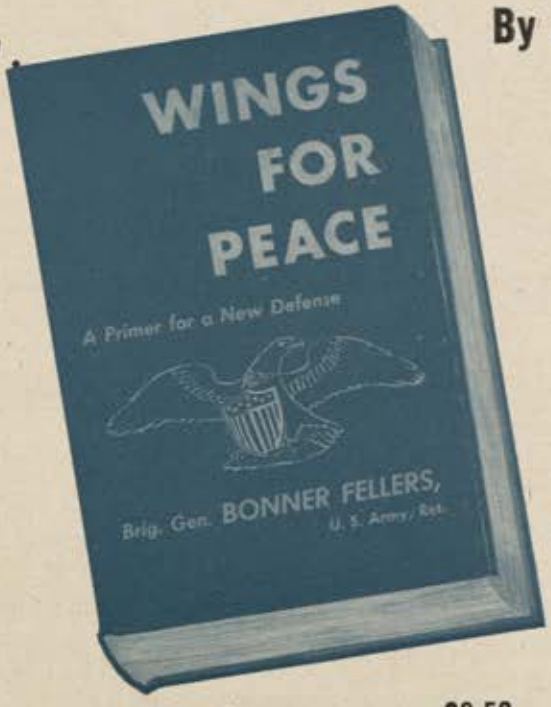
WINGS FOR PEACE

By Brig. Gen. Bonner Fellers, USA (Ret.)

1.



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General Fellers received an AFA Citation of Honor for *Wings for Peace*. He was cited for his contribution to "a better understanding of airpower for world peace."

2. **THEY FOUGHT WITH WHAT THEY HAD,** by Walter D. Edmonds. The AF in the Philippines after Pearl Harbor, men outnumbered and outgunned but never outfought. **$5.00**

3. **GLOBAL MISSION,** by Gen. H. H. Arnold. "Hap" Arnold's own story of the birth and growth of the Air Force and the part he played in that growth through World War II. This book takes on special significance with the recent Fiftieth Anniversary celebration of Powered Flight. **GLOBAL MISSION** is a "must" for every airpower-minded person's bookshelf, and to do our part, AFA is cutting the price of this book to $1.00 to put it within reach of everyone. **$1.00**

4. We now have four-color reprints of the front cover of the December issue of AIR FORCE, minus lettering, ready for immediate mailing to you, postpaid, for only $1. These expensive 12x15-inch, high-gloss reproductions, highly suitable for framing, show the historic first flight at Kitty Hawk. **$1.00**

HERE'S WHAT THEY'RE SAYING

- "The only deterrent to war, in General Fellers' estimation, is for America to build a strategic air force capable of a deep penetration of Russia."
  From "The Wall Street Journal," April 22, 1953

- "In light of the new defense budget, *Wings for Peace* becomes 'must' reading for all who are seriously interested in our security position."
  Review in* AIR FORCE *Magazine, June 1953

- "*Wings for Peace* pounds home the point that preventing an atomic war is as much a mission of airpower as winning such a war."
  Editorial in "The Saturday Evening Post"

- "Of General Fellers' new book, Louis Bromfield says: 'Every American should read it. Written by one of our most respected generals, it should be of interest to every taxpayer and every young man who may be drafted.'"
  From "The Readers' Digest," October 1953

- "For the alert patriot who wishes to dig into these defense matters for himself, I recommend strongly . . . *Wings for Peace,* by Brig. Gen. Bonner Fellers, USA, who was Douglas MacArthur's chief of planning in the South Pacific throughout World War II."
  Hon. Ralph W. Gwinn in "National Republic," April 1953

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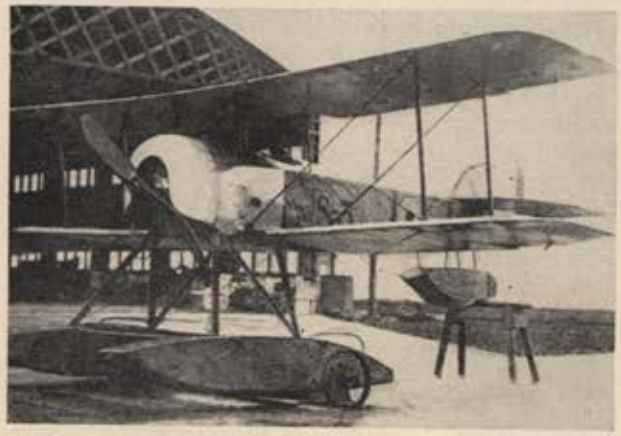
MUSTY PLANES and VINTAGE PILOTS

The short but colorful era of Navy Scout seaplanes as told by one of the Navy's earlier birds

By Cmdr. Frederick W. Keith, USNR



It took a practiced hand on a blimping button to land this Sopwith Navy Scout, powered by a French-built Gnome rotary engine.

BURIED and forgotten by this time in the swift-paced history of naval aviation is the brief and fruitless era of the single-seater seaplane "Scout." I daresay there is scarcely a Navy pilot under fifty who has even heard of a Curtiss Pursuit triplane or a Thomas-Morse Scout. This, after all, isn't so surprising, as their era came and went so fast that only a handful of us ever had a chance to fly those tricky little stinkers that used straight castor oil for lubrication in motors that whirled like pinwheels.

I was lucky enough to have been one of that handful and luckier still, I suppose, to have survived the fun. My mildewed flight log shows that I flew my first Scout plane in March 1918, and tested the last one in May of the same year. When somebody cracked up that last one a week or two later, the short-lived era came to an end. From the Navy Department in Washington came the terse directive: "The operation of Scout planes will be discontinued as of date."

I was an ensign at the time, stationed at the brand new Dinner Key Naval Air Station outside of Miami. My brass wings bore the inscription: "Naval Aviator No. 379."

Our commanding officer was Lt. Cmdr. Marc A. Mitscher, USN—twenty-five years later Vice Adm. Mitscher, commander of Task Force 58 in the Pacific.

NAS, Dinner Key, in 1918 was primarily a training station where student pilots, fresh from ground school at the Massachusetts Institute of Technology, were taught to fly. Our aircraft were the current two-seater training planes of the times—N-9s, F-Boats, and Aeromarines.

Then, early in 1918, scuttlebutt had it that we were to receive some single-seater pursuit ships. But the rumor hardly made sense because pursuit ships were landplanes, and we had no landing field. Finally Mitscher put us straight. Single-seater pursuit ships were coming all right, but they had floats in place of wheels, and were designated "Scout Planes" by the Navy. In the next couple of months we were to receive several different types, their status being mainly experimental until the Bureau of Navigation approved of one to be produced in quantities for scouting purposes along the coasts of Europe.

This was good news to me as I was a test pilot and stunt instructor at the time. My immediate superior was Lt. Louis Barin, USN, a top-notch pilot and as likeable a chap as you could hope to find. Part of our job was to test all new planes that came in, so either he or I would get first crack at the new Scouts.

The initial contingent turned out to be four Sopwiths shipped from England. When the first one was assembled, Louis and I looked it over curiously. It was a tiny biplane with dainty twin floats and a single cockpit. The power plant was a French-built "Gnome," the first rotary engine either of us had ever seen.

Immobile, the Gnome resembled the seven-cylinder, air-cooled radial-type engines of today. But start one up and any resemblance to anything vanished—except possibly a screeching, fire-spitting pinwheel. The whole cockeyed engine, cylinders and all, revolved like mad with the propeller! Inside it somewhere was an ingenious singlethrow crankshaft that remained stationary, thus completely reversing the basic principles of any normal engine. And the more the thing warmed up to its job, the more odoriferous became the pure castor oil used for lubrication.

Around the Gnome was a metal cowling which, we were informed, was both for cooling and to prevent the flames from spreading when the motor caught fire—a fairly common occurrence, as time proved. The cockpit was about the size of a squirrel cage and just as effectively enclosed by the criss-crossed stress wires around it.

Barin looked it over skeptically. He was a big fellow, about 220 pounds. "Just how," he mused, "am I supposed to get my big fanny through that mess of wires?"

I admitted he had a problem.

When the time came to test the first one, we flipped a coin for the honor of the first flight. I won.

Louis grinned ruefully. "Guess I should have pulled rank."

Two bright mechanics solved the problem of getting me into the cockpit. I was light, so they picked me up bodily and fed me in feet first. An experienced man on rotaries stepped up on the wing and gave me some much-needed pointers. The first one was quite a shock. A rotary engine, I learned, had no throttle. Either it ran wide open or it didn't run at all.

"How the heck, then," I asked

suspiciously, "am I supposed to land this kite at a hundred knots, plus?"

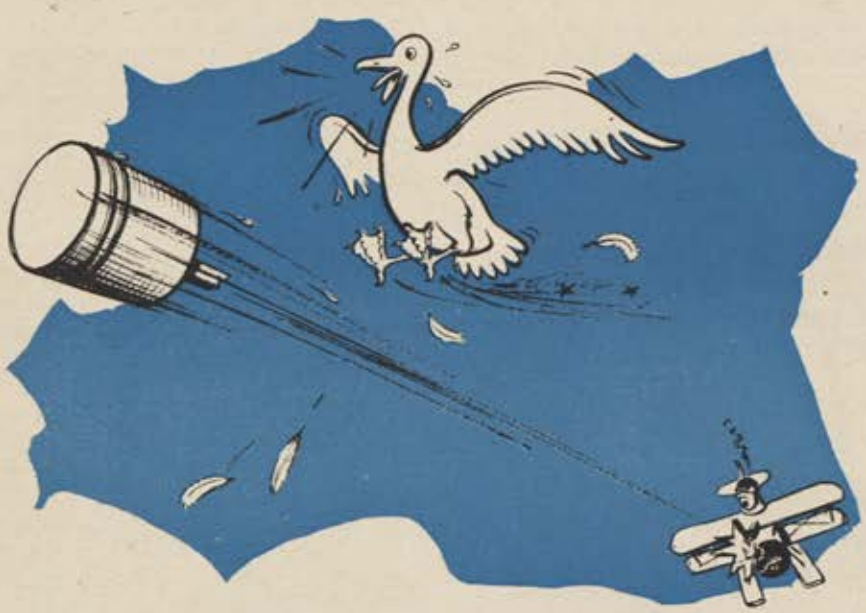
The expert pointed to a button on the rim of the control wheel. "Use that blimping button in your glide."

He might as well have told me in Chinese.

"What's a blimping button?", I inquired.

Patiently he explained that it short-circuited the motor. "When you're in a glide or taxiing on the water, keep blimping your motor on or off. That slows you down."

"What's this?" I pointed to another gadget.



From the engine came a hefty "pop" like a huge cork being pulled from a champagne bottle, and something tore through the cowling and off into space.

"That regulates the mixture to the engine. You have to adjust it every few hundred feet of climb to compensate for changes in atmospheric pressure."

I began to think another arm or two might come in handy. "How about coming down?"

"Same thing. Keep adjusting it."

Louis was enjoying himself hugely. Said he, "Cheerio, old top, in your blawsted British Sopwith. I'll even cry in my beer for you if it breaks your bloomin' neck."

Thirty minutes later I was back on the beach once more, reeking of castor oil and thoroughly spoiled for flying our slow, underpowered training ships again. That Sopwith was a dream plane compared to anything I had ever piloted before. It was fast for its day and handled beautifully in the air, but "blimping" down to a landing proved a decided headache until you got on to it.

On my first attempt I blimped too long and killed the engine. Still being high enough, I dove the Scout and restarted the motor okay, but the outsized pinwheel promptly caught fire from the raw gas that had drooled out in the meantime. Right then and there I blessed that cowling around it. Flames began licking over the edge and nearly scared me to death until I realized the big hood prevented them from reaching the inflammable fabric on the wings and fuselage.

Down I came in a roaring power dive, afraid to cut the ignition switch for fear more raw gas would squirt out to feed the fire. Luckily that nosedive did the trick. When it came time to pull out and crashland the Sopwith, I discovered the flames had either blown out or burned out, and the motor, apparently undamaged, was blasting along at its normal clip. So back upstairs I climbed to prepare for another bout with the blimping button.

In my second attempt I got the Scout down on the water intact, but it was a pretty lousy exhibition. I was too sparing with the "blimps" that time, and set it down at an ungodly speed. It was only luck the Scout didn't flip over on its back and leave me pinned head down in that fenced-in cockpit. I would have drowned for sure, as did one unfortunate a week later who flopped one over in deep water.

The next type of Scout plane to arrive at Dinner Key was an American-built Thomas-Morse single seater. I think we got six of them in all. They were biplanes powered with La Rhone rotaries, similar to the Gnome and likewise manufactured in France. Around the motor was the same kind of protective cowling that the Sopwiths had. All told, the T-Ms were pretty good kites, but they didn't have the neat lines of their English counterpart. In fact they had a rather odd appearance because of twin floats that seemed overly large in proportion to the rest of the plane. They reminded me of ducks flying along with galoshes on their feet.

I had a rather harrowing experience in one of the newcomers during a test flight. Admittedly the incident had its humorous side, too, but I failed to see anything funny about it until I was well out of a tough spot and safely back on terra firma.

We had been ordered by the Bureau of Navigation—under whom all Naval aviation activities fell in those days—to conduct a series of tests with the different types of Scouts shipped to us. On this particular day I was making a ceiling test with a Thomas-Morse. At 14,000 feet the Scout was getting sluggish and I was getting bored and blue with cold. Suddenly from the vicinity of the engine came a hefty "pop" that sounded for all the world like a huge cork being pulled from a king-size champagne bottle. Something tore through the cowling and went hurtling off into space. A flash of fire squirted through the hole it had made. My boredom vanished. We didn't have parachutes in those days, and a fire usually ended in a flaming dive with a broiled pilot.

But once again the cowling saved my hide. I cut the ignition, dove, and, presto, the fire blew out before it could spread to the vulnerable fabric. It all happened so quickly I still had time to glance over the side to look for the departed chunk of metal that had ripped through the cowling. I spotted it immediately, tumbling end over end, finally to disappear into a cloud below me.

Still jittery and thoroughly mystified, I spiraled down to a dead-stick landing near the air station. While waiting for the tow boat, I climbed

(Continued on following page)

THE AUTHOR

After WW I, Commander Keith, who's now retired in Florida, became head of a yacht-building yard. In WW II he was assigned to an admiral's staff with flag duty on carriers in the Pacific. Later he was Yard officer at Corpus Christi NAS, Tex.

out on a float and peered around the cowling at the engine. A gaping hole in the crankcase yawned where a cylinder had been. The fact that it had been whirling at 1,400 revolutions per minute when it tore loose accounted for the terrific centrifugal force behind its amazing trajectory.

When I told Louis Barin about it, he laughed uproariously. "Where did the cylinder go?"

I shrugged. "It was headed for the Everglades the last I saw of it."

Louis' question was answered in the newspaper next morning. The cylinder had landed inland in somebody's back yard. A startled housewife who was hanging out washing when it thudded down near her told a reporter she couldn't imagine where the object had come from as there was no plane in sight at the time. Mitscher chuckled when I showed him the clipping and got off an official letter of apology to her.

This member of the Navy Scout family flew like a well-trained witch's broom and had dangerous halitosis—carbon monoxide laced with castor oil fumes.

The black sheep of the Scout family arrived one day. Known simply as the "Navy Scout," it was the only one of its type ever built. I could readily understand that, after a few flights in it. It flew like a well-trained witch's broom when on its good behavior, but it had a way of pulling unorthodox shenanigans out of a clear sky. And besides that, it had halitosis – dangerous halitosis. For some reason, apparently uncorrectable, a goodly share of the exhaust fumes were sucked into the cockpit, so the pilot was breathing diluted carbon monoxide laced with castor oil fumes. A thirty-minute flight was about all a man could stand without developing a first-class hangover or passing out completely. I flew it in short doses quite frequently, partly because I had to and partly because I liked the little stinkpot. By flying it with my head dangling over the side of the cockpit, I was able to get occasional whiffs of fresh air.

One of its unpredictable antics nearly rubbed me out for keeps one day. I was trying to fly it on its back when the motor conked out, which was more or less expected in that position. But not the kind of tailspin it immediately snapped me into. In an ordinary spin there's a centripetal force that tends to glue you to the seat and glue your feet to the rudder bar—or "rudder pedals" nowadays. Thus you maintain full control of your plane and can readily pull it out of a spin by neutralizing all three controls.

So I knew something was haywire the instant the Navy Scout whipped into its spin. My feet flew off the rudder bar, my legs shot up in the air, and for the life of me I couldn't pull them down again. Even my body had a tendency to hurtle out of the plane, and only the safety belt and my clutching grip on the wheel kept me where I was mighty anxious to stay.

Meanwhile the Scout was spinning earthward like a thing possessed. Still unable to reach the rudder bar, I neutralized the only two controls I had left to work with; but the plane spun on unchecked, with the water looming unhealthily close. As a last resort I hauled back hard on the flippers, hoping to crash the Scout in a flat spin and maybe save my life. Normally it's a guaranteed way to stay in one, but, so help me Hannah, if that perverted crate didn't docilely snap out of it immediately, and right-side-up at that. I even had time to get my legs back where they belonged and level off for an orderly dead-stick landing.

Louis Barin, who had had years of flying experience, told me later that I had gotten into an outside, or inverted, spin wherein everything is reversed from an ordinary one. Whatever it was I wanted no more!

I was a witness to the ultimate and violent end of the Navy Scout. Standing on the beach one morning, I noticed it snorting along tractably enough at about 3,000 feet, on a straight, level course. Seconds later I heard a shout, and looked up to see the Scout hurtling earthward in a screaming power dive. I followed it down, waiting apprehensively for the pilot to pull it out, but he never did. With the engine still roaring, the plane crashed and exploded in a mangrove swamp in sight of the station, sending a mushroom of black smoke billowing skyward. Eventually a rescue crew hacked their way in to the crash, but found only charred wreckage and the burned and mangled body of the pilot.

I checked the time he had taken off and learned he had been in the air about forty minutes when the crash occurred—a fact that left little doubt in my mind as to the cause. I'll bet the pilot had passed out suddenly from the fumes and slumped forward against the wheel, throwing the plane into a dive.

Before the Scout era came to an end, we received two more experimental single-seaters. They were both triplanes, the first I had ever seen. Curtiss built them both and more or less from the same design except for their power plants. One had a Gnome rotary and the other a stationary engine – the reliable old Curtis OXX, which by that time had been souped up to 110 hp. The chord of their wings was so narrow that it gave them a fragile look.

Actually, they weren't fragile. They were rugged little kites and the sweetest-flying planes I have ever piloted, especially the one with OXX motor. Being a stationary en-

(Continued on page 67)

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U.S. AIR FORCE

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GILL ROBB WILSON

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MUSTY PLANES—CONTINUED

gine, it eliminated much of the vicious torque that a rotary imparted to a light plane. It was fast in the air, fairly leaped off the water, and flew upside down as easily as right-side up. With a little care you could even spiral it on its back.

One of the required tests we had to make with all the Scouts was their rate of climb. My log book shows the OXX-powered triplane climbed better than 3,000 feet in ten minutes, which was something of a seaplane record for the times.

Louis Barin took it up one day to make speed tests over a measured mile course. No sooner had he completed the required four runs than the big lug got too frisky and cracked up the triplane beyond repair. Louis was never the kind to show off his own piloting ability, but he loved to demonstrate what a good plane could do. This day he tossed the Scout around for a while in view of the flying beach and finally did a slow roll barely clear of the water. A wing-tip touched and that was the end of our sweet-flying triplane.

In the crack-up Louis' ponderous weight snapped his safety belt and he was catapulted headfirst through a wooden wingspar. When the crash boat crew fished him out of the water, he was practically unhurt, but whacky as a coot from the knock he had taken on the head. He kept babbling about flying around on a gold watch with his grandmother!

We never did learn what the speed of the triplane was. In the single-seaters the pilot clocked the runs himself with a stop watch, which was what Louis had done. He was up and around next day and perfectly normal again, but for the life of him he couldn't remember the time on any of his four runs. Nor was the knee pad he had jotted them down on ever found, so the triplane's speed is still a mystery.

Not long after that the Navy Department sent word that experimental work with scout-type planes was to be discontinued. They had proved a failure as far as their intended purpose in the war was concerned. Several Navy pilots who had been doing missionary work with Sopwith seaplane Scouts along the European coast had been shot down like sitting ducks. The weight of floats had proved too much of a handicap against the lighter and faster German landplanes.

Later I learned our Navy Scout and the two triplanes were the only ones of their types built.—END

THIS IS AFA

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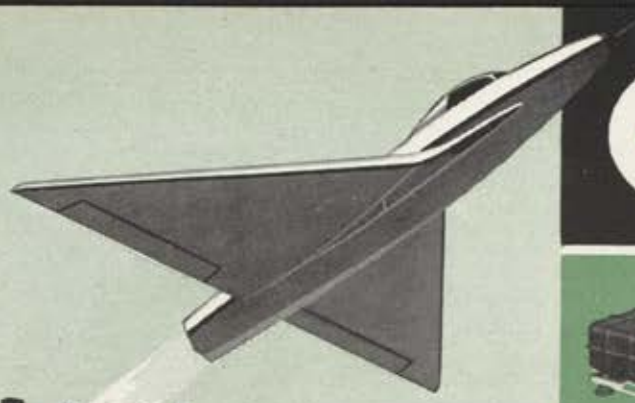

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