AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

August 1955 • 35c

'Operation Alert'

Is Civil Defense Too "Civil"?

IN THIS ISSUE:

The Air Force's Atomic Cloud-Busters

Shot at Sunrise—an Eyewitness Account of "Operation Cue"

NORTH AMERICAN's T-28B Navy trainers are equipped with Hamilton Standard propellers, traditionally used on both Air Force and Navy trainers as well as on leading military and commercial aircraft. Years of aviation experience, the highest engineering skills and unsurpassed modern facilities lie behind these propellers, and other *basic lines* * of equipment which Hamilton Standard is producing for jet and piston-engined aircraft.

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Propellers * Starters * Air Conditioning Systems * Fuel Controls * Valves * Pumps

HAMILTON STANDARD, WINDSOR LOCKS, CONNECTICUT

Boeing jet prototype on which new Air Force jet tanker-transport is based.

New milestone in America's aerial defense system

A new milestone in the development of our aerial forces came into sight when the Air Force ordered from Boeing the nation's first jet-powered tanker-transports. These new Boeings—called KC-135s—will bring the vital tanker-transport category of aircraft into line with the jet-age performance standards already achieved by today's fighters and bombers.

The KC-135 is an advanced version of the Boeing prototype pictured above. This new craft, designed and built by Boeing to put America into the jet tanker-transport field, has performed beyond expectations. Back of its outstanding performance is Boeing's vast background of experience pioneering the B-47 and B-52 jet bombers—revolutionary planes that opened up the current era of large, multi-jet aircraft. The KC-135 benefits from Boeing's unique experience developing aerial refueling equipment and aircraft, including the building of more than 600 KC-97s.

Boeing's Seattle Division is now tooling up for KC-135 production. Already substantial subcontracts have been placed with companies from coast to coast for participation in the manufacture of this historic first fleet of jet tanker-transports. This is part of Boeing's policy of passing along to subcontractors and vendors up to 65 cents of every Air Force dollar contracted.

The company has this goal: to produce for the nation the most advanced and dependable jet tanker, at the lowest cost possible—and on schedule. This is a Boeing tradition created with such aircraft as the trail-blazing Flying Fortresses and Superforts of World War II, today's KC-97 propeller-driven tankers, and the revolutionary B-47 and B-52 jet bombers. The jet prototype has shown in intensive flight tests that the KC-135 will, like earlier Boeings, establish new, high standards of performance.

Young men: You'll acquire "know how" as an airman in the United States Air Force. Opportunities for top technical schooling, world travel and a responsible position on the nation's defense team.

BOEING

TOMORROW'S AIRCRAFT: *One step closer*

Bull's-eye!

In bomber defensive action Westinghouse tail turret systems pay off in bull's-eyes . . . the only pay-off that is respected.

This defense of high-performance aircraft, like the Douglas A3D Skywarrior, against tail attackers requires instantaneous, pin-point accuracy *plus* reliability in every component of the complex radar and fire control equipment.

Air Arm radar uses high-speed sequential lobing and high-performance servos, resulting in excellent tracking accuracy. Computer reliability is enhanced by the use of MAGAMP* magnetic amplifiers and potted units . . . all adding up to more than sufficient capability to down the fastest moving enemy aircraft.

Since 1946, Westinghouse has been developing, designing, testing, and *building* bomber defense systems, the latest features of which are still classified. Current production systems are being turned out in quantity for the armed forces, and on-schedule deliveries have been made for more than a year.

At the same time, parallel engineering development is constantly advancing the state of the art, working hand in hand with aircraft manufacturers and the military — to help you bring Tomorrow's Aircraft . . . One Step Closer. Westinghouse Electric Corp., Air Arm Division, Friendship International Airport, Baltimore 27, Md.

*Trade-Mark

J-91026-B

On the Air Arm firing range, Armorer C. E. Brust, Jr., Test Supervisor Norman Brown, and Electrical Tester W. C. Scheele check over a typical burst pattern—evidence of accuracy backing up the fine reputation these systems have gained.

THE AIR ARM SYSTEMS FAMILY

Fighter Armament	**Bomber Defense**	**Flight Control**
Missile Guidance	**Special Purpose**	**Systems Components**

YOU CAN BE **SURE**...IF IT'S

Westinghouse

air mail

SAB Article

Gentlemen: May I congratulate you upon the excellent article concerning the Scientific Advisory Board which appeared in your June 1955 issue? It is indeed a pleasure to have been introduced to your readers in this way.

My colleagues in the member nations of NATO are very much interested in this account of a somewhat similar advisory group. We are therefore distributing seventy-five copies of your June issue among our members.

Theodore von Karman, Chairman
Advisory Group for Aeronautical
Research and Development
Paris, France

Gentlemen: Your coverage of the Scientific Advisory Board to the Chief of Staff, USAF, as presented by Dr. Walkowicz in the June issue of AIR FORCE was excellent. It is an invaluable way in which to introduce the Scientific Advisory Board wherever appropriate and we would very much appreciate your permission to reproduce the article for our use.

Dr. Millikan **Dr. Mills**

We wish to call your attention to the fact that we do not have twins on the SAB named Millikan and Mills. It would be appreciated if you would republish the picture of Dr. Mark M. Mills with a picture of Dr. Clark B. Millikan so that the readers of AIR FORCE may distinguish between them. Dr. Millikan has been a member of the SAB for three years and Dr. Mills for two years.

Lt. Col. Floyd J. Sweet
Asst. Exec. Secy., SAB
Washington, D.C.

• *We wish this had been called to our attention sooner, in light of the fact that we got the pictures, labeled as we published them, from the SAB staff. Herewith the proper identification and our permission to reprint.—The Editors.*

The Real "Mr. USA"

Gentlemen: This picture is "typical Mr. USA." The men in it volunteer their services and fly small airplanes with the Civil Air Patrol. Otherwise, they are regulars in the Air Force, US Army, and Navy.

Recently, I moved from the state of New Jersey and came to Kansas to work for Cessna. While here, I transferred from the New York Civil Air Patrol, and the Kansas Wing welcomed me with open arms, where I am now on the Wing Staff as Assistant PIO. The PIO is Lt. Al Hancock, who is an AF Reservist gaining points through CAP work. Al is with Boeing during his paid working hours.

We are helping to keep America happy and free, by working with the CAP and bringing the story before the American public.

Kansas is the center of America, and is typical of what goes on everywhere. Perhaps if you printed this picture it would inspire some of your members to join the CAP and help them. Qualified adult personnel are needed in every type of job (not just as pilots), and young Americans need good leadership.

Ruth Freckleton, Capt.
Civil Air Patrol
McConnell AFB, Kans.

Captain Kearby, a B-47 instructor from McConnell AFB (left), talks over Kansas CAP activities with Army T/Sgt. Edward Weisenberg, Navy Chiefs Harold Bowden and Raymond Espinoza, and AF T/Sgt. Bruce Buxton.

We're Investigating

Gentlemen: The magazine you have been publishing the past year or two has been slanted too much towards the technical problems of the present day Air Force (rank of colonel on up).

I was only a staff sergeant in World War II, 8th AAF gunner, and I joined the Air Force Association originally in the hopes AIR FORCE would follow the format of the magazine published

(Continued on page 7)

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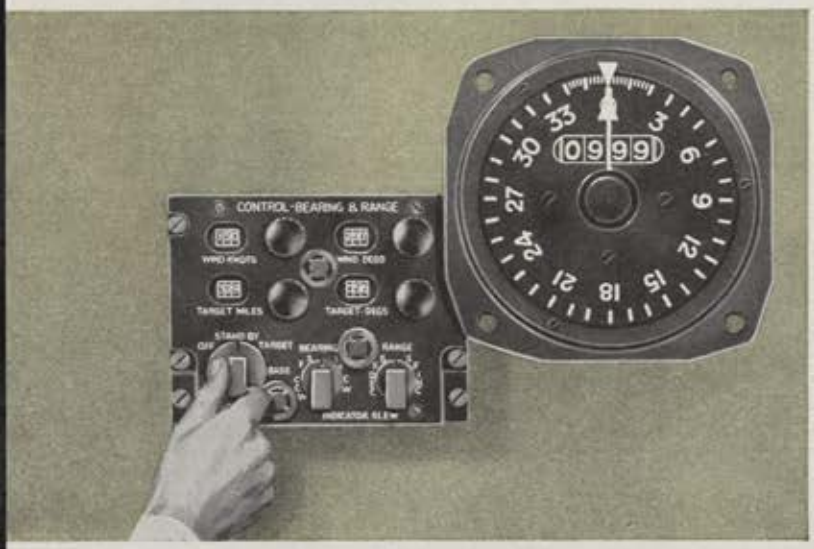
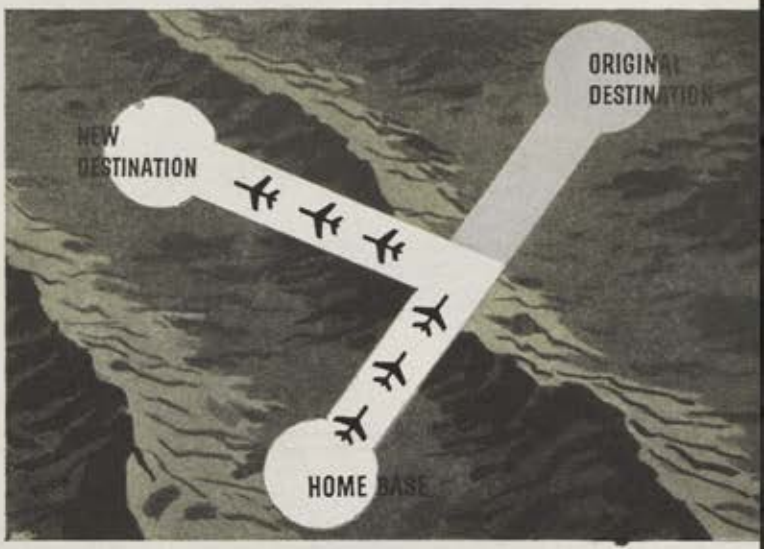
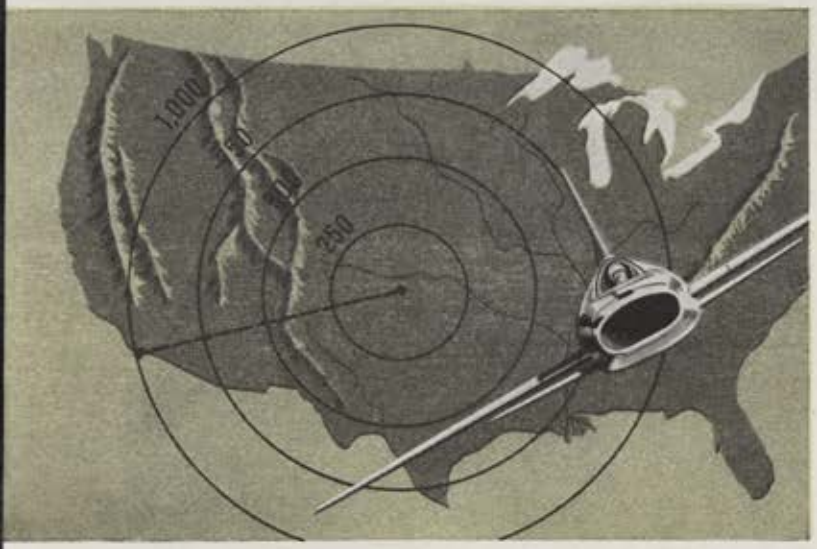
WHEN IT COMES TO MODERN FLIGHT REQUIREMENTS



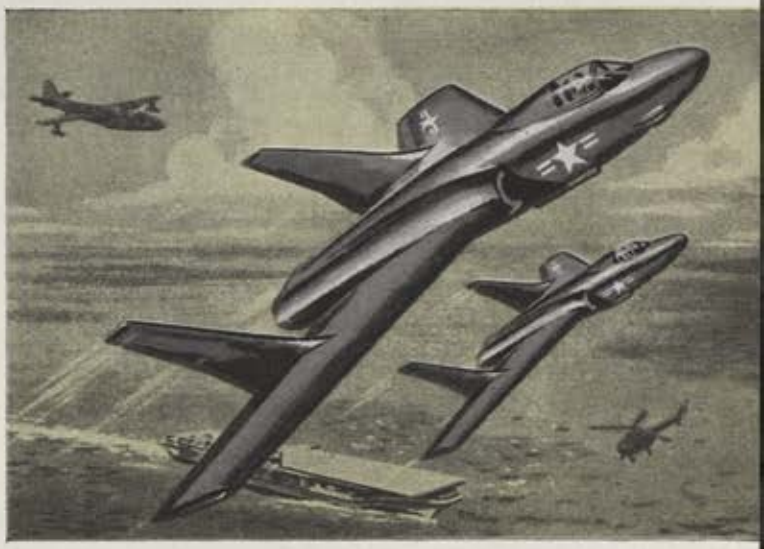
1 SIMPLICITY ITSELF! At take-off, pilot sets distance and bearing of destination . . . plus wind force and direction . . . into control panel. During flight, the indicator shows ground track and miles remaining to destination. Twelve o'clock pointer reading means "on course."



2 RE-SETS INSTANTLY! If destination—or target—is changed during flight, pilot simply sets new data into control panel. He gets correct new bearing and range reading . . . instantly and automatically . . . from his modern, self-contained, dead-reckoning Bendix Indicator System.



3 LONG RANGE! The Bendix Bearing and Range Indicator System has an effective operating radius of 1,000 miles . . . more if a new "home base" can be picked up as a reference. System accommodates true air speeds from 100 to 1200 knots and wind speeds up to 200 knots.



4 SUITED TO ALL AIRCRAFT! Because it can be tailored to any compass or true air speed system, the Bendix Bearing and Range Indicator is flexible enough to use in any aircraft. Its extreme compactness and light weight make it particularly suitable where size and weight allowances are at a premium.

THIS MINIATURIZED RHO-THETA COMPUTER IS ONLY ONE of several navigational systems developed, engineered and manufactured for modern aircraft use by Eclipse-Pioneer—foremost name in aviation instruments and components. For further details about the best system to meet specific requirements, write ECLIPSE-PIONEER DIVISION, BENDIX AVIATION CORPORATION, TETERBORO, N. J.

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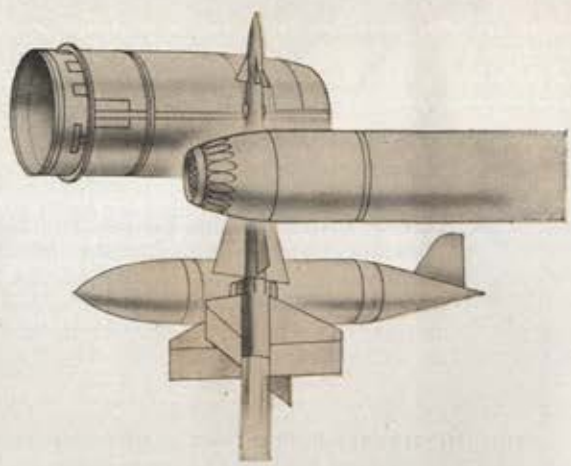
Vision is a keyword at Rheem. Forward-thinking is the basic ingredient in all research, engineering and production processes and has been a major contributor to Rheem's enviable record of low-cost per-unit production and on-time completion schedules.

Rheem's integrated Government Products Division facilities are presently in quality development and production on air frames, missile and jet-engine components, air-borne ordnance, electronics and ordnance materiel.



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during that war. However, some brass-happy editors gradually veered it far in another direction.

I am renewing this year on the strength of the May issue, which I think is one of the best you have published in years. The article on V-E Day in Europe is just the sort of article I have been hoping you would publish from time to time, and I was greatly interested in the one on the Russian Strategic Air Arm, to name but two that were exceptional.

I am sure you must have many members such as myself who can only be interested in the Air Force from the sidelines today, but like to keep in touch for the sentimental value.

Did the Air Force ever maintain records of enlisted gunners who were "Aces" (five or more enemy aircraft downed)? I have noticed many articles listing fighter pilots in this category. What happened to the enlisted gunners? Didn't any of them ever knock off five or more, or did no one give a damn? This might make you a good article some day. Me—I never shot down a sea gull.

Roy S. Duitman, Jr.
Vancouver, Wash.

• *A good idea and we're digging up background for a possible article. So far our incomplete survey lists S/Sgt. Benjamin Warmer from San Francisco (12th Bomber Command) and S/Sgt. Arthur Benko of Bisbee, Ariz. (CBI), each with nine victories, as top gunners in WW II.—The Editors.*

"A Little Gem"

Gentlemen: The story "Just a Second, Lieutenant," in the June issue, sent me rushing to the telephone to get permission to reproduce it in a hurry. I had to be certain that every one of our graduating AF-ROTC cadets had the opportunity to read this little gem. Sergeant Clifford has managed to catch just the right approach to put over sage words of advice that will certainly prove to be of great and lasting value to our newly commissioned officers.

I would like you to know that we in this unit have long enjoyed reading your fine magazine and have often sung its praises to our AF-ROTC cadets. We frequently find occasion to use your up-to-date material in our classwork. You are doing a great job.

Again, thanks for your fine co-operation. I know our graduates will profit greatly.

Lt. Col. John C. Lawrence
PAS
Williams College, Mass.

RENDEZVOUS

Where the Gang gets together

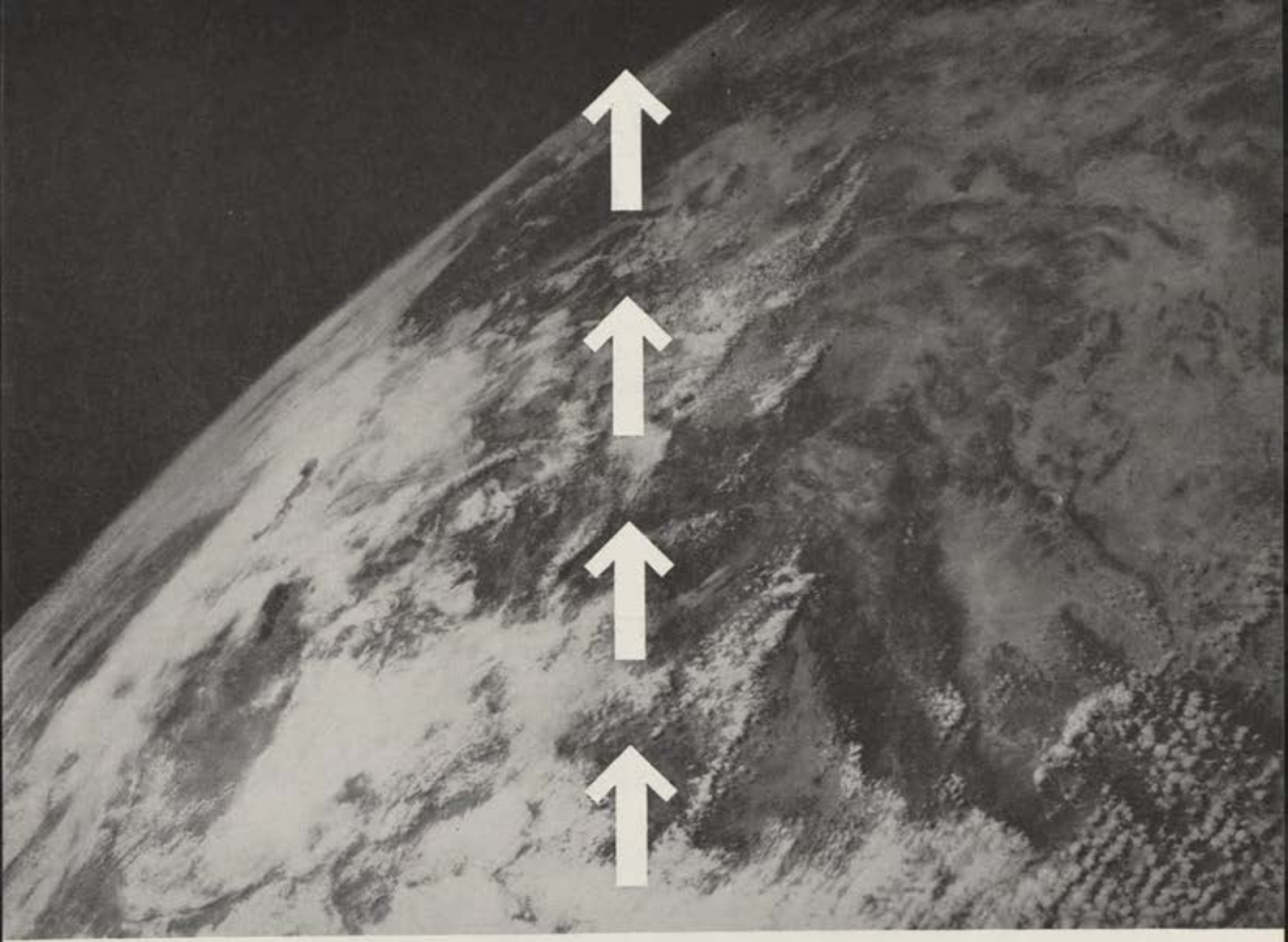
COLLECTION OF SONGS: For about four years I have been collecting songs about flying, particularly those of the fighter pilots. Last November, at the request of friends who wanted copies of the songs, and at the urging of the "Sabreknights" from California who were here for an airshow, I mimeographed sixty copies of my collection, and entitled it "Stovepipe Serenade."

I am now in the process of adding to the collection in hopes of getting out a 1956 edition. In tracing the histories of these songs I find that many of them originated in World War I, were brought up in World War II and even managed to make the Korean war. I'm afraid the first two wars were a bit before my time and that's why I'm asking your help. You readers must know many of the World War II vintage ditties and I hope you can steer me on to other people who can unearth some. I hope to illustrate the book with pen-and-ink drawings of all combat fighter aircraft flown by Americans since World War I and as many squadron insignia as I can find. Any advice would be very much appreciated. *Miss Logan Bentley, 2020-2 AACS Det., Donaldson AFB, S. C.*

CLASS 41-G: Members of flying school Class 41-G please contact me in order to get on mailing list for important information about our class. *Lt. Col. W. M. Houston, Hq., USAF, AFOOP, Pentagon, Washington 25, D. C.*

34TH AND 466TH BOMB GROUPS (H): I would like to hear from anyone who was in either the 34th or 466th Bomb Group (H) who could tell me if a history of these groups was ever published. *James R. Carey, Jr., Carey's West Side Service, Highway 52, Ossian, Iowa.*

WHERE ARE THEY? I would like to locate the following: Lt. Col. W. W. Korges; Capts. Francis O. Baur, Herman W. Baker, George C. Kelly, Walter R. Frierson, Francis X. Eagan, Wayne F. Palmer and Herbert Gabriel; Majors C. W. Cole, Francis Gardener, Byron F. Forman; 1st Lts. Robert M. Griffith, Paul Wygodski, Roy G. Miller, William R. Jenner, and Harold O. Gear; 2d Lt. Ray A. Pine; and W/O Merle R. Hendricks. *Ray Stoddard, 5 S. Maple Ave., Avoca, N. Y.*



where the future begins

It's a young man's universe!

No other branches of the armed services today—and few businesses—offer more exciting and unlimited opportunities for the future than are available in the military fields of aircraft, missiles, rocketry and space vehicle development.

Shown here is a glimpse of 600,000 square miles of our planet. It was photographed from a Martin Viking research rocket which attained an altitude of 158 miles. This rocket was one of a series developed by a team of Martin engineers and Navy scientists who have worked together since 1946.

To the young engineer and to the enlistee for military service, this picture says more than words about the immense opportunities to be explored—in uniform or out—in the closely integrated field of military and commercial aviation.

Here, in fact, is one of the biggest futures in the world today.

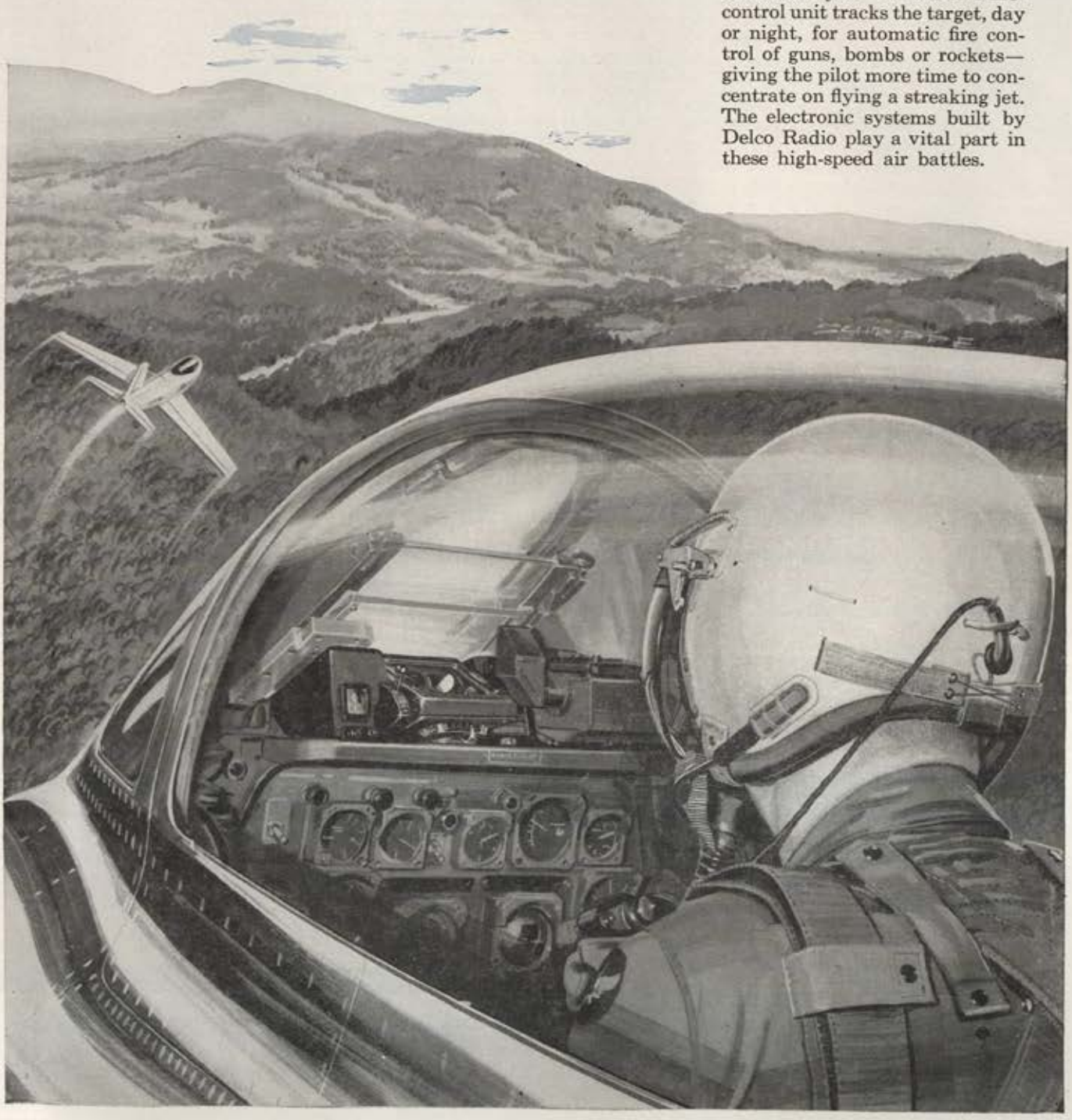
MARTIN

BALTIMORE · MARYLAND

Guns that aim

DELCO SKILL DOES IT!

The pilot guides the plane; the electronic system of the A-4 fire-control unit tracks the target, day or night, for automatic fire control of guns, bombs or rockets—giving the pilot more time to concentrate on flying a streaking jet. The electronic systems built by Delco Radio play a vital part in these high-speed air battles.



themselves

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T-38 SkySweeper, self-aiming anti-aircraft gun.

AN/TRC-32 transportable control towers for airfields.

R-390 all-purpose receiver for the Army Signal Corps.

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Delco Radio has at its command the largest integrated manufacturing facilities in the electronic field, so that it is able to produce from raw materials to finished product, more economically than ordinary assembly subcontractors.

This "under one roof" manufacturing offers purchasers still other advantages—coordinated scheduling, uniform product quality, and on-time delivery.

Delco Radio is ready *now*. For low-cost on-time production of electronic systems of high uniform quality, see Delco Radio.

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- LORAN RADIO RECEIVERS
- AM AND FM RADIO RECEIVERS AND TRANSMITTERS
- RADAR COUNTERMEASURE EQUIPMENT
- RAZON BOMB CONTROLS
- RT-70 RECEIVER-TRANSMITTERS
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- AN/TRC-32 TRANSMITTER-RECEIVER FOR CONTROL OF AIRFIELDS
- AN/GRC-27 TRANSMITTER AND RECEIVER

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- ELECTRICAL COMPONENTS
- ELECTRONIC CONTROLS FOR GUIDED MISSILES

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Air and atomic power can now go to sea... *under water*. The U. S. Navy today has weapons with striking power beyond imagination... Regulus guided missiles and a growing number of Nautilus class atomic submarines.

Regulus missiles were designed and built by Chance Vought for submarine or surface ship operation. These deadly pilotless "birds" can deliver powerful warheads against enemy targets from hundreds of miles at sea. They have brought *air power* to the underwater fleet... a fleet that is being even further strengthened by atomic submarines able to cruise at high speeds around the world without surfacing or refueling.

Both of these new weapons are prime examples of the vital contributions made by Your New Navy to strengthen the U. S. Defense team.

Regulus saves tax dollars. Most missiles are built to make one flight, but one Regulus model, equipped with landing gear, has flown 15 times! For test and training purposes, this feature means more test data gathered and many more men trained at far less cost.

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DESIGNER AND BUILDER OF HIGH PERFORMANCE MILITARY AIRCRAFT SINCE 1917

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THE COVER

The scene on our cover this month could be just a group of interested bystanders watching a helicopter behave like a helicopter. It isn't, though. The people are government workers evacuating the Pentagon. The big Piasecki H-21 'copter is about to whisk high officials off to a secret hideaway during Operation Alert, the nationwide, civil defense exercise General Phillips examines, beginning on page 36. The photo is by Wide World.

AIR FORCE MAGAZINE STAFF

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JOHN F. LOOSBROCK ..... *Managing Editor and Assistant Publisher*
RICHARD M. SKINNER ..... *Assistant Managing Editor*
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wing tips

By Wilfred Owen

Letter writers in the United States saved 10,000,000 hours of delivery time last year as a result of the experimental carriage of three-cent mail by air between specified points in the eastern states and on the West Coast.

° ° °

The 13,773-foot runway at Albuquerque's Municipal Airport, used by both Kirtland AFB and the airlines, is now the nation's longest operational runway. The only longer runway is the 15,000-foot test strip at Edwards AFB, Calif.

° ° °

US carriers accounted for the largest share of air mail flying the Atlantic, with sixty-three percent of the total. But they carried only forty-six percent of the passenger business and thirty-six percent of the cargo.

° ° °

The CAA is now issuing warnings to vacationing pilots to drive carefully on holiday weekends. Memorial Day

1954 resulted in small-plane accidents that killed eleven and injured twenty-three.

° ° °

Last April US scheduled airlines carried more than three million passengers in one month for the first time in history.

° ° °

American Airlines reports a den of foxes with nine fox pups located just off one of the runways at Detroit's Willow Run Airport.

° ° °

The Vickers Viscount to be operated in this country by Capital Airlines is also flown by British European Airways, Air France, Aer Lingus, Trans-Canada, and Trans-Australia Airlines.

° ° °

Texas and other southwestern states are spraying thousands of acres of cattle-grazing lands to combat mesquite growth, which takes four times as much water per pound as range grass.

° ° °

The recovery of disabled craft is another new use of the helicopter. A Piasecki H-21 Workhorse has towed an eighty-one-foot PT boat at a speed of eleven knots.

° ° °

According to CAA, teaching people to fly is a business that brings in more than $12 million per year.

TO MILITARY AND CIVILIAN

PERSONNEL OF THE ARMED FORCES

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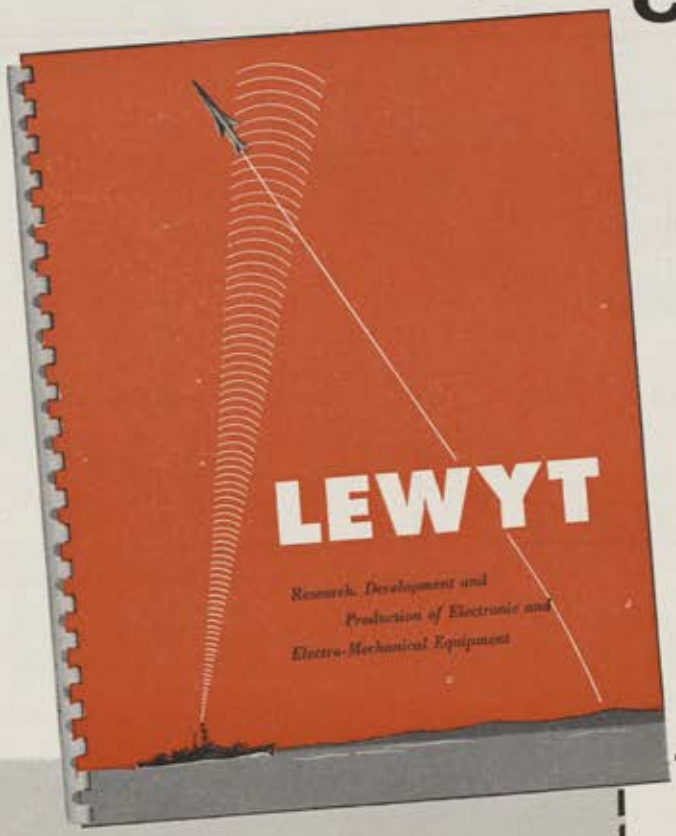

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IFF

(identification, friend or foe)

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AIRPOWER IN THE NEWS

■ A famous name will return to civil aviation this summer with the test flight of the **Fokker F-27 Friendship** cargo-transport plane. The prototype, designed as a replacement for the Douglas DC-3, is the **first Dutch airliner** to be built since the war. It will be about the same size as the DC-3, will carry twenty-eight to thirty-six passengers, will cruise at 219 mph and have a range of 1,000 miles.

The name **Fokker stirs many memories** among aviation enthusiasts. World War I pilots remember the Fokkers used by the Germans. The flight over the North Pole in 1926 by **Rear Adm. Richard E. Byrd** was made in a Fokker, as was the **1928 Atlantic crossing by Amelia Earhart.** By 1930, more than half the civil transports in the world were built by the Fokker Company. After that, the company began to be eclipsed by such American firms as **Douglas and Boeing.**

Another familiar name—this time in the air carrier field—reappeared as a scheduled world airline. *Deutsche Lufthansa*, the West German airline, started operations in May, and was admitted to membership in the **International Air Transport Association** late in June. The line will fly regular routes between Germany, the US, and South America. American crews are being used until the German crews can be completely checked out.

A milestone in commercial air transportation was reached recently when **Pan American World Airways** flew its **50,000th transatlantic flight.** The flights began in 1939 with the famous "Clipper" service to Europe, and more than 2,000,000 passengers have been carried across the Atlantic by the line since then. The "Clipper" flying boats were replaced by more economical land planes after the war when most major European cities had the runways and airfields to accommodate them.

■ According to **Dr. Hubertus Strughold,** chief of the Department of Space Medicine of the **AF School of Aviation Medicine, Randolph AFB, Tex.,** man is approaching the day when he **will be able to see the sun set in the east.** Speaking at a recent "Health and Travel" symposium in New York City, Dr. Strughold explained that **man has already flown at a speed greater than 1,500 mph** and that at that speed, a plane flying from east to west leaves the sun far behind.

A practical demonstration of this fact was made by the crew of a **British twin-jet Canberra** bomber when they flew from a base in northern Norway to Ladd AFB, Fairbanks, Alaska, on June 23. On the 3,200-mile trip, the RAF plane flew at an average speed of 500 mph and **gained on the sun all the way.** While the flight took six hours and twenty-three minutes, the flyers landed at Ladd at 4:27 p.m.—four and a half hours by the clock **before they left Norway.** They were helped in the race by the fact that at that latitude the speed of the sun in relation to the earth is much slower than at the equator, where it is approximately 1,000 mph.

Wide World Photos, Inc.

Jimmy Doolittle, one of military aviation's pioneers, has a congratulatory hug for another longtime flyer, Gen. Nathan F. Twining. The occasion was the June 30 swearing-in of Twining for a second tour as AF Chief of Staff.

Last year's Omaha convention chairman, Arthur C. Storz (shaking hands with Mrs. Parks), and Omaha AFA commander John Markel (next right, in light suit) were on hand at Offutt AFB to greet the recently freed USAF flyers.

■ Scientists at the **Ames Aeronautical Laboratory** at Moffett Field, Calif., have successfully flown a model airliner that takes off and lands vertically. Resembling a conventional transport plane, the model has **a wing that tilts to a vertical position,** pointing the propellers straight up. Once at altitude, the wing assumes the normal position for forward flight. Officials at the laboratory said that **a full-scale prototype is planned.**

■ One of the **Hoover Commission's** last reports (it went out of business on June 30) was a plan for major **reorganization of the Department of Defense.** The report proposed the establishment of a **fourth branch** of the Defense Department to supply non-military items such as food and clothing to the other three services. The separate unit would be under the management of **civilian supply specialists.** According to the Commission, the new agency would eliminate "waste, duplication and inefficiency," and save up to **$2 billion a year.** The Commission also recommended changes in the **"conflict of interests" laws** so that qualified civilians would not have to get rid of holdings before accepting Presidential appointments, but instead would be required to take an oath against participation in any decisions that might affect those holdings.

Other recommendations:

- **Confine military authority in logistics** to "tactical and combat related support activities," and to "planning and requesting" of equipment and supplies.
- Creation of a **new civilian office** under the Secretary of Defense for the **"review and analysis of defense plans and requirements."** This office would be charged with correcting what the Commission called a "weakness" in unified military planning—caused by "reluctance" of the Joint Chiefs of Staff to share planning with the civilian assistant secretaries, and the "reluctance" of the civilians

(Continued on following page)

to take on the many responsibilities of military planning.

- Use **more civilians in technical** and **management** posts and limit military men primarily to "tactical organization."
- Put an **assistant secretary** in charge of **each comptroller organization.** This is already done in the Navy, but not in the Army and AF.

■ The AF's **Assistant Secretary for Materiel, Roger Lewis,** will leave that post and return to private life in September according to a recent announcement. He has been **in office since early in 1953.** Before accepting the post he had been vice president of **Curtiss-Wright Corp.**

News of Lewis's departure was the **latest in a series** affecting high-ranking civilians in the Defense Department. Earlier, the **resignation of Robert T. Stevens** was accepted by President Eisenhower. Replacing him as Secretary of the Army will be **Wilber M. Brucker,** general counsel of the Department of Defense and a former Michigan governor.

Scheduled to leave the Defense Department in September—Hon. Robert Lewis, Assistant Secretary of the Air Force, Material. At press time, President Eisenhower had not named his successor.

Also scheduled to leave, is the number-two man in the Department—**Under Secretary of Defense Robert B. Anderson.** Reports from Washington indicate that **Reuben B. Robertson, Jr.,** President of the **Champion Paper and Fibre Co.,** Cincinnati, will succeed him.

■ Trigger-happy **Russian pilots** shot down another American patrol plane late in June. The twin-engine **Navy P2V Neptune** was on a patrol flight off the coast of Alaska in the Bering Sea when it was attacked. The plane crash-landed on US-held **St. Lawrence Island,** less than 100 miles from Siberia. All **eleven airmen** aboard survived the crash and subsequent burning of the craft. US rescue planes flew them back to their base in Alaska.

■ According to the evaluations made of the recent NATO atomic-bombing exercise—**Carte Blanche**—the aggressor will be the victor in a future war. Chief of Operations for the exercise, Britain's **Air Commodore Peter Wykeham-Barnes** said he believed that, all things being equal, an aggressor could always defeat a defender in an atomic war. The five-day exercise demonstrated the **need for drastic simplification of command** and operational procedures so that fighting forces could **continue to operate during and after an atomic attack.** During the exercise, 12,347 sorties involving 335 "bombs" were flown.

■ STAFF CHANGES . . . On June 30, **Lt. Gen. Howard A. Craig** retired from the AF. He had been Commandant of the National War College, Fort Lesley J. McNair, Washington, D. C. . . . **Maj. Gen. John B. Montgomery,** formerly Commander of the Eighth AF, SAC, Westover AFB, Mass., resigned on June 13. He accepted a position as asst. vice president of operations, with American Airlines, Inc. Replacing him is **Maj. Gen. Walter C. Sweeney,** formerly Commander of 15th AF, SAC, March AFB, Calif. Sweeney's Deputy, **Maj. Gen. Robert H. Terrill,** becomes new Commander of the 15th. In June, **Brig. Gen. George F. Schlatter** was assigned additional duty as Chief, Military Assistance Advisory Group, Saudi Arabia. He is with Hq. 2d Air Division, USAFE, APO 616, New York . . . **Brig. Gen. Benjamin O. Davis, Jr.,** has been released from assignment as Director of Operations and Training, Hq. FEAF, APO 925, San Francisco, and assigned duty as Vice Commander of the Thirteenth AF, APO 63, San Francisco . . . On July 15, **Brig. Gen. Lewis L. Mundell** became Inspector General of the Air Materiel Command, Wright-Patterson AFB, Ohio. He had been Deputy Commander of the San Antonio Air Materiel Area, AMC, Kelly AFB, Tex. . . . New Deputy Commander is **Brig. Gen. Tom W. Scott** who will leave his post as Deputy Director of Supply, AMC. . . . On July 1, **Brig. Gen. Frederic H. Miller, Jr.,** was released from duty as Assistant for Programming, AMC, and assigned duty as Deputy Vice Commander of AMC. New Assistant for Programming is **Brig. Gen. Ben I. Funk.** He had been Inspector General. . . . **Brig. Gen. Wentworth Goss** became Commander of the 3310th Technical Training Wing, ATC, Scott AFB, Ill., on July 31. He had been Commander of the 1602d Air Transport Wing, MATS, APO 208, New York . . . On July 31, **Brig. Gen. Harold R. Maddux** was assigned to the Office of the Assistant Secretary of Defense for Manpower and Personnel, Hq., USAF for duty as Director, Officer of Manpower Requirements. Replacing him as Deputy Commander, Pacific Division, MATS, APO 953, San Francisco, is **Brig. Gen. George S. Cassady.** General Cassady had been Deputy Commander, Continental Division, MATS, Kelly AFB, Tex. . . . **Maj. Gen. Elmer J. Rogers, Jr.,** has received a temporary appointment as lieutenant general. He was recently named to succeed Army **Lt. Gen. Carter B. Magruder** as Chief of Staff, Far Eastern Command . . . **Maj. Gen. Walter E. Todd** has been assigned as Vice Commander of the Fifth AF, FEAF. He will be succeeded as Commander of the Western Air Defense Force, Hamilton AFB, Calif., by **Maj. Gen. Roy H. Lynn** . . . **Brig. Gen. Jack Roberts,** named to replace **Brig. Gen. Richard Montgomery** as new Chief of Staff, Hq. SAC (see "Airpower in the News," July '55) died while en route to his new assignment. PROMOTIONS—**to lieutenant general:** Elmer J. Rogers, Jr. **To major general:** Hugh A. Parker; Walter I. Miller; John P. Doyle; Manning E. Tillery; Edward P. Mechling; Frank H. Robinson; Walter R. Agee; Harold W. Grant; Henry K. Mooney; Raymond J. Reeves; Thomas P. Gerrity. **To brigadier general:** Leslie G. Mulzer; John C. Crosthwaite; Robert S. Israel, Jr.; Edgar A. Sirmyer, Jr.; Lawrence M. Guyer; Donald P. Graul; John C. Horton; Winslow C. Morse; William L. Kennedy; George F. McGuire; Edward B. Gallant; Julian M. Chappell; Edward N. Backus; Robert L. Scott, Jr.; James S. Cathroe; Robert E. Lee; William C. Kingsbury; Charles A. Heim; Haskell E. Neal; George B. Dany; Perry B. Griffith; William H. Wise; John W. White; Robert M. Stillman; Thomas J. Gent, Jr.; Dolf E. Muehleisen; Harold L. Neely; John E. Murray; Emmett B. Cassady; Cecil E. Combs; Lawrence C. Coddington; Avelin P. Tacon, Jr.; Claude E. Putnam, Jr.; Frank E. Rouse; William K. Martin; Ralph L. Wassell; Horace M. Wade; Joseph R. Holzapple; Joseph J. Preston.—END

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what is AIRPOWER?

By Maj. Alexander P. de Seversky

Most everyone is for airpower these days, yet the term means different things to different people. Major de Seversky, long recognized as one of the world's foremost and most provocative experts on the subject, has written the following for the American Peoples Encyclopedia, published by the Spencer Press, Inc., Chicago.—The Editors.

AIRPOWER is the ability of a nation to assert its will via the air medium. The military instrument by which a nation applies its airpower is an *air force*. In time of peace the very existence of an air force of proper size and capabilities—what is termed an *air force in being*—can be used by a country to implement its national policy.

In time of hostilities, the primary use of airpower is for the establishment of *command of the air*, the condition in which one side retains its freedom of air navigation and has the ability to deny that freedom to the enemy. Freedom of air navigation when maintained by one side through successful, sustained combat is known as *air superiority*.

Because the aim of war is to impose the will of one side upon the other, the enemy must be disarmed; his industrial power to make war and the stockpiles of his armed forces must be neutralized. For that reason, the offensive air force must carry the threat of a lethal dose of destruction.

Though the main objective of war is to disarm the adversary, it must be assumed from the outset that the belligerents' industrial vitals and other sinews of war will be properly shielded by a defensive air force and that access to the decisive targets will be challenged. It is for this reason, as well as to deprive the enemy of his retaliatory capacity, that the primary mission of the air force must be the elimination of the opposing air force, through (1) the destruction of its operational facilities and equipment on the ground and (1) combat in the air. This is termed *air battle*.

In the past, when the range of aircraft was limited, it was possible to maintain *local* command of the air. *Global* command of the air could be achieved only after the establishment of a world-wide complex of air bases so located that, in terms of a given practical range of aircraft, their air peripheries would interlock to form an uninterrupted air canopy over the theaters of operation. This arrangement was not unlike the system maintained in the nineteenth century for seapower, which, for the exercise of its global functions, required the establishment of bastions of naval strength on foreign soil throughout the world.

There are emerging among the major powers, however, aircraft that, for all practical purposes, possess global range. They can rise directly from their respective home bases, strike at any target in the northern hemisphere, and return non-stop. At the current rate of advance in aeronautical science, it is only a matter of a short time before aircraft of a truly global range (25,000 miles) will be a reality. In the meantime, global range is being achieved through the perfection of in-flight refueling.

Because of this global range, airpower can be applied directly from the continental base of its industrial origin without intermediary bases and the international complications attendant upon their establishment and maintenance on foreign soil. In that respect, airpower represents, diplomatically, an instrument of national policy that is superior to its predecessor of the last century, seapower, the world-wide deployment of which was often branded as imperialistic and aggressive. With the development of the global range of aircraft and the advent of nuclear weapons, local control of the air anywhere on the face of the earth, except over the continental base of airpower containing the source of its industrial origin, can no longer be maintained. Thus, intermediary bases have become not only unnecessary but actually untenable. It follows that the base of air operation should be so located that any attack against it will involve for the attacker the risk of engaging the entire air might of the nation. (This proposition, incidentally, defines the airpower of the British Isles. Although an insular nation, Brtiain possesses a vast industrial complex and a large, technologically skilled population. She is a source of airpower of global significance that is capable of accepting a challenge to her air sovereignty.)

It follows, also, that because local control of the air cannot be maintained, airpower can no longer be applied on a sustained basis against a continent from intermediary

(Continued on following page)

An interesting contrast to Major de Seversky's definition of airpower is that given by Adm. Arthur Radford, Chairman of the Joint Chiefs of Staff, in a speech before the National Press Club, Washington, D. C., December 14, 1953, when he said:

". . . At this time of the Fiftieth Anniversary of Powered Flight, it would seem appropriate for me to amplify what I mean by national airpower. As I use the term, it includes the Air Force, Naval aviation, Marine Corps aviation, Army aviation, and the tremendous aircraft industry and civil air transportation systems of the United States. You may not fully comprehend the true magnitude of today's United States national airpower; but I will state unequivocally that it is superior to that of any other nation. Furthermore, the United States has so developed certain segments of its airpower as to achieve a strategic air force and a naval carrier striking force which are without peer in this world.

"The President of the United States, the Secretary of Defense, and the Joint Chiefs of Staff are of one mind on that matter: *this nation will maintain a national airpower superior to that of any other nation in the world.*"

bases located on its periphery, whether those bases are fixed on land or are floating, as aircraft carriers. If, for example, a floating base ventures beyond the protective canopy of a friendly continental air force, it becomes untenable. It stands to reason that, like an intermediary base, a floating base can never contain enough airpower to challenge or ward off the entire air force of a hostile continent. Further, with the development of nuclear weapons of a size conveyable by small, supersonic aircraft, the floating base, like any other intermediary base, becomes extremely vulnerable and once destroyed has no powers of recuperation.

From the above assumptions, it becomes clear that command of the air means a global command, exercised directly from the continent of its industrial origin. Either one controls the entire air ocean clear around the globe or one controls nothing.

In defining airpower, military experts have invariably paraphrased the historic definition of seapower, maintaining that airpower includes a nation's air force, the military aviation of its other services, its civil aviation and civil air transportation system, its aircraft industry, and the aeronautical skills of its population. In other words, they have held that airpower comprises that entire portion of the national effort that expresses itself in aircraft, their crews, and their operational facilities.

In the strict military sense of differentiating the respective strategic roles of the land, sea, and air forces, such a definition of airpower can be challenged. The reason the seapower formula is not applicable to airpower is that the movement of ships is naturally confined to their medium, the water, and cannot directly participate in, or compete in parallel with, overland movement. It is logical, therefore, that the national effort that culminates in ships, their crews, and their operational facilities constitutes strictly seapower. On the other hand, it has never been claimed, for example, that army ordnance facilities and skills, although applicable to the production of naval guns, constituted seapower—the reason being that those facilities were irrevocably committed to the maintenance of the army.

Unlike seacraft, the aircraft is an extremely versatile vehicle, which not only participates in and competes with all methods of transportation on land and sea but, with the development of hovering machines and such as helicopters, extends its application to other forms of motion, serving in effect as gigantic elevators, escalators, and hoists. As in the foregoing example of army ordnance facilities in relation to seapower, it can be argued that aircraft designed for and committed to surface forces do *not* constitute airpower. It is quite possible for a nation to have an amorphous mass of aircraft, even in prodigious numbers, and still have no airpower.

To put it another way, it is utterly immaterial whether an airplane rises from land or from water or from a catapult. What determines its definition as a land, sea, or air weapon is what it is designed to do after it becomes airborne. If designed to assist and increase the efficiency of land and sea forces in attaining their objectives, it is *not* an instrument of airpower. Only when an aircraft is designed to assist and increase the efficiency of the air force in its task of establishing command of the air is it an instrument of airpower.

A *strategic force* can be defined as a military force capable of assuming the command of its own medium by its own combat resources. Until the advent of the airplane, the army and navy were valid expressions of the nation's ultimate military power on land and sea, respectively. With the development of aircraft, however, that ceases to hold true. No longer the masters of their own mediums, in which airpower can at will decisively interfere with their functions, those forces have lost their strategic significance. Conversely, the surface forces cannot on their own initiative interfere decisively with the functions of the air force. Consequently, the air force is the only strategic force, because it is the only force that can attain command of its own medium by its own combat resources. Thus, the air force has become the primary instrument of the nation's military strength.

Because in a major conflict surface forces can no longer successfully fulfill their missions unless the air above them is controlled by a friendly air force, command of the air becomes the crux of war and an end in itself. (This principle, of course, is not applicable in the case of limited, localized conflicts, the conduct of which is often governed by political considerations in defiance of military logic. Thus, in Korea, the United Nations' air forces were confined to the support of ground forces and were prohibited from attacking the enemy's air bases or the industrial sources and stockpiles of his military strength.) Only when undisputed command of the air has been established can these other military services carry out their mission of exploitation, on the surface, of a climactic decision won in the air. Until then their efforts must be directed toward supporting and assisting the air force in its primary task.

In order to acquire maximum airpower, a nation must adhere to these principles of military art: singleness of purpose, unity of command, and concentration and economy of force. This means that the entire airpower potential of a country must be unified, under a single air command, into a single force—an air force in being that can go anywhere and do the necessary.

Therefore, it can be stated that airpower may be considered the supreme expression of military power and rests upon the entire human and material resources of the nation.—END

Major de Seversky wrote his definition of airpower in July 1954. In February of this year he added the following notes:

(1) The term "defensive air force" embraces defensive aircraft and their ground operational facilities, together with the nation's entire detection and warning complex and ground-to-air missile and vehicle systems.

(2) An important fact to be kept in mind is that the advent of nuclear weapons does not change the nature of airpower. With atomic warheads becoming common to all military forces, the supremacy of the Air Force as an instrument of war lies not in the nature of the explosive it employs, but in its superior and global combat mobility through the air medium, as contrasted with the inferior and geographically limited combat mobility of land and sea forces in their respective mediums.

The acquisition of aircraft by land and sea forces *for logistic purposes* does not alter that axiom. The acquisition of aircraft by those forces for air combat is tantamount to creating separate, competitive Air Forces, an act which defies the basic military principles of economy of force and unity of command, with resultant over-all weakening of the airpower of the nation.

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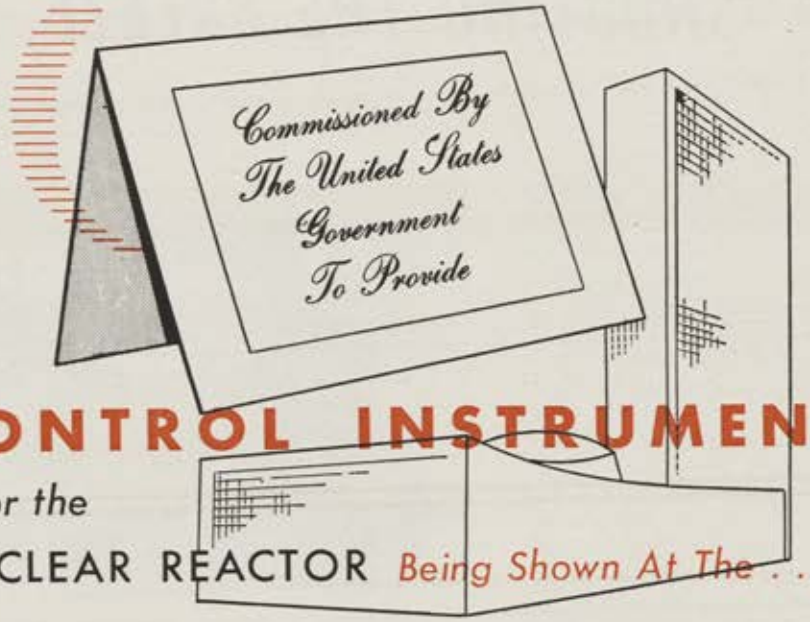

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SHOOTING THE BREEZE

WITH JOHN F. LOOSBROCK, MANAGING EDITOR, AIR FORCE MAGAZINE

The AFA-sponsored Ricks Memorial Trophy event for National Guard pilots was splashed over the front pages of the nation's newspapers and covered by NBC television as well. The winner—Lt. Col. James A. Poston, Columbus, Ohio (see cut at right). His time from Ontario, Calif., to Detroit—1,945 miles in three hours, thirty-two minutes. Colonel Poston's F-84E averaged 546.505 miles per hour which, under a handicapping system used for the first time this year, was good enough to win. Fast flyer was Capt. George C. McCrory of Pennsylvania. He pushed his F-84F at an average speed of 611.27 miles per hour, and his elapsed time was eighteen minutes less than that of last year's winner, Lt. Charles J. Young, Jr., of New Jersey. Captain McCrory's handicap, however, put him in sixth place. Colonel Poston will receive the Earl T. Ricks Memorial Trophy, named for the late commander of the National Guard Bureau's air division, at AFA's San Francisco Convention. Attending the finish of the event, at the Michigan Aero Club's Aviation Exposition, were AFA President John R. Alison, Executive Director Jim Straubel, Program Director Ralph Whitener, and Reserve Affairs Director Ed Hogan.

Lt. Col. James A. Poston, Columbus, Ohio, winner of the Air Force Association's annual Ricks Trophy cross-country event for ANG jet pilots, is greeted on his arrival in Detroit by Maj. Gen. Winston Wilson, ANG chief, and by MGM movie actress Anne Francis, the official hostess. Under the new handicapping system, Colonel Poston's 546 mph won the Los Angeles to Detroit cross-country event.

BREEZECAKE FOR AUGUST: More on the decorative side. The caption says, "A little-known use for the same precious platinum used in jewelry is for making electrodes of AC aircraft spark plugs . . . reported to last twice as long. . . . Examining the pellets, which appear to be suspended in space, is an attractive AC spark plug assembly operator, Clara Vallaire."

Any lingering doubts about Russia's airpower were laid to rest on July 3, when the Reds put more than 400 planes in the air over Moscow in the greatest show of strength in Soviet air history. Included were a formation of twelve Bisons, the four-engined jet intercontinental bomber; two new fighter types; a formation of seven four-engine turboprop bombers; a jet airliner. *Pièce de résistance* as far as the Russian crowd was concerned was a glider that flapped its wings.

☆

We were much impressed by the copy of the Annual Report of the Maryland Wing of the Civil Air Patrol. Paul Fonda of Fairchild has done a fine job as commander of the Maryland CAP. Perhaps it is merely coincidence, but we seem to detect some of Jim Fisher's touch in the layout of the Annual Report. Jim is the guy who makes *Pegasus*, the Fairchild magazine, look so pretty.

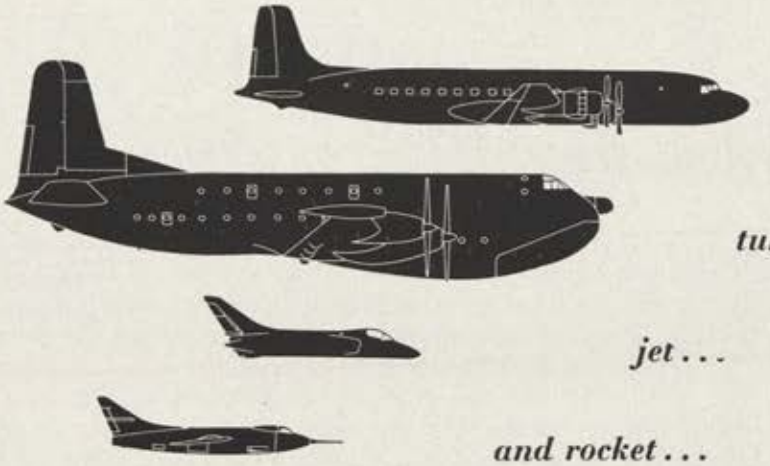
☆

If you've doubted that the Army has been thinking seriously of having its own full-fledged air force once again, take a look at the July issue of the *Military Review*, published by the Command and General Staff College, Ft. Leavenworth, Kans. The lead article is "Tactical Air Support for Army Forces." In it author Jules E. Gonseth, Jr., Signal Corps, USA, reaches these conclusions:

"1. The Army should exert vigorously every effort at high level to obtain from the Air Force satisfaction of the request for the quantities *and control* of close air support required to support ground units engaged in combat *and should amend the doctrine* accordingly.

"2. Failing in this, the Army should take the necessary steps to amend agreements and memoranda of understanding *and proceed with plans to provide its own organic close*

(Continued on page 27)



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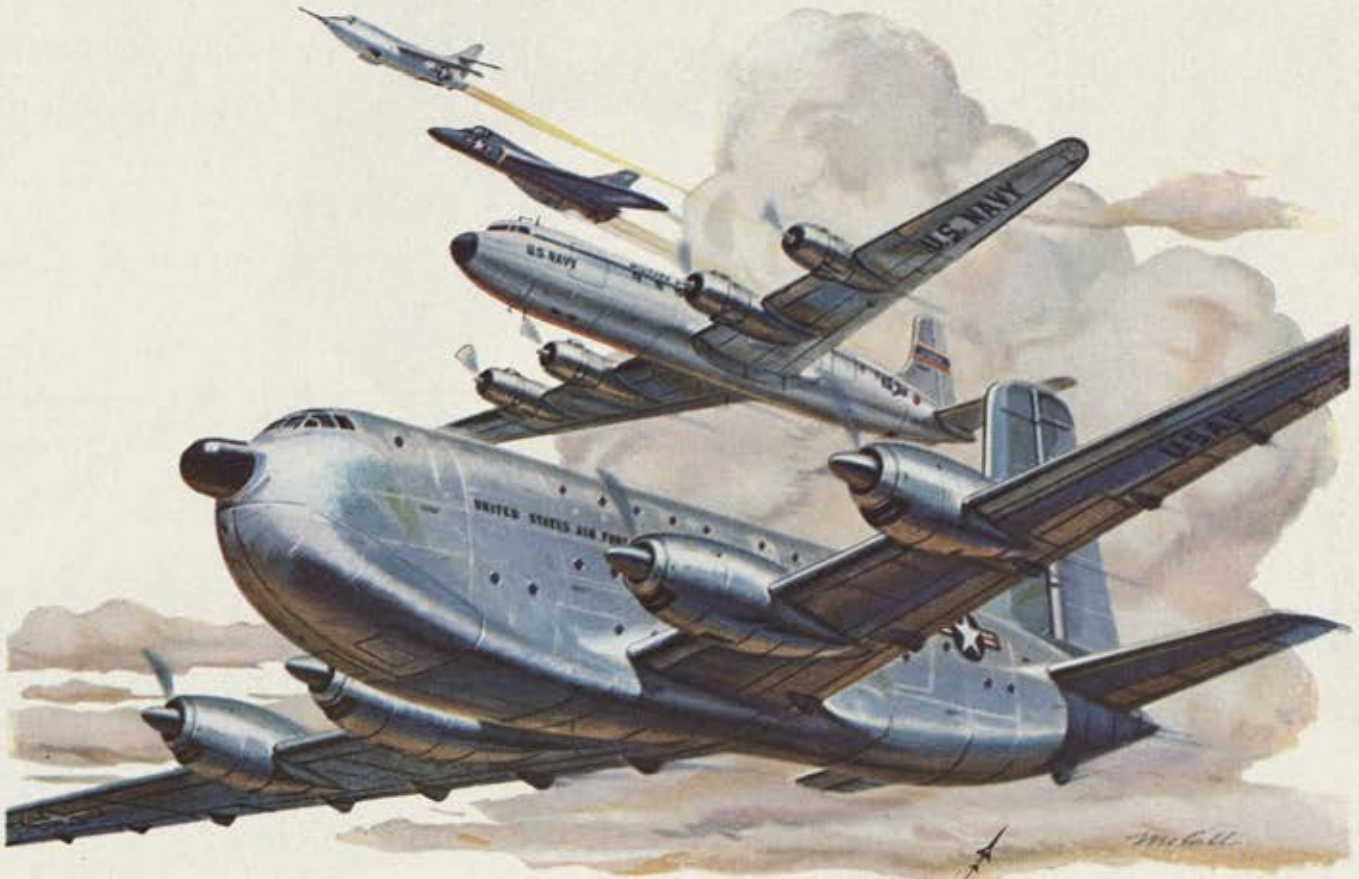

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air support with aircraft, organizations and other means especially designed for the purpose." [Italics ours.]

The piece is accompanied by the usual disclaimer that the views are the author's and not necessarily the Army's. But it would seem that tactical air still means only one thing to Army people—close support. And that the Army wants its own and intends to get it.

☆

The Air Force's manpower problem was brought into sharp focus by the resignation of SAC's Eighth Air Force commander, Maj. Gen. John B. Montgomery. This highly capable combat leader left the Air Force to take a post as an assistant vice president of American Airlines. His AF pay (with allowances), approximately $14,000. 'Nough said.

☆

Vaughan Monroe isn't the only guy "racing with the moon." Dr. Frank Back used a Thirteenth Air Force T-33 to race the moon's shadow during the recent eclipse of the sun in the Philippines. It worked fine, he said. He got good pictures of the eclipse in all its phases to buttress a research project he's working on.

☆

AFA Organizational Director Gus Duda had a busy day not long ago. He had breakfast in Dallas, lunch in Kansas City, and dinner in Chicago, all with AFA members, and then hopped on to Grand Rapids the same day for the Michigan Wing convention.

☆

July 4 is the traditional date for naming the winners of the Harmon International Aviation Trophies. This year the awards went to J. F. (Skeets) Coleman, Convair test pilot, for his test flying of the Navy's experimental VTOL aircraft, the XFY-1 Pogo. Navy Capt. Marion H. Eppes was the other winner, for keeping a Goodyear blimp, the ZPG-2, aloft for more than eight days during a simulated anti-submarine patrol.

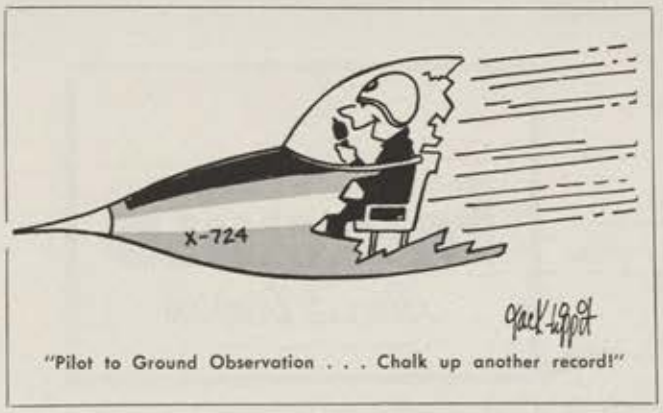
☆

The office wag, on reading of the defection of two North Korean pilots, wondered if one of them, Lt. Lee Un Sung, might not be one of those unsung heroes you hear about.

☆

A couple of our magazine staffers inadvertently almost had lunch with Billy Mitchell the other day. Coming out of one of the neighborhood restaurants, they spotted a number of vintage Model T Fords and a cluster of men and women wearing clothes of the Roaring Twenties. A closer look revealed a battery of cameras, klieg lights, reflectors and all the trappings of a movie company on location. And it was. The company turned out to be Warner Brothers; the location, Washington's Army-Navy Club, where crews were shooting scenes for the forthcoming film, "The Court-Martial of Billy Mitchell." The cast, including Gary Cooper (as Mitchell), Ralph Bellamy, and Charles Bickford, was in Washington for about ten days. The picture will be released next January. Meanwhile Warner Brothers are working on another airpower movie—"The Spirit of St. Louis," starring (surprise!) Jimmy Stewart as Lindbergh.

Three AF officers model newly approved summer uniform, which will be available in 1956. Picture shows various combinations local commanders may authorize for their areas. Pith helmet, for tropical areas, takes regular cap insignia.



"Pilot to Ground Observation . . . Chalk up another record!"

☆

The National Aviation Education Council has come out with another fine little volume for small children. It's called "Aviation Activities" and includes a picture dictionary of aviation for little folks, cut-outs and planes to color. For prices and quantity discounts write NAEC, 1115 17th St., N. W., Washington 6, D. C.

☆

Airman's Bookshelf

One of the outstanding publishing events of the year thus far isn't properly a book at all. It is the May 1955 issue of The Annals of the American Academy of Political and Social Science. The issue is devoted entirely to "Airpower and National Security" and is must reading, in our opinion. Two of AFA's Directors are represented in the table of contents—W. Barton Leach (see page 42) and T. F. Walkowicz. Other contributors include Gen. Thomas D. White, Thomas K. Finletter, Ramsay Potts, and Robert Strausz-Hupé. Copies are available from the American Academy of Political and Social Science, 3837 Chestnut Street, Philadelphia 4, Penna. . . . An unusual literary *tour de force* is the book *Nine Soviet Portraits*, by Raymond A. Bauer, now a research associate at the Center for International Studies at the Massachusetts Institute of Technology. The book consists of profiles of typical Soviet citizens—a student, a woman collective farmer, a doctor, a Party secretary, a housewife, a writer, a factory worker, a tractor driver, and a secret police agent. The portraits are fictional but are based on interviews with Soviet refugees made by the Harvard Refugee Interview Project. It's published jointly by John Wiley & Sons and The Technology Press of MIT . . . Touted as the *Caine Mutiny* of the Air Force is a novel scheduled for September publication by Macmillan. It's written by former AFA man Joe Klaas, the title is *Maybe I'm Dead*. It's based on a German POW death march during World War II.—END

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AIR FORCE
AUGUST 1955

The men who've seen the boiling, mushroom clouds from the inside

Maj. Daniel L. Schmucker, a member of a B-36 crew assigned to the 4925th Test Group (Atomic) for the nuclear tests.

The Air Force's Atomic Cloud-Busters

The story of the unique role the AF plays in the A-bomb tests on the Nevada desert

By Joseph Stocker

IN THE slowly gathering light of a Nevada dawn, a descending jet made its final turn out over the yucca-spiked desert. Wheels down, it poked its nose toward the end of the runway at Indian Springs and slid earthward along its glide path.

There was the jumbo-sized burp of tires meeting asphalt. The jet rolled for a distance, then turned off the runway and taxied into parking position. The engine's maniacal screech subsided to a fretful howl, a rumble—and silence. The cockpit canopy slid back.

Up to this point it had been a thoroughly ordinary jet landing operation. But now some thoroughly out-of-the-ordinary things took place.

Ground crewmen, instead of hooking a ladder over the lip of the cockpit for the pilot to dismount, rolled up alongside with a mechanical forklift. Mounted on the lift was a wooden platform, which the crewmen hoisted to cockpit level. Carefully, gingerly, the pilot stood up. Taking conspicuous pains not to touch the plane's outer surface, he raised one foot well over the cockpit's rim and planted it on the wooden platform. The other followed. Platform and pilot settled to the ground.

Meanwhile, another crewman, bearing a long pole with a hook on the end of it, edged toward one of the tip-tanks. With the same brittle caution

(Continued on following page)

A/2C Thomas O. Summers keeps a safe distance from a "hot" F-84 sampler plane of the 4926th Sampling Squadron as he removes the wafer containing an atomic cloud sample from the cloud-busting aircraft's tip-tank slot.

Col. James A. Watkins, just promoted to full colonel, passes out a cigar to Col. Harry L. Donicht, seated, commander of the 4925th Test Group. Watkins heads the 4926th Squadron.

ATOMIC CLOUD-BUSTERS

CONTINUED

that the pilot had shown, he engaged his hook and withdrew a large metal wafer from a slot in the tip-tank.

A random observer, witnessing these peculiar and suspenseful goings-on, might have wondered what all the fuss was about. And, had he not been privy to the latest wrinkle in atomic testing, the answer would have jolted him. For the jet plane in question was radioactive. And it got that way by the simplest and most direct method—flying right through an atomic cloud, deliberately and according to plan.

This, multiplied many times over by different jet planes and jet flyers, was one of the more spectacular phases of the latest atomic test series in the desert wilderness of south central Nevada. Week after week, as one earth-shuddering shot followed another, the Air Force sent its jets hurtling into the mighty mushroom clouds. These penetration missions were flown by Republic F-84 Thunderjets, Lockheed T-33 trainers, and a Martin B-57 jet bomber. They belonged to the 4926th Sampling Squadron of the Air Force Special Weapons Center at Kirtland AFB, Albuquerque, N. Mex.—the only squadron of its kind in the entire Air Force.

There were good reasons for the atom cloud-busting operations. And none of them involved a mere curiosity as to what the big, ugly mushrooms looked like on the inside.

In the first place, the Air Force needed to learn the effects of radiation on airplanes and personnel. Information thus obtained would be useful in the design of future aircraft and the planning of air tactics for atomic warfare, if it ever should come.

Mission number two was to obtain cloud samples for radio-chemical analysis by scientists of the Atomic Energy Commission. This was accomplished through the use of special filter traps installed in the jet tip-tanks. As the sampler plane whisked through the atomic cloud, its filter trap would open, collect the sample and close again. Back at the Indian Springs base, the sample would be removed from its slot by a specially-trained team, placed in a lead box, and flown by fast courier plane to AEC laboratories.

Actually the Air Force has been penetrating atom clouds with man-operated aircraft since 1951. Prior to that time, cloud-sampling was done by drones—unmanned, radio-controlled, and expendable. Then, in one of the Nevada test sequences known as Operation Ranger, several Air Force flyers decided that the job could be pulled off safely, faster, and more cheaply with manned aircraft. Volunteer crews were assembled under the aegis of the Air Research and Development Command and the pioneer cloud-busting flights were made in Boeing WB-29s. Later, as equipment and techniques were refined, human-operated planes penetrated nuclear clouds both in the Pacific and in the continuing Nevada tests.

But Operation Teapot—as the 1955 series was called—marked by far the most extensive and successful cloud penetrations carried on thus far. It also marked the earliest post-explosion penetrations—more than three-quarters of an hour earlier than any previous

---

The author, Joseph Stocker, is a full-time free-lance writer whose nonfiction articles have appeared in some fifty magazines, including our March '55 issue (over the article "Eyes in the Back of His Head"). Born in Detroit 41 years ago, Joe Stocker grew up in Oklahoma and won honors at the University of Oklahoma from which he was graduated in 1935. He worked on an Oklahoma City newspaper for 5½ years as a political reporter before serving in World War II as an infantry officer. After the war he worked for the Associated Press in Denver before moving to his present home in Phoenix, Ariz. There he was editorial page editor of the now defunct Arizona Times. *He has been free-lancing since 1948.*

Three B-57 sampler pilots, wearing their skin-tight altitude suits, stand beside one of the atomic test aircraft before take-off.

LEFT: An airman technician records data on the plotting board in the air control center, Mercury, Nev., from which the whole operation is supervised.

RIGHT: Dr. Harold Plank of the Los Alamos Scientific Lab, here in the nose of a control plane, is one of our leading authorities on cloud-sampling.

penetrations. Within scant minutes after each detonation (the Air Force isn't saying exactly how many minutes), jets were plunging into the boiling cloud mass to bring back data vital to America's survival. Their crews also brought back the first information to be made public of how the cloud appears to the human eye from the inside.

The color is dark and brick red, say the flyers, and there's a strange odor which one officer described as being similar to that created by a bolt of lightning. Atomic scientists attribute both the color and the odor primarily to oxides of nitrogen formed by high temperatures prevailing in the fireball after the explosion. Surprisingly enough, the cloud-busters encountered little turbulence.

Dangerous? Well, it might seem so from the layman's point of view. But, from the flyers' point of view, it has become—to use a well-worked Air Force word—"routine." Said one flying officer: "We know what we are doing and there is nothing to get excited about."

T-33 jet trainers, each carrying a pilot and scientist-observer, made the earliest cloud penetrations. The planes were fitted out with a complex of special instrumentation to measure the radiation level and collect scientific information. Pilots wore regular radiation protection gear, including lead vests and respirators. But the observers wore no special clothing and used no protective shielding.

Before take-off, each observer attached a sensitive film badge to the outside of his body. He also swallowed a capsule containing another film badge just like it. The capsule was fastened to a string which the observer held in his teeth as the jet swept through the atom cloud. When the plane landed, the capsule was fished from the observer's stomach by its string. Then the radiation recorded on the external film badge was compared to that which was recorded on the "stomach badge." Thus it was possible to determine the relative amount of radiation penetrating into the interior of the body.

T-33s also were used as "sniffers" to help guide the sampler fleet of F-84s, plus the high-altitude B-57, into the atomic cloud. The 33s would fly around the edge of the towering mushroom and report conditions to the sampling operation director, Dr. Harold Plank of the University of California, who flew in a B-29 "sampler control" plane. On the basis of information funneled to him by the 33s, Dr. Plank would give the sampler jets their course bearings and specific points of entry.

"That B-29 team was so good," said one top-ranking officer of Operation Teapot, "that throughout the whole operation we got adequate samples without a single individual getting any significant radiation."

The B-57, incidentally, made its atom-testing debut during Operation Teapot. Previously the Air Force's main sampler plane was the F-84. It was late in March, when the 1955 series was well under way, that the two-engine B-57 went into action. And this US version of the Canberra proved ideally suited to its sampling mission. It had the advantages of speed and high-altitude capability. It also had the advantage of carrying two men instead of one, which meant twice as many hands and eyes for flying and watching radiation instruments.

Backstopping the whole operation was the Air Control Center at Mercury, Nev. Equipped with a potpourri of radars and other electronic detecting devices, Air Control coordinated the flight patterns of all aircraft taking part in the atom tests. These included not only the cloud-busters but hundreds of other planes from various Air Force commands, executing their particular missions. So intricate and complete was the Control Center set-up that its personnel knew at every second the exact position of each participating airplane. Should an aircraft encounter trouble, quick emergency decisions could be made at this nerve center of Operation Teapot.

If you were flying a typical cloud-busting mission, you would take off from Indian Springs before dawn. In the blackness of the night, the mushroom cloud might be only a monster smudge in the distant sky, if visible at all.

Your first contact would be with the Air Control Center, which would

(Continued on following page)

give you an intercept course to Dr. Plank's sampler control B-29. Somewhere above 20,000 feet you would rendezvous with the 29, report in to Control Center and then switch to another channel to call the control plane. From the 29 you would get a course bearing and other directions for your atom cloud fly-through.

You might make only one pass into the cloud and be out again in thirty seconds and on your way home. Or you might make several passes through the seething red mass. In any case, however, the mission would have to be quickly consummated, since much of your tip-tank space is given over to sampling equipment and thus your fuel supply is limited.

The actual fly-through would be scarcely dissimilar from any normal penetration of a cloud mass—except for one significant factor: You have just twice as many instruments to watch—your regular flying instruments plus a maze of radiological instruments. There's a gadget that tells you how much radiation you're getting and another which shows the total amount of radiation you've accumulated. You have an instrument that indicates how hot the sample is in your tip-tank and still another that gives you a radiation reading for other parts of your plane.

"You have to play all these instruments against each other," explained an atom test officer. "You've got to get your sample, but you can't get hurt doing it."

Once you've emerged from the cloud, Air Control picks you up and steers you back to Indian Springs. At no time, and at no point in this whole elaborate procedure, is anything left to chance. The Air Force wants its samples and its radiation data. But, most of all, it wants its men back unharmed.

"A new guy may be apprehensive," said a project officer. "But after a couple of missions, you get confidence in the control team. You respect the cloud but you don't fear it. You know you have a system that protects you and gets the job done. It's a precision job. If you do everything right, you can't get hurt. But you have to do everything right."

Once again, as in previous nuclear tests, both continental and Pacific, drones played a part in the Air Force's research-flying operations. When the AEC set off its April 15 shot, three unmanned Lockheed QF-80 jets from the Air Proving Ground Command were thrown into the atomic maelstrom to learn the close-in effects of the explosion. It was anticipated that two of the drones would be lost and one retrieved, and that's exactly what happened. But the lost drones released their effects data by parachute, to be picked up by helicopters.

The Navy and the Marine Corps participated in the air phase of Operation Teapot along with the Air Force. All told, more than 5,000 sorties were flown by many different types of planes without a single accident involving a manned aircraft or a single injury to a crewman.

The over-all air planning was handled jointly by the Field Command of the Armed Forces Special Weapons Project and the Air Force Special Weapons Center, Air Research and Development Command. Col. Harry L. Donicht, veteran of World War II flying in New Guinea, Borneo, and the Philippines, served as air commander for the test organization.

ARDC's role in Teapot was a many-faceted thing. Air control was one of its primary jobs, for instance. This was an almost incredibly precise and demanding operation. For there were as many as 100 planes aloft at any given time and inside a radius of twenty-five miles. To avoid mishaps and aborted missions, all planes had to be in position within ten seconds of their assigned time and within 2,500 feet of their assigned places.

In addition to air control and cloud-sampling, ARDC's mission also included tracking down the atom clouds, measuring blast, gust and thermal effects of each explosion, air lift support for movement of materiel and equipment, and air drops.

The unit handling the air drops, along with supplying aircraft and personnel for cloud-sampling and other testing operations, was the 4925th Test Group (Atomic), based at Kirtland AFB. Air dropping, like air control, demanded almost super-human precision. A nuclear device dropped from the air had to be placed within 200 feet of the target and had to explode within two seconds of the time set for detonation. Otherwise the AEC's scientists on the ground wouldn't get the results they needed, and hundreds of thousands of dollars would be wasted. Moreover, in those shots in which ground troops were used, thousands of men might have been imperiled. But the bombers clicked on every mission.

Another Air Force entity which carried a big share of responsibility was MATS—the Military Air Transport Service. Through its Air Weather Service, it provided all the forecasting required for the ticklish decisions as to whether or not to proceed with scheduled atomic shots. If the weather went awry, dangerous fall-out could result. But AWS did its work so well that the fall-out occurring in any populated area of the US did not exceed the equivalent of a gastronomical X-ray.

Still other Air Force elements figured in Teapot. SAC flew its B-36s and B-47s from bases all over the US, and at least one base outside the continental limits, to give its crews the vicarious experience of taking part in actual A-bomb attacks. TAC (Tactical Air Command) did the same thing with its Republic F-84F Thunderstreak fighter-bombers, which have atom-bearing capabilities. They coordinated their missions with the actual detonations to rehearse delivery and reconnaissance techniques. TAC also provided Fairchild C-119s for airlift support and helicopters for radiological surveys and courier service. On their radiological missions after each test shot, the Sikorsky H-19 'copters carried scientists with special monitoring equipment, which was lowered to the ground by cable to gauge the extent of radioactivity. Following one underground shot, a 'copter hovered directly over the crater while instruments were lowered into the mammoth atomic hole.

Also involved in the exercises was the Air Defense Command, which supplied personnel to Special Weapons Center for air control. And the Training Command furnished North American F-86 Sabres to shoot down drones if they went out of control. F-100 Super Sabres from Edwards AFB, Calif., likewise participated in the tests for the first time.

Why has the Air Force gone so extensively into the atom-testing business? Colonel Donicht supplied the answer during Operation Teapot: "In today's atomic age, when one bomber can destroy a city, it is essential that we have quality rather than quantity air weapons. Overwhelming numbers of mediocre air weapons are no longer enough to deter aggression, nor to win a war if it should be forced upon us. Air Force participation in the atomic testing program is a vital step in attaining and maintaining quality airpower second to none."

All in all, it was quite a show—and quite the largest atom show that the Air Force has staged thus far. No less than 2,000 airmen took part in it. Together they comprised an atomic-test-team-of-the-air which, through meticulous planning, hard work, and sheer daring, has buttressed still further the nation's defenses in an era of crisis.—END

WHAT hath God wrought?" These were the words that first came to my mind as I recovered from the impact of seeing the atomic shot at Yucca Flats, Nev., this morning. I was stunned and awed beyond my expectations.

I have had an intimate acquaintance with the whole problem of bombing and atomic weapons for some years; but none of my experiences on the delivery or receiving end during the war, none of the studies and analyses of the Japanese and Pacific Testing Ground experience, none of the endless discussions of the medical aspects of civil defense was adequate to prepare me for the hammering which my emotions took between 5:10 and 5:15 this morning.

I almost missed it. In fact, if it hadn't been for Bill Laurence, the science writer of *The New York Times*, I probably would have given up in despair, as did so many of the observers at "Operation Cue." He talked me into waiting out the weather, no matter the cost.

The shot was originally scheduled for 5:15, the morning of Tuesday, April 26. The briefings began, therefore, the preceding Friday at the Las Vegas High School auditorium. These briefings actually were a series of lectures,

(Continued on following page)

SHOT AT SUNRISE

. . . being the random observations of an observer at the Atomic Energy Commission exercise, 'Operation Cue,' Yucca Flats, Nev., April 26, et. seq. 1955

By Cortez F. Enloe, Jr., M.D.

designed to give us the background of the experiments.

On Sunday we were taken in buses—under a heavy and alert police escort—to the Nevada Testing Grounds of the Atomic Energy Commission.

As we came over the hill and began the descent into Yucca Flats, the most prominent object was the 500-foot tower, atop which, in a tiny house, rested "The Thing." Whether by day or night, and little matter what else was going on, one could not long divert one's eyes from the tower. It had a magnetic pull that seemed to threaten dire punishment to anyone in Yucca Flats who long ignored it.

"The Thing" stood there for days and nights without end while the fight between the weather and the atom ground us all down to a pulp and contributed mightily to the welfare of the Las Vegas casinos.

• • •

It was the routine that did it. It was, I am sure, a routine conceived by the devil only for suspense and frustration. It went thus:

At 10:30 each morning the AEC wizards would hold a "Weather Meeting." Here they analyzed all the weather data to determine what kind of weather they could expect at shot time. The very first crack out of the box, at 11:00 on Monday morning, announced that the conditions had flunked the test—the first of nine successive postponements.

Next morning the mysterious, unseen men on the mountain decided that the weather looked good and told us to stand by for the next weather meeting at 9:30 that night. When they said at 9:45 that things looked good, we thought we had it made.

But we should have listened to the real weather experts. That night the Las Vegas touts were betting seven to two against a shot and they were right. They outguessed the AEC meteorologists every night.

• • •

By day the mountains seemed so tall, the Flats so featureless, and the test houses and structures so tiny and far away that Yucca Flats made little impression on the onlooker. But at night all that changed.

Though you couldn't see its outline, the shot tower with the bomb in it was still the dominating feature, even at night. It stood out from all else because of the two bright lights—one over the other high up in the steel network. Down below and to the right was the airstrip with the helicopters and light planes, lights blinking.

To the left was a long string of lights—the convoy bringing in the troops who were going to sweat it out in tanks and trenches.

The civil defense people kept a steady stream of coffee flowing but, man, it was cold! The second night out, the temperature was eighteen degrees—and the wind fifteen miles an hour. Considering what is called the "wind chill" factor, the temperature on the desert that night was equivalent to three above zero.

Beginning at the skin, I wore an undershirt, shirt, sweater, fur-lined flying jacket, heavy trench coat and scarf, and I was never hot one of the nights I spent on Yucca Flats.

We got the first announcement over the public address system from the "CP" at 3:00 a.m., Wednesday, April 27. They told us that at H-hour minus two (3:15), 1,500 pounds of high explosives would be detonated two miles north of ground zero. The HE was to test the instrumentation. The voice warned us again at 3:14 and sure enough, off it went.

In twenty minutes, the voice from the loud speaker said something like this:

Fabian Bachrach photo

Cort Enloe's WW II experiences as a flight surgeon included service behind enemy lines with Col. Phil Cochran's Air Commandos in the CBI. Since the war Dr. Enloe has been a consultant to the USAF Surgeon General and medical adviser to ARDC. He holds many other advisory posts, among them consultant to the Federal Civil Defense Administrator and consulting member of the Council on National Defense of the AMA. A former AFA Board member (three terms), he is also a past commander of AFA's Medic's Division.

"The time is exactly zero, three, three five Pacific Daylight Time, H-hour minus zero, one, four, zero. At the 3:30 weather meeting it was decided to proceed with the test. The next voice announcement you will hear will be at H minus zero four five. There will be another high-explosive detonation at H minus one hour."

With this good news, the tension mounted. The TV fellows retested their cameras and circuits. The newsreel and movie men began unlimbering their massive cameras which they had kept warm in their cars or with grotesque rigs of floodlights. The roar of monitoring airplanes high above increased noticeably.

I went through my practice routine with my little eight-mm. movie camera. For those of you who want to be ready with a camera if the Russians come, here is how the AEC says to photograph an atomic blast. Make sure camera and tripod are firm. Check shutter speed and set at thirty-two frames a second, open aperture all the way, wrap arm around camera base, put on high-density AEC goggles (you can't see anything now), stimulate "count down" and at two seconds before zero start camera, at a slow count of three after the explosion (the only thing you can see through the goggles) slowly remove goggles and start taking still pictures at 1/50th and f.11—but hold onto that tripod because the heat and air blast are on their way.

The second high-explosive charge went off as planned—and then came the voice.

"It is now zero four three five Pacific Daylight Time. At the weather meeting at zero four three zero, the weather was found unacceptable. The shot is postponed twenty-four hours. The next weather meeting will be held at 10:30 this morning."

That word "unacceptable" haunted me. Who ever heard of calling something contrived by Providence "unacceptable"? If they rejected it, what else did they intend to use? They could call it "unsatisfactory" or even "unsuitable," but to say you won't accept the weather is to assume a position that can only be termed super-omnipotence. Before the next seven days had passed, I began to suspect that was the self-appraisal which pervaded the "CP."

° ° °

I really didn't think they were going through with the shot when we boarded the buses that last night, May 4. The 9:30 weather meeting on the Mount announced that if the cloud cover vanished—as they thought it would—the test would be conducted at 5:10 Thursday morning, May 5. So, without much hope we once more started the dreary routine.

I can't tell you why, but when at 4:30 they found the weather "acceptable" and said the test was on, I believed them. We had been disappointed before—but I had a feeling the pay-off for my long wait was at hand.

I still wasn't convinced that the "CP" wasn't inhabited

by little men in bright brocade and pointed hats, twirling prayer wheels and hoping Lowell Thomas would come to take their picture. Then came that voice again. "The shot is on. You will stand by for safety instructions. The windows in all motor vehicles will be opened. Do not stand in front of any object that can be hurled at you by the blast.

"At two minutes before the shot, those with high-density goggles will put them on and face the shot tower. Those of you without goggles will turn away and close your eyes. After the flash of light, count to three slowly and remove goggles. Those who have faced away may then open their eyes and slowly turn in the direction of the fireball, being careful to turn away quickly if the light is too intense.

"Any violation of these precautions may result in permanent injury to the eye.

"It is estimated that the sound and air and heat blasts will reach the observer area in approximately fifty seconds after the detonation. You will be warned to take appropriate position a few seconds before it arrives."

It was now just 5:00 o'clock. The lights in the Flats began going out until all was darkness below us. The only illumination left in that vast expanse was the faintest suggestion of dawn in the sky behind the mountains to the east. The stars still shone—mixed, as they were, with the blinker lights of the monitoring aircraft.

Then "H-hour minus two minutes."

"Put on goggles or turn away." No exclamation mark. No emphasis. Just that flat, sonorous, somber voice.

Then "one minute" and the count-down began. At ten seconds the silence was broken by the starting of the newsreel cameras on my left and the official Army cameras a couple of feet to my right. I started my little camera, perched firmly on that tripod that had been set up so many different nights at two seconds.

We counted down to one. At zero all hell broke loose.

My senses of perception were caught in a crossfire like I have never known.

I saw a flash of light as bright as the sun itself. It was almost blinding behind those glasses—goggles so dense you can't even see the outline of a person standing next to you on a sunny day. I say it was bright and I say it was blinding—but I don't really know from memory.

I know it because it must be so. My films don't show it and neither do those of anyone else, but it was there and it vanished in three seconds.

I snatched off my goggles. The most evil-looking, awesome, frightening spectacle—no, "spectacle" isn't the word—nor is exhibition or object—no, "thing" is the word—a thing which I have never seen was before me.

The enormous ball of fire had begun to shrink and as it shrank it began to rise and to be interlaced with black. Only then did it begin to look like any fire I have ever seen. And it began to curl upward in a seething internal convulsion.

As this almost animate ball of fire rose—I'd guess it was a mile across—it left behind a symmetrical stem of smoke and flame, the ground end of which was the hub of a mountainous doughnut of cloud that had its base on the ground and seemed to be two hundred feet high.

As the fireball rose, clouds formed on its top though it was still going upward. The fire gradually became less perceptible and the whole thing acquired a halo of light, violet in color and about 200 yards wide, that surrounded the whole ascending mass. This was the air being ionized or electrically charged by the gamma rays emitted by the explosion.

No sooner did the violet complexion disappear than the whole brow of the ball suddenly turned white. The white was brilliant—the more so because it was the only portion high enough to be caught by the rays of the sun, which had not yet climbed the crest of the mountains that lay eastward.

With ice above and a brownish crust of clouds separating it from the still visible fire within, the whole mass reminded one of a baked Alaska turned inside out.

A blast of noise, heat, and wind had long since hit us. Except for the noise, there was nothing distinguishing about this experience. The wind lasted four or five seconds, carrying with it dust and dirt and loose sage. The heat wave was intense but it too lasted only a second or two. However, it was the noise that surprised me.

I had expected the sound to be a roar and rumble. The rumble came as the fireball ascended but the sound was that of a thunderclap. Not a bang or a pop, but a clap. It was like getting hit in the ear with a baseball bat.

The fire in the ball dissipated as the "thing" rose to 41,000 feet in five minutes. The ground winds at about 500 feet—the height of the tower that had now vaporized—moved a part of the stem northwesterly, while most of the valley was engulfed in the dust cloud.

A dozen helicopters and liaison planes took off from the airstrip on the sand dunes down to our right.

In front but high above us the winds had molded the cloud into a long shape around which one could clearly see the vapor trails of the probing monitor planes in the clear morning sky.

All this time I was trying to organize my thoughts, to put into some sort of focus what I had seen. I don't recall saying a word.

All I could think of as I stared at the brownish-red mass in the sky this morning on Yucca Flats were the words "What hath God wrought?"—End

Civil defense's biggest job is a military one

IS CIVIL

With air defense and SAC, civil defense is one of the pillars of our survival

THERE were two bombs dropped during the recent civil defense exercise, "Operation Alert," both by the President. The first was the theoretical declaration of martial law which would have placed the armed forces in charge of civil defense and of government in disaster areas. The second was the President's statement that the Reserves were necessary to respond to calls in case of disaster.

Civil defense officials, the President said, "must be supported by trained and disciplined men. . . . There are before Congress bills for establishing Reserves for our armed services. . . . In the kind of disaster of which I am now speaking, one trained Reserve battalion in the proper place would be worth five divisions located a thousand miles away." This is a terrific shock to the National Guard and Reserves of all services, since they all are being trained for war rather than civil defense.

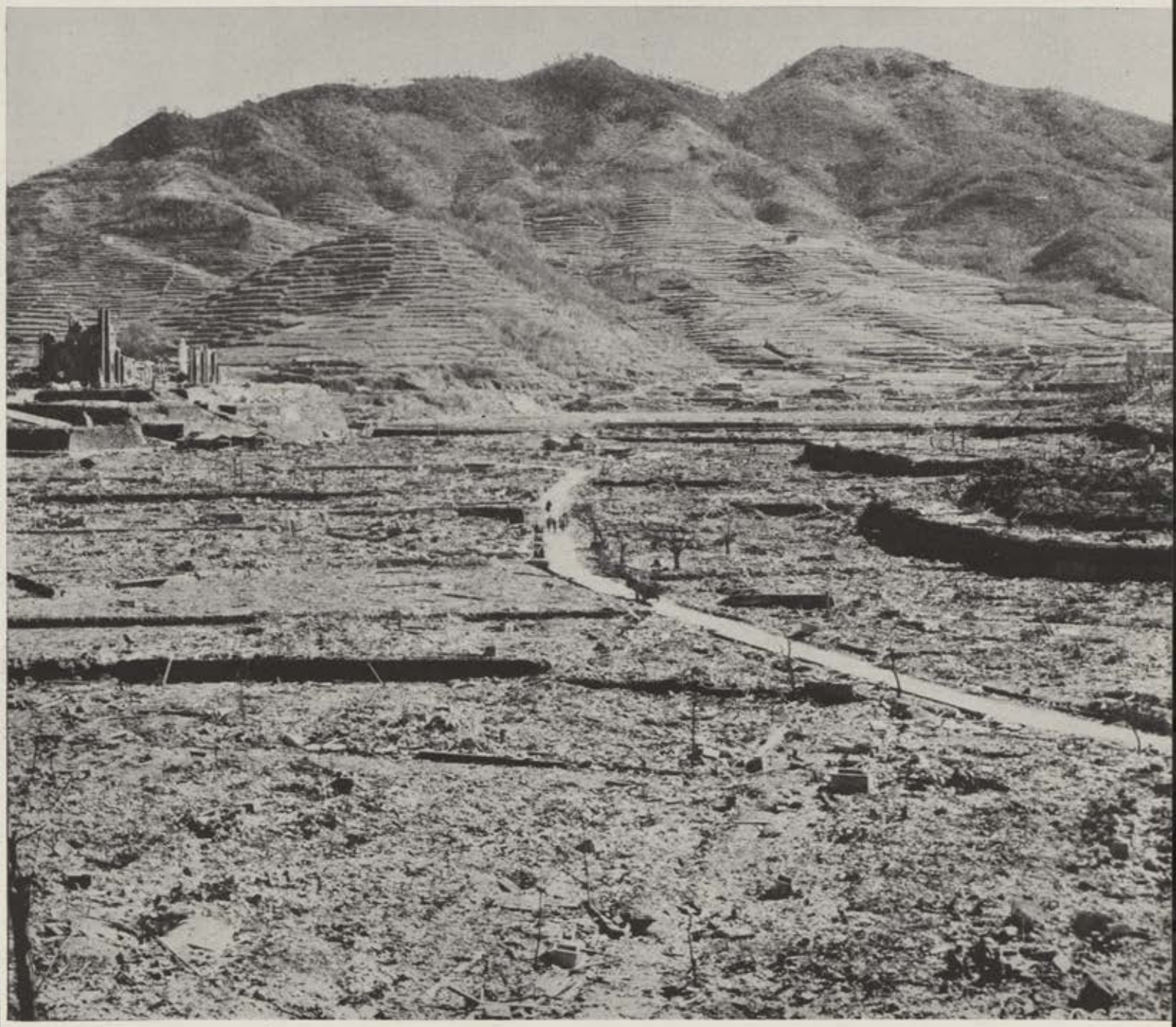
How much of a shock these two bombs were is obvious from the fact that the armed forces, active or Reserve, were not asked to participate in Operation Alert. They had no part in the planning of the operation and, in fact, were told that although they might hold their own civil defense exercises, they could not be allowed to interfere with the civil defense operation.

This is not a criticism of civil defense planning, since the exercise had

(Continued on page 38)

By | Brig. Gen. Thomas R. Phillips, USA (Ret.)
MILITARY ANALYST, THE ST. LOUIS POST-DISPATCH

DEFENSE TOO 'CIVIL'?



This was Nagasaki, ten years ago this month—proof that civil defense is nothing to boondoggle about.

no assumed strategic situation and was only intended to be a test of evacuation plans in sixty-one cities. It is indicative, however, of the unreality of all civil defense today. If the armed forces are going to take over all civil defense operations in a real emergency, they need to know it far ahead so that adequate and complete plans can be made.

The President's decision to declare martial law is exactly contrary to the spirit of existing legislation in that field. By Public Law 920 the Federal Civil Defense Administrator is authorized, with the approval of the President, to delegate "to the several departments and agencies of the Federal Government appropriate civil defense responsibilities and review and coordinate the civil defense activities of the departments and agencies. . . ." In other words the Federal Administrator of Civil Defense can, in theory, take over the Department of Defense for civil defense purposes.

Executive Order No. 10427, implementing Public Law 875, is in the same tenor. It authorizes the Federal Administrator of Civil Defense to direct any federal agency, in case of a major disaster, to provide assistance by utilizing or lending to states and local governments their equipment, supplies, facilities, personnel, and other resources. It also authorizes the Civil Defense Administrator to direct and coordinate the activities of the various federal agencies in case of disaster.

Pentagon switchboard. Communications, a military necessity, would be a first victim in an enemy attack.

One reason the Federal Civil Defense Agency was organized under the National Security Resources Board, instead of as an adjunct of the Department of Defense, was that the armed forces did not want any part of it and wanted to evade any responsibility for it. The Army, throughout its history, has been called upon to take over in case of disaster. Col. Barnet W. Beers, chief of the small Defense Department civil defense staff, testified before the Senate Armed Services Committee in 1950 that: "The feeling in military circles, the military thinking, even below the level of the administrative office of the Secretary of Defense, is that they have got enough to do as it is." In other words, the military wanted to fight the war and let the civilians take care of civil defense.

This was short-sighted in the extreme, since it has always been obvious that no agency of the government, except the armed forces, has the leadership, the skill in planning, the trained and disciplined personnel, and the capacity to mobilize and move rapidly to cope with a major disaster. Inevitably the armed forces would have to take over in any major disaster, not because they want to, but because they are best qualified to. As it turned out, they did not evade the

(Continued on page 41)

A Success, Perhaps

Another voice in the choir is that of the* Boston Herald *whose editorial from the issue of June 20 is reprinted below, with the newspaper's permission

Perhaps the civil defense test was a success. It did show how woefully unprepared we are for an actual H-bomb raid. It did demonstrate how horrible such a raid would be despite the most elaborate precautions.

More than fifty cities were, theoretically, left in ruins. Millions of persons were killed, on paper. Millions more were left homeless.

Some of the participating cities, like Bangor, Maine, went through an evacuation rehearsal, the only realistic thing to do. Others, like New York, merely sent pedestrians to local "shelter"—a practice which would be about as helpful as ordering them to put up umbrellas.

The Executive branch of the government fled Washington. Congress, however, rugged old Congress, remained on the job. Was this courage? Hardly. Our Senators and Representatives just haven't gotten around to providing themselves with a plan, thereby setting an atrocious example for the state legislatures.

The various states were prepared for the test in various ways and in various conditions. This is because under the pre-H-bomb Civil Defense Act of 1950 the major responsibility is placed on the states, not on the federal government. The bigger and better thermonuclear weapons have made the act obsolete. H-bombs, with their greater blast and vast fall-out range do not respect state borders, nor do they differentiate as much between urban and rural areas as did the old A-bombs.

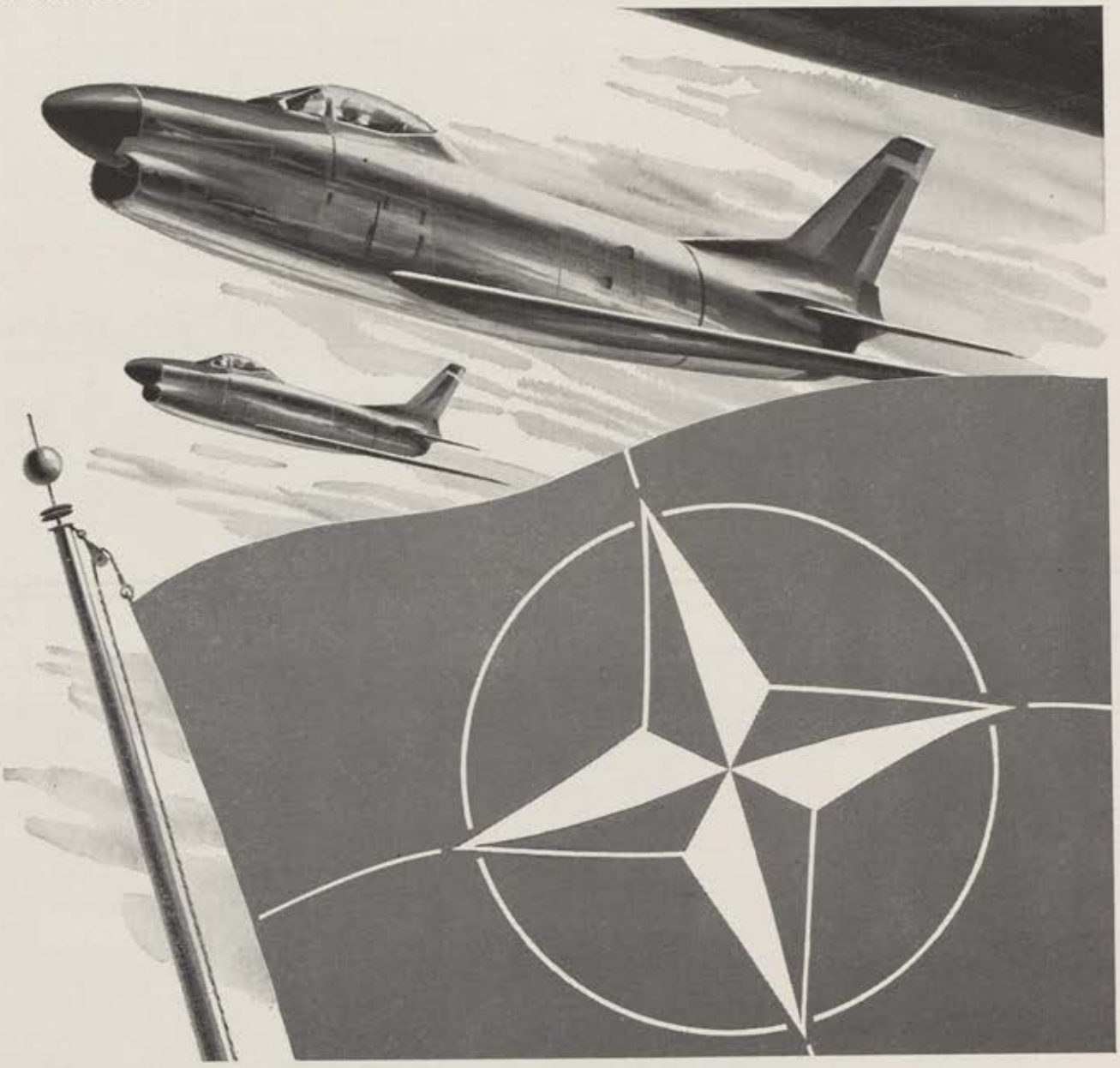
A new Civil Defense Act which provides for firm federal initiative and control over the program is needed if we are to make a serious attempt at preparing for the possibility of H-bomb war. We would be in a fine fix if the states, not the federal government, were responsible for the armed services. In this era civil defense is just as important as military defense.

But Congress has appropriated almost six times as much money for the Washington Zoo as it has for the civil defense system of the nation's capital. And Massachusetts will be fortunate indeed if its legislature appropriates the rather modest sum requested by the state Civil Defense Agency.

There will be action at the top if there is interest at the bottom. If the national civil defense test succeeded in shocking people into the realization that our civil defense system today is all too reminiscent of our armed forces in the late thirties, then something may happen.

But there is no "glamor" to civil defense. It's a hard thing to "sell." No fancy uniforms, no brass bands. It's just realism and mighty few people seem to get worked up over that.

NORTH AMERICAN HAS BUILT MORE AIRPLANES THAN ANY OTHER COMPANY IN THE WORLD



NATO's KO PUNCH

That's the new "K"...F-86K SABRE JET... North American's latest, potent addition to the Free World's air arsenal. The first and only one-man, all-weather interceptor designed specifically for our NATO allies, cannon-armed "K" is an ideal improvement on the world-famous SABRE JET Series.

The new North American designed and built MG-4 fire control system in the "K" tells the pilot in any weather where his target is and when to fire, and is a valuable navigational aid. And, like the F-86 SABRE JET, "K" is over 650 mph fast, is equipped with North American's all-flying tail, proven de-icing system and parabrake.

Now in production both at North American's Los Angeles Plant and at the Fiat Works in Italy, the F-86K SABRE JET is slated for early service...will soon form a miles-high wall against aggression.

The "K" is another example of the kind of research and development that keeps North American foremost in aircraft, rocket engines, guided missiles, electronics and peaceful applications of atomic energy.

Engineers: North American offers unusual opportunities. Write Engineering Personnel Office, Los Angeles or Downey, California; or Columbus, Ohio.

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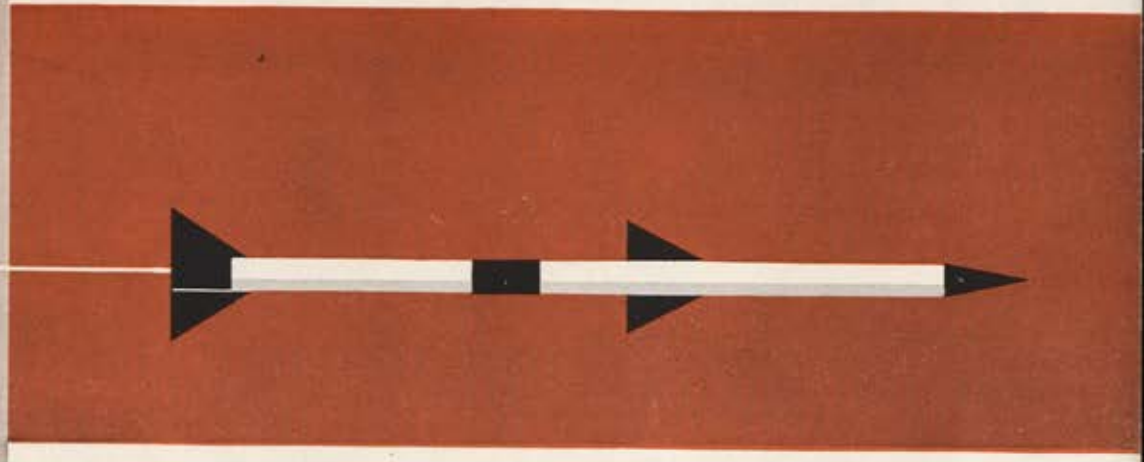

Today our Armed Services are making valuable use of Burroughs Corporation applied research for analysis and study of original defense concepts; of our expert engineering for development and testing of prototypes; and of our mass-precision manufacturing facilities for final production of defense appliances.

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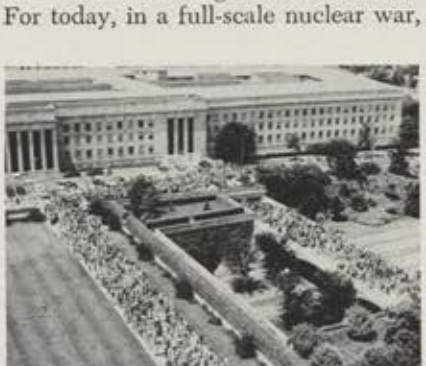
job at all, but were turned into a subordinate of the Federal Civil Defense Agency. As far as I know there has been no joint planning against the time when the Federal Civil Defense Agency takes over the armed forces, nor has there been any planning by the armed forces to take over the nation under martial law and operate civil defense in a great catastrophe.

It is hard to imagine a worse mess, or one more fraught with disaster. For today, in a full-scale nuclear war,



World Wide Photos, Inc.

Pentagon workers evacuate the building in token participation in alert.

the breakdown of civil morale and the inability of the nation to pull itself out of the ashes and to reroute its existence, due to lack of plans and organization, could cause the loss of the war. Today civil defense is one of the three pillars of survival in an atomic war. The three are: the Strategic Air Command, the Continental Air Defense Command, and civil defense.

Questions the armed forces should be asking themselves today are: Can we permit the war to be lost through an inadequate civil defense? Dare we run the chance that all the effort and resources put into the armed forces should be nullified because of neglect of civil defense? And, more immediately, can we survive and operate from our air bases if there is a breakdown of communications and transportation, if no fresh supplies of airplane fuel can be delivered, if civilian employes have left to take their families to places of safety? There can be only one answer to these questions: An effective civil defense is even more important to continued military operations than to any other aspect toward which it is directed.

Even though there were not a complete breakdown of communications and transportation, the armed forces would be hamstrung if they had to fight what was called a "Broken-Back War" by W. C. Wentworth in an article on civil defense in the December 1954 issue of AIR FORCE. This would have been the case if Operation Alert had been real. Sixty-one cities were assumed destroyed, with 8,200,000 dead and 6,550,000 injured. The figures are really meaningless because the extent of damage depended upon the size of bomb that the enemy was assumed to have used. The assumption that mostly one-megaton bombs would have been used does not seem in accord with reality. Neither did the exercise make any assumptions on radioactive fall-out.

I am sure any experienced planner would be concerned with the destruction of sixty-one major cities from the viewpoint of transportation and the diversion of resources that would be demanded. Railways would have to be rebuilt over thousands of miles of destroyed trackage. The task would be delayed by the inability to find the necessary track in the vicinity and by delays until some other destroyed section had been repaired. Nevertheless, Secretary of the Treasury George M. Humphrey declared: "We would recover, and I think recover surprisingly rapidly." Why did the Secretary of the Treasury make this statement, anyway? Why did not the President, or the Secretary of Defense, or the Director of Defense Mobilization? Did they agree with him? Or did he want to head off potential demands for more funds for civil defense? Or was the idea to calm the public fears?

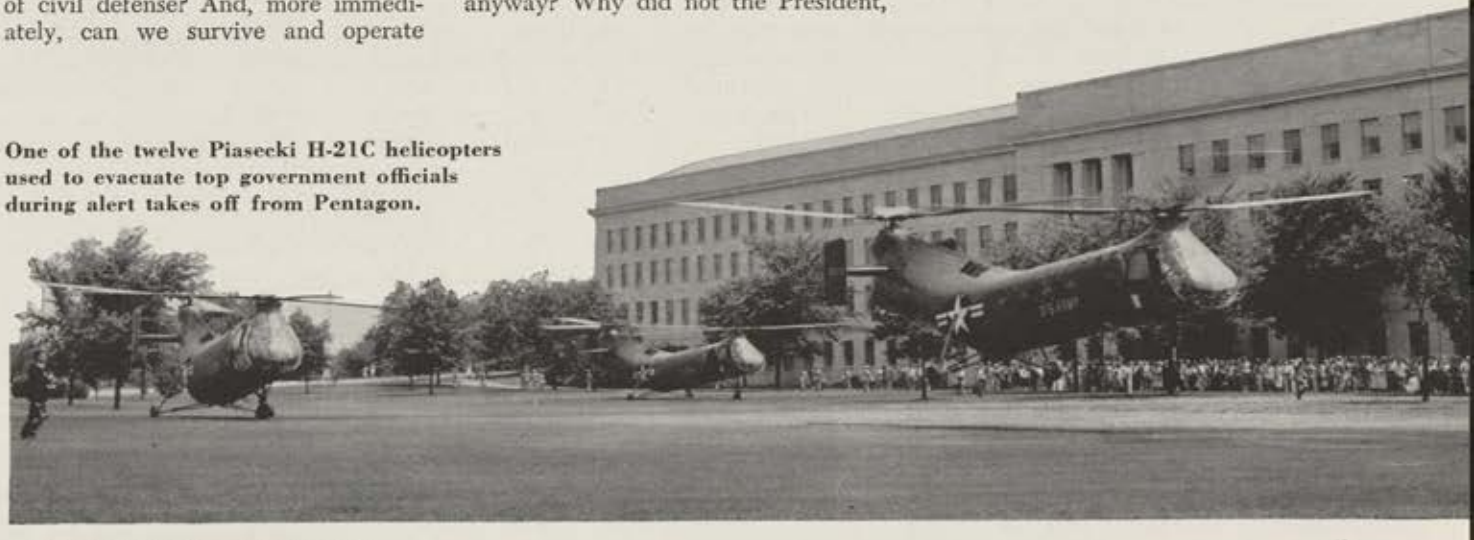
To recover from a catastrophe of the magnitude assumed in the exercise, one can envision the problem of a single city. If a large bomb were dropped on Chicago, for example, the hospital facilities, ambulances, doctors and nurses, housing and food supplies of Minnesota, Wisconsin, Iowa, Illinois, Missouri, Indiana, Ohio, and Kentucky would have to be made available to care for the injured and feed and house the homeless.

The Civil Defense Act of 1950 states that the Federal Administrator of Civil Defense should "assist and encourage the states to negotiate and enter into interstate civil defense compacts." It is apparent that an interstate compact among these eight states for the benefit of Chicago would always be only a dream. And if the compact were made it would be worthless without minutely detailed plans and the authority to carry them out regardless of state boundaries. Not only are there eight sovereign states, but they are divided into three civil defense regions in the supporting area.

Under the assumed situation in Operation Alert, there were many other cities in the eight-state area that also were destroyed. This would mean that Chicago would get very little help. Planning for such catastrophe is comparable to planning a major military operation. It can be done only by a permanent and suitably trained staff. It never can be done with the kind of loose cooperation between states, Federal Civil Defense regional offices, and the armed forces that is

(Continued on page 55)

One of the twelve Piasecki H-21C helicopters used to evacuate top government officials during alert takes off from Pentagon.



Above, the December 7, 1954, meeting of the Harvard Defense Policy Seminar, at which RAF Marshal Sir John C. Slessor (ret.) "testified." This group, typical of subsequent sessions, included:
1. Prof. Robert Braucher of Harvard Law School—a World War II P-40 pilot in the CBI, later a consultant on procurement matters.
2. Col. Frank P. Bostrom, USAF, PAS—a career pilot and the man who flew General MacArthur out of the Philippines in WW II.
3. Prof. Robert G. Albion—a historian with much experience in the Department of Defense. He is the administrative historian of the US Navy in World War II.
4. Capt. Charles M. Simpson, USA—a student at Harvard's Graduate School of Public Administration.
5. Randal H. Deasey—a career civil servant in the Australian Department of Defense, now a student in the Public Administration School under a fellowship.
6. Prof. Edward L. Katzenbach—from the Institute of War and Peace Studies at Columbia.
7. William A. M. Burden—from the Business School.
8. Col. Frank A. Osmanski, USA—from the Business School. He is chairman of the Student Planning Committee.
9. Lawrence J. Henderson—a Harvard Law School graduate and now Associate Director of the RAND Corporation.
10. Prof. W. Barton Leach—of Harvard Law School and a consultant to the USAF. He is the author of this article.
11. Timothy W. Stanley—of the Law School. He acted as chairman of the Slessor Panel.
12. John F. McGrory—of the Law

Harvard's Defense Studies Program

Pentagon Prep School

By W. Barton Leach

YOU HAVE just been sworn in for one of the thirty jobs in the Pentagon that rate the title "Mr. Secretary." The PIO photographers have left. You are sitting in that red leather chair behind the executive-type desk. *Now* what do you do? Action on a dozen issues has been held up pending your appointment. They crowd in upon you, each presenting a puzzle regarding the degree of your authority *vis-à-vis* your civilian superiors, your military partners, and the legislative branch of government, each also calling for knowledge and wisdom in exercising such power as you have.

I will not embarrass you by asking your qualifications for the job. You may be well qualified, as some have been. You may be generally unqualified, as most appointees will concede they are at the outset. Or you may be affirmatively disqualified, as has happened.

But, since I am an educator, I will ask what contribution your university training made to your qualifications? With great confidence I answer, "None."

If you had been appointed Mr. Secretary in State, Justice, Agriculture, or you-name-it, you would be operating in a field where the universities provide systematic research and instruction, sometimes by whole institutions, sometimes by departments, and sometimes by individual courses. But you have been appointed in Defense, where academic activity was nil when you were in college.

You have friends who have been elected to Congress. How do they know how to vote on Defense legislation? If they are assigned to the Armed Services Committee or the Appropriations Committee, where did they get the needed background information? Did their college careers stimulate an interest in defense matters?

And your friends who became journalists—editors, editorial writers, columnists—what of them? Same answers.

Whatever any of these men have learned has been acquired by on-the-job training, haphazardly, with no help from the universities that purported to prepare them to meet the demands of life and leadership.

A disclaimer is here appropriate. No one suggests a college course on "How to be Secretary of Defense." University training is the start, not the finish of education. What we professors can do for young men is limited but vital. In any subject—law, banking, foreign policy, or defense—we can awaken their interest, establish them in habits of reading and study, acquaint them with the sources of knowledge, give them a background against which to examine novel problems in perspective, encourage critical analysis and original thought, and inculcate standards of thoroughness and objectivity. If we have done that we have opened a gateway; a fair percentage of students will pass through and some will go far.

The universities cannot be criticized for neglecting these subjects in the 1930s. Few foresaw the emergence of the United States as the military bulwark of freedom in a divided world. None foresaw defense as the dominant factor in "peacetime" national budgets. But as a nation we have achieved in the 1950s a breakthrough to meet global realities. The universities must achieve a corresponding academic breakthrough.

As one enterprise in this field Harvard University has established a Defense Studies Program with a teaching and research staff of seven persons, basic financing from the Ford Foundation, and half of a modern building. By the way, who ever started the hoax that Harvard is "anti-military," an expression I have recently discovered in an official document? Anyone nursing this delusion should get the facts. Pick your period and then look at Harvard's record. King Philip's War? Harvard was reduced to three students. The Revolution? Harvard quartered the Continentals in its dormitories. World War I? Harvard in effect declared war by inviting and receiving a French Military Mission while a certain Princeton graduate had still not renounced "neutrality in thought and deed." World War II? If you served, as I did, in the AAF your civilian superiors were named Roosevelt, Stimson, McCloy, Patterson, and Lovett, all men of Harvard. Aside from the Defense Studies Program, Dean McGeorge Bundy—co-author of the Stimson biography—is sponsoring an invigorated

School. He is a Naval Reserve officer with special interest in tactical aviation and carrier-borne air operations.
13. Laurence W. Levine—of the Law School. He was one of the analysts of the British White Paper on Defense and Parliamentary Debates.
14. Maj. Norwell M. Walker, USA—of the Business School.
15. James P. Reid—of the Law School, one of the analysts of British policy documents.
16. Robert B. Choate—publisher of the *Boston Herald*.
17. Maj. Joseph H. Dover, USAF—of the Business School.
18. Lt. Col. James O. McKee, USAF—of the Business School.
19. Lt. Col. Jeffery O. Wellborn, USAF—of the Business School.
20. Ass't Prof. Samuel P. Huntington—of the Government Department. He is the author of articles on various defense subjects.
21. Lt. Col. Trevor N. Dupuy, USA, PMS&T—co-author of the new book, *The Military Heritage of America*.
22. Prof. Milton Katz—Director of the Institute of International Legal Studies, former Ambassador for the Marshall Plan in Europe.
23. Frederick M. Sallagar—of the RAND Corporation, former Special Assistant to the AF Secretary.
24. Marshal of the Royal Air Force, Sir John C. Slessor (ret.).
25. Prof. Arthur Smithies—chairman of the Economics Department.
26. Samuel P. Newbury—of the Law School; administrative assistant for the Seminar.
27. Prof. Samuel Eliot Morison—noted naval historian.
28. Dr. James C. Shelburne—educational adviser, Air University.

"Harvard Plan" for the ROTC. Anti-military, indeed!

Be that as it may, beginning in September 1954, Harvard conducted a Defense Policy Seminar with some thirty students from the graduate schools of Business, Law, and Public Administration, including a dozen Regular service officers.

Each Seminar session ran like a Congressional hearing. The "witness" would make a statement, the shorter the better, and then subject himself to questions. Faculty members and a specially prepared student panel served as interrogators. Did it work? All I can say is that the meetings, due to last two hours, beginning at 4:00 p.m., rarely stopped before 6:30; and then student groups would corner the "witness" and faculty for further discussions for another hour or so.

In limited space perhaps the best way to describe this venture is to bring you into the middle of one session, let you listen to the discussion for about ten minutes, and tell you what preparation lay back of it.

On December 7, 1954, the witness was Marshal of the Royal Air Force Sir John C. Slessor. I presided.

Toward the end of the first hour, two students raised the question of how far military requirements are, or should be, clipped for economy reasons. They said it looked as if England were putting "figures before forces" in the two following instances:

- Mr. Harold MacMillan, appointed Minister of Defense in November 1954, announced as his first official act a reduction in conventional forces, especially anti-aircraft batteries.
- In 1952 a major revision was made in the UK pattern of forces, apparently built around a budget limitation. Sir John was Chief of Air Staff at the time. He brought to the US in August of that year the English "New Look" with heavy emphasis on atomic airpower.

Air Marshal Slessor replied: "The current reductions just happened to occur at the time of a change of Ministers of Defense. This is not a case of a new broom sweeping clean. The reductions have been in the works for at least two years. The elimination of certain conventional anti-aircraft batteries is a consequence of the continual re-examination of weapons to get rid of those that have lost their utility in modern warfare. There may have been some thought that any reduction of expenditures is a good thing, but it was not a principal motivating factor.

"The 1952 business was quite another matter. We were faced with a real crisis in our dollar/gold reserves. Something had to give. The Chiefs of Staff Committee came to an agreement that we should build up the RAF capability of conducting nuclear warfare both as a deterrent and as a war-winning factor, that the Army should remain pretty much as it was, and that the Navy should cut back on carrier-based air and large-ship construction and concentrate on defenses against enemy subs and mines."

Professor Smithies, Chairman of the Economics Department, then observed that among economists these so-called crises are often highly debatable matters. "For example," he said, "the National Planning Association believes that at the present time the US could spend at least another $5 billion for defense, not only without damage but with actual benefit to the economy. Furthermore, I know of no professional economist, including the President's own economic adviser, who holds any different view. Yet it appears to be the Treasury belief that the nation's solvency is in such peril that risks must be taken with defense."

Air Marshal Slessor said, "As of 1954, I have no reason to believe the economy of either partner to the Anglo-American alliance is in such condition as to require taking risks in national defense. However, in 1952 the UK had lost all but about 300 million of its gold/dollar reserves and, dependent as my country is upon imported food which must be obtained through manufacture of exportable goods, it was faced with the alternative of living within its means or becoming dependent on a permanent dole from the United States. Furthermore, the NATO program of forces agreed upon in 1951—ninety-two divisions and about 10,000 tactical aircraft—was wholly beyond the capabilities of the NATO countries. These forces were conceived in the mistaken notion of piling atomic armaments upon all the weapons of conventional warfare. The hard facts of foreign exchange forced the UK strategists to reconsider their position; but in so doing they induced more realistic thinking throughout the NATO structure. The conversion of SHAPE war plans to nuclear warfare had some relationship to the pattern of UK forces and the strategy decisions of the British Chiefs of Staff Committee in 1952."

The students asked what channels were available for protesting against decisions as to reduction of force which might be militarily unwise. Sir John stated that in England each of the active service chiefs had direct right of appeal to the Defense Minister, the Defense Committee, and the Prime Minister. "But," he added, "the British Chiefs of Staff take very seriously the terms of their charter that they are a single Chief-of-Staff-in-Commission; splits on service lines are not usual. The Chiefs do not appear before parliamentary committees, nor do they maintain communication on service matters with individual members of Parliament. Neither they nor their subordinates discuss service matters with the press. There are no leaks of either facts or inter-service deliberations."

He emphasized the importance of two forums for uncensored professional discussion of inter-service matters: (1) the House of Lords, where senior retired officers of all services debate defense issues at length and (2) the Royal United Services Institution Journal where both sides of controversial issues are presented.

The students outlined the facts on the $5 billion cut

(Continued on page 45)

NEW POWER SOURCE TIGHTENS RADAR DEFENSES

Million-Watt Klystrons Aid Detection of Distant, Low-Flying Planes

THE STORY BEHIND THE STORY:

What is the significance of the headline above? To borrow from an old baseball expression, *"You can't hit 'em if you can't see 'em"*— approaching planes that formerly evaded radar detection can now be "seen" at greater distances than ever before.

■ Behind this improved radar vision is a new family of high power tubes known as Megawatt Klystrons. These new tubes not only provide greater ability for beaming radar impulses against small and distant objects, but provide a new improvement to a technique known as M.T.I. or Moving Target Indication. In radars without M.T.I. everything within the beam of the radar appears on the viewing scope. Images from trees, terrain, buildings, all combine to form "ground clutter" on the scope. M.T.I. eliminates this "ground clutter" by indicating moving objects only. Therefore with Megawatt Klystrons, approaching aircraft can be spotted sooner and defenses can be alerted more quickly.

■ Producing millions of watts of electronic power, these giant tubes make possible illumination of small objects with radar impulses at greater distances to provide clear, sharp images on the radar scope. Furthermore, the Megawatt Klystron's stable performance and long life assure that these radar sentries are constantly on guard.

■ The Klystron tube made microwave radar possible. Developed by Sperry, it generates, amplifies or multiplies microwaves. Today, Sperry produces Klystrons covering a wide range of powers and frequencies for specific requirements — both military and industrial. To meet demands for these tubes, a new plant has just been opened devoted exclusively to Klystron research and production.

SPERRY GYROSCOPE COMPANY

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in the Air Force budget in 1953. The Air Marshal declined to comment.

How could these young men discuss such technical matters as the British strategy paper of 1952, the MacMillan cuts in AAA, and the Air Force budget of 1953? Preparing wasn't easy. Two student panels had been working intensively on this session for six weeks. With all other students they had read Sir John's *Strategy for the West*. One panel studied the British White Papers and Parliamentary Debates on Defense (1952 to 1954), then prepared a thirty-three-page summary for the class. The other panel studied the writings of Sir John Slessor, particularly in comparison with those of Thomas K. Finletter, Field Marshal Montgomery, Admiral Horan of the Royal Navy, and others who might present comparable or conflicting views. They prepared a seventeen-page summary, with a series of questions to the Air Marshal. Both papers were mimeographed, distributed to the class, and sent to Sir John in England. The value of this advance notice became apparent when Sir John produced documents of great significance extracted from his files in England in response to specific questions in the student papers.

So, it is reasonable to say, this session represented something more than a pleasant Tuesday afternoon chat with a distinguished and urbane airman.

And so it went through the course. Guest lecturers included the following:

Robert Amory, Jr., Central Intelligence Agency.

Dr. Eugene M. Emme, Air War College.

Thomas K. Finletter.

Vice Adm. M. B. Gardner, Deputy Chief of Naval Operations (Plans and Policy).

Frank H. Higgins, Assistant Secretary of the Army (Logistics and Research and Development).

Prof. Edward L. Katzenbach, Institute of War and Peace Studies, Columbia University.

Professors George B. Kistiakowsky and Fred L. Whipple, Chairmen of Departments of Chemistry and Astronomy, Harvard University.

Col. G. A. Lincoln, Professor of Social Sciences, US Military Academy, a participant in the Yalta conference.

Professors John W. Masland and Laurence Radway, Dartmouth, analysts of higher professional education in the services.

Frederick M. Sallagar, the RAND Corporation.

Gen. Albert C. Wedemeyer, USA (ret.).

Joseph N. Welch, counsel for the Army in the Army-McCarthy hearings.

From this list the subject coverage can be deduced. We also took the Seminar to Washington for the Air Force Association Air Logistics Conference last December.

Let me make one thing clear: this is not an "air show." My background lies in the Air Force, but that of my senior associate, Dr. Edward L. Katzenbach, is in the Navy Department. The Army viewpoint is ably represented by Col. Trevor N. Dupuy, the Professor of Military Science and Tactics at Harvard, and we hope to get a civilian with Army background. There is, and will continue to be, real unification in this enterprise.

P.S. We still need money.—END

The author, who's an AFA Director, has been a professor at Harvard Law School since 1951. Now an AF Reserve brigadier general, in WW II he headed the AFA's Operations Analysis Division, a brain trust that explored the science of air war. Professor Leach represented the AF in the unification and B-36 hearings and was General Vandenberg's counsel during the 1953 cutback of the AF budget.

B-29 formations were familiar scenes during two Pacific wars.

SAC converts to jets and a proud old AF warrior retires

LAST OF THE SUPERFORTS

Most of the USAF's once great Superfort armada is now awaiting eventual salvage in the Arizona sun

1st Lt. Richard C. Graham and his crew from the 97th Bomb Wing, Biggs AFB, Tex., get ready to board B-50 9316 for its last flight. Minutes later, the plane was airborne and on its way to retirement at Davis-Monthan AFB, Ariz.

By Lt. Douglas M. Fouquet

A PROUD old Air Force warrior, which during a decade of combat duty inflicted greater damage to the enemy than any other weapon in the history of the world, has finally given way to the jet age.

Last month in El Paso, Tex., a lone Boeing B-50 Superfortress bomber headed its nose down a sand-swept runway and took off from Biggs Air Force Base for the last time. Except for a few officers and airmen who went out to watch the take-off from the flight line, the rest of the base went about its normal duties, barely aware that anything unusual was happening.

More likely to attract greater attention would be the arrival of forty-five new sweptwing jets, which were due to fly into Biggs at regular intervals during the summer and early fall. Like many other Strategic Air Command medium bomber outfits which had done the same thing before, the 97th Bomb Wing at Biggs was turning in its propeller-driven Superforts for Boeing B-47 Stratojets.

But even more significant on a national level was the fact that with the re-equipping of the 97th, SAC had reached the last stop of a major conversion program involving every medium bomber wing in the command. With the departure of the last combat B-50 from Biggs, the storied Superfort was bowing out of the Air Force's active bomber inventory. And, with the subsequent arrival of the 97th Wing's new B-47s, the Strategic Air Command's long-held dream of an all-jet medium bomber force would at last be realized.

Ever since 1948, when the first B-47 production orders were issued, SAC has steadily been working at the task of modernizing the fleet of B-29 and B-50 Superforts which it inherited following World War II. Years of preparation preceded the actual conversion. Not only did SAC's planners have to coordinate B-47 production rates with the availability of funds for new base facilities, but in addition, they also had to reckon with the very real possibility that war might break out at any time while the conversion was under way. Since the process of re-equipping with new aircraft removes a bomb wing from combat-ready status for a number of months, intricate schedules had to be worked out in order to insure that the great majority of SAC's medium bomb wings would be available for immediate action at any given moment.

The pioneer outfit in SAC's conver-

(Continued on page 49)

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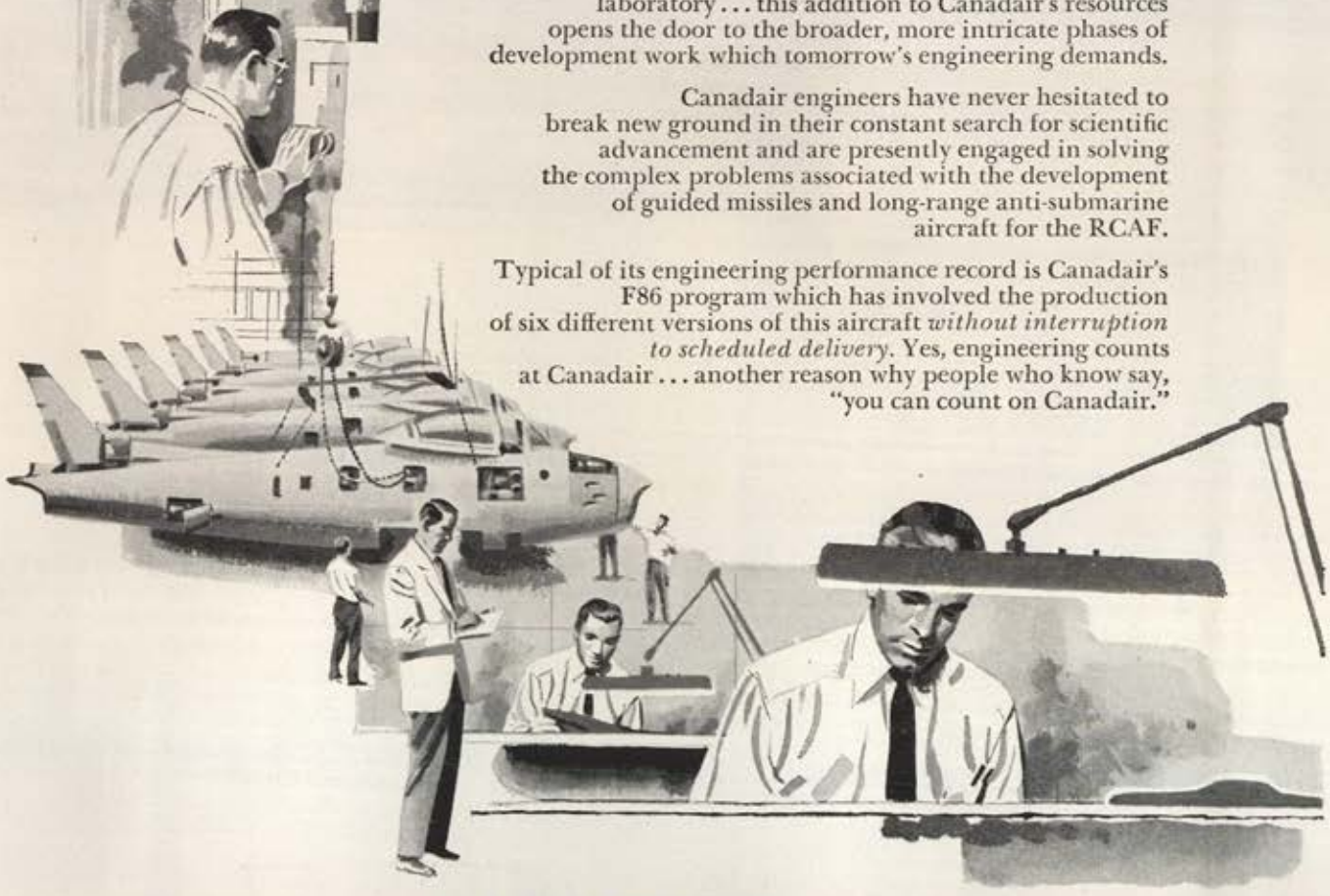

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CASS-17UST

During thirty-seven months of action in Korea, B-29s flew 21,000 missions and dropped 167,000 tons of bombs.

After departure of last Superfort, Col. Willard W. Smith, CO of the 97th, erases the serial numbers from the aircraft status board.

LAST OF THE SUPERFORTS — CONTINUED

sion program was Col. Mike McCoy's 306th Bomb Wing at MacDill AFB, Fla., which began trading its B-29s for B-47s in late 1951. Then came months of intensive crew transition training, capped by several "max effort" wing-strength exercises in which 306th crews demonstrated that they had successfully mastered their new equipment and procedures. But it was the 306th's record-breaking non-stop deployment to England in June 1953 that proved that the unit not only had regained its combat-ready status but had picked up something more besides. Never before had a major SAC overseas movement gone off with such speed and such ease.

One by one, other medium bomb wings repeated the pattern set by the 306th, and by the end of 1953, the command-wide conversion program was well under way. In July 1954 the Second Air Force became the first of SAC's three numbered air forces to become all-jet. And in November of that year, the last B-29 unit remaining in the entire command was ready for conversion, leaving only the 97th and a few other B-50 outfits to be converted in 1955.

Just what has this command-wide swing to jets meant to SAC? No one has been able to figure out exactly how much added striking power and efficiency has been gained, but judged by almost any standard the Stratojet offers great advantages over its predecessor. Its 600-mph speed, the ease with which it can engage in in-flight refueling, and its service ceiling of over 40,000 feet give it the capability to penetrate modern air defenses and get in and out of a distant target area in a hurry. Its accident rate has been one of the lowest in the Air Force.

But perhaps the B-47's most spectacular feature is that it offers this increased performance with a crew of only three, compared to the Superfort's crew of eleven.

The B-47 has also proved a popular favorite with the men who actually fly it day by day. Although some pilots were initially skeptical about the cramped interior quarters, they have found that the absence of vibration, the smoothness of the ride when going through rough air, and the plane's general handling characteristics provide other comforts in return. Time and time again, SAC pilots, on making their first flights, have exclaimed: "Why, she flies more like a fighter than a bomber!"

Meanwhile, it didn't take long for the B-47 to find other supporters among SAC's ground crews. Stratojets

(Continued on following page)

First flight of the first Boeing Superfortress, the XB-29, was made from Seattle's Boeing Field on Sept. 21, 1942. Dressed in a coat of olive drab paint, the bomber was cloaked in wartime secrecy. It was not until almost two years later, in June 1944, that the public first heard of the new bomber—after it was revealed that a fleet of them had raided Japan.

At Davis-Monthan AFB, Ariz., the stripped B-29s and B-50s are covered by white plastic cocoons to protect them from the weather. Here at the 3040th Aircraft Storage Squadron's depot, all salvageable parts are cleaned, crated, and shipped to supply depots for eventual installation in active aircraft.

The B-29 Superforts of the Far East Air Forces played a major role in the Korean war. This one is dropping incendiaries on a Red factory in Korea.

Stuart Symington, then Secretary of the AF, and the late Chief of Staff Gen. Hoyt S. Vandenberg were among those to congratulate Capt. James G. Gallagher and his "Lucky Lady II" crew after non-stop flight around world.

LAST OF THE SUPERFORTS

CONTINUED

When the last B-29s returned from the Far East last fall, the crews were given a real Hawaiian welcome by Red Cross ladies.

"Command Decision," attached to the 19th Bombardment Wing on Okinawa, flew 121 bombing missions during Korean war.

have flown for hundreds of hours without the need for an engine change, causing many a crew chief to remark that the B-47 was "as easy to maintain as a B-29 without engines."

Although the B-47 has proved itself to be an ideal replacement for the B-29 and B-50, it will still be a long time before the Superfort's exploits are forgotten. Rushed into production in 1942 with so much secrecy that the public never knew of its existence until years later, the B-29 was expressly designed for the purpose of bombing the Japanese Empire into submission. It made its first raid in June 1944, and by the end of the war it had delivered 147,000 out of a total of 160,000 tons of bombs dropped on Japan's home islands, including the only two atomic bombs ever dropped in wartime.

After the war, many of the 4,000 B-29s that were produced by Boeing went into storage, but others stayed in active service with the Army Air Forces and made up SAC's initial complement of aircraft upon the command's activation in March 1946. Eight months later, Col. (now major general) James C. "Bromo" Selser, Jr., led six Arizona-based SAC B-29s to Germany in the flight that proved to be the forerunner of SAC's now-established global mobility plan. Under this plan all SAC aircraft are kept ready for instant deployment to trouble spots anywhere in the world.

In 1947, the B-29 was joined by its new sister ship, the B-50, which, while similar to the B-29 in many ways, was larger and faster, and incorporated a number of postwar technical improvements. One of the first B-50s, the "Lucky Lady II," made a lasting name for itself by executing the first round-the-world, non-stop flight in history. This 23,452-mile flight was especially significant in that it clearly proved the feasibility of in-flight refueling for use in medium bomber operations.

Although the B-50 made a great contribution to national defense by providing added punch for SAC during a critical period of international relations, it never really was able to challenge its elder sister's place in the public limelight. Even in its waning days, the B-29 still managed to steal the show from the B-50 when in June 1950 it was called back into active combat in Korea.

Through thirty-seven months of action in Korea, B-29s dropped 167,000 more tons of bombs, during a total of 21,000 individual missions. These missions were first directed against enemy airfields and industrial facilities but when all of these targets were rend-

(Continued on page 52)

By Unanimous Agreement

These men, representing the armed services, discuss, debate—and finally agree upon a course of action. By so doing, they demonstrate a fact that is basic in the thinking of RCA: no matter what the equipment may be—atomic, electronic, chemical or structural—it takes *a man* to run it! There is no substitute for the human brain. The man always far outvalues the equipment he uses. Without him, it is meaningless.

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ered unserviceable, Superforts were given a new task that their designers had never dreamed possible—tactical support of front-line troops. Yet, with only fifteen Superforts shot down during the entire Korean war, the B-29 operated at a loss rate lower than that normally incurrred during routine peacetime training in the states. One Superfort named "Command Decision" even became an "ace" in its own right after its crew had shot down five enemy MIGs.

By the time the Korean war had ended, all of SAC's stateside B-29 outfits had been converted to B-47s, so when the last B-29 wing returned from the Far East in late 1954, it flew direct to the Air Force's B-29 and B-50 storage depot at Davis-Monthan AFB, Ariz. In a simple ceremony at Honolulu, where the B-29s made their last stop before reaching the scene of their retirement, a Hawaiian lei was placed around the nose of the lead ship in recognition of the B-29's decade of accomplishments.

Retirement of the last B-50 bomber in SAC has not meant a complete end to the Superfort's military career,

While the transition from propellers to jets was taking place, SAC had to make sure that the maximum number of its units were ready to go at a moment's notice. This called for intricate training schedules. Here, Capt. M. F. Culver (left) is being taught the in-flight malfunction analysis of the Stratojet's bombing-navigation system. As the third man on the B-47, Culver will ride in the nose section—sometimes referred to as "the devil's workshop"—surrounded by electronic devices. At the same time, his pilot and co-pilot learn to fly the sleek Boeing jet bomber.

however. Both B-29s and B-50s are still flying with the Air Force in various support capacities. Most of the final B-50s declared surplus by SAC this year, for example, will go either to TAC, as air refueling tankers, or to MATS, as weather reconnaissance planes. Other Superforts are still serving in such specialties as turbojet test planes, air rescue craft, and C-97 transition trainers.

The remainder of USAF's once-great Superfort armada, however, is now basking in the Arizona sun at the Davis-Monthan storage depot, awaiting eventual salvage. There, supply technicians of Air Materiel Command's 3040th Aircraft Storage Squadron systematically strip each Superfort of all salvageable instruments and parts, before its useless hulk is finally carted off and sold as aluminum scrap.

"I hate to see her go," one ex-Superfort pilot remarked mournfully after a recent tour through acres of idle B-29s and B-50s lined up in the big Davis-Monthan depot. Then, looking up at a faint set of contrails high in the sky, he added with a smile, "But I'm sure glad the Air Force found such a beauty to take her place."—END

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To facilitate production of this important plane, TEMCO was called upon to fabricate aft fuselage sections. The award of this contract indicates the thoroughly satisfactory manner in which TEMCO has been handling work on another McDonnell fighter, the F3H *Demon*, and further establishes TEMCO's reputation for producing a quality product, on schedule, at the lowest possible cost.

Final assembly and inspection of aft fuselage section of F-101 prior to delivery to McDonnell.

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now required under the existing laws.

So far the discussion has only been concerned with helping the injured and homeless. It would be necessary to draft civilian labor, supplies, and equipment to restore first the transportation system to keep the national economy alive and to prevent starvation in areas subjected to fall-out or with all communications cut. There are no legal authorities under which such actions can take place except martial law or the unwritten emergency powers of the President.

The planning assumptions of the Federal Civil Defense Agency, presumably based on information from the Defense Department, are questionable. The planning assumptions, effective July 1, 1954, read: "If this country were attacked, a primary objective of the attacker would be to destroy our production capacity and our will to resist. The most probable method of attaining this objective would be to attack our centers of industry, population, and government." And further: "It is assumed that the initial attack would be in the nature of an attempted knock-out blow."

This is a strange assumption. Our own long-range Air Force has as its primary objective the destruction of the enemy's means of delivery, as a means of defense of our own air bases and our cities. The enemy's air force is the main threat to our means of delivery and capacity to continue in the fight. Because we, from our peripheral air bases, have such numbers of aircraft capable of the necessary reach, it will be possible not only to go after the enemy air bases but to take on other targets.

But delivery from the other direction is intercontinental, and intercontinental bombers will always be few in number due to their great cost. Then also there are targets for the enemy in Europe as well as the peripheral air bases that must be taken

(Continued on following page)

An enemy would probably hit our air bases before attacking our cities and factories.

IS CIVIL DEFENSE TOO 'CIVIL'?

CONTINUED

care of. In consequence, a more rational assumption would be that the strategic air base system in the United States and abroad would be the primary target. Possibly a very few conveniently located cities would be included in the primary target objective. And these would more likely be attacked with guided missiles or torpedoes from submarines.

So it could be that the air bases, not the cities, would be the places where rescue by civil defense and rapid restoration of function would be imperative. Under any circumstances the primary function of civil defense must be to make it possible to continue the war. I have never heard of any civil defense plans to come to the assistance of the armed forces, although all elements of the armed forces have plans to help civil defense.

Another fallacy in the civil defense planning assumptions is that the enemy would have a primary interest in destroying our production capacity. If the war lasts only a couple of weeks or a couple of months, as even the staff of SHAPE (which is composed mostly of ground officers) believes, production capacity is of no importance. The war will be over before any new production could ever be transported.

The chances are pretty good also that in a nuclear war the enemy would destroy British and French ports—a single bomber missile or mine of the right size would make them useless for a long period—and we should be unable to ship the products of our production capacity. Our own ports, likewise, are a tempting target from the sea. If the assumption that a nuclear war will be short is valid—and I know of no one with full knowledge of the immensity of destruction that can be done in a week that believes otherwise—every effort of the nation, including civil defense, must have a primary mission of keeping the Strategic Air Command flying.

This would mean that SAC needs first priority in transportation, repairs, and shipments of every requirement to keep it operational. It would have to be able to draft skilled personnel to replace those lost in destroyed bases. It would require preemptive rights to take over any suitable air field for operations, both in lieu of destroyed fields and for dispersion. Since the Strategic Air Command would be the main target, its bases would be dangerous, and legal authority of some sort would be needed to draft and keep the necessary skilled labor, which would be just as important to continued operation as keeping the men in uniform.

Our planners do not believe that we, or any other nation, are able to deliver a knock-out blow in a sneak attack. The preparations are too massive to be hidden. It is more likely that the conflagration would start on a small scale—in a minor war, perhaps—and suddenly flame into a major catastrophe. There would be warning.

If we can assume confidently that the big war will be short and that our production will never reach the battle or have any effect on its outcome, then why not, some have asked, immediately start evacuation for the duration, of unnecessary people, and shut down unneeded industry in the real target areas? This would need to be far more extensive than the evacuation from target cities in Great Britain during the last war where it was applied mostly to the very old and the young. If the war did not turn out to be short, very little harm would be done, because the real bottleneck would be transportation by land and sea, and not production.

The term "real target areas" is important. The civic pride in American cities is such that any one of them is outraged at the idea that it is not important enough to be a real target

city for any reason whatsoever. Each can dredge up a thousand reasons to prove that it is vital. New Orleans and Mobile both probably can. But in reality they are so distant that the difficulty of attacking them outweighs their importance. But Federal Civil Defense, being a political affair at the top, is forced to deal with all alike. However, if real money is to be spent in preparation to keep the nation operational in war, there will not be enough for boondoggles to soothe civic pride. If they must join the sad parade, they should pay for it themselves.

It seems apparent that the Federal Civil Defense organization is totally unable to perform functions of the magnitude that would be required in a nuclear war. It has not been given the legal authorities that obviously are essential for it to act to keep the economic life of the nation running in a catastrophe greater than ever has befallen a modern nation. Its planning appears to be based on erroneous assumptions and to be directed so entirely toward rescue of injured and care of evacuees that the military operations—and their economic support—on which the survival of the nation depends easily could be starved to a halt from lack of supplies and skilled personnel.

This is not the fault of Civil Defense. The organization has been doing its utmost with the funds and authorities provided by Congress and information supplied by the Defense Department and the Atomic Energy Commission. The major blame for the situation lies with the Defense Department, which has attempted to evade any responsibility for one of the three essential elements of national survival.

The President, by his declaration of martial law and by pointing to the need for trained and disciplined men ready to act, has put the problem of civil defense back on the track. There is hope, finally, that after seven years of fumbling and trying to make an impossible set-up work, a civil defense establishment geared to realities may now evolve.—END

A primary target for the enemy—a lineup of Boeing B-47s at a SAC air base.

About the Author

The author, Brig. Gen. Thomas R. Phillips, USA (Ret.), is Military Analyst for the St. Louis Post-Dispatch. *His column on military matters appears regularly in that paper. He's authored several books and contributed to US, foreign, and military periodicals since 1923. His military background includes the Air Corps Tactical School, the Coast Artillery School, and the Command & General Staff School.*

Tech Talk

By Lee Klein

Recently released pictures of the Navy's newest jet fighter, the **Chance Vought XF8U-1** (see cut) show a highly-mounted, sweptback wing and a low horizontal tail. Designed **to operate from aircraft carriers** and to fly **at supersonic speeds,** the plane is powered by a **Pratt & Whitney J-57-P-4 turbojet with afterburner.** No performance figures were released, but the design specifications called for a high rate of climb, exceptional combat ceiling, and penetration of the speed of sound in level flight. Titanium was used in parts of the rear and middle fuselage and a **lightweight ejection seat** ("Tech Talk," May '55) developed by Chance Vought is standard equipment. Flight tests have been conducted at Edwards AFB, Calif.

Chance Vought's XF8U-1, the Navy's newest fighter, is shown on a test flight.

The motor in the **Hughes GAR-1 Falcon** (see "The AF's New Bird of Prey," May '55 AIR FORCE) is **powered by a special, solid propellant fuel,** it was revealed recently by H. R. Ferguson, vice president in charge of Rocket Division of the **Thiokol Chemical Corp.** Development of the solid fuel rocket motor culminated years of research and development by Thiokol in close coordination with the AF, the Army Ordnance Corps, and Hughes Aircraft Co.

Three aircraft manufacturers—**Republic, North American,** and **Douglas**—will use a **new braking system** known as "hytrol" in their latest jets. According to the manufacturer, **Hydro-Aire, Inc.,** a subsidiary of the **Crane Co.,** the system **shortens landing distance** as much as thirty percent. The secret is a skid detector which warns of the beginning of a skid, permitting the pilot to use **maximum braking** and at the same time virtually **eliminating the danger of blowouts.** MATS has also announced it will use the system on some planes.

The AF has awarded a multi-million dollar contract to the **Convair Division of General Dynamics Corp.** to convert thirty-six C-54s into air rescue planes. After the conversion, the planes will be designated SC-54s and will be used by the Air Rescue Service of MATS. Conversion will include **installation of larger fuel tanks** to give the planes greater range, blister-type windows to improve search visibility, and the latest electronic gear and equipment. The planes will be equipped for **day or night, all-weather search and rescue operations.** The first SC-54 is scheduled to be delivered to the AF this fall.

The first **jet executive transport,** the French **Morane-Saulnier 760,** was shown at Washington National Airport recently. The twin-jet, four-place craft has a top speed of 410 mph, a service ceiling of 35,000 feet, and a range of 1,015 miles. **Beech Aircraft Corp.** may manufacture the sleek monoplane under contract. Its price tag? in the neighborhood of $300,000.

A new jet fuel, similar to the AF's JP-5, but with greatly improved quality characteristics, has been developed to meet the critical demands of supersonic aircraft. Donald P. Heath, of the **Socony Mobil Oil Co.** Research and Development Laboratories, reported on the new fuel at the Golden Anniversary summer meeting of the **Society of Automotive Engineers** in Atlantic City recently. Supersonic jet fuel acts as a cooling agent, but its effectiveness has been limited by its instability at high temperatures. The gums and sediments formed by unstable fuels tend to cause engine operating difficulties. The new fuel, developed by a new "hydro-cracking" process, is said to eliminate most of these formations.

The Navy has ordered four **De Havilland Otter** transports for use in its next expedition to the Antarctic. The rugged little utility transport, of the same type purchased by the US Army recently (see "Tech Talk," March '55), will be carried into the Antarctic on Navy icebreakers and **will fly men, equipment, dog teams, and stores into the land camps.** The fully winterized Otters are used by the Royal Canadian

(Continued on page 61)

An artist's conception of the DC-8 jet passenger transport. Douglas hopes to flight test it by December 1957.

Thirty-five Lockheed turboprop transports have been ordered by American Airlines. Delivery will begin in 1958.

ACES . . . back to back

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Air Force for **search and rescue duties in the Arctic** and for civil transport and Arctic operations in Norway.

A **revolutionary new airplane,** at first glance looking just like hundreds of other Lockheed F-80 Shooting Stars, made its first flight at Mitchel AFB, N. Y., recently. It was the **first all-magnesium aircraft,** built for the Air Research and Development Command by the **East Coast Aeronautics Corp.,** a subsidiary of **Barium Steel Corp.** The magnesium plane was built to see how its flight characteristics and manufacturing problems stack up with those of conventional aluminum types. According to officials at East Coast, the new plane has **only half the parts** used in a comparable aluminum plane because the magnesium is more rigid and requires fewer stiffening members. Also, because of its lighter weight, **thicker wing structures requiring fewer rivets** were used. This smoother wing

First all-magnesium airplane was flown recently. It is being tested by ARDC.

is said to increase the speed of the new plane **ten miles an hour over other F-80s.** AF pilot Capt. Richard O. Ransbottom, at the controls for the historic first flight, reported that performance of the craft was excellent. The plane goes to Wright-Patterson AFB, Ohio, for extensive tests before acceptance by the AF.

The AF's first turboprop transport, the **Lockheed C-130A Hercules,** will be equipped with an **electronic fire alarm system,** designed to detect the first "flicker" of an engine fire. Manufactured by the **Fireye Division** of the **Electronics Corp. of America,** the system incorporates a photo-conductive cell that is sensitive to the infra-red rays emitted by fires. When the "eye" sees a fire, **a warning light is flashed in the cockpit** so the crew can take appropriate action. Up to now, fire-detection systems have usually relied on some type of heat-detecting device.

Heat remains the **major obstacle in the development of missiles** capable of speeds of **10,000 to 15,000 mph,** according to missile experts at the National Advisory Committee's **Ames Aeronautical Laboratory.** Even at speeds of 7,000 mph—much less than those foreseen—temperatures as high as **8,000 degrees Fahrenheit** could be produced during sustained flight, according to the scientists. At that temperature, the heat would rapidly soak into the structure of the missile, and a means of preventing damage must be found.

In a new wind tunnel at the **Armstrong-Whitworth** guided missile plant at Coventry, England, British scientists are studying the heat barrier. Models are tested at speeds at which **generated heat begins to distort aircraft structures** in an effort to find ways of combating it.

Piasecki Helicopter Corp. has announced that it will start production on a commercial, nineteen-passenger version of its **H-21** helicopter. The **civil version** of the twin-rotor craft will be known as the **PH-42** and is scheduled for delivery in **1956.** New York Airways and Sabena Belgian Airlines are among the operators now evaluating the H-21 as a possible replacement for their present smaller helicopters.

Two almost automatic **machines that look like mechanical men** (see cut) have been developed by **Ryan Aeronautical Co.** for use in the manufacture of jet engine parts. The "robots" pictured are scalloping heads, **used to trim scallops** on jet engine housing assemblies to an accuracy of .0015 inch. The two smaller machines on either side of the operator are drill heads. Used to drill 150 holes and machine sixty scallops in five different housing assemblies, the **machines have reduced the time required** for these operations **from six hours to 1½ hours.**

Symbols of automation—machines at Ryan plant resemble mechanical men.

A new type of parachute to slow and stabilize the descent or flight of inanimate objects has been developed by the **Aero Mechanical Research Laboratory of the Radioplane Co.,** a subsidiary of **Northrop Aircraft, Inc.** Called "Rotafoil" and described as an **"auto-rotating airfoil parachute,"** it is said to provide greatly increased drag and stability for **deceleration, supply dropping,** and **aerial delivery of weapons.** According to Radioplane engineers, a four-pound Rotafoil parachute can stabilize and prevent the tumbling of a 6,000-pound falling object. The device **derives its drag from centrifugal force** that causes the skirt of the 'chute to flare out. It is **stabilized by a spinning action** of 1,500 to 3,000 revolutions per minute. According to company officials, it is not intended as a human air escape device.—END

E. G. Ewing, Radioplane Co. engineer, demonstrates parachute he invented.

minute men

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Build a Cliché in Your Basement

The current "do-it-yourself" craze evidently prompted the following offering from one of our correspondents who prefers to remain anonymous. Since a successful service career depends in large part upon your ability to handle gobbledegook, the subject should be of interest to every military man. No longer need you be dependent on tired, overhauled clichés that come to you through the red-taped channels of normal distribution. Now you can build your own clichés, using only leftover military correspondence. —The Editors.

° ° °

1. Initially, in order to construct a cliché in your basement, both minimum and maximum requirements must be established, along with desired objectives and accomplishments.

2. These must be accompanied by complete justification in sextuplicate, to be forwarded through channels, within bounds of security, to next higher headquarters. No attempt should be made to bird dog, to push through, or sell this piece of paper to the front office. In no case should it be walked or hand-carried down the hall. Orderly procedure should be followed with due consideration of priorities and suspense dates of higher echelons.

3. After a reasonable waiting period, subject matter referred to will be weighed in light of existing criteria and directives. If no objection is interposed, it will receive approval and action initiated to channelize it down through appropriate levels to units concerned. Nine copies will be accomplished for this purpose, including comeback copy.

4. At this point, classification should be established, code and file numbers assigned. When this action is completed, clearance will be granted automatically and proper coordination inaugurated for staff approval.

5. In setting up programmed action, cost figures must be firmed, budgetary authority obtained, funds earmarked, local purchase authorized, and bids advertised. After a go-ahead is received, an appropriation symbol will be allotted.

6. Utilizing maximum capability and total resources, personnel affected should now beef up their schedule, crank in extraneous elements, all cats and dogs, and disregard any built-in problems.

7. Identical procedure must be followed in attempting to expedite finalized form back up the ladder to highest headquarters with urgent request for earliest practicable action.

8. Personnel are advised, however, of likelihood of fiscal people, provost marshal or chaplain's office stepping in with prohibitions, comptroller rulings and adjutants' contrary decisions. It also must be realized that the personnel shop, ops section, and the old man have not yet had a shot at your mission.

9. But if, improbably, desired approval overcomes staff action, and your cliché is returned, you will be unable to recognize it.

10. In this case, one of three alternative courses of action is mandatory, *i.e.:*

(a) Try to build your cliché in the attic next time.

(b) Assign construction project to subordinate unit.

(c) Say, "Oh, to hell with it," and forget the whole thing.

11. By this time your equipment is obsolescent, anyway.

Colonel Eyewash

Career Decision

When an American boy graduates from high school, he may want to become an accountant because his father was a successful CPA. Or he may decide to be a policeman as a result of a long admiration for the patrolman on the corner. Whatever he wants to be, the decision, to a great extent, is based on past experiences and familiarity with the field. Why should a high school student elect to enlist in the USAF when he knows nothing about the military organization? Why should we expect a student to say "I wish to be a radar technician" or "I wish to be a radar observer" when he doesn't know what the terms mean?

American students are curious about the fields of endeavor wherein they may obtain gainful employment, satis-

(Continued on following page)

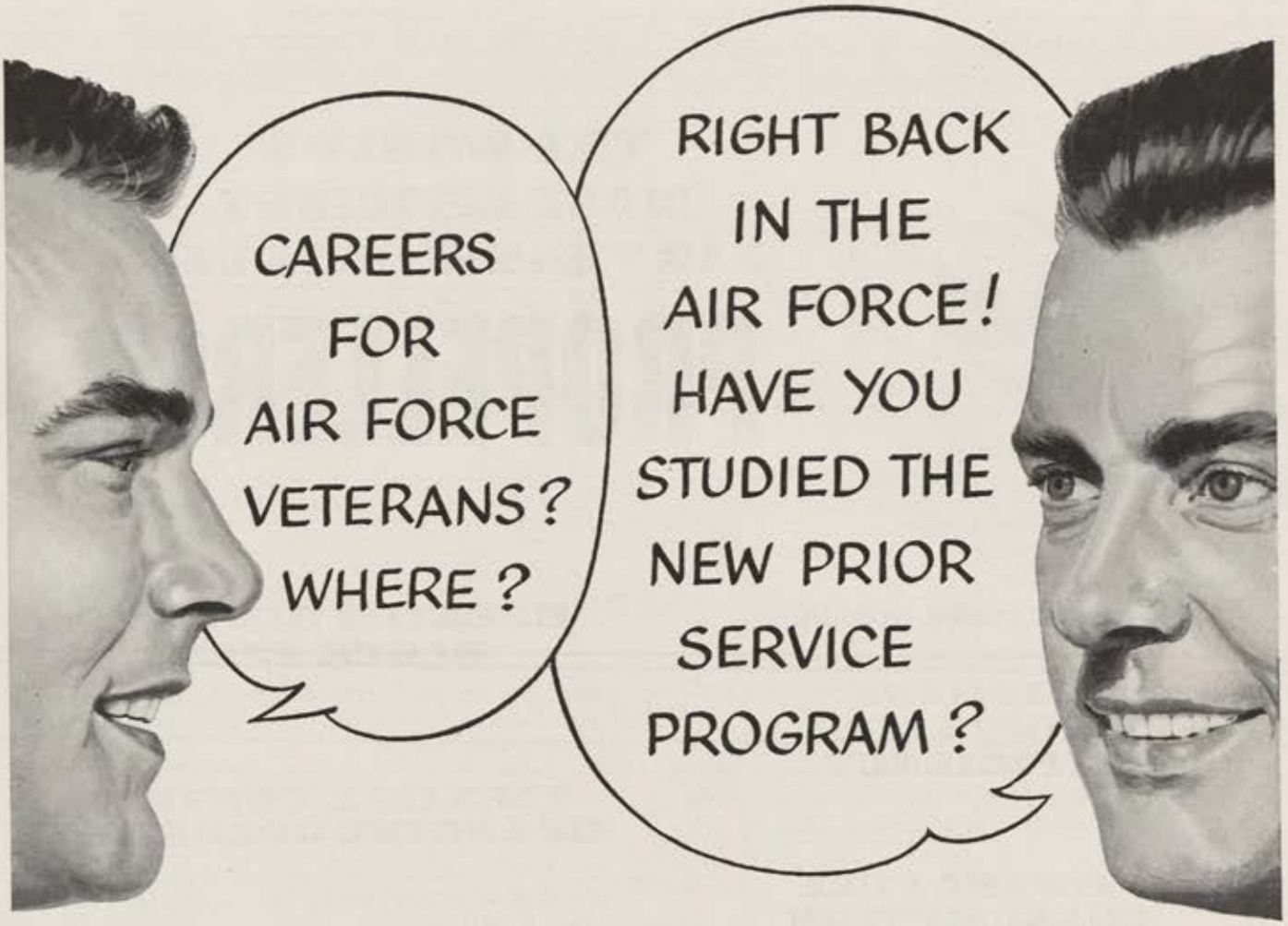
JET BLASTS——CONTINUED

faction, and which offer opportunity. American industry spends millions of dollars annually catering to high school and college students in an attempt to direct their futures along certain lines. If industry has realized that a classified advertisement is inadequate, it is time for the USAF to establish a more vigorous and informative procurement program.

How such a program should be organized is open to discussion and the combined talents of leaders in education and military recruiting should be utilized. It must not include emphasis on basic military training such as drill, military codes or weapons familiarization. Rather this activity must stress the career program in the Air Force. The numerous career fields must be explained and the students should be informed of the extensive and continuing training programs available to military personnel. In this manner the student will begin to ask, "Should I take a job now, enroll in college, or should I avail myself of the training available in the USAF?" The realization that service in the military is a proud and rewarding profession will be an important factor in reaching a decision.

An Air Force technician, commissioned or non-commissioned, can be a valuable source of personnel procurement under such a program. This activity could be conducted in the schools for as little as one hour a week, either during regular "study periods" or after classes. The students are interested in their futures and would be anxious to participate in this program. If the Air Force is to maintain its efficiency it must solicit the aid of this country's youth, for the Air Force is a young man's service.

James K. McKillop
Brooklyn, N. Y.



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'Airpower Day' Is Held in Seattle

WASHINGTON WING, LED BY HAROLD HANSEN, SPONSORS AN EVENT-PACKED DAY ON MAY 19

The **Washington Wing,** with Wing Commander **Harold Hansen** as General Chairman, sponsored a **unique program** in Seattle on May 19. A Youth Aviation rally kicked things off, followed by an Airpower parade, a reception and banquet, the dedication of the New Washington Hotel's Airpower Room, and the local premiere of the film "Strategic Air Command," during which Brig. Gen. Edwin B. Broadhurst, Fairchild AFB Commander, crowned Miss Joan Johnson as Seattle's "Miss Airpower."

The new Airpower Room, decorated with photos and murals depicting the history of aviation, provides a meeting place with an airpower theme. Hansen and his committee chairman, realizing the need for such a place, had received the hotel's enthusiastic cooperation.

Earlier, Mayor Allan Pomeroy had proclaimed May 19 **"Airpower Day."** The Orpheum Theater's management invited all participants in the AFA program to a special showing of **"Strategic Air Command,"** at which the McChord AFB band and the University of Washington AF-ROTC drill team performed. Fifteen-year-old Ken Kaiser, winner of the Northwest Model Airplane meet, was introduced. He and "Miss Airpower" received a free trip to Hollywood, courtesy of the Washington Wing and Western Airlines.

Those helping Hansen make Airpower Day a successful one included the committee chairmen—**Floyd Dawson, Joe Princen, Don Kennedy,** and **Flora Koski.**

Three more states have held **AFA Wing conventions** (for word of others, see "AFA News," July '55). The **Utah Wing's** annual meeting was held in Salt Lake City's Morehouse Hotel May 20 and 21. After a day-long business session, delegates and guests attended the state premiere of the film "Strategic Air Command." **Maj. Gen. William F. Dean,** Commander of the Sixth Army, was the main speaker at the convention. Delegates also heard Col. John F. Sharp of the Continental Air Defense Command. **George Van Leeuwen** of Ogden was elected Wing Commander, replacing Paul Fisher. The following day those attending the convention took part in the Armed Forces Day program at nearby Hill AFB.

More than 100 delegates turned out for the **Pennsylvania Wing** convention in Lewistown on June 4, with the **Mifflin County Squadron** acting as host. **Gill Robb Wilson,** nominee for President of AFA for 1956, delivered a stirring address to some 150 guests at the Airpower Banquet held in the Green Gables Hotel. Afterward, delegates and guests attended a party in the Squadron's fine new clubhouse. **Leonard A. Work** was reelected Wing Commander, and **Mrs. Chester Richardson** was chosen to head the Pennsylvania Wing Auxiliary, replacing Mrs. Raymond Murray. Gus Duda was on hand, representing National Headquarters.

The **Michigan Wing** met June 18 and 19 at the Rowe Hotel, Grand Rapids, with retiring Wing Commander Robert F. Emerson presiding at the meetings. **Col. Dean E. Hess,** Special Assistant to the AF Deputy Chief of Staff for Personnel, was the main speaker at a luncheon on the nineteenth. His subject was morality and the use of modern airpower in warfare, a topic on which he is well qualified to speak since he is both an ordained minister and a veteran of 258 combat missions in Korea. Colonel

(Continued on following page)

SQUADRON OF THE MONTH

The Wright Memorial Squadron
Dayton, Ohio

CITED FOR

its sponsorship of the seventh annual Wright Memorial Glider Meet, which attracted a record number of entrants. Such programs develop interest in private flying. AFA is proud of the Squadron's contribution in this field.

Brig. Gen. Edwin B. Broadhurst, CO, Fairchild AFB, shown with, from left, Marilyn McGuane, Joan Johnson ("Miss Airpower"), and Barbara Bowen, on stage at Seattle's Orpheum Theater, during Airpower Day.

Representatives of seven Illinois Squadrons made up the 1955 Wing convention committee. John L. Carr, the retiring Wing Commander, is seated second from the right.

AFA Falcons received charter during Illinois Wing convention. Beulah Carr, founder and advisor, is at extreme right. Tommy Carr, President, holds the charter.

Hess is noted for his work with displaced persons, especially orphans, in Korea. **Stanley Mull** of Benton Harbor was elected to succeed Emerson as Wing Commander. Honored guests at the convention included Regional Vice President Glenn Sanderson, National Directors George Anderl and Morry Worshill, and Col. Lloyd Arnold, representing Tenth AF Commander Maj. Gen. Richard Grussendorf. Gus Duda, from National Headquarters, was also present. Dale Hornung was toastmaster.

A little more than two years ago, a group of **Omaha** businessmen got together and decided they wanted not only an AFA Squadron in the city but the **biggest Squadron** in the country. That ambition was realized after a concerted membership drive in Omaha and Offutt AFB netted 1,619 new AFA members. This June the same group geared up for a similar effort and proved their previous program was no flash in the pan by sending in **1,527 memberships.** Many people were in on this membership program, but the lion's share of the credit goes to **Arthur C. Storz,** who is well remembered as the 1954 National Convention Chairman.

Paul M. Fisher, right, congratulates George Van Leeuwen on his election to command the Utah Wing.

In the past few months, the **Southeastern** and **Southwestern** sections of the nation have shown a great deal of interest in AFA activities. To encourage this interest, two members of the National Headquarters staff toured the area in June. After another trip to **New York** and **Chicago,** where he met with National, Wing, and Squadron officers to talk over current problems and programs, **AFA Executive Director James H. Straubel** swung south, to attend meetings in Oklahoma City and New Orleans. Then, with **Organization Director Gus Duda,** he met with numbers of present and potential AFA leaders in San Antonio, Dallas, Fort Worth, and Houston, Tex., in line with the reorganization of the **Texas Wing,** under the leadership of **Robert J. Smith** of Dallas.

In **New Orleans,** Wing Commander **Fred O. Rudesill** called together a number of civic and industrial leaders who heard Straubel's briefing on the aims of the Association. An honored guest at the meeting was **Brig. Gen. T. B. Herndon,** of Baton Rouge, who is Louisiana Aviation Director and chairman of AFA's National Air Reserve Council. Clyde Hailes, Com-

(Continued on page 71)

★ ★ ★ ★ ★ ★ ★ ★

RESERVISTS AND AIR GUARDSMEN, NOTE!

The Reserve Forces Clinic at the AFA Convention will be held Wednesday afternoon, August 10, instead of Thursday, as previously announced.

★ ★ ★ ★ ★ ★ ★ ★

Hotel Reservations

BY THE time this notice appears, room and suite accommodations at three of AFA's twelve convention hotels—Fairmont, Mark Hopkins, and Huntington—will be "sold out." This is an indication of the advance interest in the 1955 AFA Convention. Nearly 500 rooms and 100 suites have been confirmed at just three convention hotels—an unprecedented situation. If, upon reading this, you still feel like taking a chance on getting a canceled room at the Fairmont or Mark Hopkins, be sure to list a second choice of hotels. Cancellations will be scarce. Send all requests to: AFA Housing Bureau, 61 Grove Street, San Francisco. Include a $10 deposit per room.

AFA HOTELS AND ROOM RATES

HOTEL	SINGLE	DOUBLE	TWIN
Fairmont	SOLD OUT	SOLD OUT	SOLD OUT
Mark Hopkins	SOLD OUT	SOLD OUT	SOLD OUT
Huntington	SOLD OUT	SOLD OUT	SOLD OUT
Sheraton-Palace	$8.00-13.00	$10.00-15.00	$12.00-17.00
Sir Francis Drake	9.50-13.50	11.50-15.50	13.00-19.50
St. Francis	8.00-18.00	10.00-15.00	13.00-20.00
Clift	8.00-12.00	10.00-15.00	10.00-18.00
Chancellor	5.50	7.50	8.50
Plaza	5.00- 7.00	7.00- 8.50	8.00-10.00
Stewart	4.50- 7.00	6.00- 8.00	7.00-12.00
Richelieu	4.50- 6.00		8.00- 9.00
Whitcomb	5.00- 9.00	7.00-12.00	8.00-12.00

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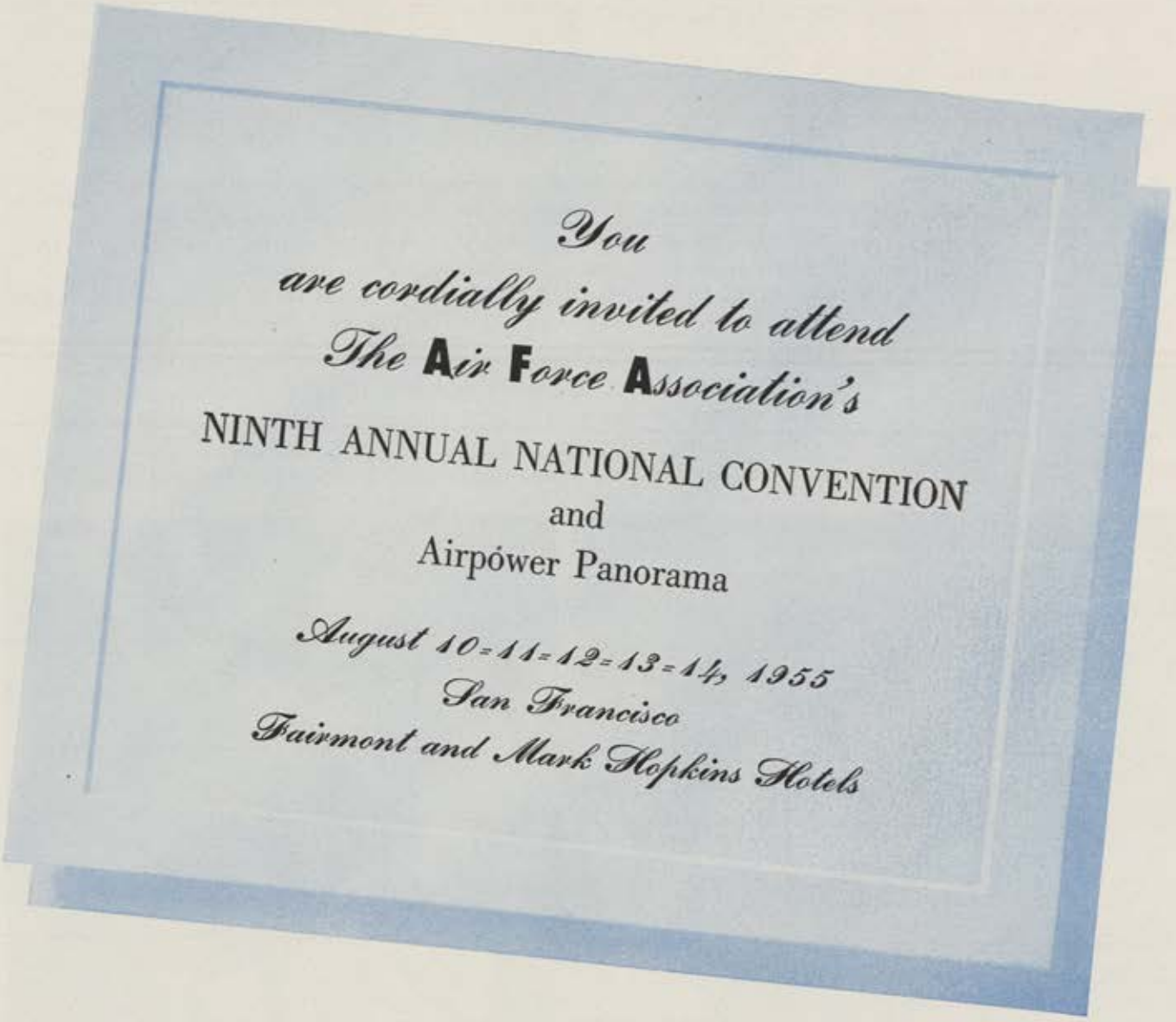
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Cadet Col. Rodney C. Reindl, center, commander of the AF-ROTC unit at Loyola University, Los Angeles, accepts AF Los Angeles Group trophy from AFA commander Ray Scherer, right. The Loyola unit was cited as "outstanding in military excellence" in the southern California area. At the left is Maj. George Reavell, professor of air science and tactics at Loyola.

mander of the New Orleans Squadron, was also on hand.

In **Dallas and Fort Worth,** area leaders discussed methods of organizing AFA Squadrons and made plans to have organizational programs in full swing by late summer, with Squadron activities centering around community problems. In **Houston** plans were made for a send-off banquet for the Texas entrant in the **AFA-sponsored Ricks Memorial Trophy event.** The local AF Reserve Center, commanded by Col. Joseph H. Batjer, and the Houston Air National Guard squadron, commanded by Maj. Robert H. Taylor, agreed to combine their activities under the AFA banner on June 27 to honor **Lt. Jack M. Burden** of the 111th Fighter Squadron, Texas ANG, before he left for California for the Ricks event July 2.

In **San Antonio, William B. Bellamy,** an executive with the Express Publishing Company, was chosen to head a temporary slate of Squadron officers. Joseph Draper, Jr., Jack Conrads, and Stan Ellis back him up. Bellamy is a former B-17 pilot. At the meeting, Regional Vice President **Clements McMullen** briefed the new officers on their duties.

On June 10, seventy-five members and guests of the **Oklahoma City Squadron** turned out to welcome Straubel to the city with a dinner held in the Officers' Club at nearby Tinker AFB, presided over by Squadron Commander **Mace Spangler.** Addressing the group, Straubel outlined the mission of AFA and cited some specific programs that have been carried on at the national level. Honored guests included **Maj. Gen. William O. Senter,** Commander of the Oklahoma City Air Materiel Area, AMC, and a delegation from the **Northwest Oklahoma Flight** at Enid, headed by the Flight Commander, **Clyde Dains.**—END

A story of survival in a Korean wilderness—part three

Hell is a cold place

By Clay Blair, Jr.

This true story of how two airmen, downed in Red territory, fought to stay alive in the bitter Korean winter, is one of four stories in Clay Blair's new book Beyond Courage, *published May 16 by David McKay Co., Inc. The two, AF Lt. Clinton D. (Clem) Summersill and his Army observer, Capt. Wayne Sawyer, crashed while on a close support mission in their T-6. They escaped from their burning plane and successfully evaded the Communist troops who came looking for them. They set out at night into Red territory before cutting south where the enemy lines were weakest. A blizzard struck as they climbed a mountain, and by dawn Summersill's feet were frozen. They made their way east through fog along the ridges. That night they began following a canyon and saw signs of Red troops. The next morning they came to a Korean house. Sawyer hid while Summersill looked in a window and saw six Chinese soldiers. "Summersill backed hurriedly to the spot where he knew Sawyer was. But Sawyer was gone. . . ."*

SUMMERSILL thought: They have captured him quietly, and they are waiting to get me. He pulled out his knife and switched the blade into position.

Then he walked around slowly in the darkness, calling very softly, "Wayne? Wayne?"

"Yes?" It was Sawyer's voice. He had moved to another bush. Summersill heard the click of the .45 hammer as Sawyer let it go forward slowly. The two men came face to face.

"It's a good thing you spoke up when you did," Sawyer said. "I thought you were a Chinese, and if you had taken one more step, I would have blasted your guts out."

"That's all right," Summersill said. "I was just getting ready to cut your throat."

The house, full of Communist soldiers, blocked the way ahead. The only way around it appeared to be through rushing waters of the creek. Sawyer and Summersill scrambled down the steep bank and plunged into the cold, ice-chocked water, stumbling across rocks and boulders. The water was more than knee-deep. Summersill could feel it trickling down into his boots. In a matter of minutes, he knew it would be frozen solid.

When they reached the opposite bank, they scampered up through the rocks. They found a trail that followed the lip of the bank and hurried down it, trying to put as much distance as possible between the Communist house and themselves before daylight. They had not gone far when, in the faint light, they saw a Chinese soldier walking up the opposite bank of the creek. They stopped and squatted in the shadow of a rock. They watched the soldier make his way toward the house.

When the Communist disappeared from view, Sawyer and Summersill got up and hurried on. They were rounding a bend when they spotted a second Communist soldier, this time on their side of the creek and coming straight up the trail toward them. Both men stopped, looked at one another and eased back into the shadow of a large tree. There was no need for talk. Summersill pulled out his knife. He made a signal to indicate he would tackle the soldier low. Sawyer took out his pistol, gripped it by the barrel. He motioned that he would knock the soldier on the head. It was important to avoid a big commotion that might alert the other soldiers.

The Chinese came steadily on. The airmen strained. They could see that he wore the standard green-quilted Chinese Communist Army uniform and carried a Russian submachine gun. When he was about thirty feet from the tree, he turned abruptly from the trail, climbed down the creek side, and skipped through the water to the opposite side.

"What the hell?" Summersill whispered. "Did he see us?"

"I don't think so," Sawyer said.

"That place must be a guardhouse or a trail block," Summersill said.

"Yes. I guess they are changing the guard right now. It looks like they have the whole canyon bottled up good. We'll have to be very careful."

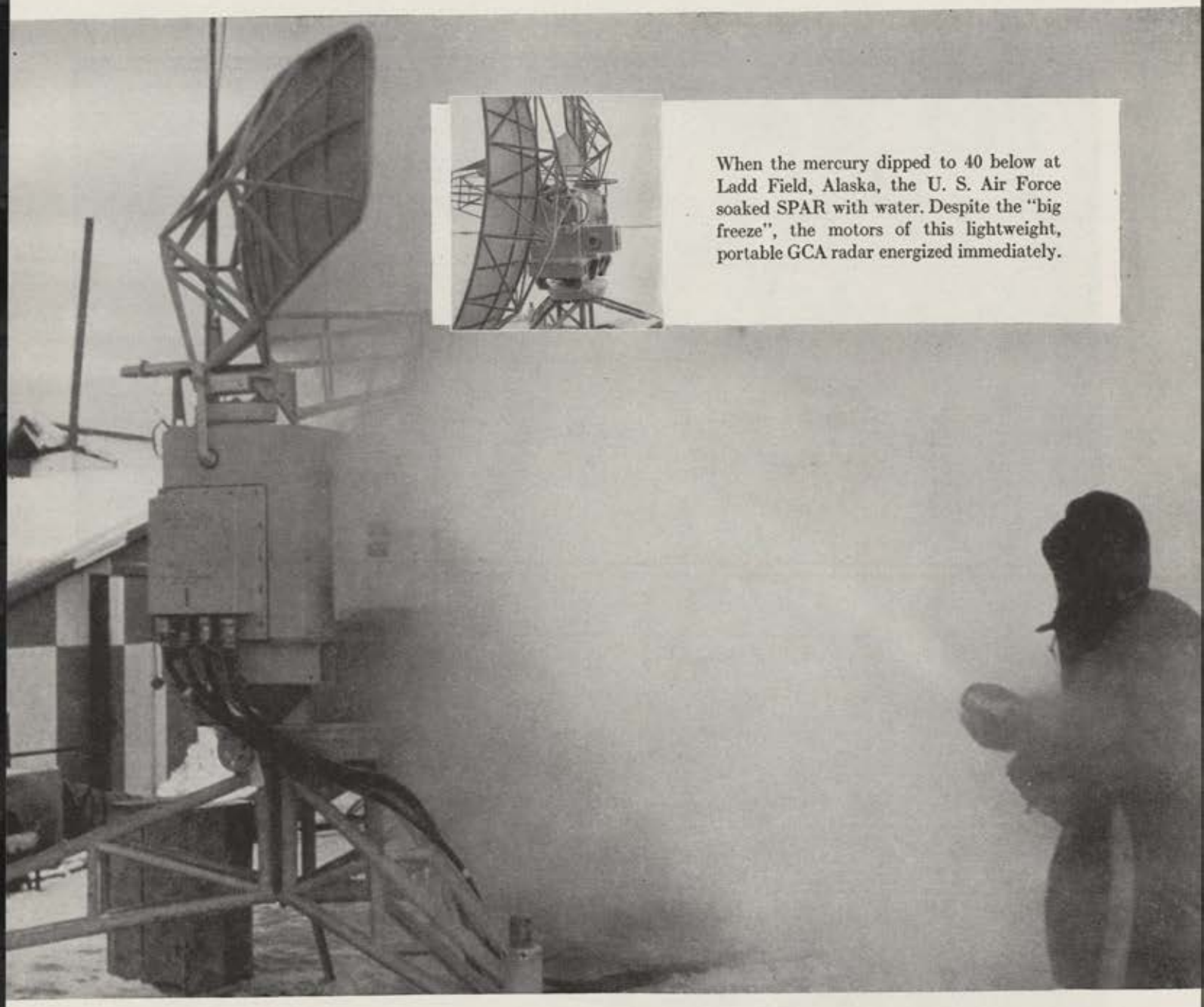
"We'll have to hurry and find a place to hide because it'll be getting light very soon," Summersill said. He looked to the east.

"Remember," Sawyer said, "nobody gets captured."

"Right," Summersill said.

To avoid Communist soldiers who might be using the creekside trail, the two airmen cut off to the right and climbed halfway up the sloping canyon wall. It was rugged terrain and, therefore, less likely to be patrolled. They hur-

(Continued on page 75)



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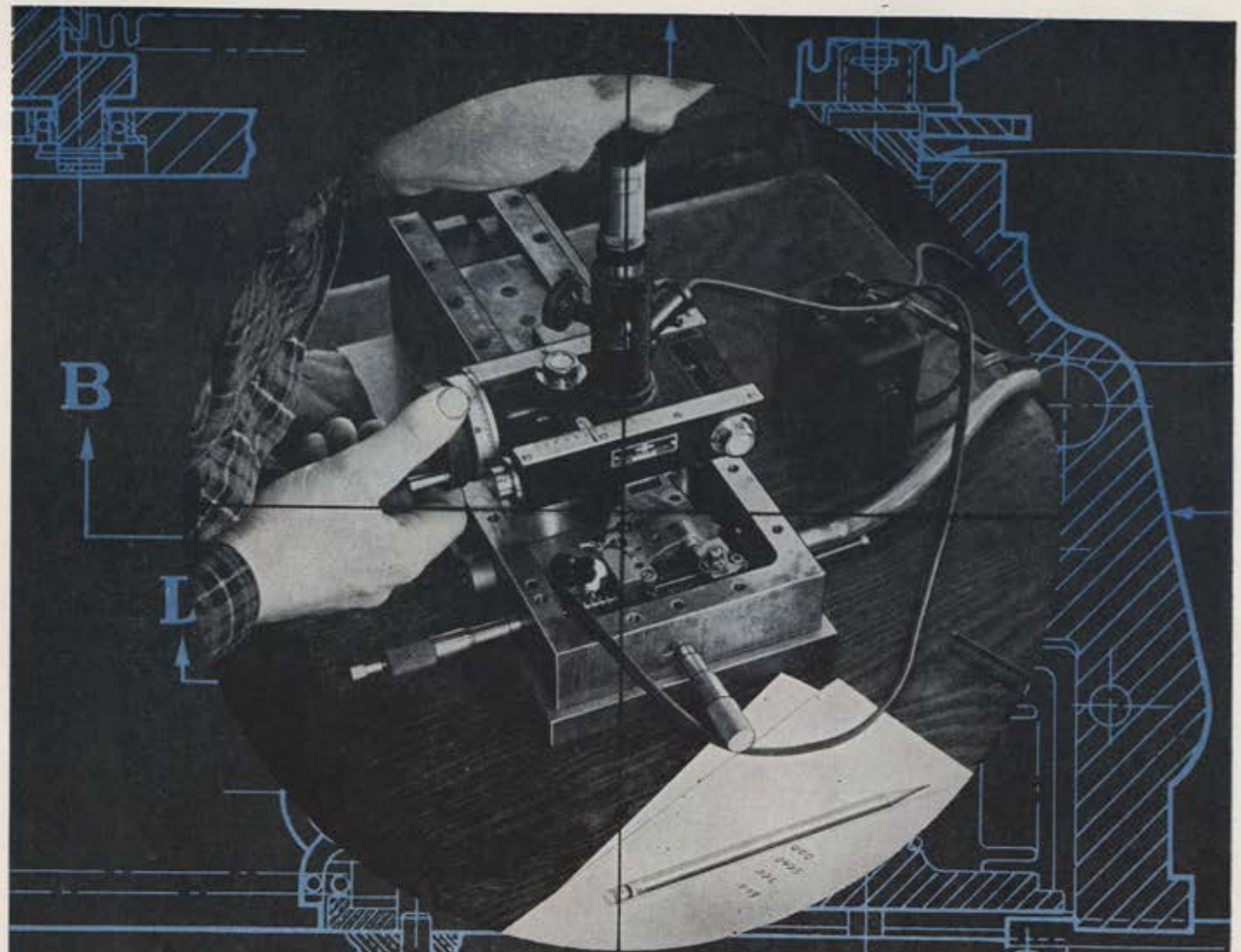

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Summersill looked out the door. "Wayne," he said, "there are Communists in the woods!" Sawyer whipped out his .45.

HELL IS A COLD PLACE — CONTINUED

ried on, searching everywhere for a cave. After a while, they realized that the ridges were not as steep. Ahead, the flat canyon floor seemed to blend in gradually with the ridge slopes. At last, they were coming out of the mountains into the flatlands!

The snow was thinning out. In some places, the earth was entirely bare. Summersill became aware of the transition in a painful way: while tramping through the relatively soft snow, he had felt little pain from his frozen feet. But, as the snow thinned, and they moved on frozen ground for long periods, the sensation of walking on stilts returned, and he felt as though he would go out of his mind. He said to Sawyer:

"Wayne, we have got to find a place and thaw out my feet. I just can't go on much farther like this."

"Well, maybe we ought to go back to the creek where the going is easier," Sawyer said.

The two men circled back down toward the creek—now a river more than a hundred yards wide—to pick up the trail. As they came down out of the ridges, they saw a Korean farm just ahead. They threaded their way through the frozen ponds of a rice paddy. Then Sawyer stopped. He whispered.

"Clem. Across the creek. Communist soldiers!"

"Where?" Clem asked. He seemed unable to focus his eyes.

"Right over there. About half a dozen of them. They have burp guns. They must be guerrillas. They seem to be headed back toward the mud house."

"Well, let's get the hell out of here," Summersill said.

"Wait! There's a potato bed. Let's try to get into it."

Sawyer led the way to a Korean potato bed, a large hole in the ground covered over by a thatched straw roof that protruded two or three inches above the surface. They pulled on the straw cover. It would not budge. It was frozen in place.

"We better keep moving," Sawyer said, "or we'll attract attention."

They struck off down the trail, one behind the other, bent over and walking slowly. Their clothes were dirty and torn. Their faces were bearded and filthy. They hoped that from a distance, the guerrillas would take them for two old Korean peasants trudging down the path. Sawyer kept one hand inside his jacket on his .45 just in case the Communists became suspicious.

The ruse was successful. The guerrillas did not appear concerned. Soon they had rounded a bend and were out of sight. At the same moment, the airmen spotted a small, windowless mud house about one hundred yards up the slope from the trail. Both men turned automatically toward the house. If there were Communist soldiers inside, then they would fight it out. If it was inhabited only by civilians, they would ask them for help, hoping that they were not Communists or Communist sympathizers.

They paused briefly at the rear of the house, then split up, one going around the house one way and the other, the opposite. They met in front of the house. Then, with weapons drawn—Sawyer's .45 and Summersill's knife—they rushed through the opening that served as the door. They soon discovered the "house" was empty. There was nothing in it except a feeding trough. The "house" was actually a Korean barn.

They searched the dirt floor for something to eat. They found several kernels of corn but, otherwise, nothing. "The cheap cows even ate all the salt block," Sawyer observed, as he looked through the feed trough.

They sat down on the floor of the hut to rest. They talked for a minute, then Summersill proposed that they move on to the farmhouse itself, which they could see a few hundred yards down the trail.

"We can get warm and get something to eat. The Communists might find us if we stay out here. Or we might even freeze to death."

Sawyer was thoroughly exhausted. He did not want to move.

"I'm staying right here, Clem. I'm not moving another step. If the Communists come, I'll fight it out."

Summersill got up and looked out of the doorway. It was now completely daylight. He could see for miles across the Korean countryside. There was not a soul in view. Then, he said:

"Wayne! There are some Communists in the woods over there. Look!"

(Continued on following page)

Sawyer jumped up and whipped out his .45.

"Where?" he asked.

"Over there," Clem said. He pointed to a nearby patch of trees.

"Get back," Sawyer said. He was now wide awake, ready for action.

"What are we going to do, Wayne?" Summersill whispered.

"We'll watch them a minute, then try to break out of here. That patch of trees probably contains a command post. No use staying here. They probably walk right by this barn all day long going from the trail to the trees."

They waited a few minutes. Then, with Sawyer leading, they struck off down the slope toward the trail, walking at a slow pace, with heads bowed, posing again as Korean peasants. Summersill quietly congratulated himself for getting Sawyer out of the barn. He did not feel guilty about the lie. He sincerely believed that if they did not get to the house, they would both die. "I got Wayne into this damned mess and I am going to get him out," he said to himself.

They branched off the trail and walked up toward the thatch-roofed mud farmhouse. Summersill walked ahead. As before, he would knock on the door, while Sawyer covered from the rear.

"If there are Communists in that house, I think I can get three or four, and maybe five of them, before they get me," Sawyer said.

"I think I can get two of them before I go," Summersill said. There was no talk of surrender. They knew if they were captured, they would be killed. It would be better to go down fighting, taking as many of the enemy as possible.

Sawyer ducked behind a large tree about forty feet from the front door; Summersill walked up to the side of the house and knelt down among several shocks of straw. He put his ear against the mud wall. He could hear voices inside the house, but he could not tell how many people were inside, or whether or not they were Communist soldiers.

After a few seconds, Summersill reached around the corner of the house and knocked on the door. Now he could hear the voices inside babbling in low tones, apparently discussing the knock. Finally, an old Korean with a white beard and a fez hat stuck his head outside. Summersill grabbed the man by the neck with both hands, and literally jerked him through the door and around the corner of the house. He forced him to squat down in the straw. Summersill did not want anyone inside the house to see him just yet, and he did not want to attract attention from the outside.

While the old man watched nervously, Summersill took out an Air Force "pointee-talkie," a device containing fifteen or twenty sentences printed in both Korean and English, to be used in such emergencies. Summersill jabbed a finger at the sentence that read: "I am here to help the Korean people." The old man did not seem to understand. Summersill pointed to another sentence. It read: "I am an American aviator." The old man again looked blank. Summersill pointed another sentence: "I am a Christian." Then another: "Are you a Christian?" But the old man did not seem to comprehend.

Summersill put the pointee-talkie aside and spoke to the old man in broken Japanese. The Korean's eyes lit up faintly. Then, half in Japanese and half in sign language, he explained that he did not know how to read. He told Summersill he would go back inside the house and get someone who could. Summersill immediately suspected a trap; the old man would probably come back outside with Communist soldiers.

Summersill looked toward the tree where Sawyer was hiding. Sawyer was aware that something was amiss. He was alert and ready. Summersill asked himself: What can we do? The man certainly was of no use outside. If the Communists were inside, they would come out soon anyway to find out what had happened. After a few minutes, he turned the old man loose and then signaled to Sawyer.

Sawyer, with .45 held ready, stepped from behind the trees into the open, facing the door. He made signs to indicate that he would start blasting the instant the first Communist soldier came out. Summersill remembered what he had said: "I think I can get three or four, and maybe five of them, before they get me." He nodded, then waved his knife, indicating that he would rush from the side. Then they waited. Summersill could hear the voices inside the house jabbering excitedly.

After about five minutes—it seemed like hours—the door cracked open. Summersill tensed. A Korean of about forty stepped around the corner. He seemed friendly. Summersill put away his knife. If the man was sympathetic, he did not want to appear hostile. Unseen, Sawyer stepped back behind the tree.

Summersill took out his pointee-talkie again. The Korean

(Continued on page 79)

Both of Lieutenant Summersill's feet had to be amputated in order to save his life. At the Walter Reed Army Hospital in Washington, D.C., doctors of the AF Medical Service tailored two plastic feet for him. Here, one of the medics prepares to fit the new feet on Summersill.

Before too long, Summersill could walk, dance, run, even kick a football. Here he boots one on the grounds of Walter Reed as his wife, Patricia, and an AF doctor look on. A special order by the late Gen. Hoyt S. Vandenberg permitted Summersill to remain on active duty in the AF.

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looked at it, shook his head, then pointed to his eyes. He apparently needed glasses. He would go back inside to get them. Was it a trap? The old man had gone back to get someone who could read! Summersill let him go, then once more alerted Sawyer. The two men once again braced for a rush of Chinese soldiers. In a few minutes, the Korean came out alone—wearing glasses.

Summersill gave him the pointee-talkie and again jabbed at the sentence that said: "I am here to help the Korean people." The Korean nodded his head and smiled as he read the sentence in Korean. Then Summersill put his finger on the sentence that read: "I am an American aviator." At that the Korean became very excited. He slapped Summersill on the back, smiled warmly, and shook his hand violently. He made signs to show that he was sympathetic. Still Summersill did not fully trust the Korean; it could be a trap to lure them into a houseful of Communist soldiers.

The Korean stood up and pulled Summersill by the arm, motioning toward the door. Sawyer stepped from behind the tree and walked up, his pistol leveled at the Korean. The latter got a glimpse of Sawyer out of the corner of his eye and turned pale. He jabbered excitedly, and waved his arms high in the air. He was very frightened. Summersill said in Japanese, "*Tamadachi. Tamadachi* [friend]." The Korean was relieved. Sawyer slipped his pistol back in his shoulder holster. The Korean slapped Sawyer on the back, pumped his hand warmly, then urged both men to hurry inside before they were seen by Communist soldiers.

The Korean pushed open the door to the house and entered. Before going inside, Sawyer and Summersill once again took out their weapons. Then they rushed in, quickly looking behind the door, into each corner, and inside an adjoining room. They found no one else except an old Korean woman. Summersill heard the old man and the younger Korean laughing. At first he thought it was a trick, that they were trying to put something over on them. Then he realized the Koreans were chuckling signs of admiration and approval at the thorough way in which the two airmen had searched the house. They relaxed.

The airmen felt it was important for their safety to make it perfectly clear to the Koreans that they were not hostile, and that they wanted to become friends. As a first step, they sat down on the floor and, in accordance with the polite Oriental custom, started to take off their boots. When the Koreans realized what the two men were doing, they rushed forward, shaking their heads. They had seen what the tired airmen had not—the boots were hopelessly frozen. No amount of tugging at the laces would undo them.

The old Korean bent down and rubbed his hands over the ice-coated boots. Then he spoke to the woman. She disappeared into the other room and returned with a flatiron, which she placed inside the *habachi*, the charcoal-burning urn in the center of the room. When the flatiron was hot, the old man pressed it against the laces of the boots. Gradually the ice melted. Sawyer's boots came off easily. Summersill's were frozen to his socks and had to be cut in several places. The socks had to be "ironed" to unfreeze them from his feet.

Once the boots were off, Sawyer carefully inspected Summersill's feet. He could see ice crystals under the surface of the skin. There was no doubt that they were frozen solid. The brittle feet reminded him vaguely of two pieces of beef that had been in a freezer for a long time. He noted that the skin of one heel had been ripped off, apparently while rolling off the socks. He told Summersill to take two of the sulfa tablets in the first-aid kit, to guard against possible infection or gangrene.

The old man got a large bundle of loose cotton and a bottle of oil. He sat down and carefully spread the oil over their feet, then wrapped them with the loose cotton. Then he spoke in Korean to the old woman. She looked pained and hesitated. He barked at her sharply, and she fairly flew into the other room and returned with a brand-new, white Korean shirt. He promptly ripped it into bandages, which he wrapped around the outside of the loose cotton.

"These people seem to know a lot about frostbite," Sawyer said to Summersill. "I guess the cotton is to keep our feet warm and keep us from bruising them, which you can do easily while they are frozen. The oil is to keep the cotton from sticking to the frozen part."

"Pretty savvy, huh?" Summersill replied.

Meantime, the old woman had been preparing food. First, she brought the airmen two bowls of steaming celery broth. This was followed by two heaping bowls of rice and cups of hot tea. As they ate, they told the Koreans—through the help of the pointee-talkie and sign language—who they were and how they happened to have been shot down behind enemy lines. They stressed that they had been doing everything possible to try to rid the Korean countryside of Communist invaders.

Finally, when they felt that they had the confidence of the Koreans, Summersill pointed to the sentence on his pointee-talkie that said, "Please find someone who can speak English and who can help us." The younger Korean got up and nodded. He put on his coat and hat, and then he was gone.

"Do you think we can trust him?" Sawyer asked.

"I don't know, Wayne. But what else can we do? We are committed to these people now. I've had it anyway," Summersill said. His feet were beginning to hurt. Every muscle in his body ached. He was so sleepy that he could hardly hold his eyes open. Within seconds, he rolled over on the warm floor and was asleep. Sawyer sat against the wall facing the door with one hand inside his jacket on his .45—just in case. But several minutes later he, too, was sound asleep. The Korean woman covered both of them with blankets.

When Summersill regained consciousness, he heard the sound of gruff, Oriental voices. The first thought that flashed through his mind was: Communist soldiers! The young Korean has betrayed us! He was so frightened that he could not open his eyes. He lay on the floor waiting for the slam of the rifle bullet, wondering vaguely if there was a way out.

But after a few minutes, when no rifle bullet came, he opened his eyes. Standing over him were two soldiers dressed in GI field fatigues. Summersill blinked, and then recognized the soldiers as South Korean. One man was a first lieutenant, the other a sergeant. Each held a carbine slung over his arm. They were arguing in Korean. Summersill rolled over on his back and shouted:

"Hey, boys. I thought you were Chinese." He started to get to his feet.

The South Korean lieutenant smiled, and said, "Hey! Take it easy." He pushed Summersill back on the floor and cautioned him not to try to get up.

"You might bruise your feet," he said.

Summersill knew he ought to be terribly happy, and, in a way, he was, but somehow he could not express it. He said, "Hurrah," but it sounded flat. He shook the lieutenant's hand warmly. His tired eyes said the rest. He fired questions: How did you get here, by foot, jeep, or helicopter? How many of you are there? How did you find us? How far are the front lines? By then, Sawyer was awake plying the sergeant with questions. But the sergeant did not speak English.

The ROK told this story: The young Korean who lived in the house had run twelve miles to the front and then had made contact with the ROKs. The ROKs set out immedi-

(Continued on following page)

ately in a jeep through enemy lines toward the house. They traveled as far as they could in the jeep—eight miles—and then parked it and came the rest of the way on foot. The area was heavily infiltrated by Communist guerrillas. They had avoided detection on the way in. The lieutenant explained that he was very anxious to start back because it was getting dark.

While the ROK talked, the old Korean and the younger Korean made up two crude stretchers from quilts and poles. When Summersill and Sawyer were asked to lie down on the stretchers, they did so without hesitation. Then they bade farewell to the old Korean woman, on whom they bestowed a token present: the sewing kit from the emergency vest. She waved farewell, and then the group, joined by several friendly Koreans who had been waiting outside the house, set off toward the jeep, four miles away.

The younger Korean and a friend carried Summersill's stretcher. The ROK sergeant and another Korean carried Sawyer. The lieutenant walked ahead, watching for Communist guerrillas. He found them soon across the wide river. They fired burp guns and Russian rifles, but the aim was poor, the distance great.

The lieutenant waved the stretchers off the trail and, when the airmen were safely under cover, returned the fire. Soon the guerrillas ceased firing, and the party resumed its hurried pace. They encountered several more Communist guerrillas who fired random shots across the river. Each time, the Korean lieutenant skillfully returned the fire and dissuaded the guerrillas from taking further action.

Two hours later, the group arrived at the jeep, which had been parked off the trail and camouflaged. Summersill's stretcher was placed over the right-hand seat, with one end resting on the right side of the engine hood. Sawyer's was laid across the back seat. The lieutenant got behind the wheel, the sergeant, the younger Korean, and the old one and their friends jumped on board, and soon the jeep was bouncing speedily along the trail. The Koreans hung on for dear life.

Just before dark, the jeep reached a UN outpost. It was an advance element of the 5th ROK Division. By then, both Summersill and Sawyer were heavily doped with morphine that the ROK lieutenant had brought along. However, they regained consciousness long enough to say good-by to the friendly Korean civilians. Summersill reached in his pocket where he had some 40,000 Korean won (equivalent then to about ten dollars). He got out the pointee-talkie and pointed to the sentence that said, "I will reward you." The Koreans refused to take Summersill's money. The airmen took their names and made arrangements for them to receive other remuneration.

Soon they were off again, bouncing along the bumpy dirt roads. At a ROK medical aid station, the airmen were taken off the jeep and placed on pallets on the floor of a building. Small Korean children came to look at the strange Americans. They gave them pieces of their candy and two eggs. Summersill tried to smile, but his face was drawn and ached. Then he mumbled in Japanese: "You're very kind; thank you very much." Tears filled his eyes.

An American ambulance was sent from the 187th Regimental Combat Team, a paratrooper regiment that was on the line alongside the Korean division. The ambulance ride was very bumpy. Alone in the back, on stretchers, Summersill and Sawyer alternately cursed the driver and laughed like maniacs. At a USA aid station in Punggni, they were unloaded and fed "homemade biscuits," beef sandwiches, and hot coffee. On the front nearby, a firefight was in progress. There were several wounded GIs in the aid station. One of the GIs came over to Summersill, looked him in the eye, and said, "Boy, Lieutenant, you look like hell."

Later that night they were taken to Andong and loaded on board a hospital train bound for Pusan. When they had been tucked in bunks across the aisle from one another, Summersill said to Sawyer, "Well, buddy, we made it."

"Right, laddie," Sawyer said. He was still clutching his map. He had obtained the exact location of the Korean farmhouse. "We walked forty miles in forty-three hours without stopping," he said.

"That's not quite a mile an hour," Summersill said.

"That's right, laddie, but what miles they were," Sawyer replied.

In Pusan, Sawyer and Summersill were transferred to the hospital ship *Consolation*, which was anchored in the harbor. Then, after preliminary medical treatment, they were put aboard a second hospital ship, the *Repose*, which took them to Tokyo, where they were confined to a hospital. Within a few days, Sawyer was up and about. He lost only a tiny piece of his left big toe. He was later assigned to an Army unit that specialized in briefing men on how to survive behind enemy lines. Summersill's case was more serious. He was put aboard an evacuation transport plane and flown back to Walter Reed Hospital in Washington, D. C. There, in order to save his life, both feet were amputated at the ankles.

Early on his journey back to the States, Summersill remembered a vow he had taken on the mountainside. On the first hospital ship, he called for the chaplain, a robust, gregarious man, who opened the conversation by saying jovially, "When are you fellows going to stop cracking up those planes and save the taxpayers a little money?"

Summersill forced out a feeble smile. Then he told the chaplain of his experience behind the lines. He finished the tale by saying, "I have a debt to wipe out. How can I go about doing it?"

"Son," the chaplain said, "that is a problem that you will have to work out yourself." Before long he found his answer in the Catholic Church.

The worst part about the experience for Summersill was the fact that with the amputation, he lost forever not only his opportunity to fly fighters, but also his right to serve as an officer in the United States Air Force. As he well knew, there were no double amputees on duty in the Air Force; certainly none had ever flown an Air Force plane. But the new warmth and insight he experienced in "paying off the debt," as he put it, gave him hope and courage. While still in the hospital, he began looking around for a civilian job to supplement the disability pension he would receive on discharge. In record time, he was hobbling around with new artificial feet provided by the Air Force Medical Service, determined to make a good show of it.

Not long after he received his new feet, a young Air Force aviation cadet was brought to Walter Reed. He was put in a private room. Summersill and his friends learned, through the grapevine, that he had been badly hurt in an automobile accident. Ever curious and eager to make new friends, one day Summersill pushed his way into the isolated room and started up a conversation with the cadet. With great astonishment, he learned that he was Hoyt S. ("Sandy") Vandenberg, Jr., son of the Chief of Staff of the Air Force.

As the days and weeks passed, Summersill and young Vandenberg became good friends. They talked of flying. Vandenberg hoped that his injuries would not—as Summersill's had—deprive him of flying status. Summersill told Vandenberg of his experiences and how badly he hated to leave the Air Force to go back to civilian life.

One night, several weeks later, Summersill, who by then was fairly proficient with his new feet and had taken to

(Continued on page 83)

Production units of Aeroproducts Ram Air-Driven Generator (left) have been installed on the Navy's Douglas A4D Skyhawk; Aeroproducts Ram Air-Driven Hydraulic Pump (above) is scheduled for installation on jet fighters.

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going out in the evenings on dates, pushed his way into Sandy Vandenberg's room, asking:

"Sandy, what time does the dining room at Bolling Air Force Base close? I have a date and I want to take her there."

He noticed that the door would not open fully. It seemed to be pushing against something. Summersill peeped around it and looked squarely into the face of Sandy's father, Gen. Hoyt Vandenberg. He backed off and came to attention. For a minute, he felt about as tall as a pin.

"Dad," Sandy said, "this is Lieutenant Summersill, a friend of mine."

Vandenberg, who was wearing civilian clothes, put out his hand. Summersill shook it.

"Well, excuse me," Summersill said. "I have to be going."

"Come on in, Clem," Sandy said. As Summersill walked in and leaned politely against the hospital bed, the younger Vandenberg turned to his father: "Clem here was a Mosquito pilot in Korea. He was shot down and walked out through Communist lines in the snow. But he froze his feet, and they had to be amputated. He wanted to make a career of the Air Force, but now he must get out."

"You want to stay on in the Air Force?" General Vandenberg asked.

"Well, yes," Summersill said. "But there are no double amputees in the Air Force."

"Why don't you come over and talk to me?" General Vandenberg asked. "Make an appointment tomorrow."

"Yes, sir, I certainly shall," Summersill saluted smartly and backed out of the room.

Summersill called General Vandenberg's office, and an appointment was arranged for the following day. He brought along his cane. He was not yet too steady on his feet, but when Vandenberg opened the door to let him in, Summersill left his cane in a corner and walked, for the first time, without support.

Summersill sat in a leather chair facing Vandenberg's desk. The General offered him a cigarette, which he accepted, then he said: "Tell me all about what happened."

Vandenberg listened with great attention to Summersill's story. When he finished, the General asked:

"Well, why do you want to stay on duty in the Air Force? You can have a pension and probably make a pretty good go of it."

"Well, sir," Summersill replied, "I'm not looking for a soft touch. I like to fly. I like the Air Force. I believe I can still be of value to the Air Force."

General Vandenberg stared out the window toward the Potomac River for several minutes. Then he spun around in his chair and pushed three buttons on the squawk box on his desk. Voices answered crisply. "Come up here, will you please?" Vandenberg asked each one. Within minutes, three generals appeared in the office. By then, Vandenberg was dictating a special order, which, for the first time, permitted a double amputee to remain on active duty with the Air Force. Vandenberg turned to the generals, who were grouped around Summersill's chair.

"I want you to look around and see if we have a job for this man. As long as he can do his job efficiently and satisfactorily, he will wear an Air Force uniform."

The Air Force generals quickly found a job for Summersill, working on the Air Staff in the Pentagon. Not long afterward, he married a former Army nurse, and they set up housekeeping in nearby Arlington, Virginia. Summersill became so proficient in the use of his artificial feet that he could do almost anything, including flying an airplane. In late 1954, he began a campaign within the Pentagon to get the Air Force to put him back on flying status. There is every indication that he will win his battle.—END

THIS IS AFA

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