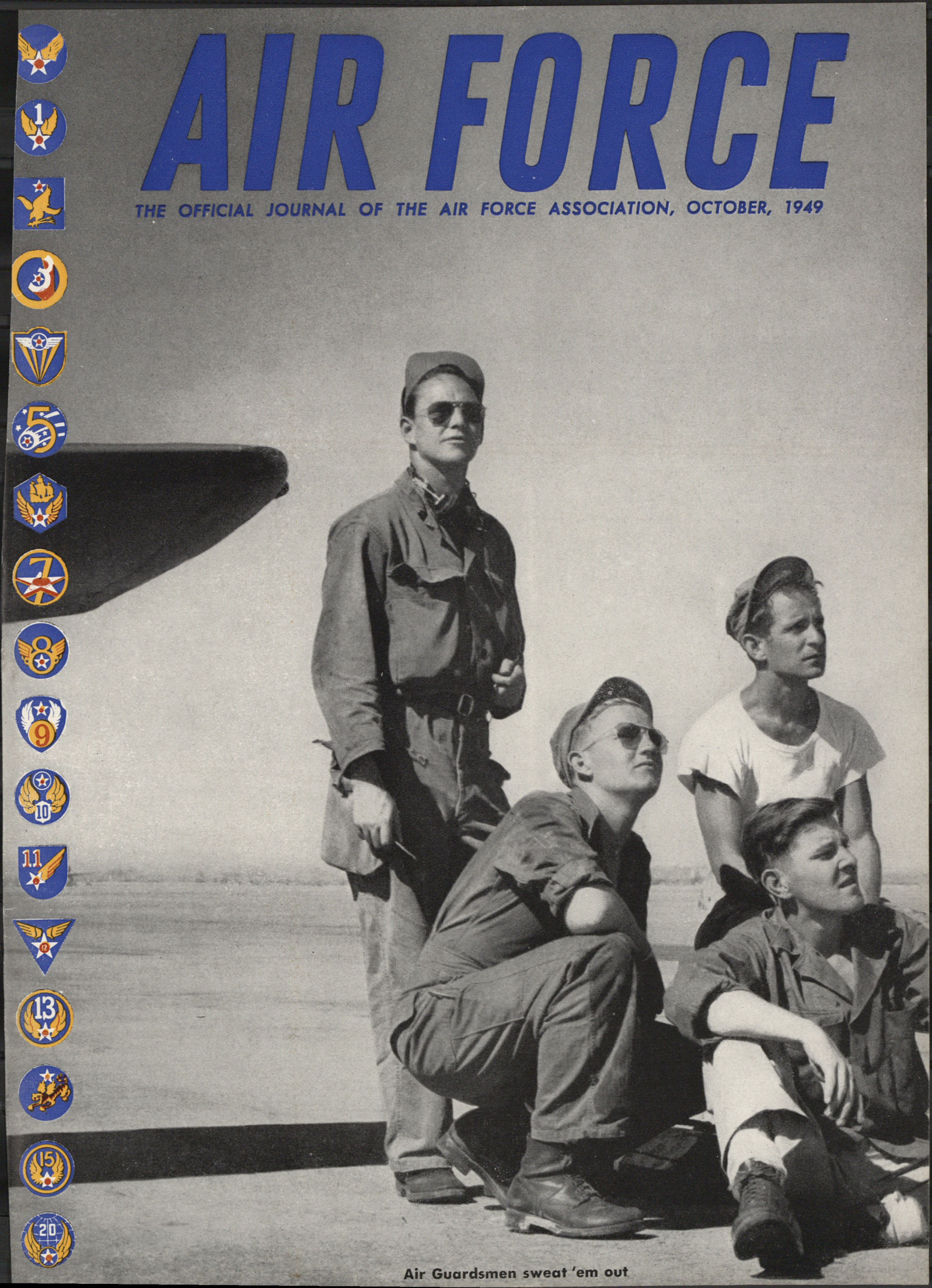
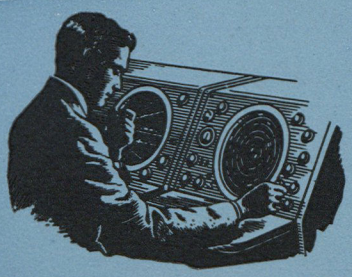
AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION, OCTOBER, 1949



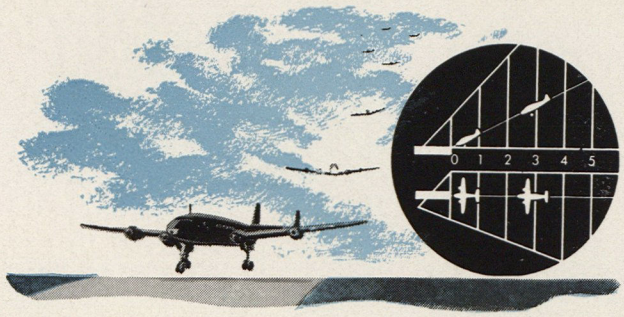
Air Guardsmen sweat 'em out



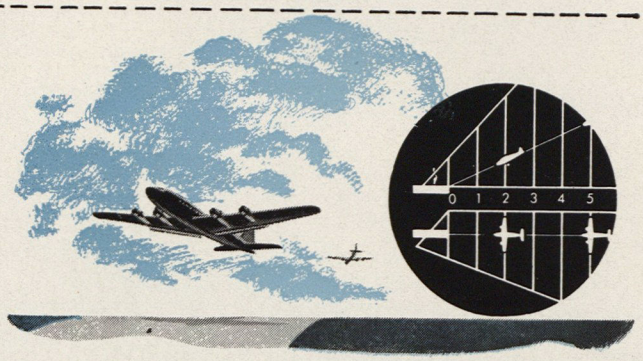
GCA speeds up IFR Traffic 300%

Los Angeles Municipal Airport is closed or "on instrument" 20% of the time. During this bad weather period, the airport operates at only 60% efficiency. When a $20,000,000 airport functions at only 60% efficiency, the airlines, air passengers and the taxpayers stand the loss. One airline conservatively estimated it lost $200,000 at one airport during a 90-day period because of bad weather. And this does not consider the incalculable loss of passenger goodwill resulting from schedule irregularity.

To master bad weather and its costs, GCA is being installed at L. A. Municipal Airport and 82 other airports across the nation. GCA is both a fail-safe, precision radar landing system and a great factor in air traffic safety, operation and efficiency. GCAirports can operate near 100% efficiency in all weather. With GCA, airlines can be on schedule with safety... and with profit.



GCA Unstacks Aircraft a Minute Apart—4 Times Present IFR Limits. At most airports, CAA IFR procedure permits aircraft to unstack at 4 minutes minimum spacing. With GCA's precision scopes showing each aircraft's position in 3 dimensions, the new CAA Radar Procedure Manual permits unstacking at 1 minute spacing . . . 4 times as fast with GCA. Actually, with GCA, stacks seldom develop, because GCAirports handle IFR traffic with clear weather speed and safety.



GCA Speeds Up IFR Landings and Take-Offs 300%. In IFR weather, once an aircraft reports over the Downey marker on final approach at Los Angeles, all take-off aircraft are held. At time of report, the landing aircraft is 5 minutes – 15 miles – from touchdown. And should the landing aircraft miss first approach, present practice at Los Angeles keeps the take-off aircraft grounded until a successful approach and landing is made. With GCA, planes can take-off until landing aircraft is within 1 minute – 3 miles – from touchdown.

GCA Isolates Rogue Aircraft. When an unidentified aircraft flies into a crowded airport area, GCA spots its position immediately. Unidentified "rogue" aircraft accidentally flying off course into the Los Angeles Airport area could conceivably disperse a dozen large transports at incalculable cost and jeopardy. GCA's high powered search scopes bring the rogue under control at once, and any danger of collision is eliminated.

GCA Eliminates Costly Turn-Backs and Safety Climbs. In IFR weather, the bogey of all pilots is the tedious, time-wasting climb to avoid stacks and other aircraft. Departing aircraft must fly "over the top"—sometimes 14,000 feet—before proceeding on course. With GCA, departing aircraft must keep only a 3-mile horizontal distance from other aircraft. They can because tower GCA gives them the relative bearing and distance of other aircraft. Also, departing aircraft under GCA surveillance take off 1 minute apart – 3 times present CAA limits.

PIONEER DEVELOPER AND MANUFACTURER OF GCA FOR THE USAF AND CAA

GCA Gilfillan LOS ANGELES

In the front line of U.S. air defense

(1) The arrow-shaped Boeing B-47 Stratojet bomber, big as a B-29, faster than any bomber ever built! Designed to dart in at its objective with 10 tons of bombs, the Stratojet's blazing speed of over 600 miles an hour is its strongest defense.

(2) The powerful Boeing B-50 Superfortress, successor to the famed Boeing B-29. Last May, this 400-mile-an-hour strategic bomber circled the earth on a non-stop, refueling flight, demonstrating that the U. S. air arm can reach any spot on the globe.

(3) The giant Boeing C-97 Stratofreighter, heavy-duty work horse of the Air Force. This twin-deck teammate of the B-50 can carry up to 26½ tons of freight — even tanks or heavy guns — or 143 fully equipped troops. In just three days on the Berlin airlift, this fast, powerful, efficient air cargo carrier, carried 200 tons of vitally needed supplies into the blockaded German capital! The Stratofreighter is a sister ship of the new Stratocruiser now going into service on leading airlines.

Designed and built in co-operation with the U. S. Air Force, the Stratojet-Superfortress-Stratofreighter team plays a vital role in this nation's program to keep the peace of the world through airpower.

Built by Boeing for the U. S. Air Force are the new B-47 Stratojets, B-50 Superfortresses and C-97 Stratofreighters; for the U. S. Army, L-15 Scout liaison planes.

BOEING

For the world's leading airlines, Boeing is building fleets of the new twin-deck Stratocruisers.

Message from the President

WE'VE STARTED THE FIRE

A few weeks ago in a letter to all members I laid our deficit situation face up on the table and suggested we cover the table with dollars to help burn the mortgage.

I explained that for nearly two years we had operated within our income in AFA, but that high initial expenses of the first year had left us with old bills which now handicapped our current efforts.

My proposal for voluntary contributions of one dollar from each member was based on the conviction that AFA is a cooperative effort in which each of us is an equal shareholder. The response to my letter has supported that conviction many times over.

As one member stated it in the note clipped to his contribution, "I want no thanks. I feel it's as much my debt that's being paid off as that of any other member".

As for the results so far: In the 30-day period between August 19, when the first returns came in, and September 19, as this issue goes to press, we have received exactly $12,934.89.

That is a long way from the 51,000-odd dollars we're shooting for, and the daily trend in returns indicates we won't burn the mortgage with this one effort.

But I am not discouraged. To begin with, this $12,934.89 is not to be sneezed at. It is a lot of money. Applied to old debts, it is a great help to AFA. And we've cut the deficit by $12,934.89, a big step forward.

Another thing: My letter went out at the worst possible time, in the hot month of August during summer vacations. I feel that many of our members who were away when the letter arrived will still do their part.

It's impossible to be discouraged when I consider the thousands of letters which have accompanied the contributions, letters which repeat again and again, "here's my token of faith in AFA" . . . "sorry I can't send more" . . . "its the least I can do for airpower".

One member actually gave his last dollar. There's a slight catch to it, but it represents the spirit of the response. His letter explained, "Here in Canada we are not able to have American money in our possession. Therefore I have only this one American dollar, which I am sending to the Association".

There's no catch at all to the dollar situation when you're out of a job. And that's exactly the position of several AFA members who sent in their contributions.

There was the note scribbled on a hospital bed by a member who explained he had recently undergone a major operation as a result of cancer, and who added, "I won't be able to work for about a year, but here is my dollar anyway".

But perhaps the spirit of the whole effort is best seen in the letter from an AFA man who *couldn't* put up his dollar at this time, much as he wanted to. He apologized in these words, "One dollar is not much to a man who can work and earn it, but I am not that man. For you see I am 100% disabled and I, my wife, my two children and my father-in-law must live on my compensation that I get from Uncle Sam. And at today's prices for everything, you can see just how far $180 will go". And he added, "I wish there was something I could do for the outfit".

Discouraged? With letters like that? No, we've got the stuff in AFA to beat that deficit. These initial contributions have started the fire. We'll burn that old mortgage yet.

Robert S. Johnson

VOL. 32. NO. 10 OCTOBER, 1949

AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

FEATURES

DEPARTMENTS

AIR FORCE MAGAZINE is published monthly by the Air Force Association at McCall Street, Dayton 1, Ohio. **EDITORIAL OFFICE:** 901 Sixteenth St., N.W., Washington 6, D.C., Sterling 2305. Publisher assumes no responsibility for unsolicited material. **ADVERTISING OFFICE:** 369 Lexington Avenue, New York 17, N.Y., MUrray Hill 9-3817, Sanford A. Wolf, Advertising Manager. **MAILING:** Reentered as second class matter, December 11, 1947, at the post office at Dayton, Ohio, under the Act of March 3, 1879. **SUBSCRIPTIONS:** Membership in the Air Force Association, $4.00 per year, $2.50 of which is for 1 year subscription to AIR FORCE. Subscription rate to non-members, $4.00. Single copy, 35 cents. **REGISTRATION:** Trade-mark registered by the Air Force Association. Printed in U.S.A. **CORRESPONDENCE:** All correspondence pertaining to editorial matters and change of address should be sent to Air Force Association, 901 Sixteenth St., N.W., Washington 6, D.C.

AIR FORCE IS PUBLISHED BY THE AIR FORCE ASSOCIATION

THIS IS AFA

- The Air Force Association is an independent, non-military, airpower organization with no personal, political or commercial axes to grind; established and incorporated as a non-profit corporation February 4, 1946.

- **Active Members** are men and women honorably discharged from military service who have been assigned or attached to the US Air Force or its predecessor services, or who are currently enrolled in the Air Force Reserve or Air National Guard. **Service Members** (non-voting, non-office holding) are men and women currently assigned or attached to the US Air Force. **Associates** (non-voting, non-office holding) are men and women not eligible for Active or Service Membership who have demonstrated an interest in furthering AFA's aims and purposes, or in proper development and maintenance of US airpower.

ITS OBJECTIVES

- To preserve and foster the spirit of fellowship among former and present members of the Air Force, and to perpetuate the identity and group solidarity of wartime Air Force units large and small.

- To assist in obtaining and maintaining adequate airpower for national security and world peace.

- To keep AFA members and the public at large abreast of developments in the field of aviation, and to stimulate community interest in Air Force activities and installations.

"A NATION'S AIRPOWER IS ITS TOTAL AVIATION ACTIVITY, CIVILIAN AND MILITARY, COMMERCIAL AND PRIVATE, POTENTIAL AS WELL AS EXISTING."

H. H. Arnold

SHOOTING

THE BREEZE

Mutiny Off the Bounty

The nation is indebted to a Navy captain by the name of Crommelin for blowing his top.

Up to the time he "couldn't stand it any longer" and blurted out a public statement calling the Navy to open revolt against the Department of Defense and particularly Secretary Johnson, against the Army and particularly its general staff, against the Joint Chiefs of Staff and particularly its chairman, General Bradley, and against the Air Force (no one in particular)—up to then the real issues in this Battle of the Pentagon had been clouded with the false notion that all this was what the newspapers delighted to call "interservice bickering".

Even the ferreting out of the Navy's Cedric Worth as the author of the amazingly dishonest "anonymous" document against the B-36 and the Air Force, left the on-the-record issue standing at the level of the B-36 program.

It took Captain Crommelin to reveal what was quite well known but publicly unconfirmed all along—that the controversy surrounding the B-36 was merely a surface argument, that under the surface this whole mutinous effort centered in long-standing opposition within the Navy to a unified defense system for the nation; in fact, opposition to most anything which might dislodge the Navy from its traditional and now obsolete status as "first line of defense" and all that goes with it.

At long last the lines are firmly drawn. As admirals jump to the defense of Captain Crommelin, as the B-36 "atrocity trials" are resumed in Congress and in the Department of Navy, it is apparent for all to see that this is a revolt against a law of the land—Unification—by men pledged to uphold that law.

As a result, the Unification issue has reached a critical stage. It's easy to get rid of a Crommelin, but the problem goes deeper than that. Others in his service share his fanaticism for Navy as against unified effort. Purge them too, you might say. But it goes still deeper. True Unification is an educational program. We have need of, and paid heavily for, the trained manpower of the Crommelins in uniform. We don't need, though we paid for it, too, their philosophy of Navy first, let the rest fall where it may. How do we get the manpower without the philosophy? Not by rubbing out the Crommelins. Only by rubbing out the philosophy. And to do that we must go back to the beginning, to our basic military concepts, to the distinction between service pride and service unity, and to the plebes in this fall's class at Annapolis.

If we can't teach old sea dogs new Unification tricks, the least we can do is make sure these tricks are being taught our young sea dogs coming up. If the plebes at Annapolis aren't given solid Unification indoctrination from the very beginning, we leave our defense establishment vulnerable to more and more mutiny in the years to come.

Meanwhile, the top command of the Navy is faced with the immediate problem of putting the Navy's house in order and getting on with the job of unified defense. It must live with its Crommelins today; it doesn't have to live with its Annapolis plebes for several years to come.

Navy leaders have one of the toughest jobs in the entire defense establishment. And the nation is fortunate in having men of the stature of Secretary Matthews and Admiral Denfeld on deck to handle that job. Both have shown, in sharp contrast to their predecessors, a firm understanding of unified defense and a sincere desire to make it work.

One factor must not be forgotten: All Navy airmen are not Crommelinites, though the drum beaters like David Lawrence and Hanson Baldwin would like you to think so. Crommelin represents an element, and as far as Unification is concerned a potentially dangerous element within the Navy, but naval aviation can boast combat-trained men who deplore the Crommelin philosophy as detrimental to their service and to Unification, and ridiculous in the extreme in terms of modern defense requirements. These men are not vocal and probably will not become so, but if Unification can break through the Crommelin-type of element in the Navy, these men will help it become operational.

Questions and Answers

Readers have asked a number of questions regarding David Lawrence and the part he might be playing in this anti-Unification campaign. Interest seems to center in this query: What is Mr. Lawrence's connection, if any, with the Navy League?

Mr. Lawrence is not identified by the Navy League as an officer or director. We have no way of knowing whether he participates directly in League activities. We have reported previously that his daily newspaper column and his weekly magazine, *US News and World Report*, follow closely what we have described as the Navy League "party line" on defense subjects. (In answer to a reader's specific question on this subject: His weekly magazine is not, as far as we know, officially linked to the Navy League.)

Of course, League leaders consider Mr. Lawrence "must" reading on defense matters. We have in mind, particularly, a radically pro-Navy, pro-supercarrier, anti-Unification, anti-Air Force editorial by Mr. Lawrence in the May 6, 1949, issue of his *US News*. Reprints of this editorial were sent to all Navy League members along with a letter from Frank A. Hecht, League president, who explained, "We feel it desirable for you to have his views".

Reprint mailings are routine with most magazines. We mention this one only because it had elements apart from the routine, for the back page of this reprint contained an order form for subscriptions to *US News* headlined "Handy Way to Subscribe". This may have been, however, a straight business arrangement, and does not necessarily connect Mr. Lawrence or his magazine with the Navy League in an official capacity.

The Navy League Comes Through

Back in the July issue on these pages we addressed an open letter to members of the Navy League, in which we expressed concern, in the interests of Unification, over the type of commitments League leaders were making in the name of their membership. Specifically, we questioned whether League members were prepared to go down the line for the anti-Unification pronouncements of their president, Mr. Frank A. Hecht of Chicago.

We called special attention to the fact that the Secretary of Defense had determined, with presidential approval, that it would be in the best interests of Unification to abandon the three annual service day celebrations—Navy Day, Army Day and Air Force Day—and that this decision had been supported enthusiastically by the press and by Congress. We explained that the Air Force Association, official sponsor of Air Force Day the last two years, had been the first to go along with the plan in the best interests of defense unity.

At the same time, we called attention to the fact that Mr. Hecht had written to Secretary Johnson, had an-

nounced to the press, and had informed League members by letter that the Navy League had no intention of giving up its sponsorship of Navy Day, that Navy Day would be celebrated as usual on October 27 of this year. He summed up what was supposedly the prevailing opinion of League membership with the flaunting statement that "It is for the Navy League to decide whether there shall always be a Navy Day".

We questioned at the time whether Mr. Hecht really represented his members on this subject, whether they were prepared to support his defiance of an obviously constructive decision on the part of Secretary Johnson. Now we know the answer.

Mr. Hecht has recently announced that the Navy League will forget Navy Day and join in on the celebration of Armed Forces Day, a joint observance of the three services designated by Secretary Johnson to be held the third Saturday in May (in 1950 on May 20). As Mr. Hecht put it, the Navy League "reluctantly will abandon its original plan".

The reasons he gave in letters to top defense officials, stressed the point that the Navy had already declared its units could not participate in Navy Day programs, that the plan for Armed Forces Day was receiving unified support, that he wished to work for Unification.

It is even more significant, we believe, that ever since Mr. Hecht announced his determination to hold Navy Day regardless of hell and high policy, defense offices in Washington have received letters from Navy League members who stated emphatically that they didn't go along with Navy Day, and who pledged their support to a unified service day celebration. We congratulate League members for this support of unification.

Thought-of-the-Month

From remarks by General Joseph T. McNarney, Chairman of the National Defense Management Committee, before the Armed Forces Information School:

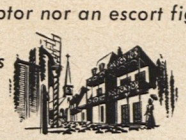
"By consolidating our land, sea and air strength, the Armed Forces are being given the opportunity of putting an end to many of the conditions that have caused a lack of confidence and good will. . . . The mere passage of enabling legislation did not automatically accomplish its objective overnight. Rather, some of the very measures aimed at strengthening the nation's defensive instrument have placed us on trial before a bar of critical opinion to prove that not only the nation but the men and women and the organizations involved, may profit from the investment. . . . In practical operation, the creation of a single military establishment is a major step toward the sort of preparedness we need. It is not something that is merely invented, but a system of defense that is dictated by time, space and by the unalterable facts of geography".

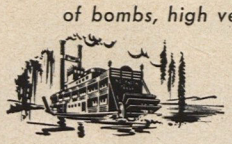
J. H. S.

THUNDERJETS OVER AMERICA

Way down yonder . . . high above cotton fields and tobacco lands . . . more F-84's are going into active service daily . . . broadening the protective scope of our U.S. Air Force patrols. ¶ *Two new models of the*

Thunderjet . . . the F-84-D . . . and the F-84-E . . . have been added to the Air Force's fighter arm . . . bringing even greater performance in speed, range and altitude for air defense . . . and for quick retaliation in case of need. ¶ *Not just an interceptor nor an escort fighter . . . but also a deadly fighter-bomber, carrying two thousand pounds of bombs, high velocity rockets, depth charges or incendiaries . . .*





in addition to a FULL load of fuel for any required mission . . . this is the THUNDERJET. ¶ *Today, F-84's protect the vast Southern waterfront with its inland cities and farmlands . . . just as they are assigned to help guard our East and West Coasts and Northern boundaries. Proficiency of pilots and planes alike is kept razor sharp by*

frequent maneuvers . . . highlighting the tactical requirements of independent air operations, as well as performing vitally important close support assistance to Army Ground Force troops. . . . . Republic Aviation Corporation, Farmingdale, L. I., New York

"This is the year of the Thunderjet"

REPUBLIC AVIATION

Makers of the Mighty Thunderbolt · Thunderjet · XR-12 · XF-91

Airpower in the News

THE B-36 INVESTIGATION

(Continued)

SINCE LAST MONTH'S REPORT ON THESE PAGES, the thread of the B-36 inquiry has suddenly appeared in cloth of unmistakable Navy pattern. When Chairman Carl Vinson temporarily set aside his committee's knitting for a brief recess last August 25th, the Navy quickly picked up the needle (which had been mostly in its side until then) and began reweaving frantically with a "yarn" more to its own liking.

UNTIL THE RECESS, THE ISSUE WAS CLEAR. Some half a hundred anonymous charges of malfeasance in the procurement of the AF's biggest plane had been inserted in the Congressional Record by Representative Van Zandt of Pennsylvania. They had come to him, he said, from sources he "could not ignore." They had little or nothing to do with US defense strategy. They were personal in nature and leveled mostly at Secretaries Johnson and Symington and Convair's Floyd Odlum. Grand implication was that B-36 had been foisted on US to further political or monetary ends of these three men. Purpose of the investigation was to find whether or not these charges had any basis in fact. Or, as Van Zandt himself put it, "to investigate the ugly rumors."

FOR SEVERAL WEEKS, A PARADE OF WITNESSES GAVE TESTIMONY OF SUCH CONCLUSIVE VINDICATION as to raise the question of legal liability of the anonymous author. Statements of early witnesses appeared here last month. Since then there has been:

GENERAL OF THE AIR FORCE H. H. ARNOLD: "You don't buy an airplane the way you buy beans. No one man is responsible for procuring any plane. There are so many different people--scientists, boards of selection, engineers and others. The B-36 is the outstanding bomber in the world and the country should be proud of it. Political favoritism and business relationship had nothing to do with the selection. I should know, as I am the one who selected it."

WILLIAM ALLEN, PRESIDENT, BOEING AIRPLANE CO.: "Boeing believes it should get its business on the basis of merit. I believe the Air Force follows the same policy."

GEN. OLIVER ECHOLS (Ret.), Board Chairman of Northrop Aircraft Co.: "I am probably more responsible than anyone else for the ship's having been ordered. In 1945...I recommended that in no circumstances should the airplane be cancelled."

SECRETARY OF DEFENSE, LOUIS JOHNSON: "There was no plot. There was no conspiracy. The government has been hurt and our defense has been hurt by airing these charges in Congress."

GEN. CARL SPAATZ (Ret.): "I believed the contract (for the original 100 planes) should be continued. I believed that the results to be obtained from possession of an intercontinental bomber were so enormous as to justify going ahead and taking the chance of failure."

FLOYD ODLUM, head of Consolidated: "There is not one rivet of politics in the B-36."

GEN. J. T. McNARNEY: "The selection of the B-36 was based entirely upon the mandatory requirement of the Board of Senior Officers to furnish the USAF with equipment which could best carry out the plans, responsibilities, roles, tasks and missions which had been placed on the Air Force by the Joint Chiefs of Staff."

GEN. OMAR BRADLEY: "I consider the senior officers of the Air Force as among the most efficient, capable men in the armed forces. I have no doubt of their integrity."

(Continued on page 8)

IT WAS NOT UNTIL WITNESS PARADE WAS NEARLY ENDED that the poison penman who had put it in march with his anonymous document was identified as Cedric Worth, Special Assistant to Secretary of Navy Air, Daniel Kimball. Immediately suspended from his Navy post, Worth spent two of the more miserable days of his life in the witness chair explaining his action. His excuse: He was "greatly concerned" that defenses of the nation were "going in the wrong direction and were being weakened by propaganda that is not true." Had his superiors known what he was up to? No. What were his sources? He had talked to many people, among them Commander Thomas Davies, pilot of the Navy's Truculent Turtle; Navy Lt. Samuel Ingrahm, in the office of Naval Operations; Capt. LeRoy Simpler, head of Plans and Operations (appropriately) Navy Public Relations. But none, he said, had assisted him in writing the paper. Did he know it contained classified information? Yes. And did he acknowledge showing it to persons without first determining their qualifications to see such information? Yes. And did he admit that the charges, innuendoes and allegations were without basis and were therefore a great disservice to the American people? Yes.

IT WAS SHORTLY AFTER WORTH'S CONFESSION OF GUILT that Chairman Vinson called a temporary halt.

"There has not been, in the judgment of the committee", said Vinson, "one iota, not one scintilla of evidence offered thus far that would support charges or insinuations that collusion, fraud, corruption, influence of favoritism played any part whatever in the procurement of the B-36." With this statement, adopted unanimously by the committee-even Van Zandt--the hearing was recessed until Oct. 5.

QUICKLY THE NAVY BEGAN AN INQUIRY OF ITS OWN. Headed by Admiral Thomas C. Kinkaid, Commander of the Eastern Sea Frontier, its stated purpose was to determine who in the Navy in addition to Worth was involved in the preparation of the scurrilous "Black Paper." In on-again, off-again session since August 26th, it has done little toward this end other than to name Worth and Davies "interested parties"--a technical classification which allows them representation by counsel, without naming them defendants.

INNOCENTLY OR OTHERWISE, Navy inquiry has turned the whole thread of investigation both in court and in the press away from original charges and into question of assigned roles and missions IN SPITE OF THE FACT THAT ROLES AND MISSIONS IN THE DEFENSE ESTABLISHMENT HAVE BEEN SET AND AGREED UPON BY THE JOINT CHIEFS OF STAFF--ARMY, NAVY AND AIR. The investigation no longer has to do with the B-36 or its procurement. Ironically, Cedric Worth is being made to appear a martyred and highly respected man. Said Lt. Sam Ingrahm when asked by the Navy Board why he had referred certain congressmen to Worth for advice about matters of defense, "I did so because everybody respected him, and I still do." Navy writers David Lawrence, Hanson Baldwin and others spoke highly of Worth's "fine record." Added the Communist New York Daily Worker, "Worth tried to carry on a one man fight against corruption and graft."

THEN CAME NAVY CAPTAIN JOHN CROMMELIN, a staff member of the Joint Chiefs of Staff, who hit every headline in the nation with charge that unification was a tragic error, that it gave a dangerous amount of power to a few men, and that the Army and the Air Force had combined to destroy Naval aviation at the risk of impairing national security.

THAT ATTACK ON UNIFICATION WAS SCHEME BEHIND THE WHOLE THING TO BEGIN WITH WAS AD-

(Continued on page 41)

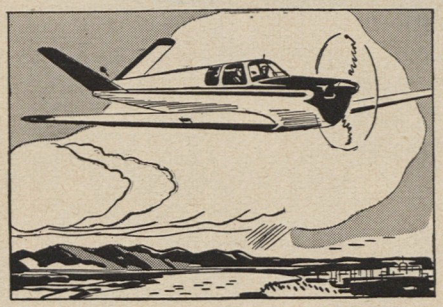
Here are just a FEW of the reasons why this

Beechcraft

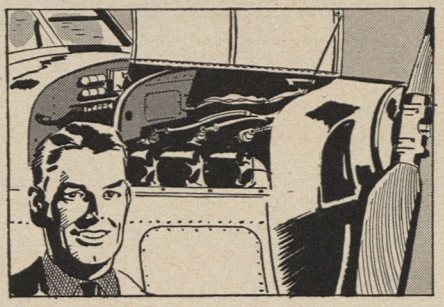
BONANZA is a better buy!

Ruggedness plus Speed . . . Performance plus Economy . . . Beauty plus Power

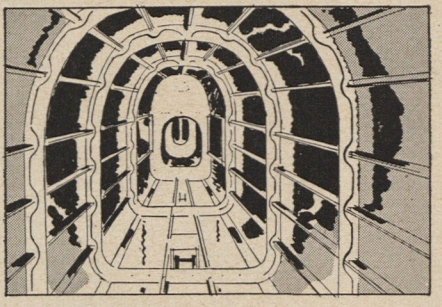
The Beechcraft Bonanza's high payload, high speed, and low operating cost, combined with extra safety and greater comfort, make this Beechcraft a better buy! It's easy to enter or leave the 4-place Beechcraft Bonanza with its unique retractable step and wide auto-type door. Plenty of room for four big people to ride in uncrowded comfort. Maximum 5-way visibility and sound-proofing of the smartly appointed cabin add to the limousine luxury of this outstanding airplane.



High Performance—At 8000 feet the Beechcraft Bonanza cruises at 170 mph using only 56% of the engine's maximum rated take-off power.
No engine overload, so you get extra speed with an extra margin of safety. Take a look at the Beechcraft list of guaranteed performance figures for the Bonanza.



...Plus Economy—Because of lack of engine overload you get lower maintenance costs and longer service life. Beechcraft Bonanza travel means you get an *extra low* per mile operating cost, an *extra low* fuel consumption of 9½ gallons per hour at cruising speed. You *save*, with a Beechcraft Bonanza.



...Plus Safety—Extra ruggedness of the sturdy framework means an extra margin of safety. Rated in the *utility* category at *full gross weight*, with a limit flight load factor of 4.4 G's, the Beechcraft A35 Bonanza has been subjected to dive tests by radio control at 275 miles per hour and pulled out safely at 3 G's.

Compare these performance features	**Compare these comfort features**
Top speed, 184 mph	Exclusive retractable step
Cruising speed, 170 mph	Limousine entrance
Range, 750 miles	Insulated, sound-proofed cabin
Service Ceiling, 17,100 feet	Quickly removable rear seat
Fuel economy, 9½ gal. per hour	Luggage compartment accessible two ways

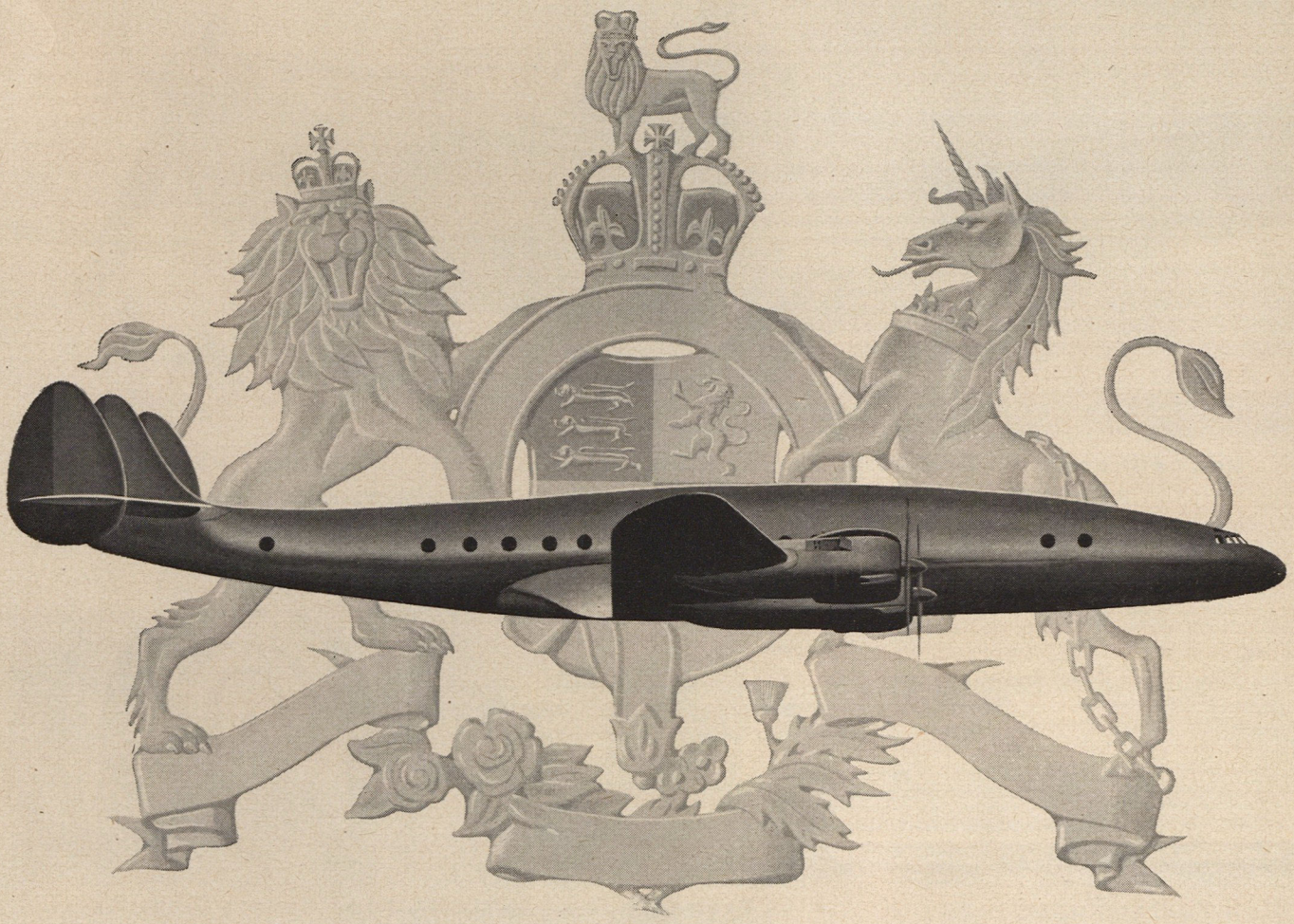
These are only a few of the reasons why the Beechcraft Bonanza is a better buy! *See* it today! A note on your company letterhead will bring illustrated brochures describing the Beechcraft Bonanza's many *extra* advantages. Write to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

Beechcraft

BONANZA MODEL A35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

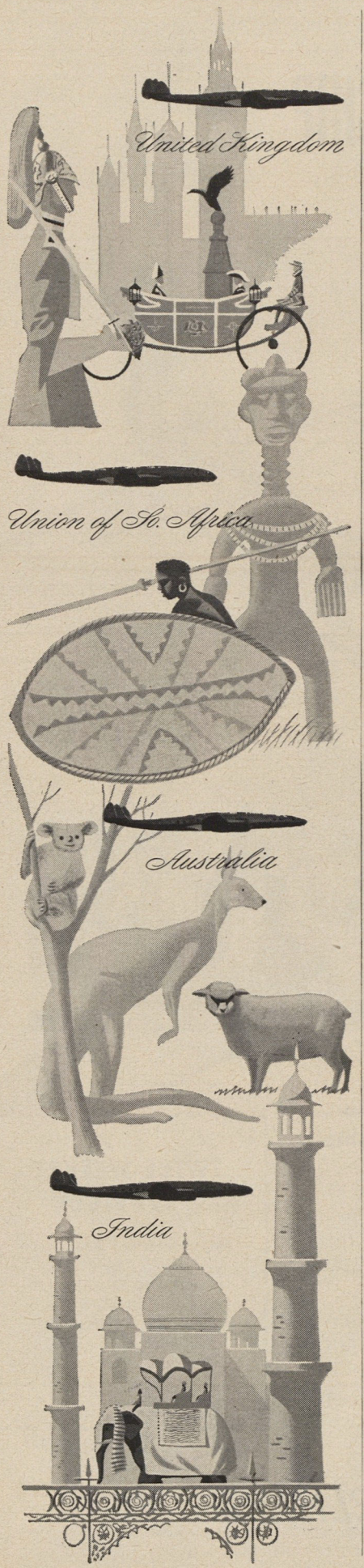
The Majestic Constellation

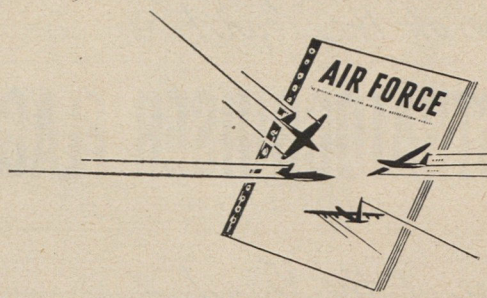


The newest member of the Lockheed Consteliation family is the Union of South Africa. This government recently purchased a fleet of these 320-mile-an-hour transports for the South African Airways. Now, four members of the great Commonwealth of Nations fly the majestic Constellation. Australia is represented by Qantas Empire Airways, India by Air India International and the United Kingdom by the British Overseas Airways Corp., all flying the Constellation. Eight other major world airlines also fly, and many have reordered, this famous *tried and proven* airliner, still the world's most reordered four-engined transport.

LOOK TO LOCKHEED FOR LEADERSHIP

Lockheed Constellation





RENDEZVOUS

Where the Gang gets together

FOUND: On bus returning from Air Fair to Stevens Hotel on July 3rd, one pair of dark glasses. Owner may have same by describing and writing to *Louise M. Barnes, 334 Drexel Ave., San Antonio 10, Texas.*

MORE REUNION: There will be a reunion of all former members of the class of 40-G, which graduated from Kelly and Brooks Field on November 15, 1940, at 6 PM, Saturday, November 12, 1949 at the St. Anthony Hotel, San Antonio, Texas. *Lt. Col. Robert J. Gerrard, Denver Hotel, Victoria, Texas.*

HEY FRIENDS: I would be extremely happy to hear from some of the boys of the 94th Bomb Gp. 8th AF, who used to be stationed at Bury St. Edmunds, England. *Pierre Contresty, 65 West 56th St., New York 19, N. Y.*

PICS WANTED: I am hunting for pics of B.A.D. #2 Warton, England and of the 307th Depot Repair Sq. other than the formal set taken in 1943. I have shots of Freckleton Memorial Playground to trade. *Edmond J. O'Brien, U. S. Veterans Hospital, San Fernando, Calif.*

MORE REUNION: On Sunday, October 16, 1949 at 6 PM, the Second Annual Reunion of expatients of Valley Forge General Hospital and their friends will be held at Billy Rose's Diamond Horseshoe, New York, N. Y. For further information write: *Ann Minor, 321 East 43rd St., New York 17, N. Y.*

STILL MORE REUNION: Additional names and addresses are needed of former members of the 409th Bomb Gp, in regard to plans for a future reunion. *Bernard B. Bernstein, 7626 North Eastlake Terrace, Chicago 26, Ill.*

HEY LARRY: Would like to contact Larry Strong who was with 63rd AACS Gp, in China. *John L. Rynott, 2929 Farnam St., Davenport, Iowa.*

CORRECTION: My rendezvous item of last month entitled MOGINS MAULERS should have read 362nd Fighter-Bomber Gp. *M. K. (True) Swofford, 110 Hugh St., Weatherford, Texas.*

LOST BUDDY: Am looking for an old friend: Capt. M. N. Nunneley, formerly base flight officer at Biggs Field, Texas. In 1947 he was living on Travis Street in El Paso, Texas. *Charles K. Sawicki, 282 Tinkham St., New Bedford, Mass.*

INFO WANTED: Would appreciate any information concerning Capt. Eugene Slovacek, home town Austin, Texas. He served in the CBI theater. *Herbert C. Fisher, Dixon, Mont.*

MISSING PAL: Am trying to locate an old buddy named James Martin who used to live in Sioux City, Iowa and was with me at Minter Field, Bakersfield, Calif. *Charles A. Roler, Smithfield St., Boston, Mass.*

LOOKING FOR: M/Sgt. Dale W. Coleman formerly assigned to the 373rd Bomb Sq., 308th Bomb Gp., Luliang, China. *Jim Meldon, 330 East 30th St., Erie, Pa.*

MIA: Would appreciate any information concerning Cpl. Everett Taylor, 766th Bomb Sq., 461st Bomb Gp. in Italy. Reported missing in action but death never confirmed by War Department. Anyone who knew him or has any information concerning his last mission please contact his father: *Mr. Harry Taylor, Kingsley, Mich.*

REUNION: Would like to hear from personnel formerly stationed at Davis-Monthan AFB who are interested in attending a reunion details of which will be announced at a later date. *Charles H. Jacob, 615 Fort Washington Ave., New York 33, N. Y.*

URGENT: Desire the names of any men who served in the 720th Sq., 450th Bomb Gp, Italy. One of our members passed away of a heart condition and his widow cannot get a pension unless she can obtain a notarized statement from several of his buddies telling of the attacks he suffered while in the service. *Robert L. Green, 15th AF Society, P. O. Box 7622, Philadelphia 1, Pa.*

LOST: I am looking for Capt. John P. Busam of the 367th Fighter Gp., 9th AF who formerly lived in Cincinnati, Ohio. Any information concerning his present whereabouts will be greatly appreciated. *John W. Morris, Long Ridge, Ky.*

LOTTA LOST FRIENDS: Sure would like to hear from Col. Sutton, 92nd Bomb Gp. CO at Alconbury and Poddingdon Air Base, England or anyone who might know where he is. Also looking for Col. Bird, Maj. Fellubaum, Maj. Eves, Maj. Hale of the 482nd Bomb Gp., Alconbury, England or any fellows from either of these groups. I'll also be glad to pay for any pictures of personnel of either of these groups. *T-Sgt. Marion L. Blessing, Fenimore, Wis.*

LOOKING FOR SOMEONE? ANY ANNOUNCEMENTS TO MAKE? WRITE RENDEZVOUS AND RENDEZVOUS READERS WILL WRITE YOU.

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THE NEW STRATOCRUISER FLAGSHIP

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AIR MAIL

Courtesy

Gentlemen: In the Convention issue of Air Force Magazine was an article about the Air Fair in Chicago, which I witnessed. The Canadians put up a very wonderful performance with their jet planes and not a single picture or one single word was run about them—not even a "thank you." I think that is a shame. How about giving some credit where credit is due?

William Truver
Chicago, Ill.

• *Wonderful the Canadians were. There was no intention of ignoring them. The simple truth was that the Vampires moved so fast that none of the six photographers assigned to cover the Air Fair got a shot good enough to reproduce.*

BETTY JANE

Miss Hawaii

Gentlemen: The enclosed photo is that of Miss Betty Jane Johnston. Last year she was elected Air Force Girl of 1948 by the Hawaii Wing of the Air Force Association. This year the entire Territory backed up our judgment and sent Betty Jane to Atlantic City as "Miss Hawaii" to participate in the "Miss America" contest. We have great hopes that she will place near the top.

Edward E. Johnston
Commander Oahu Sq. AFA

• *She was in the first fifteen.*

Kindred Soul

Gentlemen: In the Air Mail section of the September issue of Air Force I found a kindred spirit in Mr. Pete Henry of New York. I fail utterly to see how a Reserve Program which trains about one-tenth of the personnel (at least officer personnel) in a community can be considered in the best interest of the Air Force. I was attached to a T.O. & E. squadron as a navigator from its inception in 1946 until last June. The first three years I served without compensation, but since I was allowed to fly I remained in the active reserve. The whole "shooting match" was recently dissolved and I, like Mr. Henry, received a neat little card advising me that I was once again a "volunteer." I didn't even get a look-in at the only corrollary squadron in my area. I realize that I'm not the only one in the same sad shape, but I feel like a voice in the wilderness living in Washington, D. C. since I don't even have a congressman I can beef to.

Hugh McNeal, Jr.
Washington, D. C.

You're Welcome

Gentlemen: One of the nicest things that anyone ever thought of doing for me was the VA form 9-430 enclosed in my copy of September Air Force. If more people were as thoughtful as your office has been with this distribution, the world would be a better place to live in. My appreciation of Air Force will always be highlighted by this gesture.

Max H. Peiffer
Philadelphia, Pa.

Water-Based Air Force

Gentlemen: I have just finished reading Mr. Root's article on water-based bombers and can see no point in arguing about who shall control them. All airplanes whether operated from oceanic bases or land bases should be under the control of the Department of the Air Force. Our first combat air unit was a part of the Signal Corps where it remained until the early 1920s when it was severed from the Signal Corps and set up as the U. S. Army Air Corps. At about that time the Navy started using a carrier-based plane and organized the Naval Air Force modeled after the Army Air Corps. In view of the history of military aviation, I believe all air power should have one controlling head.

Vincent A. Van Uden
Hardin, Mont.

Here We Go

Gentlemen: Can you verify the following information on World War II figures:

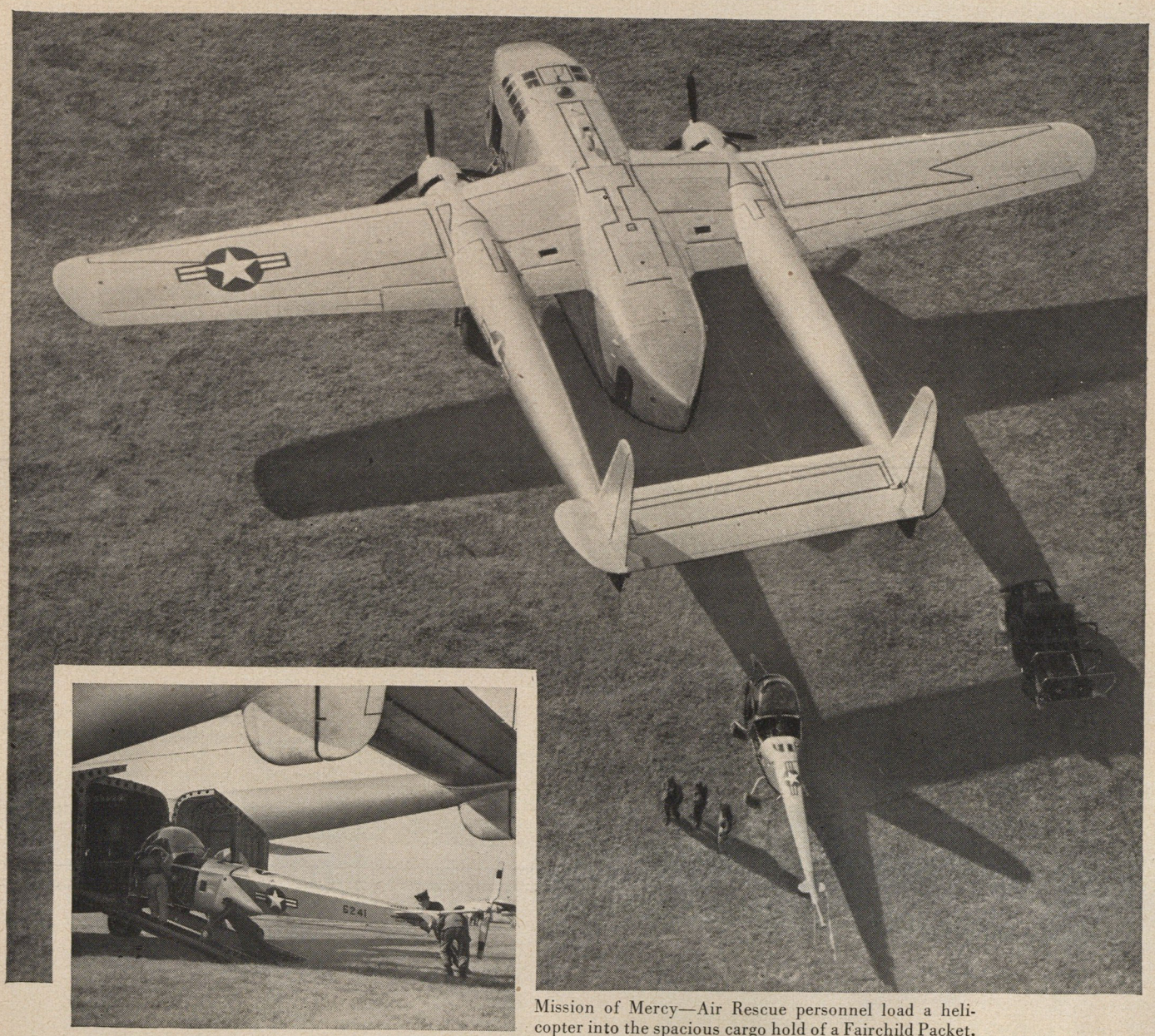
1. The State of Texas had the largest Air Force personnel.
2. Wisconsin was second.
3. Figured per capita, Sheboygan County, Wisconsin, had the largest Air Force personnel.

John A. Ratz
Sheboygan, Wis.

• *Unbelievable as it seems, there are no figures in Washington on AF personnel from Sheboygan. The same is true of the states of Texas and Wisconsin. Maybe some of our readers can verify your statements.*

AIR RESCUE

Over faraway jungles, deserts and mountains, helicopters of the USAF Air Rescue Service have flown in search of stranded airmen and passengers. The helicopters got there because they have been given a "mother" ship—the Fairchild Packet—that transports them over distances far beyond their range. Thus, our Air Force has added a new ability to the versatile Fairchild Packet—increasing the importance of its part in the development of modern airborne military tactics.



Mission of Mercy—Air Rescue personnel load a helicopter into the spacious cargo hold of a Fairchild Packet.

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Divisions: Ranger Aircraft Engines, Farmingdale, N. Y. • Nepa, Oak Ridge, Tenn. • Fairchild Pilotless Plane, Farmingdale, N. Y. • Al-Fin, Farmingdale, N. Y.
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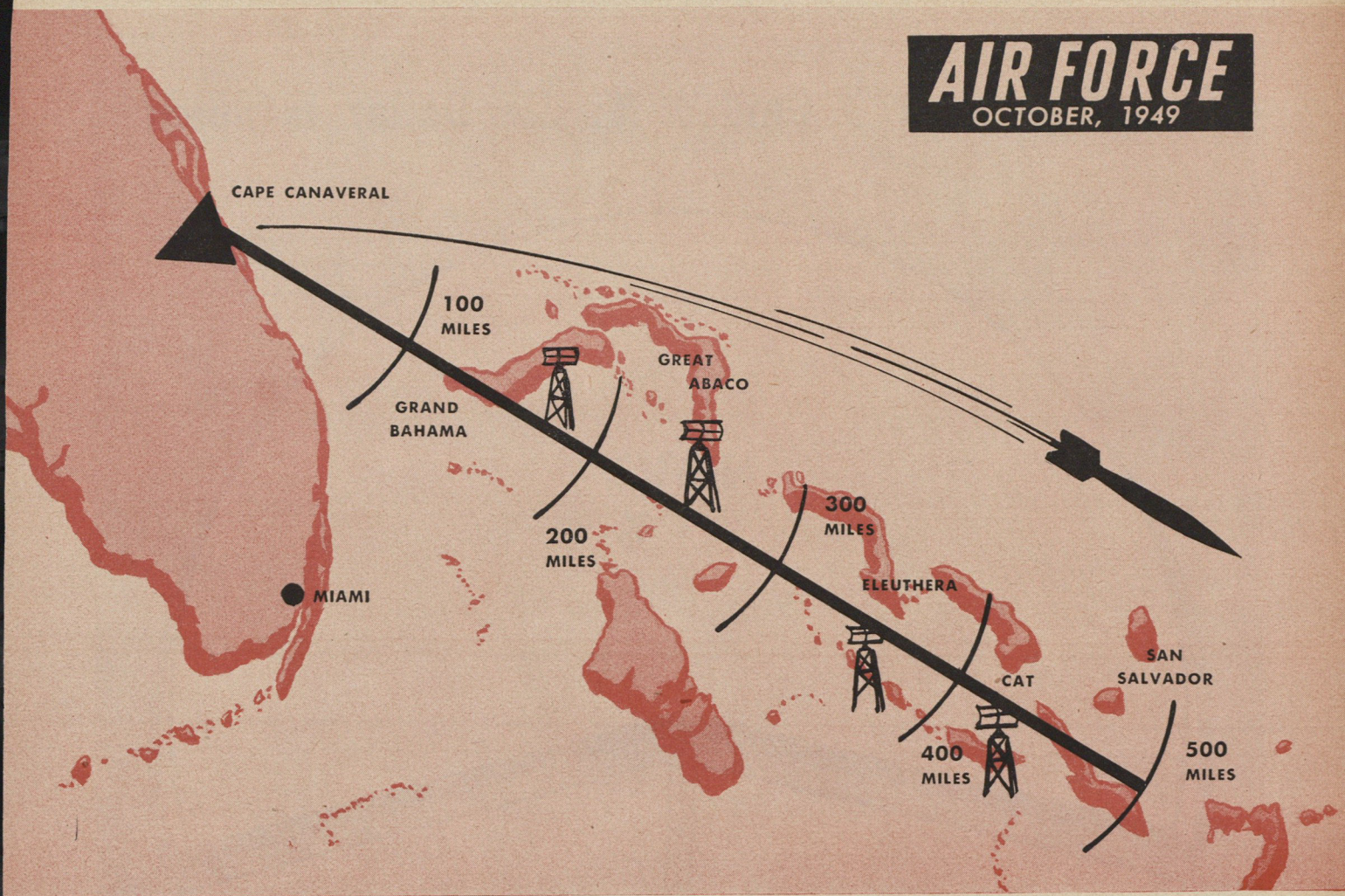


Above, the new Proving Ground for Guided Missiles in the Caribbean. To be used first for test missiles, the range will eventually accommodate real weapon missiles of three to five thousand mile range. Radar towers are observation stations.

Who Will Guide The Missiles?

It will be some years before the test missiles we are now experimenting with are ready for the production line. In the meantime there is a matter of control to be settled. It has to do with more than servo-mechanisms

By Ned Root

THERE are two big problems in regards to guided missiles these days. Both of them are *control*. One is the kind of control that has to do with servo-mechanisms, stabilizers, and all the other gadgets that keep a missile on its course and guide it to its target. Sooner or later *this* problem—and it's a big one—will find solution in a set of indisputable mathematical equations put down by a physicist at Cal Tech, or it will be resolved in a little box full of wires and wheels invented by an engineer at General Electric.

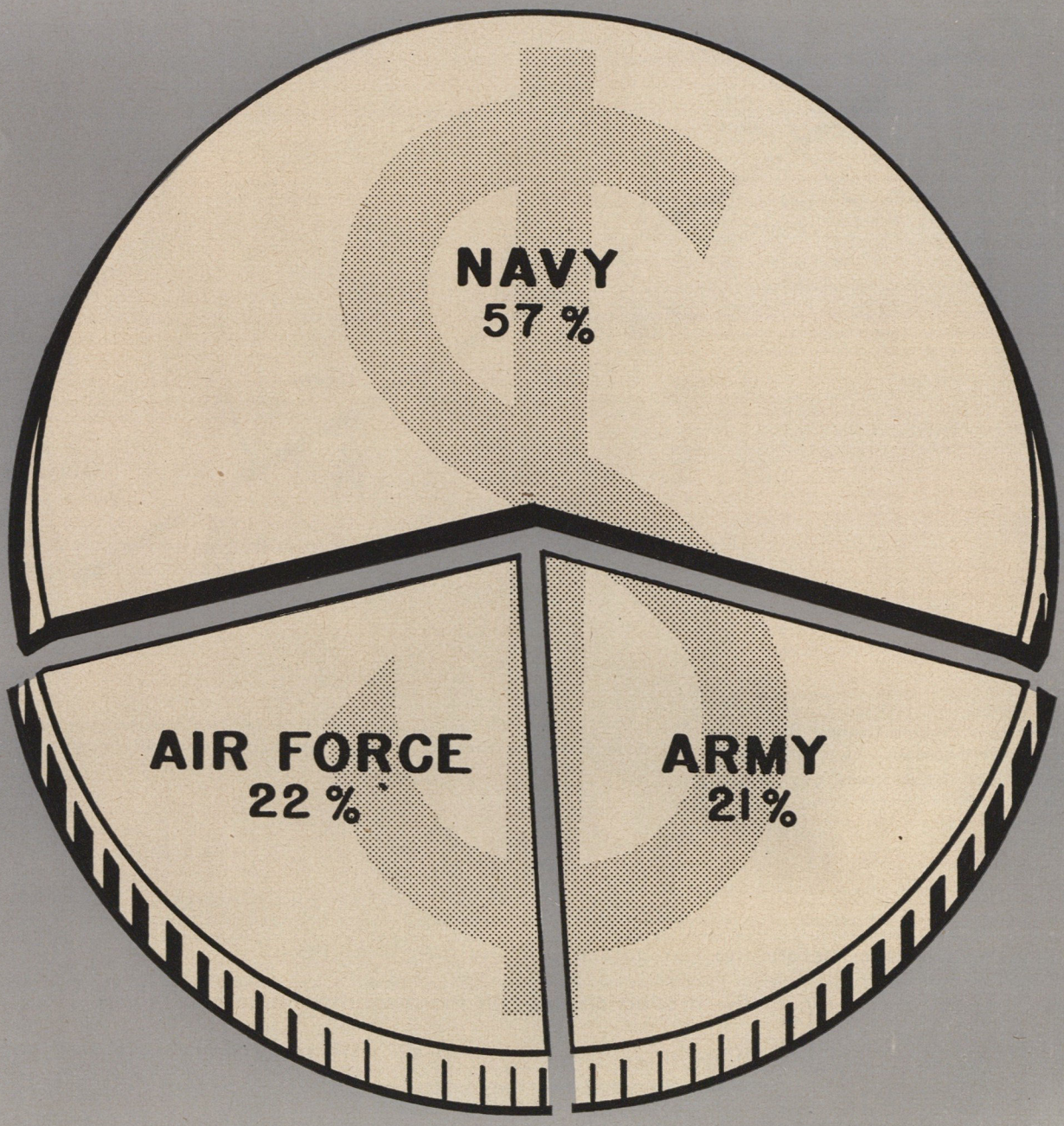
The other kind of control may never arrive at a conclusion of such absolute nature, for it has to do with the *human* mechanism. Its equations are ambition, pride, loyalty and a lot of other variable emotions, including devotion to country, that make the human machine tick. This one is the problem of control of the guided missile program itself. Is it to be Army, Navy, Air Force? Or will it be a combination of all three?

Should any one service cop the program for its very own, that branch would stand to put its two sister services in all but total eclipse. For it is apparent that the end refinement of the guided missile as an instrument to carry destruction to the enemy—the guided missile that has "grown" to full maturity, will be of such a nature as to revolutionize (and in most cases antiquate) the carriers we now use on land, sea, and in the air.

This eventuality pertains, of course, to a quite distant future. But it is not so distant as to be beyond outline in the minds of many front-office defense planners. It is not so distant as to prevent anyone with a plan of his own from starting it in motion today. But more of that later.

Before the question of who is to use or control the guided missile can be settled, a brief study of its physiognomy must be undertaken. To begin with, the guided missile in itself is not a weapon. Unlike the a-bomb, it has no explosive power. It is a carrier. It can be used to

How The R & D Guided Missile Dollar Is Spent



Amounts in dollars and cents are secret, but on a percentage basis this is how the Research and Development dollar for guided missiles was divided between the three services in 1949. The figures are those of the Guided Missiles Committee—a joint Army, Navy, Air Force group under the Secretary of Defense. In any program as complex as this, differences in methods of accounting make it difficult to arrive at an absolute comparative figure. But no matter how you compute it, the Navy still gets more than the other two services combined.

Who Will Guide The Missiles

CONTINUED

deliver an atom bomb, a jug full of biotics, or the morning paper. Second, according to its design, it can be fired four different ways; (a.) from surface launching sites to surface targets, (b) from surface sites to air targets, (c.) from aerial platforms to aerial targets, and (d.) from air to surface. Third, it can be used in either strategic or tactical operations, according to its built-in range and explosive power.

Which of the three services have use for such an instrument? The same ones that have use for a gun—all of them.

But just as the Air Force would find difficulty putting a 16 inch Navy rifle to good purpose, so would a ground Army have a tough time utilizing an air to air missile. It gets back to a very simple and logical beginning. Each of the services is (or will become) a using agency of any type missile that will assist it in the accomplishment of its assigned roles and missions—the same roles and missions (set forth at Key West and Newport) that govern its activity in the development and utilization of any other instrument of war.

It was for the purpose of measuring the activities of each of the services with this objective yardstick—of measuring the missile against the mission—that the Guided Missiles Committee of the Joint Research and Development Board was established under the Secretary of Defense. The Guided Missiles Committee has at its table two officers from each of the services and three civilians. At the moment the Chairman of the group is Dr. Robert Milikan, President of California Institute of Technology.

The board has these general responsibilities:

▶ To see that the total guided missile program—the sum of the activities of the three services is "adequate."

▶ To see that the program is economical—that the money appropriated is spent efficiently.

▶ To see that there is no wasteful duplication of effort.

▶ To see that "gaps" don't develop in the program as the result of too close attention to a single phase of the program.

With the established premise that all branches of the service, not just one, are to use the missile, it follows logically that each of them should take primary responsibility for *development* of the specific types of machines they need to accomplish their missions.

For example. The functions of the Army (as set down at Key West) include:

▶ Defeating enemy land forces.

▶ Seizing, occupying and defending land areas.

The types of missiles best suited to these ends are ground-to-ground (of perhaps medium range) and ground-to-air. The Army has no need for air-to-air or air-to-ground machines. Should they be inclined to venture into that field, it would be the responsibility of the Guided Missiles Committee to get them right back in their own backyard.

The Navy's functions, again according to Key West, include:

▶ Seeking and destroying enemy naval forces and suppressing enemy sea commerce.

▶ Gaining and maintaining general sea supremacy.

▶ Controlling vital sea areas and protecting vital sea lines of communication.

To accomplish these things, the Navy might quite logically find use for surface-to-surface missiles, surface-to-air, air-to-air, and air-to-ground. In other words the works. The surface-fired missiles the Navy uses, however, must (within the definition of its mission) have the capability of being fired from aboard ship. In truth, all such missiles the Navy is now developing have that capability, with the exception of a few designed solely for testing purposes. Should the admirals overstep—should they get into the field of land-fired missiles, it would again be the responsibility of the Missile Committee to step in and take a hand.

Getting down to the Air Force, its assigned responsibilities include:

▶ Gaining and Maintaining general air supremacy.

▶ Defeating enemy air forces.

▶ Being responsible for strategic air warfare.

Like the Navy, the Air Force has use for missiles of all four general classifications. The biggest difference, perhaps, is that the big baby everybody is waiting for—the strategic missile capable of reaching an enemy target from a launching platform in the United States—becomes the responsibility of the Air Force, since it is the service primarily accountable for strategic attack against the enemy.

From the above it begins to become obvious why no one service could possibly assume full control of the guided missile program. It has been suggested that the service primarily interested in a given type (such as the primary interest the army has in surface to air missiles) take over the development of that particular type for all other branches. Even this isn't as practical as it sounds, for a ground-to-air missile that is adapted perfectly to the army's problem might not be worth a darn to the Navy.

Taking such matters as these into account, the organizational chart which appears on page 19 and which has guided missile offices scattered from one end to the other with little seeming thought of a chain of command, begins to make a little more sense. The oft-voiced criticism that the guided missile program is loose and lacks directions becomes less credible than the official contention that its "looseness" is in reality a highly desirable flexibility. That the system can be made to work is evidenced by the fact that the Guided Missiles Committee has, on several occasions in the past, directed one or another of the branches of the service to discontinue research on a particular project either because it was in duplication with another—perhaps more advanced—program or because it was considered outside the service's assigned responsibilities. Perhaps "directed" isn't the right word. It is reported that nearly every decision of the Guided Missiles Committee has been unanimous.

Practical or not, there are straws in the wind that indicate that at least one branch of the military establishment is not too content with things as they stand and plans to do something about it. That branch is the US Navy.

For at least three years now, the Navy has endeavored with every device at its disposal to establish itself in the public mind as pre-eminent in the missile field. Although the subject is of the highest security classification, the Navy has rarely missed an opportunity to let the public know just what it's up to. Or perhaps it would be better to say that the Navy has invented every conceivable guided missile story it could concoct—short of releasing actual secret information—to show its superiority. How many news fotos have you seen captioned "How The World Looks From X Miles Up In A Navy Guided Missile". They pull them out of the drawer and release them regularly. A forgetful public never remembers that it saw the same thing—or nearly so—eight or ten months before. And every few weeks it is announced that some new and wondrous atmospheric phenomenon has been discovered by a high-soaring, instrument-laden Navy missile.

All of which, on the surface is innocent enough and makes interesting reading. But how these feats are germane to the basic problem of designing a missile that can be successfully launched, sustained in flight, and directed with accuracy to an enemy target is not always clear. Unless, of course, the "target" is a sympathetic public.

The Navy's bid for control of the program doesn't stop with its carefully laid public relations program. There are other aspects. For example, the Navy got 57 percent of all the money appropriated to all three services in 1949 for research and development of guided missiles. This is a figure that has never been released before. The Air Force got 22 percent and the Army 21.

The statistics come not from any one service, but from the official record of the joint Guided Missiles Committee itself. Admittedly it is difficult to arrive at an accurate set of figures in any program as complex as this one. Differences in methods of accounting could throw the final tabulation off several degrees either one way or the other. But it is to be assumed that insofar as possible, the Committee tried to get an honest, comparative break-down. But even if they were off as much as ten percent—an incredible assumption on the face of it—the Navy would still have far and away the biggest hunk of the dollar.

Can it be taken from this that the responsibilities of the Navy are such that

Who Will Guide The Missiles

CONTINUED

it requires missiles twice as complex as either the Army or the Air Force? Hardly. It is readily acknowledged that the Navy has one major problem peculiar to it alone. As mentioned before, every surface-to-surface missile the Navy gets into has to have the capability of being fired from a boat. Obviously this complicates things and hikes the cost. But is the problem any bigger than the one the Air Force has of designing a strategic missile capable of ranges up to and beyond five thousand miles? Remember the Navy has no such responsibility as this.

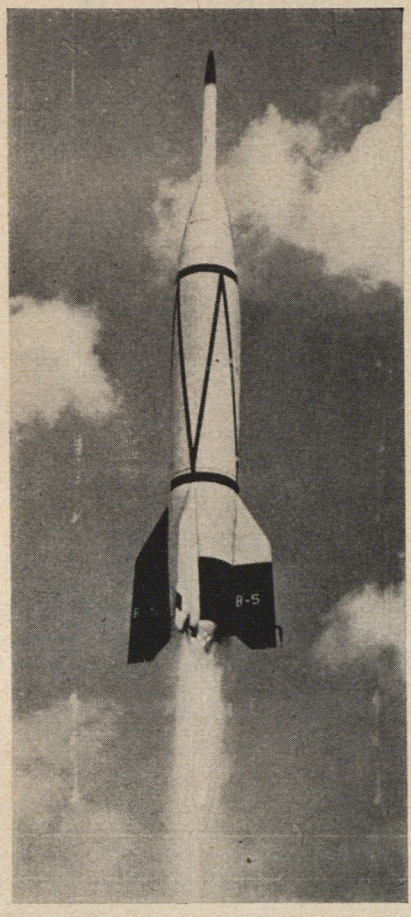
There is another way of measuring the Navy's feverish effort to capture the controlling position in this most important field. To help out, the National Military Establishment has called upon the services of 192 outside civilian agencies. They include colleges, research labs, and manufacturing concerns. Some of them are occupied with only the abstractions—the physics and mathematics of the subject. Others are engaged in actually turning out guided missiles. Of the total of 192, thirty seven are under contract to the Army, sixty to the Air Force, and *ninety-two* to the Navy. There can be no variance in the methods of accounting here. It's a simple case of counting school bells and smoke stacks.

When the Navy will choose to make an open attack on the joint control system now in operation is hard to say. It may never come. They may elect to "take over" by attrition. They are well on the way right now. On the other hand, they may strike sooner than expected—before the Army and Air Force get too deeply into the thing. Those who think it is too brazen a move to be risked by the admirals are reminded of a similar challenge the Navy issued not so long ago—the one that had to do with a re-evaluation of the strategic bombing mission of the Air Force. Here was a program—like the guided missile program—that had been studied by every responsible officer in the military establishment. It was set down on paper and approved unanimously by the Joint Chiefs of Staff—including the Naval member. Within the military establishment it was law. Yet Naval interests have succeeded, through the device of the B-36 investigation, in reopening the whole thing to debate. What device they may find to bring the guided missile issue to a head is hard to foresee from here.

They may argue that the Key West document is not definitive enough in regards to guided missiles. That the program has now advanced to the stage where it is necessary to identify more positive areas of responsibility. They may come up with figures to prove that the "flexibility" the Joint Chiefs have deliberately encouraged is really expensive duplication. Suppose they say, for example, "Our studies show that the inter-service competition in guided missiles, which the Joint Chiefs say is healthy up to a point, is actually costing the taxpayer millions and millions of dollars—dollars that could be saved by naming the one service pre-eminent in the field responsible for the entire program. There's a lot of taxpayer appeal in such an argument. It will be an interesting thing to watch.

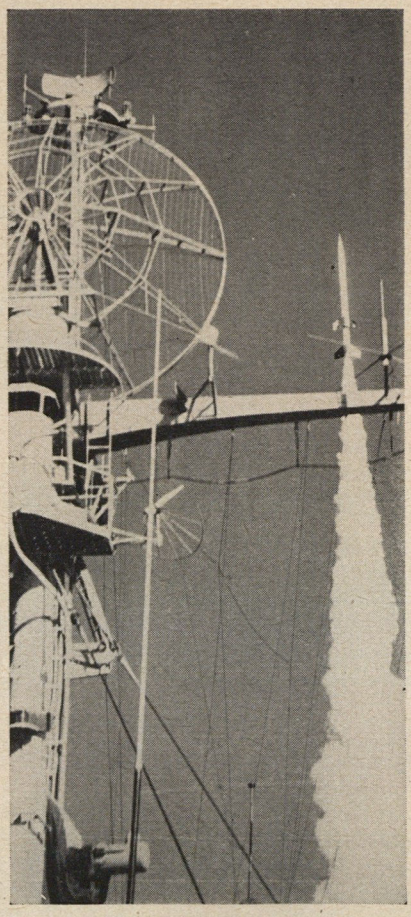
IN the meantime, it is worthwhile taking a look at the missiles themselves. As was the case last year, and the year before, we still have no missiles that are ready to go into production as real weapons. All that we have are test instruments. And that goes for all four classifications, air-to-air, ground-to-air,

The Army . . .



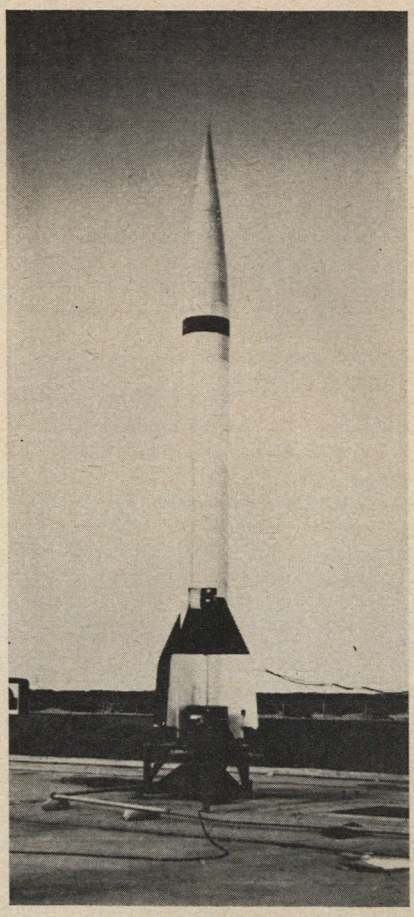
". . . To defeat enemy land forces. To seize, occupy, and defend land areas." Above, the WAC Corporal in V-2 nose.

The Navy . . .



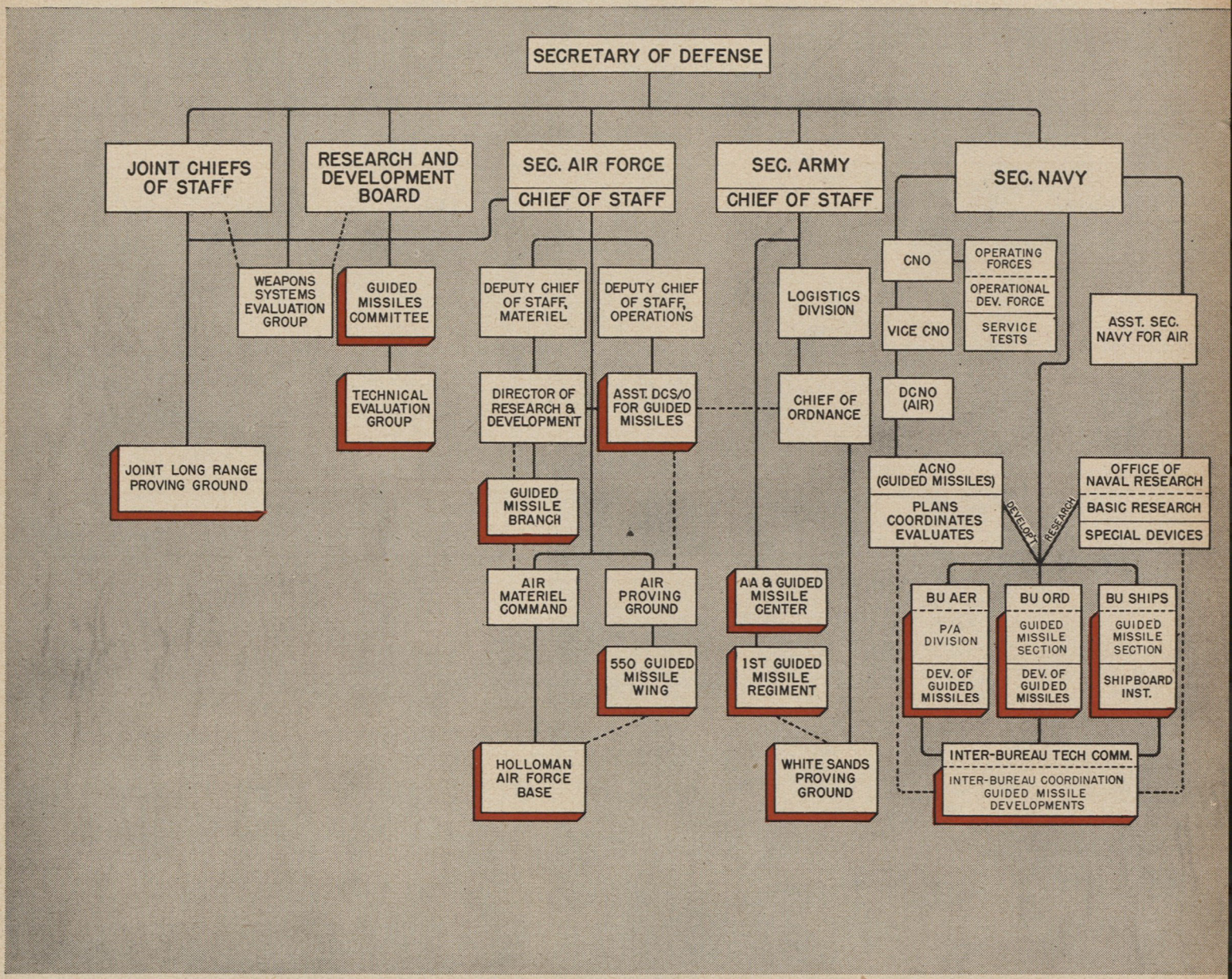
". . . To gain and maintain general sea supremacy. . ." Above, a Navy Aerobee test fired from aboard ship.

The Air Force . . .



". . . To be responsible for strategic air warfare. . ." Above, Consolidated 774, first US missile of V-2 size.

THE MISSILE CHART—"Loose" or "Flexible"?



As shown in diagram below, guided missile offices in Department of Defense (identified by color boxes) are scattered over length and breadth of Military Establishment. Not shown are many other offices that have partial responsibility.

air-to-ground, and ground-to-ground.

The most encouraging sign that we are about to emerge from the laboratory and into the hardware stage is the announcement that the new Joint Long Range Proving Ground for Guided Missiles will soon be ready for operation in the Caribbean. By direction of the Secretary of Defense it will come under the executive direction of the Air Force's General Vandenberg. As a project, it will be under the Joint Chiefs of Staff, with an administrative group at the base of officers from all three services. While no official announcement has been made to date, it is expected that an Air Force officer will be selected as the Range's first commander. Subsequent commanders may be chosen by the Air Force Chief of Staff from any of the three branches, although rotation is not mandatory. It is not unlikely that the AF foothold in this project is one of the things that is irking the Navy.

Most of 1950-1951 will be spent building facilities and installing equipment on the range. A target date of July 1, 1951 has been fixed as the time it should be ready for extensive guided missile tests. Limited tests may be made before then however. As can be seen on the map on page 15, the range extends from Florida's Cape Canaveral (the launching site) in a south-easterly direction out over the ocean. Observation stations will be located at regular intervals along the Bahama chain for the first 500 miles. Observation will be made by radar and by telemeter instruments in the missiles.

Guided missile officials have pointed out that while observation posts extend only 500 miles that does not mean that missiles of only 500 mile range can be tested. Actually observation, they point out, is only necessary during the early part of a missiles flight. After it once gets under way the observers aren't particularly concerned with it until it comes back down. The range will accommodate missiles of "almost unlimited" range—at least all we are likely to build into them for some years to come. Since there are no "operational" missiles in existence as yet, only test vehicles will be used at first. The range is designed, however, for the real thing —when it comes along.

The only question now is who will be in command when that real thing gets here. It will be too bad if the "sloppy" chart above is materially bothered.

At West Palm Beach, above, workers begin job of cleaning up after the blow of 1949. Wind velocity reached 150 mph, caused damage estimated at 20 million in property and 25 million in citrus crops. Below, a West Palm Beach grocery store wrecked by the record wind.

In 1935 the headlines told of hundreds dead . . .

STALKING

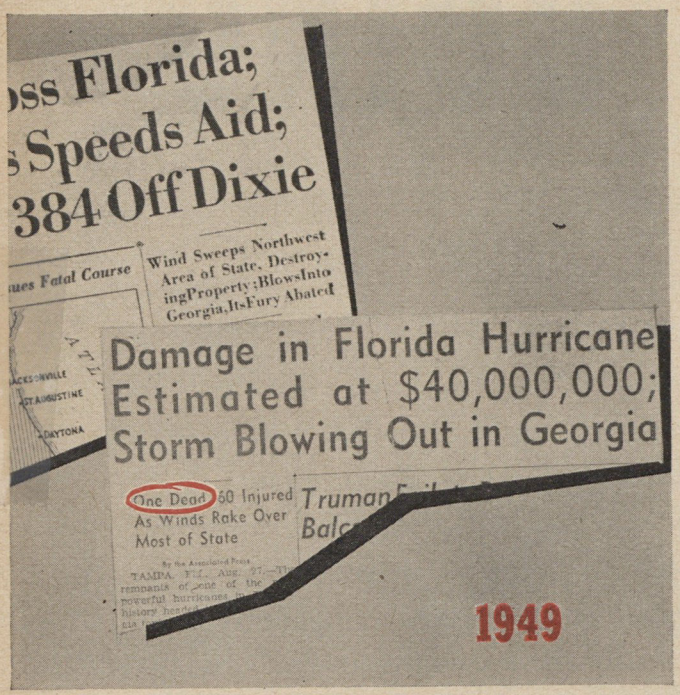
Nineteen years ago a West Indies hurricane took

year an even more vicious storm killed only one

It would be difficult to tell how many people in southern Florida can thank the Air Force and Navy that they lost only a palm tree or a few grapefruit instead of their lives in the hurricane of late August. A comparison of the headlines above indicates that the number would run in the hundreds. The 1935 hurricane, although less violent than this year's, struck suddenly and without warning. It killed about 400. The one in August 1949, although the worst since 1928 in property damage, killed only one person. The difference. There was a three day advance warning this time.

The men who furnished the warning, although they have been given little public credit, are the MATS Hurricane Hunters, stationed at Kindley Air Base, Bermuda. Hurricane "Baker" as it was called (Baker for "B" since it was the second of the season) was found about 300 miles east of Puerto Rico even as Hurricane "Able" was spending itself in a cold front off Newfoundland, still trailed by other watchful Hunters.

"Baker" was recognized immediately as a potential killer. The moment it was spotted—moving with awkward lethargy at first—a report was flashed from the patrolling B-29 to Kindley. From Kindley the warning was relayed to the joint Air Force-Navy Weather Bureau Hurricane Warning Center in Miami. From there the information was relayed by every available means to the communities that might find themselves in the giant's path.



While in 1949 the death count stood at only one.

A KILLER

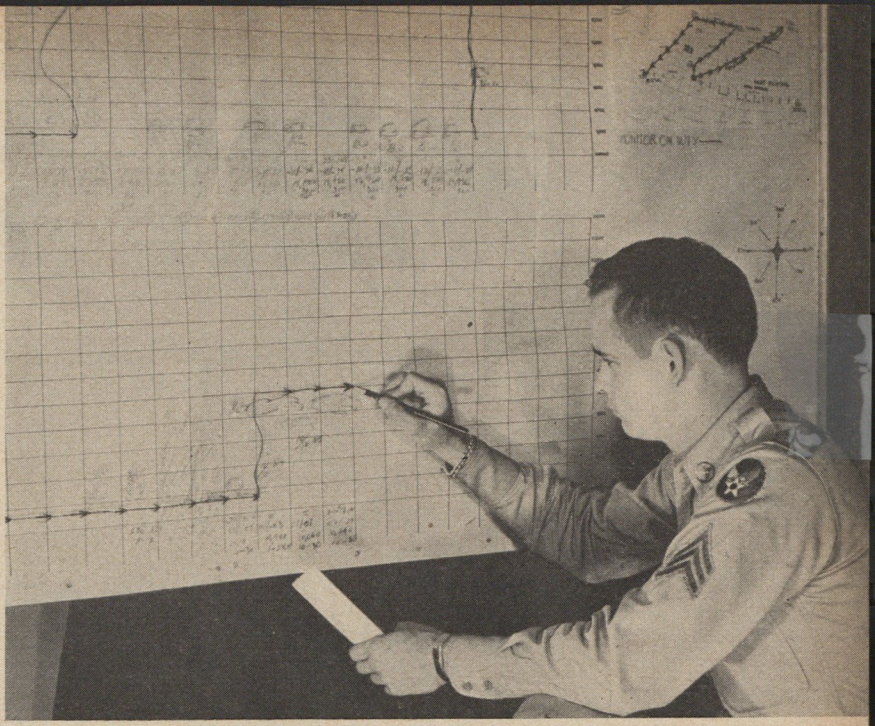
the lives of 400 unsuspecting Floridians. This person. The Hurricane Hunters saved the others.

From then on the Baker that could have been a butcher was kept under untiring surveillance. In accordance with pre-established plan, Air Force crews of the 373rd Reconnaissance Squadron did the tracking in the afternoons. In the mornings the Navy took over. By the time the hurricane hit the coast of Florida, the inhabitants of the area had had 73 hours to batten down and get ready. Hence the relatively happy headlines above.

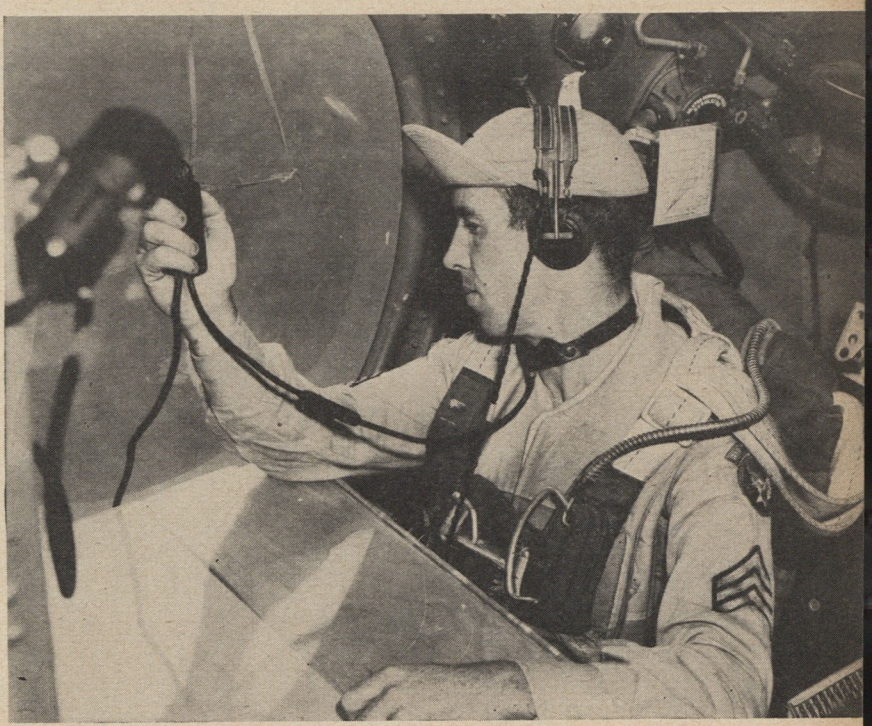
In their own quiet way, the Hunters have been in business since mid-war years. They were established as part of the old Air Transport Command to better serve the unending stream of planes flying men and equipment to Europe. Prior to their activation airmen had been forced to rely on the wholly inadequate reports taken from ships at sea and sparsely scattered land stations. Tracking the big blows by plane was a revolutionary idea born of wartime necessity, but it has paid huge dividends.

Today the reconnaissance program is under the direction of the Air Force's Air Weather Service, an agency of the Military Air Transport Service. Air Weather Service maintains a network of approximately 200 fixed weather stations throughout the northern hemisphere.

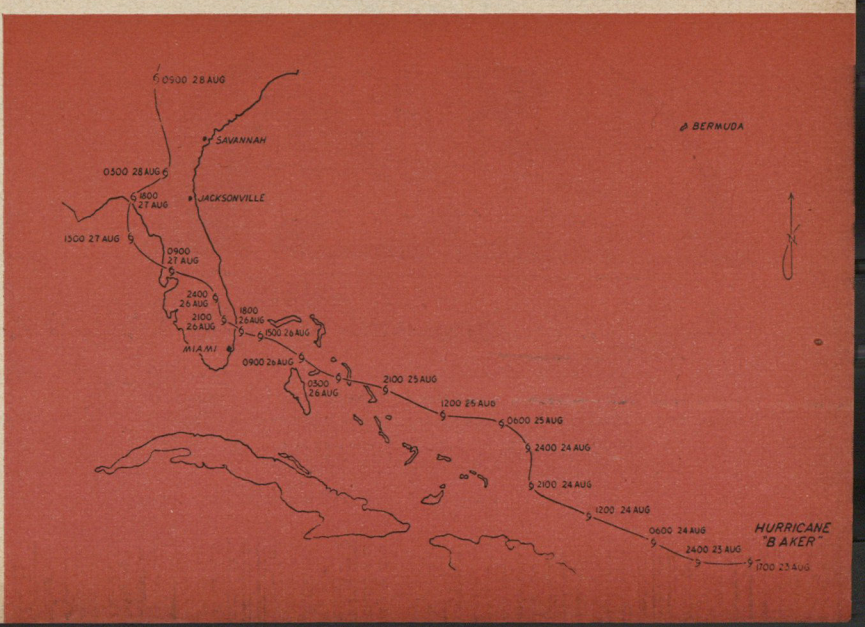
The hurricane season is not yet over. It extends from June 1 to November 30th. Able and Baker will be followed by Charlie, Dog and Easy. But if they strike the mainland one thing is sure. They won't arrive unannounced.



Course of Hurricane "Baker" was charted every inch (above) at Kindley AFB, as reports came in from the stalking 29's below.



"Baker" was discovered 23 August 300 miles east of Puerto Rico. Slow moving at first, it hit Florida full blast three days later.



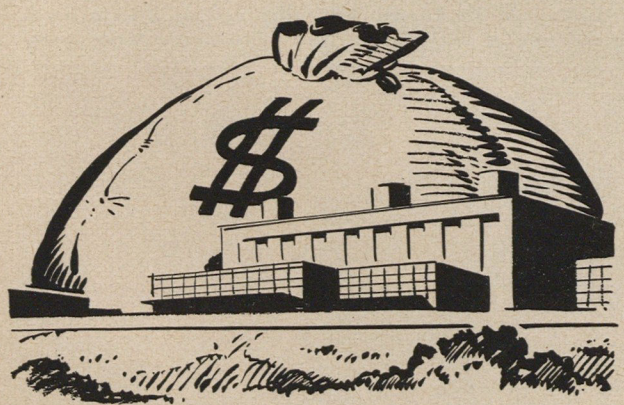
WHAT'S DOING

Every working day at Pratt & Whitney Aircraft nearly 50,000 gallons of gasoline are consumed.

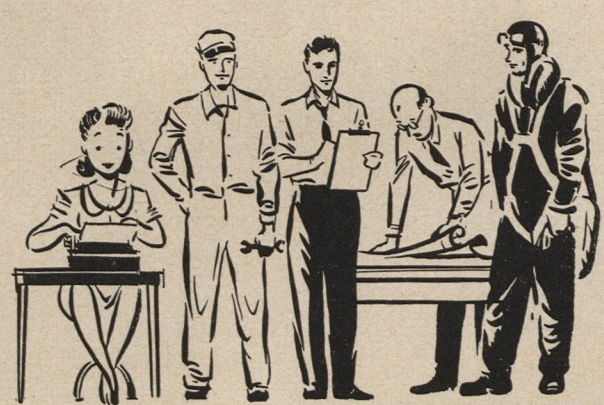
That's one way of saying that we do a lot of engine testing. But it doesn't begin to tell the complete story of Pratt & Whitney's test program. That program began in 1925, when we built our first Wasp engine. It has continued and expanded ever since. Twenty-four hours a day, six days a week (and often seven), scores of tests are being conducted on complete engines or component parts. And every test contributes something toward giving our customers better, more powerful, more dependable engines.

We believe that today Pratt & Whitney Aircraft has the finest engine test facilities in the world. These include such items as a multi-million dollar turbine test laboratory (devoted exclusively to testing turbine engine parts), more than a hundred large test houses for running completed engines, literally scores of smaller units for testing parts and accessories, special refrigeration and altitude laboratories, and our own fleet of flight test airplanes.

With these facilities in constant use, our current test program at Pratt & Whitney Aircraft is the largest in our history. Some idea of its scope can be gained from the brief outline on the next page.



Test facilities at Pratt & Whitney Aircraft include more than 200 installations, ranging from a simple test bench to full-scale test houses and a turbine test laboratory. They represent an investment of more than 20 million dollars.



Test personnel at Pratt & Whitney includes more than 1,000 employees — engineers, technicians, pilots, mechanics, clerks and many others. In a year they devote more than 2,000,000 man-hours to our test programs.

at Pratt & Whitney Aircraft?

COMPONENT TESTING

Testing of a new type of engine begins before the first model is assembled. This is "component testing" in which major parts such as cylinders, superchargers, compressors, turbines, burners and others are individually tested to see how they will perform in the finished engine. Then, when the parts are assembled, full-scale testing is less costly and less time-consuming, because many of the "bugs" have already been eliminated. Even after the engine is in regular production, component testing continues to be a mainstay of the development program. Whenever a new part is designed, whenever higher performance is sought, whenever operating troubles develop in service, a series of component tests help to solve the problems. In an average week, well over 100 tests are being conducted on various parts of Pratt & Whitney engines.

COMPLETE ENGINE TESTING

When the first experimental engine of a new type is assembled, a program of full-scale testing is begun to see how well the thousands of individual parts function as a unit. Then the engine must pass the gruelling 150-hour government type test, to be certificated. Here again this is only the beginning, and there is a continuous program of full-scale testing to improve the performance of the power plant under every possible operating condition. So extensive is this program that a battery of 35 full-size test houses are in almost constant use testing experimental reciprocating and turbine engines. Just as an example, nearly 50,000 hours of full-scale experimental testing have been done on the R-4360 Wasp Major type since the first engine was assembled. This does not include many additional thousands of hours of component testing and tens of thousands of hours of final testing of production engines.

FLIGHT TESTING

To supplement the component testing and full-scale testing, we carry on an extensive program of flight testing. We have our own airport, our own experimental hangar, a fleet of half a dozen flight test airplanes, and a flight test staff of pilots, engineers and technicians. Day after day this group puts our engines through the acid test of performance in actual flight.

SPECIAL TESTING

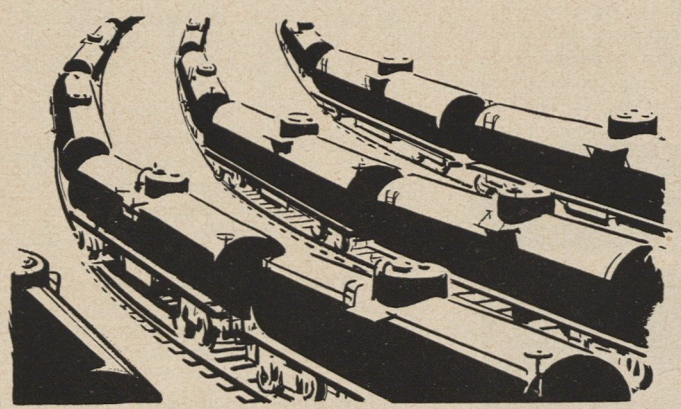
Still another phase of testing arises frequently. This special and somewhat-out-of-the-ordinary type of work is that which our engineers carry on outside our plants. To study icing conditions, several engineers will run tests during a bitter winter atop Mt. Washington in New Hampshire. Others may spend several months in one of our customer's plants working with their engineers on some special test. Still others may find themselves at some remote military base running special tests to lick a particular problem that has arisen there. All these tests help make our engines perform better under the unusual conditions often encountered in actual service.

PRODUCTION TESTING

All the testing referred to above relates primarily to the experimental development of new engine types. But even after they have passed their 150-hour type tests and gone into quantity production, they are subjected to further testing. Every reciprocating engine that rolls off the final assembly line goes through two basic tests. First is the so-called green test of about 5 hours to make sure that it is functioning properly. Then it is completely disassembled and visually inspected for indications of unusual wear or incipient troubles. Following this, it is reassembled and run on the test stand for another 3 or 4 hours to see that it measures up to performance guarantees before being shipped to the customer. Production models of our new turbine engines go through a similar test program. All told some 65 full-size test houses are kept busy on these production tests.

* * * *

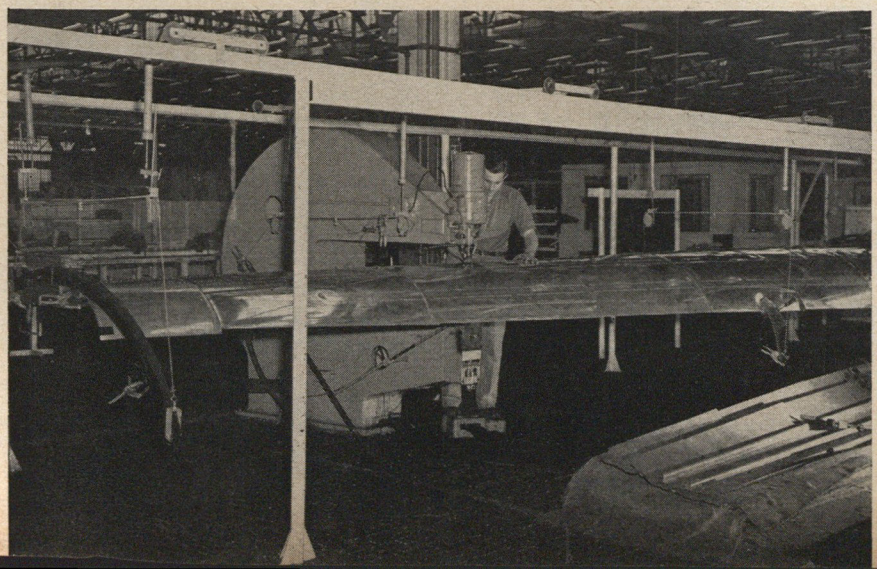
Summed up, Pratt & Whitney's test program involves heavy expenditures of time, money and effort. But it is giving our customers better, more powerful, more "Dependable Engines".



Fuel consumed in our testing program amounts to more than 13 million gallons a year. This is the equivalent of 1,450 average tank cars — more than $2,500,000 worth of gasoline. For cooling purposes, 125,000 gallons of water per minute will go through the turbine test lab — six times the consumption of a city of 250,000 people.

Workmen are shown above joining the two halves of the C-119 center section. Building the huge structure in two parts enables Fairchild to step up production on short notice. The sections are perfect units, already inspected.

Skeleton of the horizontal stabilizer is assembled in a long jig (above). Some workers are inserting the ribs while others are installing electrical wiring before the aluminum skin is applied. Below a riveting machine goes to work on a section of the tail boom. In many instances large assemblies were broken into smaller units in order to utilize the mechanical riveter.



Industrial Pl
A "MUST"

Preparedness in the world of today de

for the advantages of time and spa

By William S. Friedman

The atomic bomb and the supersonic jet have not changed the theory behind Gen. Nathan B. Forrest's cogent observation on how to win wars: "Get thar fustest with the mostest." During the Civil War, that meant plenty of horses and forced marches. Today, it means a lot of things—among them "Industrial Mobilization."

Even a cursory examination of our current industrial scene indicates, for the most part, that the task of conversion to maximum output would take almost as long as it did in the period after Pearl Harbor. This, in spite of the fact that no such cushion of time and space will ever be ours again in case of military emergency.

There are two possible ways in which this situation can be connected. Accumulation is the traditional system, which worked fine when the backbone of defense was a stock of rifles and similar weapons that remained standard for a couple of decades. The life-expectancy of a modern military airplane, however, is only three years, the cost per unit is prodigious and the cost in storage space alone is prohibitive. Stockpiling is therefore definitely out. Under the second technique, which is the only one that appears workable, we can plan, we can make preliminary preparations, we can keep the nucleus of required industries alive and healthy, and we can provide the structure within which they can expand quickly to required output in response to emergency demands.

In line with this thinking, the Air Force and the Navy invited 29 leading airframe manufacturers to present their ideas on the requirements for "Industrial Mobilization," and a number were then ordered to work up detailed plans as to how they would mobilize their own plants to shift from low-volume peacetime production to high-output emergency demand, and to extend their production to new plants if so required by wartime needs.

Phase II of the Industrial Mobilization Plan presented the nation's top military planners with a comparative study of the manner in which the subject airframe was presently produced, and the recommended major changes needed to prepare the plant for true in-

anning—
for Security

pends upon Industrial Mobilization

ge will never again be ours

Industrial Mobilization means that representatives of Engineering, Tooling, and Production work together from the drawing board to the finished plane.

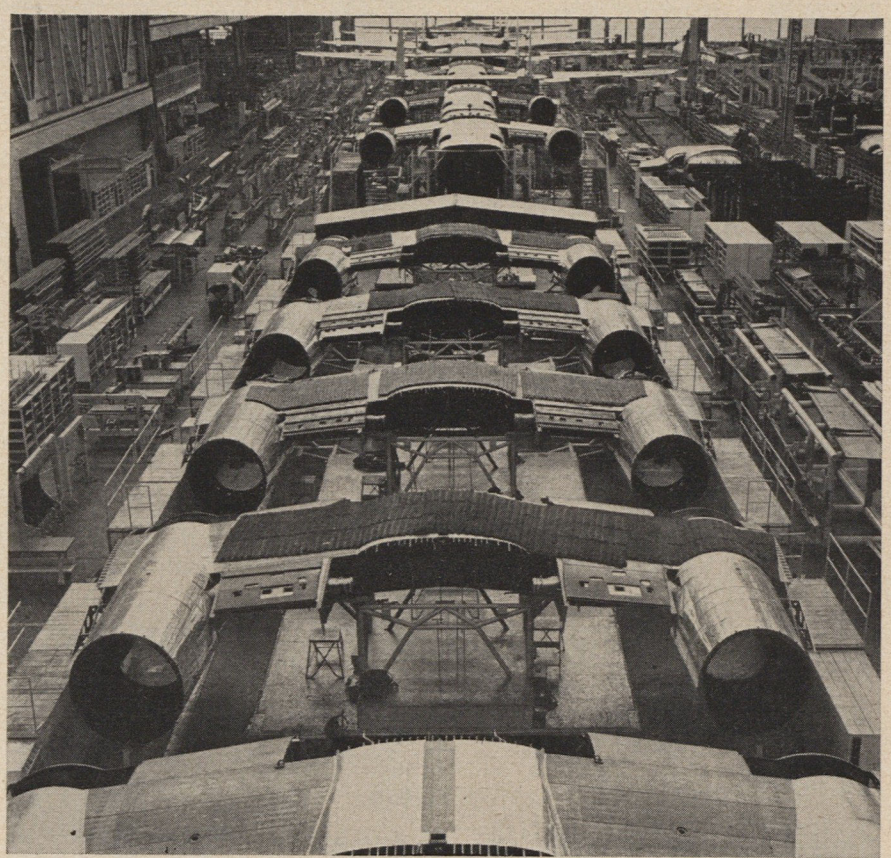
dustrial mobilization. As it turned out, the only plant that has actually put its industrial mobilization study to work was Fairchild Engine and Aircraft's Airplane Division at Hagerstown, Maryland. Luckily, Fairchild arrived at Phase II at a rather unique time. They had been producing the C-82 "Flying Boxcar" which was originally designed for the invasion of Japan. Basic operational experience indicated that certain changes were needed, more power and better vision, etc.

Fairchild management saw in this situation a unique opportunity to plan a new airplane and at the same time a technique in conformance with the requirements of Industrial Mobilization.

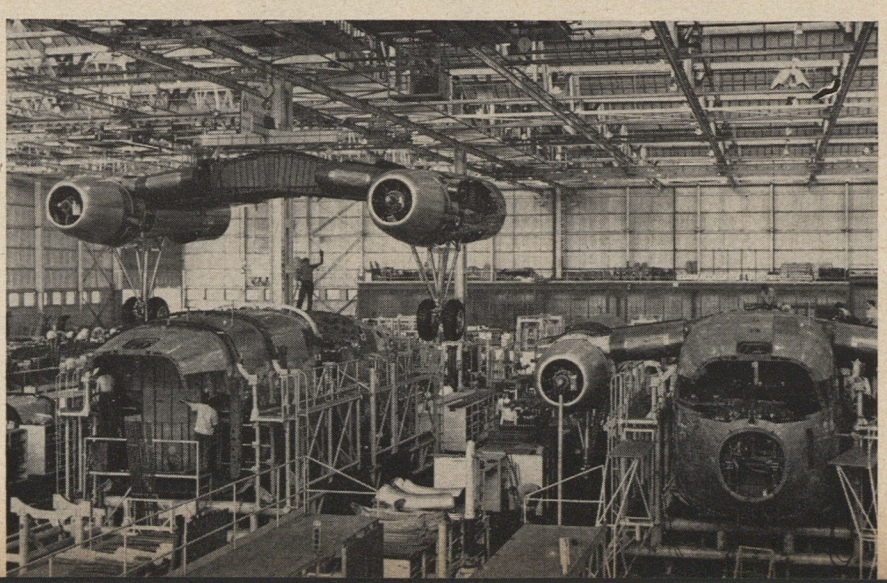
Fairchild's plan for putting Industrial Mobilization into operation, therefore, concerned the C-119B, the new Packet. Everyone connected with the Fairchild plan was well satisfied with what it contained. For within its covers were the directions for achieving what the Air Force wants—a Technique for creating an airplane at low volume in peacetime that is sufficiently flexible so that its output can be increased quickly to meet emergency needs. More important than the airplane it discussed, Fairchild's Phase II report presented a matrix of ideas and information which will be of value to other airplane builders, in that it has now been tried out in actual plant operation.

Before Industrial Mobilization planning made its demands on the aircraft industry, a new airframe was produced in three distinct operations which sometimes appeared to be only mildly related. The Engineering Section created the aerodynamic form suitable for the particular task as laid out by the customer, i.e., the armed services.

For this form, a structure was devised, furnished with power, accessories, etc. This concept, expressed on paper, went to the tooling department, whose job was to devise tools, jigs and other facilities by means of which the engineering section's cerebrations could be expressed in metal. This juncture usually caused much wrangling. Engineering's position—"we think 'em up—you tool for 'em." Tooling's answer usually bore on such practical items as whether it

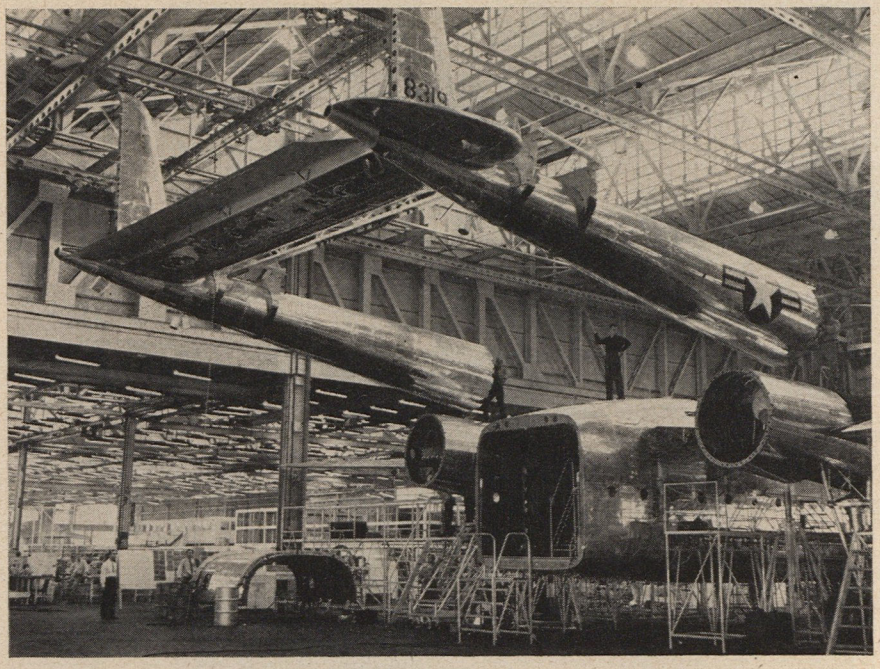


The joined halves of the center section move along the assembly line toward the finished airplanes. The two nacelles are ready to receive the engines and landing gear and in the next step, (bottom), is lowered into place on a fuselage. Soon the whole assembly will be on its wheels and on the way out.

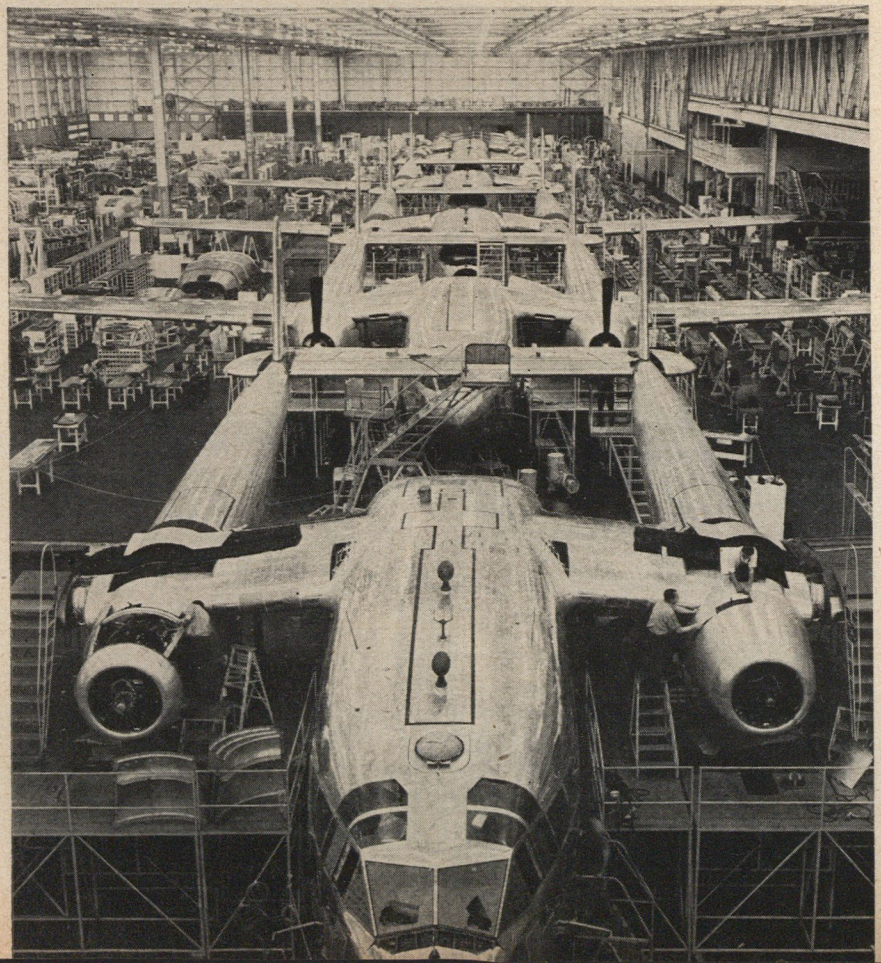


wouldn't be easier to start certain structures with a hole and build the assembly around it rather than drilling a hole in totally inaccessible places.

The compromises reached between Engineering and Tooling, usually satisfactory to neither, then went to Production, whose job it was to apply this tooling by manpower to materials and get work out at a certain rate. If the tools called for master craftsmen with a touch of genius and only common labor was available (as it would be in wartime), the situation might become acute.



Massive tail booms, with basic tail assemblies already attached are lowered into place as the C-119 nears final assembly, while below outer wing panels are installed and final touches given to power plants. Still to be attached are huge clamshell doors at rear of cargo compartment—a final assembly step.



Fairchild's new approach was to closet the three elements together from the time the first line was drawn on paper, making them come up with a produceable airplane stemming from an expandable production technique. When the C-119B came into being, it contained tacit acceptance of a number of basic ideas by all three major elements.

The first of these fundamentals was that as far as the builder of military aircraft was concerned, "peacetime production" was an unnatural or hibernating state and that full wartime production was its natural condition of existence. This may, on the surface, sound like a pretty revolting idea, but any manufacturer who is not realistic enough to accept this as basic should consider some other kind of product, like sport-planes, refrigerators or baby carriages. The second is that the modern military airplane must be built in quantity, on demand, and without excessive sacrifice in performance. To achieve this, everyone concerned with the original planning of the airplane must view it from the output viewpoint, seeing the production line as a main stream fed by many tributaries, and keeping in mind that the flow of the river at its final outlet is a function of all of its sources.

Units of this rate-of-flow are expressed in the term, *elapsed time.* In practical language, the factory itself has an optimum elapsed time, expressed in the number of aircraft per shift, day, week, etc., that it can produce, ready for flight. Since the whole is the sum of all of its parts, no single operation in the building of an airplane can be any slower than the factory's delivery rate at the front door. If the plant produces one Packet per shift, it must, somewhere along the line, complete two engine installations, finish a center section, complete one cargo hold, etc., in the same period. While this doesn't happen in actual operation, the plane must be designed so that the elapsed time in any single operation is less than the gate-rate demanded of the plant.

This concept calls for simplification in design, in structure, in tooling and in production technique. It calls, most of all, for careful observance of the production requirements of Industrial Mobilization by everyone concerned with original planning.

Fairchild's Industrial Mobilization Planning stemmed from a realistic projection of wartime conditions in the possible future, in the light of past experience. They knew, as did the rest of the industry, that wartime airplanes are built by common labor, trained to do a specific task, by housewives and by teen-agers, led by a handful of skilled leaders and supported by a nucleus of trained technicians and craftsmen. Out of this personnel, the management must extract a steady, rising and controllable flow of production. The sole solution to the problem is in the facilities—the tooling and the planning. The plant must contain what its labor largely lacks. The "knowledge" must be in the tools and jigs. The acceleration stems from the fact that the total airplane is divided into many parts, and

that the slowest elapsed time of any single operation is faster than the required completion time of the overall product.

The best example of this time function is the C-119's center section. Structurally, the center section is the major assembly of the airplane, its real spine. The wing panels are attached to it. It holds the engine nacelles; the two tailbooms sprout from it and it is the anchor plate for the cargo hold and command bridge. It is a part that had better be built right.

In the predecessor Packet, the old C-82, the center section was built in an upright steel jig, about three stories high. It was a beautiful fixture. Its frame was foot-diameter tubing, and its general dimensions were at tolerances that would make the average toolmaker proud. The production process involved was in line with orthodox aircraft construction techniques. Sub-sections and fittings were built and brought to the jig where they were incorporated with the usual aircraft tools. The procedure called for a moderate amount of know-how. The jig, however, had a number of production drawbacks—Because of its size it warped and stretched, being larger on a hot day than on a cold one. But even if it had been perfect—if Fairchild had surrounded it by round-the-clock temperature control, the device would have been unworkable in the industrial mobilization program. The unit's elapsed time was too long. Work sat in the jig for a week or more, which meant that if production had to be jacked up to one plane a shift (14 planes a week for two shifts), fourteen of these giant jigs would be required and the whole Hagerstown plant couldn't hold these fixtures and the space required to feed it parts.

The alternate technique was to divide the center section into pieces, all of which would require less than the required factory-output time to complete. If the part appeared complex it was divided and simplified. This meant that a set of RATE OF FLOW could be established, and that this flow could not be stalled at any one point because the smaller the pieces are, the easier it is to apply pressure to a possible bottleneck.

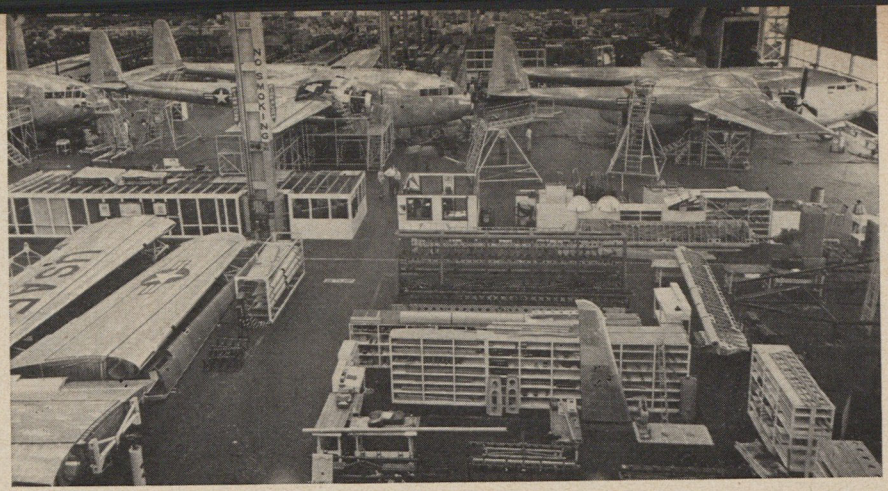
The new center section was therefore designed in two parts, which were assembled on a horizontal jig system also made up of two sections, one fixed and one movable. To this jig were brought only sub-assemblies, completed and inspected, ready for incorporation. The only processing other than final assembly was in the fittings that united the two halves. They were brought into the structure unmachined, and were finished to final dimensions after incorporation. The center-section was built as a low-tolerance operation except for these fittings. This technique guaranteed smooth-mating parts, reduced rejections and cut down the built-in strain resulting from riveting detailed machine forgings into the structure.

This same philosophy went into the whole structure of the airplane. Long before the last C-82 rolled off the line at Hagerstown, the changes needed to conform with Industrial Mobilization plans had been detailed. As each department completed its part of the last old Flying Boxcar, its functions were revised and redesigned to fit the new idea.

When the plant was ready, the theory of fluid production had an opportunity to prove itself. Some of the critics of the whole fluid production idea looked at the revised floor plan and predicted failure. The final assembly line where the airplane, sitting on its own wheels, takes on its last parts and connections, was believed to be too short. The answer to that, of course, was that by the time sub-assemblies came to final assembly, they were complete. Tailbooms arriving for mating were complete units, inspected and accepted, and required only mating and attachment of control lines. This did not call for a lot of time in the final assembly phase, therefore the last portion of the line could afford to be a short one.

This same production theory held for the entire airplane. Each piece came

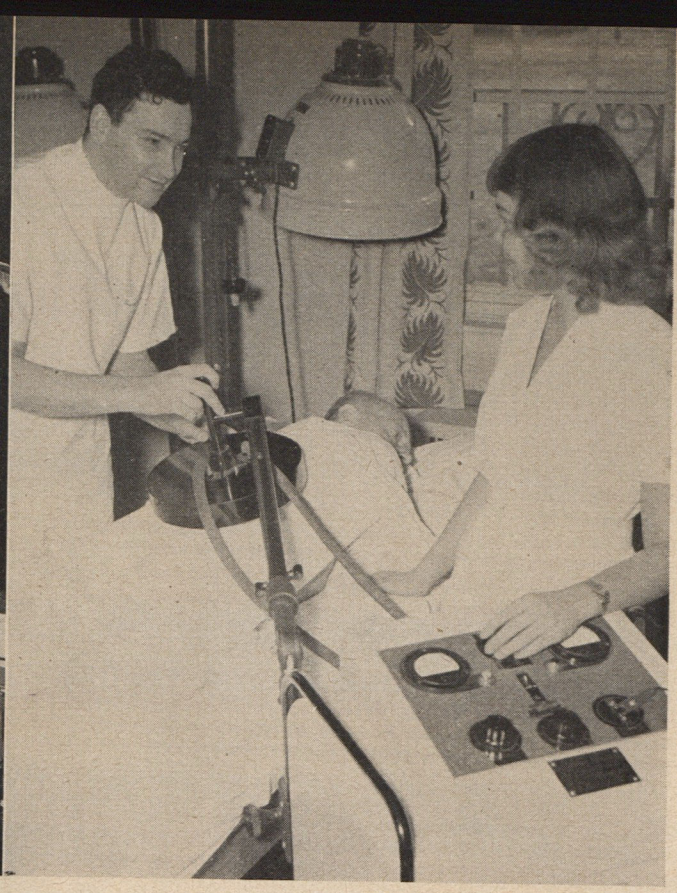
(Continued on page 47)



Almost ready to roll out the hangar door, these C-119s reach the end of the assembly line. A few more days are needed for engine-run-ups, flight tests.

Aloft at last, this is Fairchild's new Packet—the first airplane to be built entirely from plans demanded by the new "Industrial Mobilization" technique.

Dick Neiman, who lost his right hand and his sight during the war has made quite a name for himself as a musician and a disk jockey on his own radio show in Lancaster, Pa.



Ray Frey, former football player and first President of BVA, is shown here operating his diathermy machine. Ray is a physical therapist in the Lebanon Veterans Hospital.

SAVE THE SOFT MUSIC

The Blinded Veterans of America don't want your sympathy—and what is more important: they don't need it. A chance to prove themselves is all they ask

AN Organization of World War II veterans recently pulled into Washington for their fourth annual convention. They checked into two downtown hotels, unpacked their bags and settled down to the business at hand.

The absence of the unrestrained horseplay and heavy drinking which usually accompanies such conventions stemmed only from the fact that the Blinded Veterans Association was just too damned busy to fool around much.

More than half of the 1,600 men who have already lost their sight as the result of injuries received during the second World War, belong to the BVA. The organization was formed to provide assistance to members in overcoming their physical, psychological and social problems and, what may be even more important, to "train" a well meaning but often ignorant and clumsy public which doesn't understand blindness or blind people. As Lloyd Greenwood, a former B-24 pilot and present Executive Director of the organization put it, "The general public thinks you're WONDERFUL if you can blow your own nose and walk across a room without falling flat on your face."

This is no charity organization. A blind man may have special problems but he's not a helpless child. To be a

A successful business man is Tom Kennedy, Jr. of Baltimore, Md. shown here outside his stationery store.

Irvin P. Schloss, Editor of the BVA Bulletin, talks things over with his boss, Air Force Vet Lloyd Greenwood, Executive Director.

Not only golf, but bowling, boxing, swimming, duck shooting and dancing are among the sports of the blind.

useful member of society, he needs training, like anyone else. He may require a few special tools, and he needs self-confidence and a society which will let him prove himself. These are the things that B V A is working for.

The hell with basket weaving. Whatever jobs young men are doing today, the blinded vets are doing too.

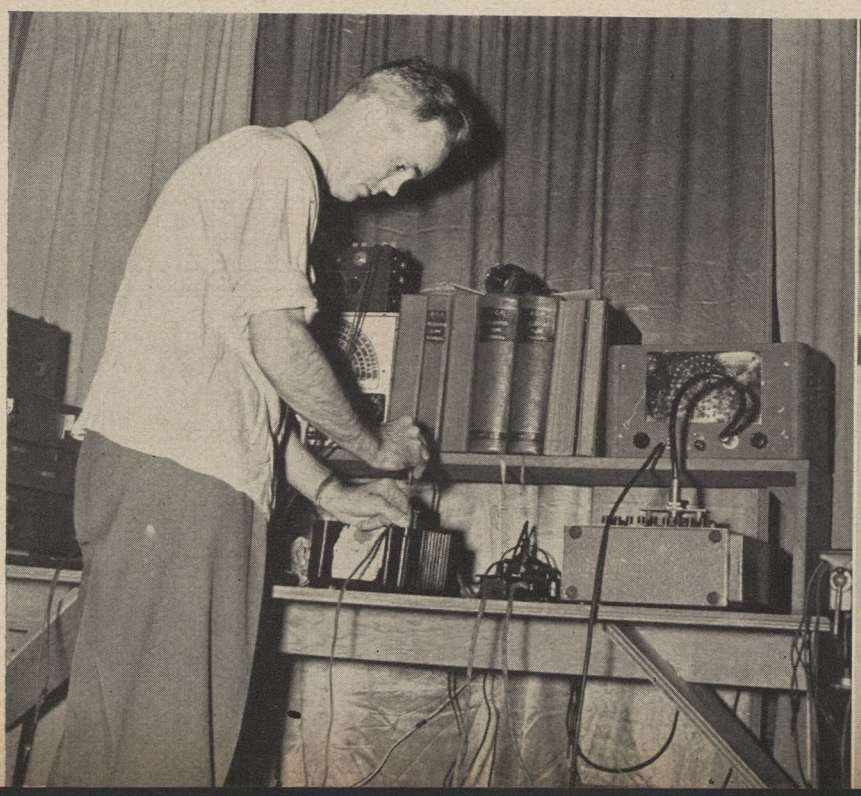
Examine the case of John Paul Moriarty of Canton, Ohio. Moriarty piloted a Piper Cub artillery observation plane. On September 9, 1944, he was shot down behind enemy lines. He was not only blind, but had suffered severe burns, cuts and broken bones. Moriarty was repatriated in February of 1945 and shortly thereafter sent to Old Farms Convalescent Home in Avon, Conn., where the Army does its best to build up the self-confidence of blinded veterans and prepare them for a normal, useful life. They reckoned without Moriarty, whose practical jokes had the place in a continuous uproar. On one occasion he stepped out a second story ledge, got one of his buddies to hold his belt, and scared the hell out of a crowd of Sunday visitors, all, of course, in the spirit of good clean fun.

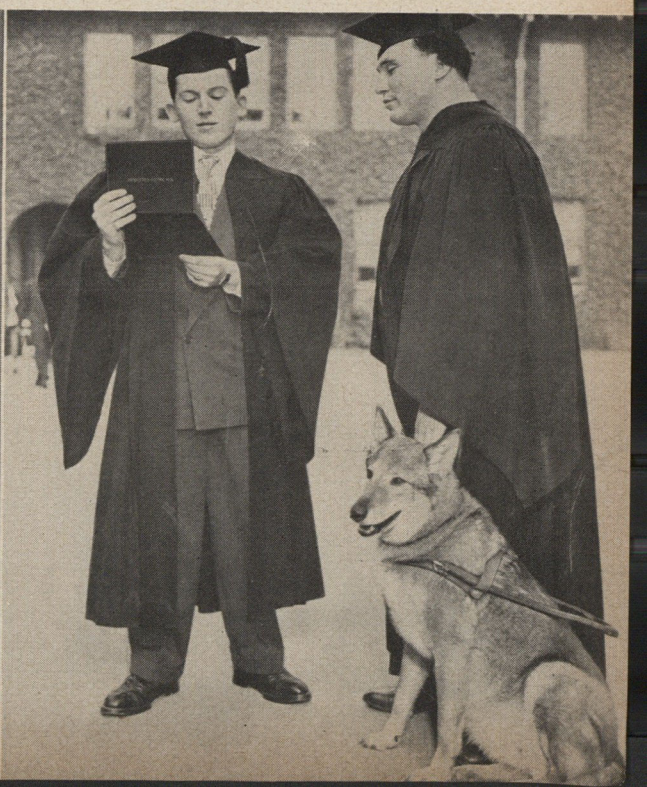
When Moriarty got back to Canton and went around to see his old firm, the Timken Bearing Co., his determination and confidence so fired company executives that they didn't hesitate to give him a job testing materials on a special electronic device. So well did Moriarty do his job that Timken opened its doors to some 40 blind workers, employing them in several of their plants in a number of different, important jobs.

Of course it would be Moriarty who wound up the BVA Convention by introducing the following resolution (passed unanimously): Resolved that the major leagues recruit next year's umpires from the ranks of the BVA whose members can call plays better than the personnel now employed."

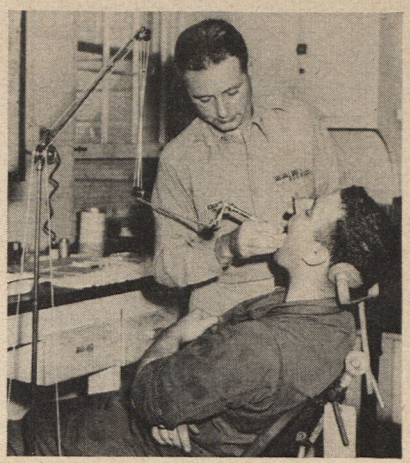
There may be happier families than that of William H. Haase but they would have a hard time proving it. Bill graduated from law school, plans to practice.

Left, Ernest W. Gay, Jr. of Hartford, Conn., works at his job as a radio repairman. Right is Michael Bernay, an Air Force Veteran currently an honor student at Los Angeles City College. Bernay wrestles on the side—our side, we hope.

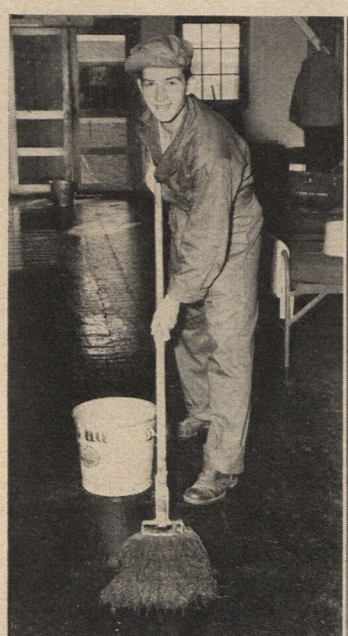




Men of Massachusetts Air Guard (above) met with units from New Hampshire, Maine, Vermont and Connecticut. Combined they made up 67th Fighter Wing.



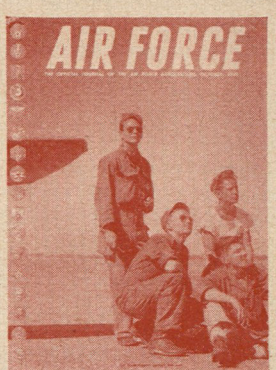
This airman of NY's 52nd Wing spent part of 15 days in dentist's chair.



Two familiar Air Force poses. Above left, Edwin Zilenski, of Connecticut's 118th Fighter Sq. manages a smile just for the camera, while to the right a Georgia flyer stands proudly before his Thunderbolt. Below left, plotters of Ohio's 55th Fighter Wing mark progress of their interceptor units.

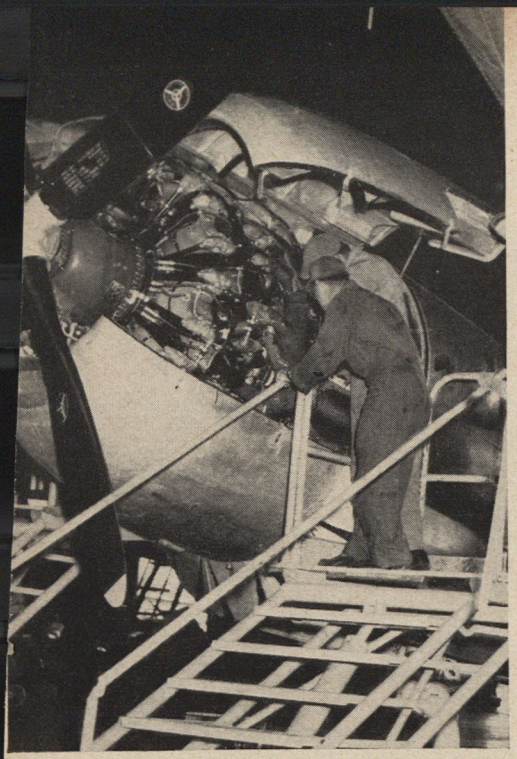
TWO WEEKS

The Air Guard....



The four young men on this months cover along with those pictured here, are a few of the 32,000 Air National Guardsmen who assembled from the 48 states, Hawaii and Puerto Rico this summer for the Air Guard's first try at maneuvers on a Wing basis. The experiment was a marked success. Ignoring state boundries, Air Guard units from clusters of three to six states, met at 20 strategic locations throughout the country to defend their areas from enemy attack. The "enemy" forces were usually furnished by the regular Air Force. Free from organizational problems that plagued the Reserve, the guardsmen were preoccupied only in getitng phone lines connected and stoves working.

In the Pacific Northwest, Air Guard units of Montana, Washington, Oregon and Idaho met for war games series.



Reservist at Wold-Chamberlin, Minneapolis, gives Afrtc plane a 50-hour.

At Smyrna AFB, Tennessee, Paratroopers of the 11th Airborne Division put on demonstration for Air Reservists. Later Reserve pilots checked out on 82's.

WITH PAY

. . . The Air Reserve

Summer encampment in the Air Reserve was marked by two things. First was a dislocation of training schedules caused by a reorganization of forces under the new five-part program. Of 25 AFRTC wings only 15 were able to train as combat organizations. The other ten occupied themselves solely with the problems of readjustment.

Second item of note was the introduction of jet fighter planes in the Reserve. First squadron to be "equipped" was the 52nd Fighter Squadron at Hamilton Field, Calif. Since the 52nd is a Corollary unit, the planes were not really its own, but the property of its parent unit the 83rd fighter squadron. None-the-less, the event was hailed as a Reserve milestone. This year about 23,000 Reservists took part in summer training. Next year, with reorganization behind, the number is expected to be at least 50,000.

Highlight of Air Reserve summer training was checking out of 52nd Fighter Sq. on F-84's. 52nd, stationed at Hamilton, is first of six fighter units to get jet equipment. Below left, Long Beach reservists use instrument mock-ups for ground training. Below, members of Birmingham TC unit take quick evening dip.

Hoag Replaces Quesada as Pentagon Reserve Chief

Founder of Five-Part Reserve Program moving to Joint Chiefs of Staff. New head formerly with American air mission in Turkey

A major shift in high Air Reserve command was revealed last month with the announcement that Lt. Gen. Elwood Quesada, formerly Special Assistant to General Vandenberg for Reserve Forces, would be moved to the Joint Chiefs of Staff to head a special planning project. Presidential approval of the switch, a formality in the re-assignment of officers of three-star rank and above, had not yet been granted but was expected as a matter of routine.

Quesada will be replaced by Maj. Gen. Earl S. Hoag, formerly chief of the US Air Force Group of the American Mission for aid to Turkey. During the early part of the war, Hoag was commander of the India-China Wing of ATC. Later he commanded the European Division of ATC—a post he held until V-J Day.

Quesada's new assignment is not as a replacement for any officer now serving with the Joint Chiefs, according to AF authorities. He will head a new group assigned to studies of undisclosed nature. Prior to his tour with the AF Reserve Forces which began last fall, Quesada was CG of the Tactical Air Command, Langley Field, Va. During the war he commanded the Ninth Air Force's Tactical Air Command in Europe.

His assignment to the Reserve Forces last year came as a direct result of a presidential edict to all branches of the service to undertake more "vigorous" reserve programs.

VA Reveals Method of Figuring Insurance Refund

Formula based on amount of insurance, age at time policy taken out and length of time held. Refunds will go as high as $528

Veterans holding National Life Insurance Policies can now compute the dividends that will be paid them on their refund applications on the basis of a formula made public last week by Carl R. Gray, Jr., Administrator of Veterans Affairs.

The formula is based on three factors: Amount of Insurance; Age at the time policy was taken out; and length of time prior to the policy's 1948 anniversary that policy has been held.

The maximum payment that a veteran can receive is $528. This figure is based on a $10,000 policy in force for 96 months (the longest possible period) on a veteran aged 40 or less at the time the policy was taken out. As the mortality for the age group of 40 and under did not vary greatly, a single dividend rate of 55 cents per month per $1,000 of insurance will apply to this whole group.

Here is the complete schedule:

Age At Issue	*Dividend per $1,000 of insurance for each month in force prior to anniversary date in 1948*
40 and under	$ .55
41	.52
42	.49
43	.46
44	.43
45	.40
46	.37
47	.34
48	.30
49	.28
50	.25
51	.24
52	.23
53	.22
54	.21
55 and over	.20

This proposed scale does not apply to permanent plan insurance which has been surrendered for a reduced paid up amount.

And there was good news from the Internal Revenue Commission which ruled that these dividends are not to be subject to income tax. The ruling of the Commission stated that dividends are only adjustments of the premiums paid.

Meanwhile, the Veterans Administration, which has been deluged with application blanks, has released a fact sheet with official answers to the most frequently asked questions about the dividend payment. Some of the questions and answers are:

What is a dividend?—An insurance dividend is the distribution to policy holders of surplus funds resulting from operations of the mutual plan.

Did the dividend result from fewer war deaths?—Definitely not. Under the law, the Government assumes liability for all claims traceable to the extra hazards of service in the armed forces.

Who will get dividends?—Any person who took out NSLI prior to January 1, 1948, and kept it in force for three months or more.

Relax GI Flight Course Rules

Ex-servicemen may now take flight training under the GI Bill of Rights without the previous requirement of showing "complete justification" that the instruction will further present or contemplated employment. The easing of the rule was contained in Public Law 226, recently signed by President Truman.

Under the new law, a veteran is required only to submit to the Veterans Administration a personal affidavit and two corroborating affidavits showing that flight training will be useful to him in connection with earning a livelihood. In the absence of substantial evidence to the contrary, VA will accept the affidavits as compliance with the law. The new ruling applies only to flight training. The old ban still applies to other courses still considered "recreational".

Under the new policy, flight schools now must be in operation on their own for at least a year before being accredited to accept GI enrollees. This means that unless the one year minimum is met, veterans beginning training in such schools may not receive subsistence allowances.

Purpose of the law, VA explained, is to protect the interests of veterans by requiring schools to have had at least a years experience in providing the type of training they propose to offer ex-servicemen and women.

Reservists to Get No Warning of Expiration of Appointments

Officers and enlisted men of the Air Force Reserve who do not take the initiative in renewing their Reserve appointments before expiration may find themselves on the outside looking in, according to Air Force sources.

The Air Force itself, it has been disclosed, does not contemplate any sort of official warning that commissions and appointments are about to lapse. It will be up to the individual Reservist to determine from his own service record when his appointment is due to expire and to make application for renewal. Appointments are for five years from the date of issuance.

Lack of facilities and insufficient personnel are the reasons given by the Air Force for its inability to give the Reservist the "protection" of prior notice. It was suggested that all Reservists examine their service records to determine when applications for renewal should be made. The AF recommends application by letter be made to the numbered Air Force in the Reservists area, six months before date of expiration.

High Policy Groups Gear Up for Reserve Action

AF board wants Reserve vice commander, Civilian Components Board names Executive Officer, House gets Reserve subcommittee

Waning weeks of the hot Washington summer brought this activity within the topside policy ranks of the Reserve:

▶ An ad hoc committee of Air Reserve officers, after weeks of study, advised against a Reserve Command for the USAF (August 1949 issue) at this time while recommending that the USAF supplant its top Special Assistant's post with an even higher ranking office of Vice Commander for Reserve Forces. It also recommended that each continental air force have a Reserve Commander with no less rank than brigadier general. The committee interviewed some 35 Air Reserve leaders to obtain their opinions before presenting its findings to the Chief of Staff, USAF.

▶ Defense Secretary Johnson's new Civilian Components Board (July 1949 issue) opened for business with the appointment of Col. Luke W. Finlay as Executive Officer. Reservist Finlay, a graduate of West Point and Yale and general counsel for Standard Oil of New Jersey, will be the key man on the Board. Its membership will consist of top-level representatives of the three services and their reserve components. For example, the Air Force will be represented by an Undersecretary or Assistant Secretary of Air, two Air National Guard officers, two Air Reserve officers and one regular air officer. Chairman of the Board is William T. Faricy, President of the Association of American Railroads.

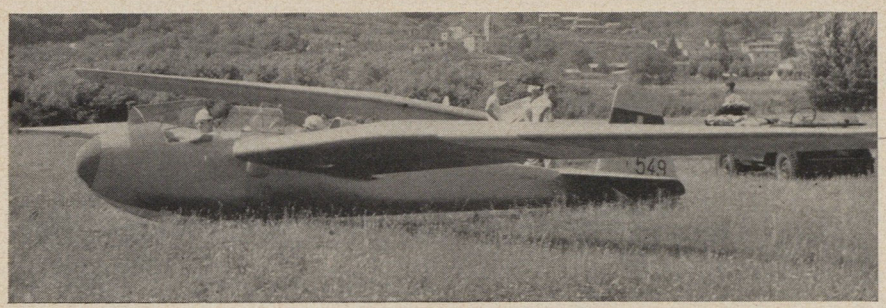
▶ The Subcommittee on Reserve Components of the House Armed Services Committee, at its first meeting, heard a report that decisions of the Civilian Components Board will have "teeth" in them, and suspended activity until that group could get into full-scale operation. The Subcommittee, which is designed to take legislative leadership on Reserve and Guard matters, has Dewey Short (R-Mo) as Chairman.

Points All Figured? Read This

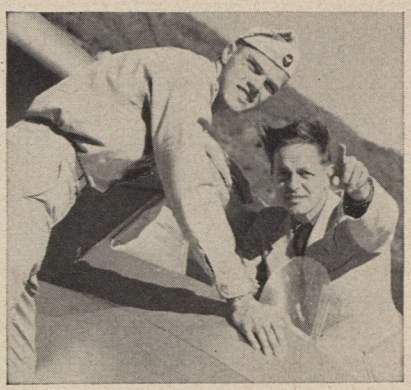
Air Reservists who thought they had mastered the complex riddle of promotions, pay and retirement have been thrown for another loss—HR 5929.

HR 5929 says in effect that the system of points incorporated in the five-part Air Reserve program will not be considered effective until June 29, 1949 instead of June 29, 1948. In other words you have three years from last June to accrue your minimum points, instead of three years from a year ago last June. Furthermore, regardless of how active or how lazy you have been up 'til now you will get fifty points for each year you have been on the Reserve roll call since discharge. All of which is to your decided advantage. But. . . . .

Suppose you have been a member of the active reserve for several years past and have piled up a total of, say, 90 points a year. The new bill says only 60 of those points will count. But you were saving them for a promotion? Tough. Saving for retirement? Tough. You start all over. Which, in consideration of the complexity of the thing, may be all for the best.



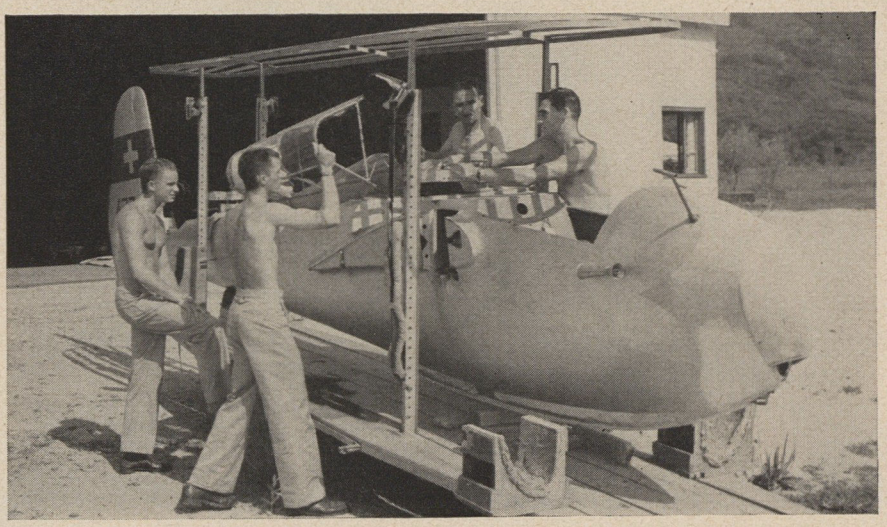
On a gentle slope near Alpine Lake Lugano, a Swiss glider waits for a tow from American Stinson power plane. A CAP exchange cadet in front cockpit lends attentive ear as his instructor gives advice from rear.



Glider mentor Francis Liardon shows cadet Donath where to find drafts.

ALPINE AIRPOWER

Of all the activities of the AF's Reserve Forces, none is more unique than the cadet exchange program adopted by the Civil Air Patrol in the US and parallel organizations in Canada, England, France and Switzerland. This summer 61 CAP cadets spent three weeks in one of the four countries learning how other nations utilize airpower in times of peace. The American cadets on this page were chosen to go to Switzerland. While their Swiss counterparts studied powered flight at Randolph Field, these five teen-agers learned how to fly gliders in the valley of Lake Lugano, nestled at the foot of the Alps on Switzerland's southern border. Trained by instructors of the Swiss Air Force, the Americans began by cautious flights a thousand feet above the field. With more experience they were allowed to explore the peaks and thermals of the mighty Alps. When it was time to come home, they had two things: A glider pilot's license, and a smattering of fraternalism which may in the end be as valuable as their knowledge of flight.



CAP Cadets Fred Donath and James Kaufman (second from left and extreme right) help uncrate a new glider. Not lending much of a hand are Capt. Werner C. Goering (left) USAF escort officer, and Frei Bern, outstanding Swiss teacher.

New Mock-ups Help AF in "Human Engineering"

Engineers and Medics Work Together at Wright to Standardize Cockpit Designs, Control Locations. Hope to Reduce Pilot Error

The Air Force is in the mock-up stage in its long-range program to standardize control locations and other cockpit arrangements in the interests of increased efficiency and safety. The needs of the program were dramatically portrayed a few years ago in an exhaustive study of military aircraft accidents. Ever since, aero-medical experts at Wright Field have been studying the human engineering problems of airmen with a view to direct application of their findings.

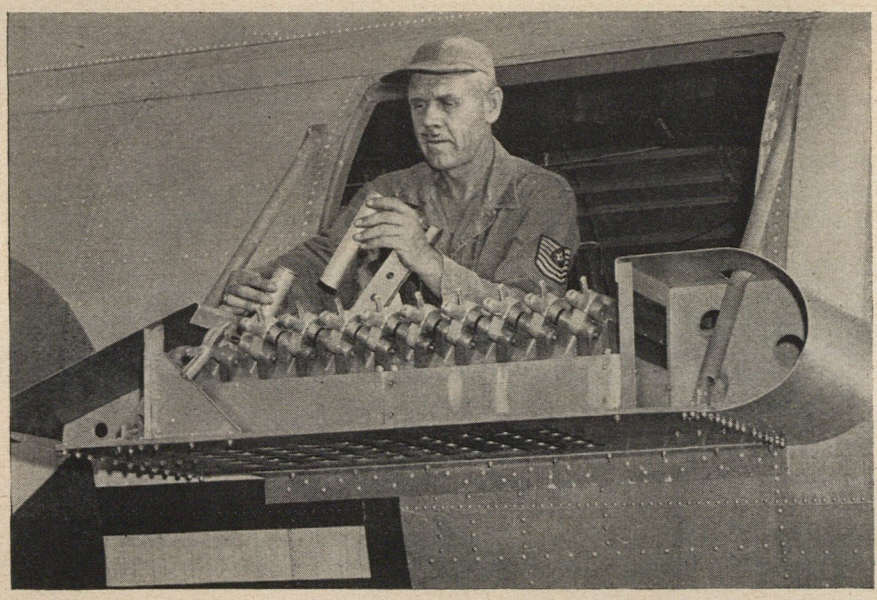
This program now centers in three large mock-ups of cockpits—fighter, bomber and cargo. Built by Goodyear Aircraft Co., they serve as laboratories for experimental design studies, with emphasis on safety in case of emergency. Here, too, new control locations are tested, based on actual recommendations of pilots.

The Unification program has edged its way into the program, too. The fighter plane mock-up, of conventional USAF design, contains a lever for operating folding wings, so that the mock-up may be used for study of cockpit arrangements in Navy fighters.

Largest mock-up of the lot, a wooden nose section of what is believed to be a VHB design now in development, incorporates a radical departure from conventional seating arrangements for pilot and co-pilot. It calls for the pilot to sit alone in the center of the fuselage enclosed in a bug-eye, or canopy-like affair, similar to the cockpit arrangement of a fighter. Improved visability and easier handling is claimed.

In this same mock-up, the co-pilot control panel is behindthe pilot, at a position located near a full-vision window in the left side of the fuselage. Through an opening in the panel he can see the pilot's hands operating the controls, but his position is entirely apart from that of the pilot. Reason: to decrease the odds of a "hit" knocking out both the controllers of the plane. Of course, the co-pilot can take-over complete controls at any time. To the right of him, in much the same relationship as that of pilot and co-pilot in conventional cockpits today, is the flight engineer's position.

The program's tandem bomber mock-up, patterned after the XB-48, has ejection seats for both pilot and co-pilot. The seats slide back and down so that knees will not strike instrument panels at the time of explosive ejection. The co-pilot's seat can swing in any direction, probably to help him in scanning and in feeding vital information to the pilot—and the seat-ejection method used is so designed it will rocket the co-pilot out and clear of the aircraft no matter which direction it is facing at the time of egress.



M/Sgt. Pete Brauscomb of Wright Field, loads AF's new photo-flash mechanism. Cartridges weigh less than three pounds, can be fired at timed intervals.

Shaking Stick Warns of Stalls

To meet special requirements for proper pre-stall warning in high performance military aircraft, a tiny, electrically driven stick shaking device has been developed by the Safe Flight Instrument Corporation.

Actuated by a pre-stall sensing vane on the wing's leading edge, which detects the approach of a stall under any condition of load acceleration or speed, the stick shaking unit provides an unmistakable shaking of the control-stick. For high speed fighter aircraft the stick shaker has been desirable over the normal horn and red light warning.

Weighing but 20 ounces the stick shaker embodies a unique design which permits mounting the unit coaxially around the control stick. The compactness of the unit minimizes interference with the cockpit structure and does not obstruct free action of the pilot's legs.

The stick shaker is actuated by a 5/1000ths hp electric motor driving with a high gear reduction, a large gear which rotates around the stick column. To this gear is attached an eccentric weight which produces the desired shaking with low frequency but high amplitude to simulate in an exaggerated and unmistakable manner the pre-stall buffeting found on certain aircraft.

AF Reveals Secret Photo-flash Gimmick used in NY Portrait

The secret is out—about the Air Force's new package of sunlight which turns night into day and makes possible sharp, clear detailed low-altitude aerial photographs even on the darkest of nights.

It looks like a 20-mm shell in size and shape, probably a few fractions of an inch more in diameter. It shoots out like a machine-gun from a special mounting platform in the tail of a B-17 bomber. The platform is a tray-like affair mounting the shells in virtual chain feed, like you would load a machine gun.

Each of the cartridges weighs less than 3 pounds. Inside is a special chemical powder compound which produces light equal to about 50,000,000 candle power. Automatic release and firing mechanisms permit shooting the cartridges at timed intervals. Shells shoot out away from the plane, but in definite pattern in the sky and explode in series lighting up virtually all the horizon.

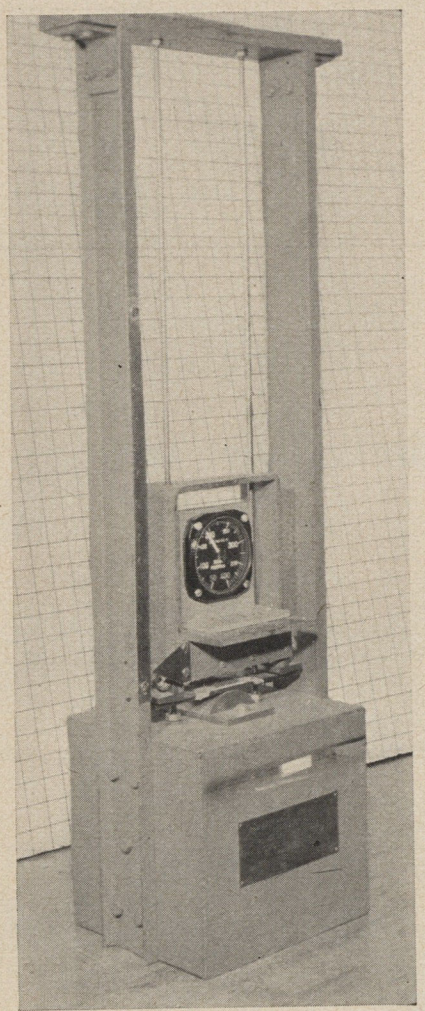
Special synchronized cameras are set to shoot their pictures at the height of the brilliance of the flash explosion. A photo electric cell "snaps" the camera mechanism. It's as simple as that.

Tiny Guillotine at Wright is Really New Instrument Tester

A shock testing machine which looks and operates on the principle of a miniature guillotine has enabled Wright Field Equipment Laboratory engineers to obtain new data on instrument vibrations.

The machine itself consists of a frame which stands about 33 inches high. Parts include: an anvil base, two guide rods, a carriage which moves up and down on the guides, a special mounting platform for the test instruments, an electrical solenoid energizing unit which actuates the drop motion, and several pointers for drop measuring.

Operation is quite simple. Engineers mount an instrument which might be an altimeter, gyro compass or any of the panel family on the platform. The carriage is raised manually into pre-designation (in inches) position on the guide rods. Electrical impulse actuates release. The mounting platform drops, hits a special spring on the anvil, rebounds, causing simulated "shock" conditions. Extremely accurate measurements of the shock frequency and vibration are recorded.



Sensitivity of aircraft instruments to shock is measured by instrument that looks and acts like guillotine.

TECH TALK By Douglas J. Ingells

A whirl test tower for parachutes intended for installation at Wright Field is being moved to Muroc Dry Lake. The tower which would operate at terrific high speeds to simulate the effect of shock openings on parachutes is actually a "Maypole" operation. A long arm on which can be attached a parachute and dummy extends from a central pylon. Engineers say they will be able to study the toughness of parachute material during extreme high speed openings. Fear that the centrifugal force of the revolving test stand might cut loose one of the heavy dummies used and throw it for miles perhaps into congested areas, led to the change in location for the parachute test tower.

Hereafter, according to plans, some of the airplanes Uncle Sam buys will get a new phase of flight testing. After they have been "wrung out" by factory test pilots in airworthiness tests, and then subjected to gruelling service and performance testing by the military, they will get another rough, tough trial. All-weather testing is next on the list. How good is this plane or that one in rough weather? The boys in the All-Weather Division may find themselves turning test pilots. The idea is to take the paper claims and try them out in thunderstorms and other adverse weather.

There is also the chance that the All-Weather Division operated by Air Materiel Command, at Wilmington, Ohio may be moved to Patterson Field. Already the Wilmington site, Clinton County Air Force Base, has been slated for abandonment with only skeleton personnel left. But the big factor in the move is to locate at a field where a large and heavy runway is available to handle some of the bigger planes coming along. A B-36, for instance, couldn't use the field at Wilmington for any length of time. If all-weather tests are to be run on the big bomber it will have to seek another operational base. That and recent economy drives are behind the proposed move.

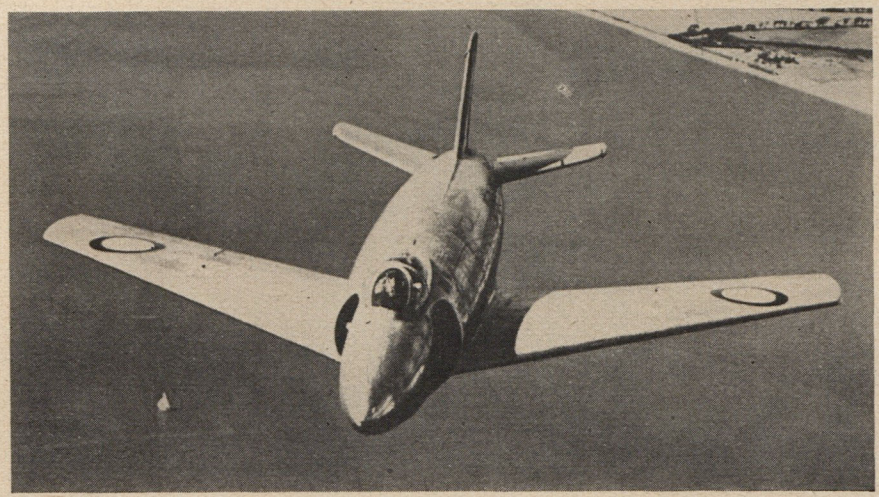
Operations of the All-Weather Division, AMC, during the last year, incidentally, have added much to their research with the automatic airplane and with blind landing and all-weather flying techniques. They have a new C-54 all automatic airplane with modified instrumentation which according to one expert "does everything but fuel itself." That would mean taxiing away from the hangar and lining up for take-off, a phase of automatic flight which used to be manual. Although the airline which used to run from Wilmington to Washington everyday right on schedule still continues at intervals, there are plans for operating flights "on schedule and never mind the weather" between San Antonio and Panama using All-Weather Division planes and techniques.

Latest on the multi-million dollar Air Development Center which is to be a new aeronautical research laboratory for combined activities of NACA, Navy, Air Force and Industry is that the decision of where to locate the center has been the principal holdup. Now it's down to two locales: one in the far west, the other in middle southeast. Both areas have large Federal Power projects nearby. For more than a year and a half all agencies concerned have been formulating their staffs and cadres to take-over and start the operation when "politics" gets out of the way. Of course, too, there's a matter of funds, but every indication is the money will come along.

The Commanding Officer at one of our airfields was walking out on the flight line the other day and spotted a helicopter pilot, hovering his craft about a foot off the ground. The pilot was sitting there reading Dick Tracy. The CO approached: "What do you think you're doing, lieutenant?"

"Me, sir? I'm getting in my flying time."

The CO measured it—1 foot, 3 inches off the ground. Standing still. He shrugged his shoulders, "Well, I guess you call that flying."

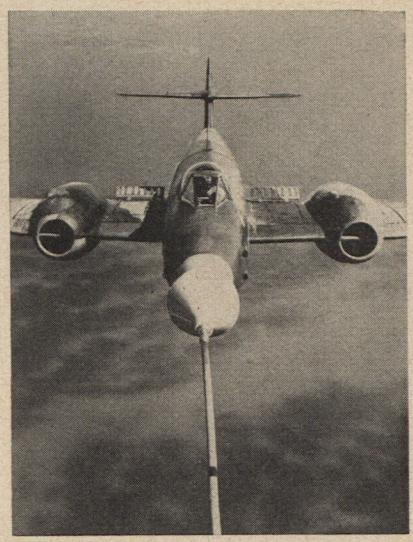


British Jet Claimed Faster Than Sound

According to official British sources, the new Vickers Supermarine "510", above, is one of the first "faster-than-sound" fighter planes to get out of the experimental stage.

Without revealing numbers, it is stated that the RAF is "soon to be equipped" with the 510. Outstanding visual characteristics of plane are wings of extreme swept-back design and a fuselage resembling an expectant F-80.

The ship was unveiled for the first time at the British Aircraft Display in Farnborough, England, last month. It raises once again the old question of which country has superiority in the jet fighter class—the US or England. How 510 would compare with the US Air Force's F-86, which is also assigned to operational units, is anybody's guess at the moment. Still less of a known quantity is performance of latest Russian fighters.



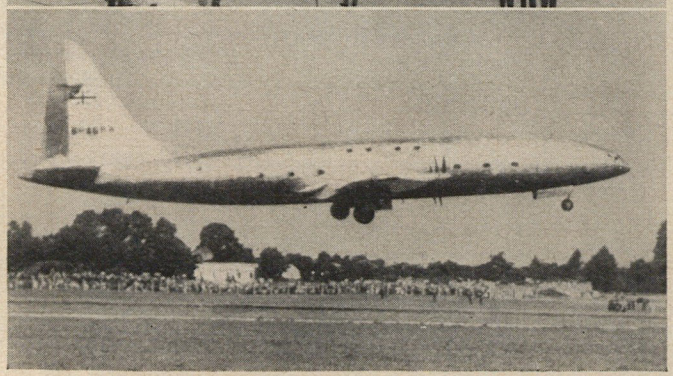
Big Inch Goes Aloft

This fast British "Meteor" jet fighter with "air brakes" up to slow it down takes on fuel from a flying tanker, a converted Lancaster bomber.

A probeshaped fuel intake connected to funnel-shaped drogue at the end of the fuel line is secret of the air-to-air refueling technique developed by Flight Refueling, Ltd. Fighter plane which has limited amount of fuel supply can get replenishments from airborne tanker thus increasing its range and operational endurance.

According to British, system requires highly accurate flying by both the crew of the tanker and the fighter to make contact with airborne "big inch."

AIR PROGRESS in England . . .

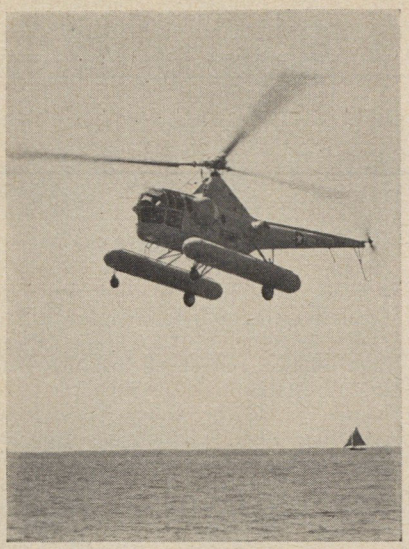


Fastest Airliner Under Test

A plane that may revolutionize air transport in Britain made its test flight last month at Hatfield, England. The new de Havilland "Comet" one of the world's first jet airliners is pictured (left, top) with tiny D.H. "108" test ship used to calibrate transport's tests. The new airliner is powered with four jet engines capable of developing 10,500 hp. Expected cruising speed is 500 mph. at 40,000 feet.

Largest Civil Airliner Flies

Britain's new "Brabazon" which is claimed to be world's largest civil land plane made its first test flight over Bristol, England on Sept. 4. Weighing 130-ton, the eight-engined, propeller-driven airliner is capable of carrying 120 passengers. It has a wing span of 230 feet and its fuselage length is 177 feet. Designed for London-New York service plane has reported maximum speed of 300 mph.

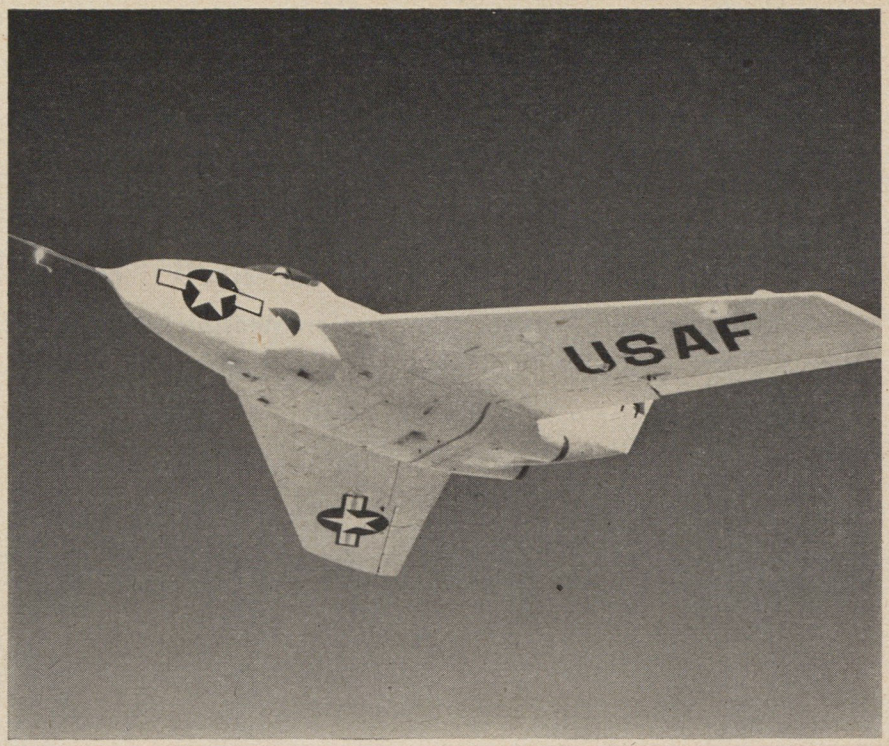


Amphib Helicopter

With its wheels prominently in view Sikorsky's H-5H helicopter the first of the eggbeaters capable of amphibious operations makes a routine test flight.

Built for the Air Force the new type landing gear, a float-wheel combination, greatly increases the helicopter's utility for rescue, and observation.

The H-5H is capable of carrying three litter patients. It has special winch arrangement which permits hauling survivors aboard from stationary hovering position when seas are too rough for landing. The litters are set side-by-side across the cabin in front of the engine and in special arrangement across rear fuselage.



X-4 Flying Wing In Secret Tests at Muroc

Undergoing an extensive secret test program in the skies over Muroc Dry Lake test base is Northrop's X-4 flying-wing type high-speed research plane.

Above picture shows the much-discussed "just below sonic" tool "X" design streaking over the California desert on a test flight, part of the AF's exploratory phase of subsonic testing. At the controls is Charles Tucker, Northrop test pilot.

The plane is the fourth in a series of "X" ships ordered by the Air Force. It was built to continue flight research at extreme high speed originated by the Bell X-1 airplane.

One of the smallest planes ever built for the AF the little ship has a wing span of approximately 25 feet from tip to tip. It is patterned after the Northrop Flying Wing.

A single pod-like pilot's compartment houses elaborate instrumentation. Unusual tail consists of only a vertical stabilizer and rudder. "Elevons" developed by Northrop and a feature of all flying wings serve both as elevators and ailerons.

Test Pilot Tucker has been running flight airworthiness tests for the past several months, but has made no disclosures of performance.

. . . and here at home

AF Shows New Martin

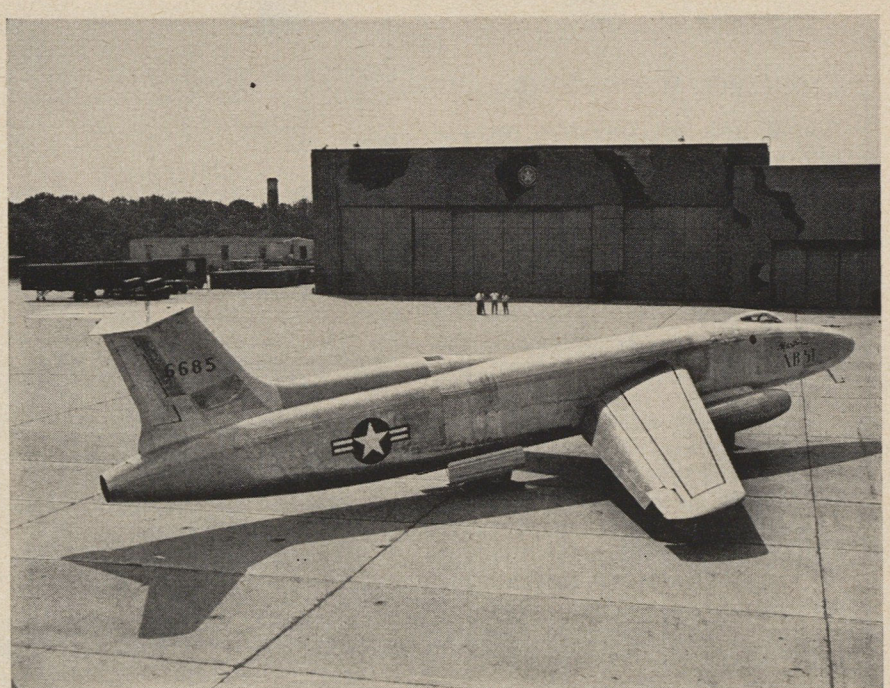
Latest design to join a list of several new jet bombers now in the experimental development stage for the AF is this sleek looking Martin XB-51.

Built by the Glenn L. Martin Company it is designated a light bomber specifically designed for short-range tactical missions in support of ground forces. Taxi tests will begin sometime in October with initial flight scheduled for about 20th of the month.

The new plane is powered with three jet engines, carries a crew of two and is equipped with pressure cabin and pilot ejection seats.

The turbo jet engines are mounted in unique arrangement—two at the lower sides of the fuselage and the third in the rear of the fuselage, visible in picture.

The plane has a wingspan of approximately 55 feet, a fuselage length of 80 feet and stands about 17 feet high. It has swept back wing design and high horizontal stabilizer mounting.



Squadron Activity Stressed in 1950 Program

Board Members Hold First Post-Convention Meeting in Cleveland, Promise Increased Support to Local Units, Approve 'Kickbacks'

President Bob Johnson and AFA officers and directors from 10 states gathered in Cleveland on September 4 and mapped plans for the coming year in a day-long Board meeting at the Hotel Statler.

Attending were C. R. Smith, New York City, Chairman of the Board; Jerome Waterman, Tampa, Fla., Southeast Vice President; William Hensley, San Antonio, Texas, Southwest Vice President; Jay Schatz, Chicago, Ill., Midwest Vice President; Arthur Kelly, Los Angeles, Calif., Far West Vice President; Earle P. Ribero, Albany, N. Y., Merle Else, Minneapolis, Minn., Robert Gross, Harrisburg, Pa., John P. Biehn, Columbus, Ohio, Henry C. Mulberger, Colorado Springs, Colo., Tom Lanphier, Jr., Boise, Idaho, and John Waters, Chicago, Ill. Also present were James H. Straubel, Executive Director, and Ralph V. Whitener, Organizational Director, from National Headquarters in Washington.

In their discussions on airpower policy these AFA leaders deplored as injurious to security the organized opposition to established national policies regarding intercontinental bombing, and efforts from the same sources to minimize the established effectiveness of strategic bombardment in World War II. Board members agreed on the need to present the facts and called for stepped-up activity to counteract the false rumors and distortions of fact being circulated by opponents of airpower and unification.

The Board members concentrated their programming work on measures designed to strengthen the Association's nation-wide network of Wings, Groups and Squadrons. As a result of decisions made at the meeting, AFA's local organizations can expect the following:

▶ A broadened airpower activity program encompassing all forms of aviation—private and commercial as well as military—designed to translate airpower in tangible form to the community level and widen the scope of the Air Force Association. The program outlined at the meeting calls for widespread civic action and full-scale committee work on the part of Squadron members. Procedures for the program are now being worked out at National Headquarters.

▶ A new and stronger relationship with the national organization through the participation of AFA's six regional vice presidents representing as many geographical areas. After hearing reports from the four regional vice presidents present at the meeting, Board members hailed this decentralization program, established at the last national convention, as one of the most important organizational steps ever taken by AFA.

▶ Increased support for Squadrons from the Wing level, since the new regional vice presidents have the authority to appoint Wing Commanders when necessary, and have agreed that bolstering Wing and Group effort is a necessary first step in their regional programs. Also, to help overcome the problem of Wing Commanders being handicapped in their AFA work by lack of expense money, efforts will be made by National Headquarters to provide them with petty cash expense funds.

▶ Opportunities for Squadrons to build up their unit funds, and thus provide the means to help finance AFA's many local activities, through "kickbacks" on national dues received through squadrons. The Board voted to refund to certified Squadrons $1 of the $4 annual membership fee of all new members of AFA who are brought into the national organization through direct enrollment by these Squadrons. These "kickback" payments will be made by Headquarters only to organizations, not to individuals, and only for new national members who join AFA as a result of Squadron activity. Tested during the past year, this "kickback" program is believed to be one of the greatest needs of the Association, since it provides a continuing means for Squadron financing, and should stimulate the overall membership effort.

▶ New emphasis on supplementary Squadron programs to complement the efforts in support of airpower. President Johnson announced that the trend toward establishment of Squadron clubhouses would be watched carefully, and that full information based on actual experience would be provided all units. The Board placed stress on formation of ladies auxiliaries as important to AFA development.

▶ Increased interest in non-Air Force veterans who support the AFA program. A drive for the enlistment of Associates of AFA, as provided at the last national convention, can be expected shortly. In addition, provision has been made for granting Honorary Memberships, both local and national, to non-Air Force people who have contributed to airpower.

Squadrons are being provided detailed instructions on all of the above points in memorandums from National Headquarters.

Board members gave considerable attention to plans for the 1950 national convention and general convention policy, and to an evaluation of the 1949 convention and its National Air Fair in Chicago. The Air Fair, which is acknowledged to have been "the greatest air exposition ever presented to the public," was judged by the Board to be one of the most significant events in AFA history. The 1949 convention program itself, which also contributed heavily to AFA's national airpower program, was considered to be so well-balanced as to serve as a pattern for future national gatherings. The Board passed a resolution commending Chicago members of AFA who served on the convention committee for their efforts in making the event a success.

A financial analysis of the 1949 meeting, presented to the Board, showed that while the Air Fair was a break-even event, fixed costs of the convention itself, exclusive of convention functions, were barely covered by the $12 registration fee.

The national convention committee, headed by Jay Schatz as Chairman, and composed of Tom Lanphier, Jr., John Biehn and Gill Robb Wilson, after analyzing the 1949 meeting, announced as a major objective the development of income sources within a convention city which would be adequate to defray costs of convention functions, and thus maintain a popular-priced registration fee.

The Board heard President Johnson's report on response from members to his appeal for $1 contributions to help "burn the mortgage" (see page 2) and was greatly impressed by this significant display of cooperative effort in support of the AFA program.

SQUADRON ACTION NEEDED

The Board of Directors of AFA recently met in Chicago and unanimously voted to establish all AFA Squadrons on the same operating fiscal year, to begin on March 1 annually. This takes effect *immediately*, which necessitates all Squadrons either extending the terms of present officers to March 1, 1950, or electing new officers to serve until that time. This is IMPORTANT, please cooperate. Send AFA Headquarters the names and addresses of your officers. Publication of the names and addresses of all AFA Squadrons in Air Force Magazine is pending on this changeover.

AFA STATE ROUNDUP

ARIZONA

Phoenix: J. Melvin Goodson, secretary of the Arizona Highway Commission, was recently elected commander of the Phoenix Squadron, AFA. He succeeds Ted Cappelen.

The squadron is currently sponsoring an Air Scout program and is pushing its public information program with aid of Williams Air Force Base. An Air Force film, "Operation Vittles," has been shown to several civic groups in the Phoenix area by the squadron, and four other films are available through the courtesy of Williams AF Base. Another objective is to organize a state wing and an auxiliary to the Phoenix Squadron.

CALIFORNIA

Los Angeles: An award for contribution to the development of American air power was presented last month to Lt. Gen. Harold L. George, wartime chief of the Air Transport Command, at a dinner meeting held at 4801 Crenshaw Blvd. Presentation of the award, a plaque, was made by Arthur F. Kelly, western regional vice-president of AFA. The meeting was attended by executives of Hughes Aircraft Co., of which Gen. George is general manager.

KENTUCKY

Ashland: William A. Mordica, Jr., 2256½ Winchester Avenue, was elected commander of the Ashland Squadron, AFA, which was chartered on August 22, 1949. Other members are Tom M. Watkins, vice commander; Claude E. Wellman, secretary; and William F. Houser, treasurer. Council members include: Bob J. Vance, John B. Wagner, Leroy M. Meade and Jack J. Jordan.

MASSACHUSETTS

Taunton: AFA members and members of the AAF of World War II interested in affiliating with the local AFA squadron in Taunton which is in the organizational stage can get information by contacting either David W. Leckart, 139 High Street, Taunton, or Arnold "Mickey" White, Tallman Insurance Co., 19 Broadway, Taunton.

NEW JERSEY

Stirling: Italo Quinto, Plainfield Road, was recently elected commander of the Union-Morris Squadron, AFA, which was chartered on August 22, 1949. Other officers are: Fred Tedder, vice commander; John Joe Thievon, secretary; and Melvin Restivo, treasurer. Council members include: R. Kenneth Hamler, Jr., M. Milton Hudson, Vincent Ruggerio and Frank D. Filippis.

NEW YORK

Staten Island: Public Relations men in the armed services must be altered or the nation will not be able to get the numbers and caliber of personnel needed in Army, Navy and Air Force, members of the Staten Island Kiwanis Club were warned recently at a luncheon meeting at the Meurot Club arranged by the Staten Island Squadron, AFA. The warning was issued by Major Clayton M. Doherty, director of the Aviation Cadets and OCA Recruitment program in this area.

A committee to organize a program of competitive model airplane meets and sponsor trips to metropolitan airports, was tentatively set up recently by Staten Island Squadron. Meeting in the Silver Lake Clubhouse, the group decided that the meets would be run in age groups and would be publicized mainly in Island schools. Vincent Scaturo was picked to head the committee. A report on the unit's membership drive was given by Edward Golden.

Mitchel AF Base: The first Nassau-Suffolk squadron of AFA was organized recently in the Mitchel Field gymnasium. It will be called the Mitchel Field Squadron and membership will be open to all former Air Force personnel of the two counties and military personnel of this base. Miss Lucia M. Gardner of Hempstead is acting chairman.

A message of welcome was delivered to the group by Col. Robert W. C. Wimsatt, commander of Mitchel AF Base. The principal speaker was Gill Robb Wilson, aviation editor of the New York Herald Tribune and a member of AFA. "It is fitting and significant," said Wilson, "that there should be an AFA squadron here at Mitchel, a cradle of air power."

OHIO

Dayton: The Dayton Squadron, AFA, was commended by Arthur R. Modler, secretary of the Dayton Buzzin' Buzzards Control Line Flying Club, in a letter last month to AFA President Bob Johnson for the squadron's efforts in producing a model airplane contest held at Wright Field recently. Previously reported in Air Force Magazine.

"The success of this model plane contest, which had over 271 contestants and approximately 15,000 spectators, was largely due to the active interest and efforts put forth by the local AFA squadron, headed by Dr. J. H. Meyer. They did a splendid job in helping us put this over," according to Modler.

"Their efforts included getting the authorities to permit the meet to be held there, furnishing skilled timmers, personnel and other facilities from their own ranks. Personally, I think the national organization should feel proud of the Dayton Squadron," wrote Modler.

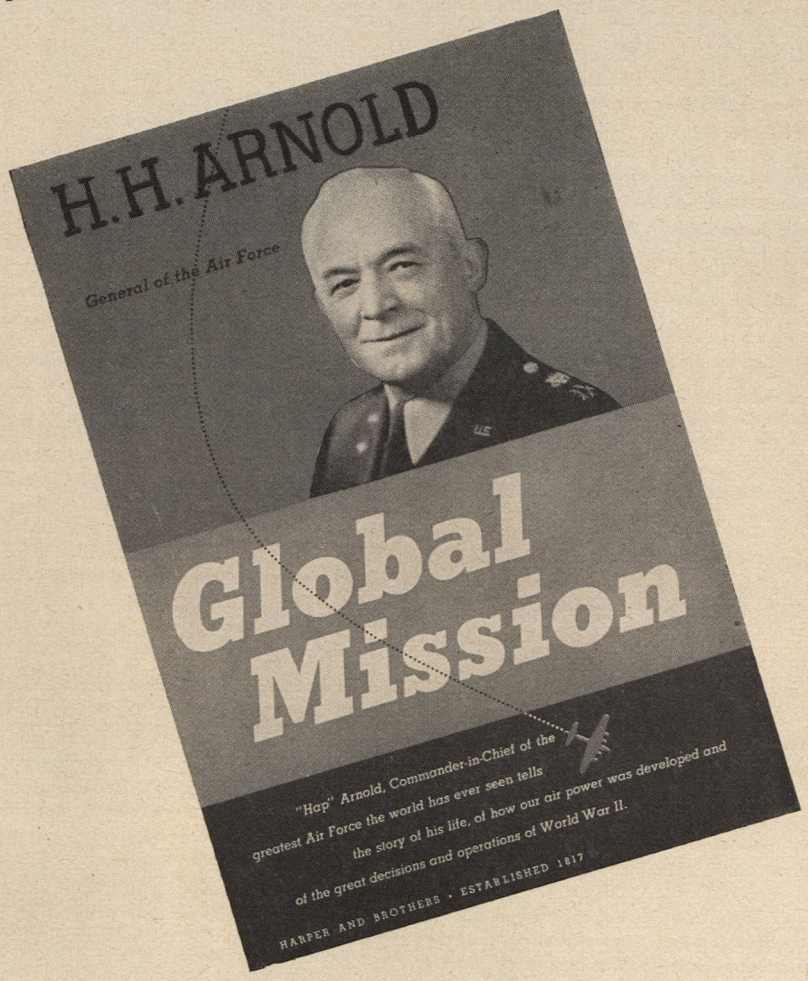
PENNSYLVANIA

Altoona: A two-day centennial air show, sponsored by the Blair County Squadron, AFA, was one of the main events that attracted thousands of visitors to Altoona during their recent centennial observance. The show was held at the county airport in Martinsburg. Col. Roscoe Turner was among the guests. All American Airlines, which uses the airport for one of its regular schedules, honored the city by christening one of its ships, "The City of Altoona." Present also for the show was Maj. Gen. Richard E. Nugent, a native son, who is assistant deputy chief of staff, personnel, USAF. Both the Air Force and the Navy saluted the city during the weekend by sending squadrons from New Hampshire and Ohio bases for participation in the air show and for flights over the city.

Recently-elected officers of the Phoenix Squadron, AFA, discuss squadron's Air Scout program. From left to right: T. W. Childs, vice-commander; Harold Knownick, treasurer; J. Melvin Goodson, commander, and Bill Conard, secretary.

GLOBAL MISSION

By H. H. ARNOLD, *General of the Air Force*



This is the Old Man's story. From his boyhood on a Pennsylvania farm to his retirement at the end of World War II, "Hap" Arnold recounts the things that happened in the salty, human style that one would expect of him. Since the Wright Brothers taught Hap to fly in 1911, he has been inseparably linked to the growth of American Airpower. In GLOBAL MISSION he tells the inside story of how that airpower was developed. The book tells about the earliest pioneers of flight, the air lessons of World War I, how America invented the buzz bomb in 1917, Billy Mitchell's court-martial and Hap's own exile. His descriptions of things which aroused his interest range from the meetings of the Combined Chiefs of Staff to "Joe" Stalin's private bottle. He tells how he got the real low-down on the Luftwaffe at a baseball game and how, for a few horrible moments, the Quebec Conference feared that one of the Combined Chiefs had murdered a colleague. Arnold has written one of the most important books to come out of World War II.

Harper and Brothers ***$5.00***

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MITTED BY CROMMELIN with confession that he was the senior officer present in a meeting with Worth, Capt. Simpler and Lt. Ingrahm when the decision was made to try to get congressional action to help create a situation which would give the Navy a chance to state publicly its views on the proposed Tydings Bill (to tighten unification). Crommelin added that he was of the firm conviction that Cedric Worth was prompted by "highest motives of patriotism and selflessness."

AS SOON AS CROMMELIN GOT ON WORTH'S BANDWAGON, OTHER NAVY MEN GOT ON CROMMELIN'S: Said retired Admiral "Bull" Halsey, "John Crommelin is a very superb naval aviator. When he speaks the American people should listen. I feel very strongly that he is attempting to do something for the good of the country." Echoed Rear Admiral A. K. Doyle, head of the Glenview (Navy) Training Center, "Crommelin always had the country's interest at heart." Admiral Ellis M. Zacharias, (Ret.) was most eloquent of all: "Captain Crommelin has chosen between his career, with its promising future, and the welfare of his country. He has chosen wisely for he can be assured that the glory of increased rank is infinitesimal when compared to the tranquility of peace of mind resulting from a duty well done." Officially the Captain's reprimand was a reassignment from the Joint Chiefs to the Office of the Deputy Chief of Naval Operations for Air.

THAT THE "SITUATION" CROMMELIN SOUGHT MIGHT SOON BE ATTAINED was voiced by Rep. Sasscer of Maryland who stated soon after the Captain's blast that he agreed that Congress should investigate the charges of Naval offensive power being scuttled.

FRETFUL LEST THE HEAT FIRE SOME OF ITS OWN OFFICERS TO STATEMENTS OF INTEMPERANCE, the AF sent a message to all of its commanders: Air Force officers, said the message, will "say nothing about statements of Naval officers in criticism of unification." It would be the responsibility of all AF men, it added, "to continue maximum co-operation in developing an effective defense team." The Navy soon followed with a similar message of its own.

AT MONTH'S END, THE BIG QUESTION WAS WHAT WOULD HAPPEN WHEN CHAIRMAN VINSON RECALLED HIS COMMITTEE OCT. 5. Whatever it would be, one thing was sure. The gentleman from Georgia would lose no time in getting the needle back in the hands it belonged.

3,120 NON-REGULAR, RATED OFFICERS will be relieved from active duty soon as part of economies planned by Sec. Johnson . . . Three of 10 AF bases scheduled for deactivation have received their notices. They are Lockbourne AF Base, made effective September 1, Dow at Bangor, Me., and Grenier at Manchester, N. H., both effective September 30. 18,000 AF civilian job reductions are also planned in the economy program.

ARMED FORCES DAY to be third Saturday in May, Sec. Johnson announced recently. . . . Headquarters of Combined Airlift Task Force was inactivated on September 1. Maj. Gen. William H. Tunner, commanding general of CALTF, will return to his former assignment as Deputy Commander, Operations, MATS, Andrews AF Base, D. C. . . . Normal scheduled transport service over MATS world-wide air route system is being restored step-by-step with return of aircraft, crews and maintenance units from Operations Vittles, Gen. Kuter has announced . . . Thirty reconditioned C-47's provided for Greek AF by U.S. are being flight-delivered to Greece by MATS.

(Continued on page 42)

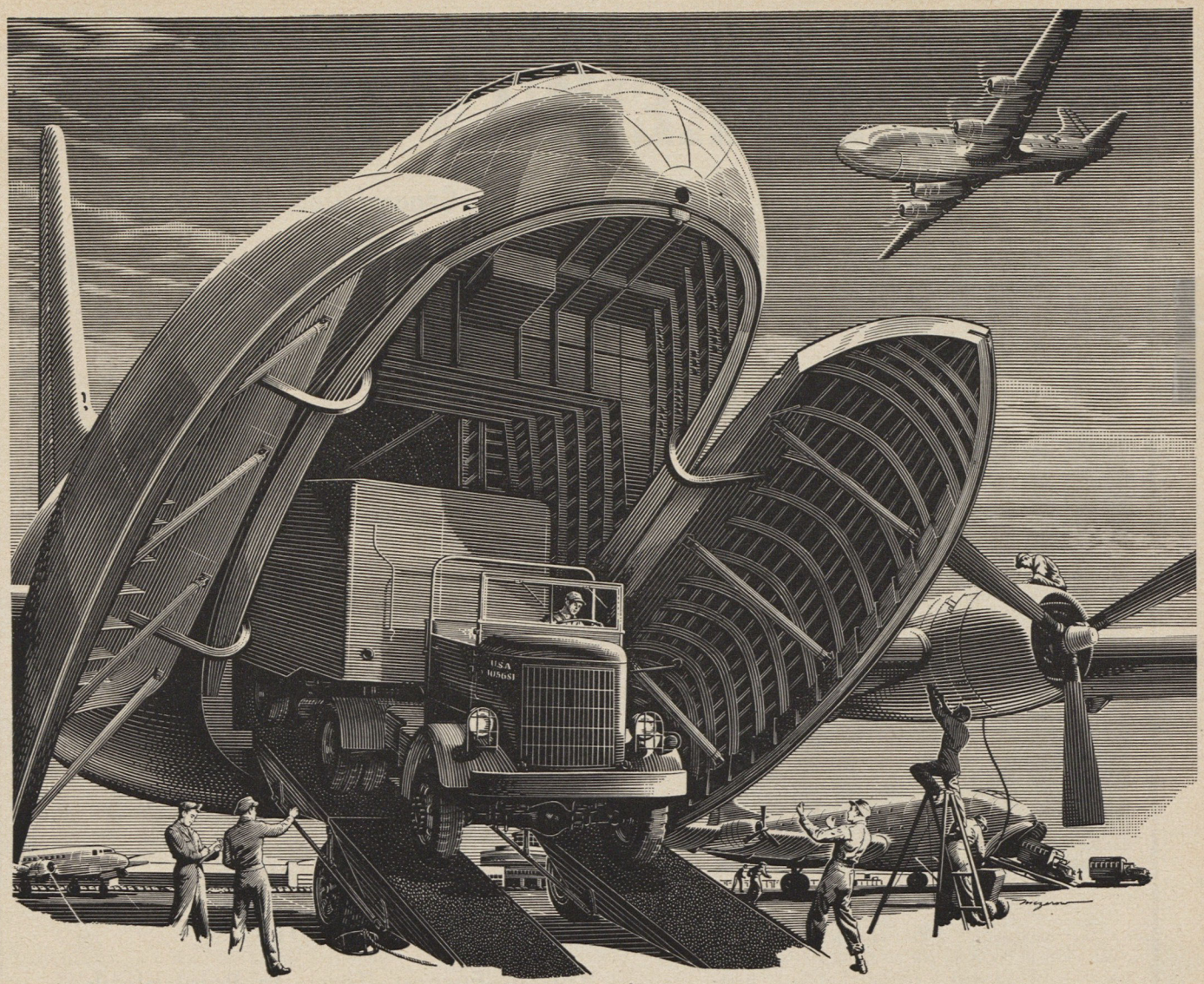
DEPARTMENT OF DEFENSE POLICY ON USE OF MILITARY AIRCRAFT by government officials was announced by Sec. Johnson on September 6 . . . Appointment of Mark Martin, Vice President of Gardner Advertising Co., as special assistant for purpose of studying advertising needs of Departments of AF and Army, was announced last month by Gordon Gray . . . Directorate of Training and Requirements in Office of Deputy Chief of Staff, Operations, USAF, has been abolished. Training Division and Requirements Division, that were formerly component divisions of Operations Staff Section, have been reestablished on directorate levels.

USAF'S CHASE XC-23, twin-engine assault transport aircraft, is being readied for initial flight tests in late September . . . A disposable oxygen mask made of paper and plastic which will cost about 25 cents when mass-produced has been developed by AF in conjunction with University of Washington and H. L. Burns Co. of Portland, Ore. . . . Naval aviators will train eight AF pilots in operation of twin-engine, Grumman-built, SA-16 amphibian, at the Patuxent River, Md., Naval Air Station beginning in late September or early October . . . Detailed soundings of stratospheric temperatures and humidity at 99,000 feet have been obtained with new instrument perfected by University of Chicago scientists, under sponsorship of Office of Naval Research. A guided missile for use of the B-36 in protecting itself against jet fighters is being developed by the government, Dr. Karl T. Compton, chairman of Defense Department Research and Development Board, announced recently . . . New Florida missile base due to be in operation by mid-1951, AF has revealed. (see story on Page 15)

AIR FORCE STRENGTH totaled 421,500 on July 31, compared with 419,300 on June 30. . . . First two nurses to be granted direct commissions in USAF Nurse Service Reserve from civilian life since establishment of separate AF Medical Service were sworn in recently by Maj. Gen. Grow, USAF Surgeon General, and Capt. Verena M. Zeller, Acting Chief Nurse . . . Applicants for aviation cadet programs must have minimum of two years of college and be unmarried, effective October 1, USAF announced on September 8. . . . 300 metal trailers were shipped to three Alaskan Air Command bases last month to help alleviate critical shortage of housing for families of USAF personnel. They will be used primarily for housing families of enlisted men . . . Strategic Reconnaissance headquarters of USAF will be at Barksdale AF Base, La., AF announced on August 29. Headquarters of Air Training Command has been moved from Barksdale to Scott AF Base, Illinois.

A USAF SELECTION BOARD to review records of approximately 520 officers and recommend a limited number for promotion to permanent grade of colonel will convene in three weeks. . . 39 officers nominated by the President for appointment to grades of brigadier and major general have been announced by Sec. Symington . . . 30 USAF officers, recently transferred from Department of Army, have been nominated by Mr. Truman for permanent promotions in Regular USAF.

ADJUDICATION OF CLAIMS OF WAR PRISONERS for cash in cases where insufficient or bad prison food was served will be begun by presidentially-appointed commission. Compensation is at the rate of $1 per day . . . A bill that would set new cut-off date for "52-20" payments to unemployed veterans as June 30, 1950, has been introduced by Rep. Rankin. Bill would bar payments to unemployed veterans who have taken advantage of education or training benefits for one year or more and those out of service more than two years and who are eligible to receive unemployment compensation under any other Federal or State law.



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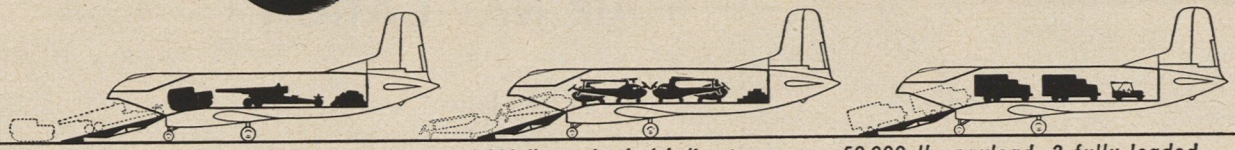

50,000 lb. payload: 8-inch MI gun on M2 wagon, 3 men, misc. equipment.

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50,000 lb. payload: 2 fully loaded 2½ ton trucks, 6 men, misc. equipment.

GENERAL KENNEY REPORTS

A Personal History of the Pacific War by General George C. Kenney

Illustrated with maps by the author
Duell, Sloan & Pearce, Inc. *$4.50*

This is a personal report of the wartime activities of one of America's most successful Air Force Generals. As wartime commander of the Allied Air Forces of the Southwest Pacific, General George C. Kenney was responsible for the rapid growth and phenomenal success of the 5th and 13th Air Forces. His inspired leadership and his humanity evoked amazing courage and loyalty from his men and his visionary, daring approach to the problems which faced him gave birth to a new kind of warfare particularly suited to the special problems he faced. Here, too, is the never-before-published story of the activities of Col. Charles A. Lindbergh in the Pacific Theater and an unforgettable portrait of General Douglas MacArthur.

"A Tent on Corsica", "The Eagle in the Egg" and "Volume II of the Army Air Forces in World War II" are three of the most important "Air Force" books to be published in recent months. Each is interesting and valuable in its own way. From solid history to a great yarn, you can find the kind of reading you like in these books. Why not order your copies now? And while you're building your library, don't overlook "Air Navigation", by P. V. H. Weems—a "must" for those interested in navigation.

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  University of Chicago Press $6.00

- **GLOBAL MISSION**
  By H. H. ARNOLD
  Harper and Brothers $5.00

- **THE EAGLE IN THE EGG**
  By OLIVER LA FARGE
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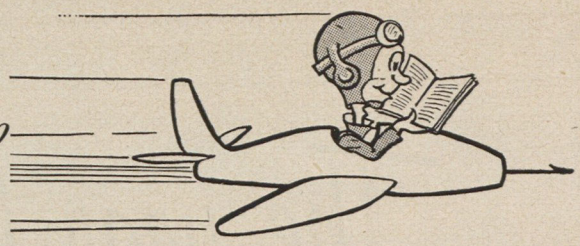

Global Mission,

by General H. H. Arnold.
Harper and Brothers. 626 pp. $5.00

The story of Hap Arnold is indeed the story of the growth of American military airpower. Probably no one single man devoted so much of his life to the Air Force. The problems were manifold. Not only did the military have to be convinced of the utility of the airplane as an instrument for defense, but, once having established this doctrine, General Arnold and his associates had to fight for the kind of air force they wanted. As a matter of fact, we never did get a real program for air development until General George C. Marshall became Chief of Staff.

"Global Mission" by General of the Air Force, H. H. Arnold is not an autobiography. In discussing the possibility of his writing a book, General Arnold told Harry Hopkins, "I (feel) that someone must write the history of the Air Force in such a manner that the real problems, the heartache and high level troubles would be spread out for future air leaders to read and heed."

"Global Mission" achieves this goal. Arnold has outlined innumerable conferences, tabulated conclusions, discussed differences of opinion within the Air Force and between the Air Force and other branches of the military. He has accomplished his job so well that he has written a book without a personality. One can learn a lot about H. H. Arnold, Commanding General of the U. S. Army Air Corps, but where is the story of the Old Man himself? We missed him in reading "Global Mission," but we gather that he planned it that way.

The story of American Airpower is there. Perhaps not all of the story, but enough of it to give the reader a good idea of the slow and painful birth that finally during World War II, gave us the world's greatest air fleet.

A dominant figure in that early struggle was, of course Billy Mitchell. General Arnold recounts the story of his fight for airpower and of his court martial and disgrace. "There were three Billy Mitchells," Arnold writes. "There was the man they court martialed . . . who wouldn't rest until he bacame a martyr; there was Mitchell the air prophet . . . of highly scientific forecasts. And then there was the third Mitchell, who included the first two but added something. This was the Billy the public loved and whom the Air Corps loved."

Hap was in from the beginning. Back in 1911, Arnold was a fresh, second lieutenant just out of West Point. His only worry then was how to become a first lieutenant. The War Department asked him if he would be willing to volunteer for training with the Wright brothers in Dayton. When his commanding officer told him that it was a fine way to commit suicide, that was all the challenge Hap needed and a few days later he was on his way to Dayton with 2nd Lt. Thomas Milling. The two later became the first qualified pilots in the U. S. Army.

Although the airplane was invented in America and our production techniques generally speaking, were the best in the world even at the time of the first World War, our Allies, perhaps because they got into the war long before we did, succeeded in developing the best combat planes of the day and the fact is that not one single plane of American design ever saw action during the first world war.

We had about 12 aircraft factories, none of them very large, in 1917. They concentrated on building, for the most part, the British De Havilland 4. But production difficulties were manifold. For one thing, the British plans were in meters and centimeters and kilograms and had to be translated into our own feet, inches and pounds. So slow were things going that many officials, high in our own government, were convinced that Europe was far ahead of us not only in design and construction technique but also in flying itself. It was not a propitious start for the USAF.

The years between the wars were years of slow, painful progress. The country was riding an economy wave and public sentiment for world disarmament was strong. Within the drastic limits imposed on the Air Corps by these two factors and the inevitable tug of war between far sighted planners and conservative stand patters, the strategic bombing concepts which finally formed the basis of our Air Force as a military instrument slowly evolved. By the time the second World War broke out in Europe our Air Force was more or less committed to the principle of daylight precision bombing—a principle they had to defend not only within our own government but among our Allies as well.

Precision bombing meant the B-17, and the decision to build our Air Force around this plane in the early days of the war met stiff opposition in Navy quarters. The Navy thought Strategic bombing a fallacious concept—the money ought to go to battleships and whatnot (mostly Navy what-not). Arnold himself had proved to his own satisfaction through experiments at Muroc, Calif., that precision bombing was the key to the strategic use of airpower. His decision was confirmed after the war by none other than General Hermann Goering himself, who, when asked by General Spaatz which had been more effective in damaging the ability of the German nation to wage war, saturation bombing or precision bombing—gave the credit to precision bombing. Said he: "Destroyed cities could be evacuated, but destroyed industries were difficult to replace."

If General Arnold intended to point up the domestic difficulties involved in establishing a healthy, forward-moving Air Force, he has succeeded. And perhaps one can take heart in the face of the current campaign of abuse being hurled at the B-36 in the fact that such things are not new, but standard Navy procedure. The Navy fought the B-17 and the whole concept of strategic bombing in the early days of the war. Even when the Fortress began to prove itself over Nazi Germany, the Navy wasn't convinced—it's main point being that the whole European war wasn't very important anyhow. The Pacific, the *Navy's* Pacific, was the thing and anyone who didn't realize (1) that the real *war* was being fought in the Pacific and combat in the rest of the world was merely window-dressing and (2) that the Pacific was Navy property and the Air Force and the Army had no *right* to interfere by conducting military operations on said Navy property was, in their opinion, somewhat akin to a saboteur.

When the Navy could no longer keep a straight face while reciting its "strategic air power is the bunk" line, it proposed "unification" like this. Admiral Ernest King, Commander of the U. S. Fleet and Chief of Naval Operations, said to General H. H. Arnold: "Trouble with all this rearrangement and reorganization is your Air Force, Hap. If you would take your Air Force and bring it over to the Navy, then the Navy would have an Army in the form of Marines, and with your Air Force *real airpower*. With our battleships, cruisers, carriers, destroyers, and submarines, the *Navy* would be the largest and most powerful force in the world." (Italics ours). Sound fantastic? Listen to what Admiral William Leahy, Chief of Staff to the President of the United States, said on the same subject some time later: "Hap, if you take your heavy bombardment and turn it over to the Navy we won't have any of these troubles about unification, because the Navy will have heavy bombardment, a Strategic Air Force; it will have its close-in air for Tactical Support; it will have its carrier-based Air Force; it will have its Army in the shape of Marines, and it will have its Navy."

The next time a Navy man goes into a song and dance about a "balanced force" you might remember these quotes.

The year that got away—

LONG AGO, he'd planned the year, the day, the hour of his retirement.

But now, a year beyond that date, his desk is still open . . . the weekday trout still in the brook.

What happened? Unexpected expenses . . . Nickie starting college . . . the last of Mom's hospital bills. He never really figured it out. But the happy day he planned was no longer in sight.

A lot of years are getting away from a lot of people . . . because they don't have a plan which helps them save money *regularly*. But there *are* people—millions in the country—who are making the most of the years, by investment in United States Savings Bonds.

It's an easy, automatic way of insuring a financial future, thanks to two simple, *automatic* plans:

1. The Payroll Savings Plan, at the firm where you are employed. You get a bond just as often as you like.

2. If not on a payroll, you can get a bond every month, through the Bond-A-Month Plan at your bank.

Don't let another year—another moment—escape *you*. Sign up today.

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INDUSTRIAL PLANNING—A "MUST" FOR SECURITY CONTINUED

out of its matrix complete, ready to join the next. Thus the complete part went into the sub-assembly, the finished sub-assembly went into its component requiring merely attachment, and the big piece went into the airplane requiring only fastening in both structure, wiring and control. Electrical systems were tested before installation, and the use of multi-prong (cannon-type) plugs made this a simple plug-in process rather than a time-consuming splice and test operation in final assembly.

Once the plant was set up for C-119B production, Fairchild had its M-Day test, piecemeal. Since it was impractical to try even a single shift working at top capacity, each station was tried out individually at its point of personnel saturation. In plain language, each piece and each step was tried out at top pressure, the fixture or operation working with as many hands as was practically possible. By doing this, the minimum time for each operation was actually discovered, and the elapsed-time was finally checked then became a known and proven quantity.

Industrial Mobilization, however, means more than simple and effective tooling. There is still the question of people, power and materials. Of these three, people present the greatest problem. The building of an airplane, like any industrial process, is the application of manpower to materials. In peacetime a factory can usually marshal the required number of skilled and semi-skilled workers. In wartime, however, airplanes are built with whatever hands are available, and these often include those of housewives and old men. The solution to the manpower problem is, in a way, similar to that of production—the creation of simple, single-purpose tools. These tools are designed so that simplified training courses can teach an untrained person to do a single operation proficiently. The courses are based on World War II experience and are aimed at making the individual a proficient riveter, for example, not an all-around genius at aircraft construction.

The term "subcontracting" has become identified with major wartime production; it is the technique of sending part of the airplane outside the plant to be built by another contractor. When to subcontract, what parts, in what order, to whom, and how, is another major phase of I/M planning.

When the number of aircraft ordered by the customer (the armed forces) exceeds the saturated production point of the plant, or threatens to do so, subcontracting must be considered. The parts selected for subcontracting are chosen in a definite order; that order being their importance to the flow of production. The first thing to leave the factory for outside construction on the C-119B are the rear cargo doors, since flight tests on the airplane can be completed without them. Next come other doors and minor sub-assemblies, extremities, control surfaces, etc., working inward toward the fuselage and center section. The theory is that as long as the spinal portion of the aircraft is built in the parent plant, the rate-of-flow can be maintained. If the parts furnished by the sub-contractor are late, they can be appended as they arrive. If the rear cargo doors are missing, the plane can be test flown and even delivered without them, since this is a removable section. If outer wing panels are late, the airplane can be pushed into the test hangar or even anchored outdoors to await the arrival of the assemblies. The parts of the airplane which must be kept within direct control of the parent plant are those capable of clogging the stream of production.

Under I/M it is unnecessary for the sub-contractor even to visit the main plant. All he needs is a "package". This package contains not only detailed drawings of the part he is to build, but also detailed instructions and plans on the tools he will need, the personnel required, the time-schedule to be maintained and, when needed, training courses for the hands needed. It contains a detailed study of the materials required, and tells the sub-contractor where to procure them. The sub-contractor's package extends the prime builder's ideas of Industrial Mobilization into the smaller plant. This means that the sub-contractor's product can arrive quickly, finished and inspected, and ready to go into final assembly.

When the delivery rate demanded by the customer—the battlefield—is so high that *major* elements of the airplane's core must be sub-contracted to prevent reduction in flow, that is the time to build another plant.

Here, the advantages of I/M planning really show up. Simple tools can be pantographically reproduced. The detailed bill of materials, which carefully break the contents of the airplane down to the last rivet and foot of cable, can be run out by simply pushing the starting button of an International Business Machine. "Canned" training courses work as well in Kansas or the Dakotas as they would in Hagerstown. Best of all, aircraft at various stages of completion are shipped to this plant, so that the lag in warming up the plant is minimized—from Day One, there is work at all the stations, and the problem is merely to keep up the desired flow by making sure that no single station, be it riveter or main assembly jig, falls behind the original plant's established elapsed time.

Industrial Mobilization has been achieved at Fairchild within the limits of the plant. They have loaded each fixture and proved it capable of being accelerated from low to high production. They have provided for procurement, training and sub-contracting on a workable basis. Their technique of expansion could produce almost any number of duplicate plants with unique rapidity. They can forecast their needs in manpower, transportation and materials, in plant space and in facilities. Within the plant, Fairchild Aircraft at least is set for M-Day.

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Cover: Air National Guard. Page 13—Bentlay Portrait; Page 20—Acme; Pages 24-27—Fairchild Aircraft; Page 28—Reni Photos, C. C. Knobeloch, Washington Daily News; Page 29—Reni Photos; Page 36—C. W. Brown, Wide World, British Information Services.

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PHOTOGRAPHER, ex-AF, age 34, 16 years experience news, commercial, industrial, motion-pix photography; completely equipped, car; seeks permanent position with progressive organization. References. Box E-T-1 Air Force. 1

JUNIOR ELECTRICAL ENGINEER, age 26, former 4-engine pilot with AF pilot's license, would like position as engineer or pilot. Will consider all offers, go anywhere that family can accompany. Write Box E-L-10 Air Force. 1

EX-AF LT. COL, MAINT. & ENG. OFFICER, age 37, 18 years exp. major airline, CAA Air carrier inspector & airline consultant, desires position with airline or corporation using airplanes. References. Write Box E-M-11 Air Force. 1

EXPERIENCED CARPENTER age 31, married, all around handy man, seeks work in U. S. or Europe. Go anywhere for steady work. Write Box E-G-4 Air Force. 1

EX-AF MAJOR, 34, desires administrative or sales position. 2½ years export experience general merchandise. Prefers non-travel at present. Salary of minimum importance. Will attend school if necessary. Write Box E-L-11 Air Force. 1

FLIGHT INSTRUCTOR single eng. land, sea glider; Ground instructor Link, Metro, Nav, Aircraft & Engine. Have 2-place glider. Desires job as pilot-salesman or instructor with glider. Age 25, married. Ex-AF ROMG. Write Box E-H-4 Air Force. 1

AF VET, former bombardier, 27, married, experienced in shorthand, typing, secretarial work, formerly railroad chief clerk, doctor's secretary, one year's experience in industrial traffic dept., will accept job with future anywhere. Write Box E-H-5 Air Force. 1

AF-ATC VET with 8 years of research, study, training & experience in all phases of airline operations, desires connection with commercial airline or feeder line in or near mid-west. Write Box E-G-5 Air Force. 1

SALESMAN, ex-B17 flight chief, 39, desires line or lines on commission basis for representation in Chicago. Best references. Write Box E-D-5 Air Force. 1

BBA GRADUATE, 26, 5 years college, accounting major, 1 year experience, 2 years office experience, good appearance, neat, aggressive, will travel. Write Box E-S-11 Air Force. 1

EX-AF SINGLE & TWIN ENGINE PILOT suffering from rare blood disease known as fly-itis. Only known cure—flying. Will take anything, anyplace but prefer income tax-dodging millionaire who will overpay. Write Box E-H-6 Air Force. 1

PROFESSIONAL WRITER, experienced medical, fiction, article fields, is also long-time pilot & ground instructor (all ratings current). Air WAC vet., with own car. Location, northern N. J. Write Box E-P-2 Air Force. 1

TELEVISION STUDENT, age 27, completing 1½ years of study & lab work in radio and TV, 1 year college, 2½ years AF radio experience, desires position with TV station, remote unit or radio and TV maintenance. Will travel. Write Box E-K-3 Air Force. 1

ACCOUNTANT, Cost Analyst, Office Manager, 30, desires construction work, 4 years experience largest construction company in West. Former AF Navigator-Bombardier, college graduate, single, will travel. Write Box E-E-10 Air Force. 2

FORMER AF FIGHTER & BOMBER PILOT desires job as executive pilot. C&1 287793 with all ratings, 5000 hrs. 28 years old, 2 years college, free to travel. Write E-J-10 Air Force. 2

PUBLICIST, available Sept. 15, 24, college graduate in journalism, ex-NCOIC Public Relations 1st AAF BU, former regional publicity director of national organization, seeks opportunity in New York area. Write Box E-A-5 Air Force. 2

ANALYST and Statistician, college degree in mathematics, economics & statistics, 8 years experience in economic research, with ATC during war, seeks position preferably on West Coast, but will go anywhere. Single. Write Box E-C-3 Air Force. 2

AFPR SPECIALIST, 26, AB, now in advertising, needs change. Prefer copy cub spot. Philadelphia and vicinity only. Write Box E-C-4 Air Force. 2

SKILLED ADVERTISING, PR, sales promotion manager, wants job with future. Widely traveled with college training. Diversified newspaper, airlines, motion picture, women's wear exp., age 30, single. Write Box E-M-10 Air Force. 2

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Shape of Aircraft to Come

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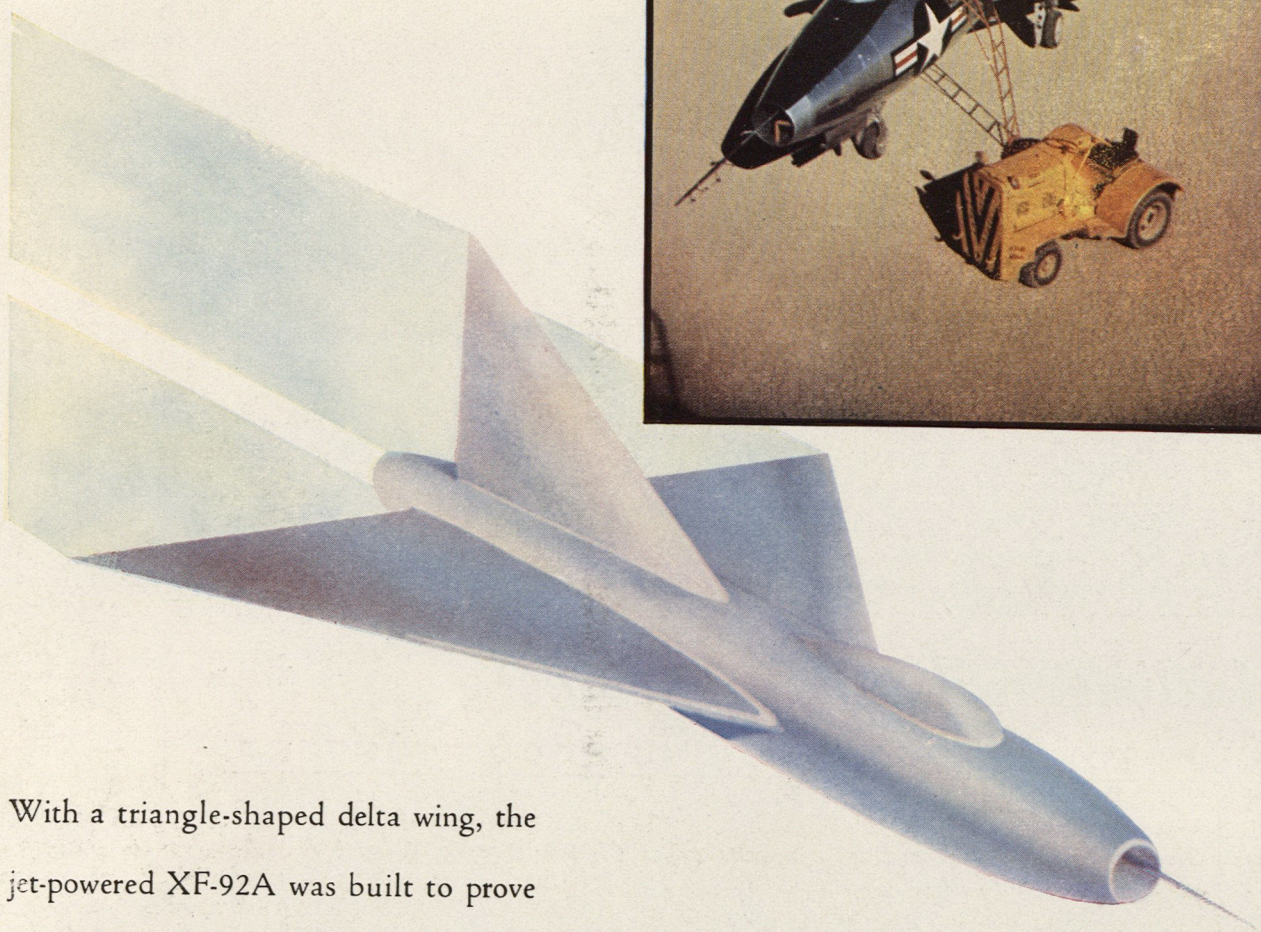
MODEL XF-92A



With a triangle-shaped delta wing, the jet-powered XF-92A was built to prove the design superiority of the delta wing configuration over conventional "swept-back" wing styles. The experimental plane has "elevons" at the wing's trailing edge for aileron and elevator action. Directional control and stability are achieved by a vertical stabilizer and rudder, also of triangular shape.

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