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AIR FORCE

THE OFFICIAL SERVICE JOURNAL



OF THE U. S. ARMY AIR FORCES



SEPTEMBER 1943

S-2
468th Bomb Group
FILE COPY

SEPTEMBER 1943

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AIR FORCE is primarily a medium for the exchange of ideas and information among Army Air Forces personnel. Opinions expressed by individual contributors do not necessarily express the official attitude of the Army Air Forces or the War Department.

AIR FORCE

THE OFFICIAL SERVICE JOURNAL OF THE U. S. ARMY AIR FORCES



September Brief

"INSPECTION concerns every man in the Army Air Forces, from the private who pours gasoline into a plane to the general who ordered its flight." In this manner Brig. Gen. Junius W. Jones, the Air Inspector, explains the need for a medium to disseminate AAF inspection information to the field. To fill this need AIR FORCE this month inaugurates a new department, prepared by the Air Inspector's office, to bring timely tips to inspectors and inspectees. Read "Prepare for Inspection" on Page 18. It should be of interest to all personnel.

BEFORE planes can be employed against the enemy, they must have bases from which to operate. Providing forward airdromes for AAF aircraft in the North African campaign was the job of our aviation engineers. An article which Brig. Gen. S. C. Godfrey, the Air Engineer, terms "the best evidence yet presented on rapid airdrome construction for a large air force in a new theatre," has been written for AIR FORCE by Brig. Gen. D. A. Davison, Chief Engineer for the Northwest African Air Forces. It appears on Page 14.

MAYBE you won't believe it but it's true: Women are flying our combat planes. Yes, the gal pilots in the Women's Auxiliary Ferrying Squadron are now breezing from factory to airfield at the controls of fighters, medium bombers and transports, as well as trainers and liaison ships. Of course, they stick to straight flying—no didos or high altitude stuff—but they're flying them just the same. An article on the first year of the WAFS, and the women pilots' transition from the lighter planes to the combat ships appears on Page 10. Incidentally, the "Flying Jenny" on the cover is Miss Nancy E. Batson, 23-year-old Alabama ferry pilot, who joined the WAFS last October. Her aviation background: CPT at University of Alabama; pilot rating in 1940; control tower operator for Pan American in summer of 1942; instructor at Embry-Riddle School of Aviation. Personal: blonde; 5 feet, 7 inches tall; not married; not engaged. Accent: decidedly southern.

LAST DECEMBER the Air Service Command was reorganized on a business basis because the Command's activities were "more closely related to those of business

management than of military operation." How the ASC functions under this reorganization—which meant principally a decentralization of authority at the same echelon—is described on Page 40 by Maj. Gen. Walter H. Frank, its commanding general.

THE EMPLOYMENT of air power in the Battle of Attu is described on Page 22 by Brig. Gen. William E. Lynd, Army Air Officer on the Staff of the Commander in Chief of the Pacific Fleet. General Lynd, who has seen extensive action in the Pacific, participating personally in many important bombing missions against the enemy, took an active part in the Attu operation.

SEVERAL months ago, the Civil Air Patrol became an auxiliary of the Army Air Forces. In addition to carrying on its coastal and border patrol duties, CAP has now been assigned to the important nation-wide AAF recruiting drive. Its 60,000 members are charged with investigating, examining and qualifying candidates to eliminate the unfit before they are certified to the cadet examining boards. The work of the CAP and its future possibilities are described in an article on Page 46 by Lieut. Col. Earle L. Johnson, the CAP's national commander.

TO A PILOT in the ATC's "special mission" group, Chungking is just a spot on the map where the weather officer owes him six bucks; Cairo, where the British nurse has promised him a date on his next visit; Melbourne, where he has to pick up last week's laundry. It's tough, serious work getting cargo to all points of the earth in record time, but these pilots laugh off their assignments as strictly routine. An article on this group appears on Page 30.

"RIDING the Messerschmitt Maytag," on Page 48, is a straight-forward account by a former cadet of how he felt about washing out in primary. The author is Private Charles M. Macko, who has been reclassified at a basic training center at Fresno, Calif., to become a student under the Army Specialist Training Program. He flunked his final check ride at Thunderbird Field, Ariz., early this year. But, he writes, "disappointed as I am, I can appreciate the Army's aim. It wants the cream of the crop to make the best pilots in the world."

AIR FORCE (formerly the Air Forces News Letter) is printed monthly by authority of Army Air Forces Regulation No. 5-6, Sept. 6, 1942, and with the approval of the Bureau of the Budget, Executive Office of the President. AIR FORCE is published by the U. S. Army Air Forces at the AIR FORCE Editorial Office, 101 Park Avenue, New York, 17, N. Y., U.S.A., for use of personnel of the Army Air Forces and allied activities, and is not to be republished in whole or in part, except by Army field publications, without express permission. Direct communication with this office has been authorized on matters of editorial content, circulation and distribution. Tel., MURray Hill 5-1951; Teletype No. NY 1-2530; Director, Major James H. Straubel, A.C.

CROSS COUNTRY

OUR score against enemy planes for the first six months of the year stood at 3,515 of the enemy destroyed, with an additional 1,127 probably destroyed and 1,280 damaged, according to an announcement by the Commanding General. During this period 846 of our aircraft were lost in aerial combat.

Bombardment planes, meanwhile, carried out their primary mission in every theatre, dropping millions of pounds of bombs on enemy industrial plants, lines of supply and communication, and military and naval installations. Our score against enemy shipping was reported as 121 surface craft sunk, 74 probably sunk and 315 damaged.

All in all, our aircraft flew 89,691 combat sorties in the six-month period. (A month-by-month box score of our aerial combat operations, by theatres, for the first half of 1943 is on the next page.)

RETURN FROM COMBAT

The Commanding General also announced that more than 9,000 officers and enlisted men of the Air Forces with combat experience had been brought back to the States to train our personnel in the actual details they will encounter overseas. General Arnold reported:

"No faculty more thoroughly equipped by long, direct, personal experience could be assembled than this group of fighting men now communicating their hard-won knowledge to their brothers in arms.

"All sick and wounded Army Air Forces personnel evacuated from the theatres of operations are sent to Army Air Forces hospitals not only for medical and surgical care but also for a full study of their cases as relating to aviation medicine. The patient is evaluated both medically and aeronautically to determine for what type of aeronautical duty he is qualified.

"These qualifications are weighed against his physical defects. Reassignment of duties may be indicated. While the physical defects are being corrected, he receives instruction in the new duties which he will undertake. Thus, no part

A report on our combat record, and other developments of the month within the Army Air Forces.

of his training and experience is lost to the Army Air Forces."

The largest single group of our personnel returned from foreign theatres—1,024 officers and 1,654 enlisted men—has been assigned to the Second Air Force. Distribution of returned personnel to other commands was reported as follows:

First Air Force, 267 officers and 361 enlisted men; Third Air Force, 683 officers and 527 enlisted men; Fourth Air Force, 268 officers and 552 enlisted men; Air Service Command, 310 officers and 351 enlisted men; Air Transport Command, 40 officers and no enlisted men; Materiel Command, 42 officers and 10 enlisted men; Flight Control Command, 57 officers and 87 enlisted men; Proving

Ground Command, 35 officers and 3 enlisted men; Antisubmarine Command, 48 officers and 109 enlisted men; Technical Training Command, 152 officers and 97 enlisted men; Troop Carrier Command, 118 officers and 55 enlisted men.

STRICTLY PLATONIC

There is no denying the value of the work being done at the various rest centers, but we can't help passing on the story about the fellow who had been appointed a club director by one of the welfare agencies and was being coached in his duties preparatory to being sent overseas. During one of the lectures the woman in charge held forth at some length on the needs of flyers returning from combat.

"Some of these men," she said, "will be sent back to your club for extended rest periods after having 100 or 150 grueling hours of combat duty. They will come to you in need of relaxation and recreation."

The good lady paused to let the thought sink in. "Now," she continued, "when these combat flyers come in what are you going to give them? Are you going to give them coffee and doughnuts? No, certainly not! Not when there are plenty of good de-hydrated soups."

GLOBAL WAR

Among the prisoners taken in North Africa was a Polish soldier who had been captured by the Russians in 1939, released by them after the German invasion of Russia to serve in the Russian army in 1940, taken prisoner by the Germans in 1941, drafted into the German army in 1942, transferred to North African duty and finally captured by American troops in Tunisia in 1943.

THE AAF TRAINING COMMAND

The new AAF Training Command was activated July 7 to replace and combine the functions of the Technical Training Command and the Flying Training Command. Maj. Gen. Barton K. Yount, former head of the FTC, was named com-



COMBAT BOX SCORE

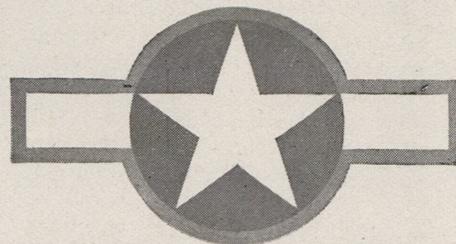
Following is a month-by-month box score of United States Army Air Forces combat operations in theatres of operations for the first half of 1943:

	Aerial Combat Enemy Losses In			On Ground Enemy Losses			U. S. Aircraft Losses in Aerial Combat
	Lost	Prob- able	Dam- aged	Lost	Prob- able	Dam- aged	
January							
8th AF United Kingdom.....	57	34	22	—	—	—	15
U. S. Units, N.W. African AF..	144	63	75	31	6	—	86
9th AF Middle East	11	8	7	—	—	—	5
5th AF Australia	151	55	41	6	7	3	9
13th AF So. Pacific	34	3	1	—	—	7	7
10th AF India	—	—	—	—	—	—	—
14th AF China	8	5	—	—	—	—	1
11th AF Alaska	—	—	1	—	—	—	—
Total	405	168	147	37	13	10	123
February							
8th AF United Kingdom.....	72	28	12	—	—	—	18
U. S. Units, N.W. African AF..	128	37	73	6	3	—	78
9th AF Middle East	8	7	1	—	—	—	3
5th AF Australia	41	21	6	5	—	—	7
13th AF So. Pacific	26	1	1	—	—	—	17
10th AF India	16	14	2	6	—	—	—
14th AF China	—	—	—	18	1	—	—
11th AF Alaska	7	—	4	—	—	—	—
Total	298	108	99	35	4	—	123
March							
8th AF United Kingdom.....	141	43	56	—	—	—	17
U. S. Units, N.W. African AF..	143	50	86	24	10	—	46
9th AF Middle East	17	4	12	—	6	—	7
5th AF Australia	91	39	15	—	3	—	11
13th AF So. Pacific	4	—	—	—	5	—	—
10th AF India	8	4	17	1	—	—	4
14th AF China	—	—	—	—	—	—	—
11th AF Alaska	2	2	—	—	—	—	1
Total	406	142	186	25	24	—	86
April							
8th AF United Kingdom.....	148	43	31	—	—	—	30
U. S. Units, N.W. African AF..	318	84	126	118	2	56	60
9th AF Middle East	152	28	48	1	—	—	20
5th AF Australia	70	16	8	6	—	—	17
13th AF So. Pacific	17	—	—	—	—	—	12
10th AF India	1	2	7	—	—	—	1
14th AF China	16	13	—	—	—	—	—
11th AF Alaska	—	—	—	—	—	10	—
Total	722	186	220	125	2	66	140
May							
8th AF United Kingdom.....	348	127	172	—	—	—	70
U. S. Units, N.W. African AF..	215	51	69	76	46	37	62
9th AF Middle East	20	10	14	9	—	10	28
5th AF Australia	29	10	10	4	4	3	8
13th AF So. Pacific	3	1	1	—	—	—	7
10th AF India	9	10	11	—	—	—	9
14th AF China	58	23	2	14	10	1	—
11th AF Alaska	5	7	—	1	—	—	5
Total	687	239	279	104	60	51	189
June							
8th AF United Kingdom.....	325	96	157	—	—	—	83
U. S. Units, N.W. African AF..	171	42	52	11	1	1	70
9th AF Middle East	40	23	8	8	—	—	2
5th AF Australia	41	4	2	3	6	—	19
13th AF So. Pacific	63	1	—	—	—	—	6
10th AF India	—	—	—	—	—	—	1
14th AF China	9	8	2	—	—	—	4
11th AF Alaska	—	—	—	—	—	—	—
Total	649	174	221	22	7	1	185
Grand Total	3167	1017	1152	348	110	128	846

manding general of the new Command with headquarters in Forth Worth, Texas. "The reorganization was effected," according to the announcement from AAF Headquarters, "to achieve maximum economy of operations, the most efficient utilization of personnel, and maximum coordination of training schedules and utilization of training facilities." In future issues, AIR FORCE will publish details of the Command's activities.

NEW PLANE INSIGNIA

Not long after the conflict opened in the Pacific, the red dot was removed from the star in the insignia of AAF planes because it was being confused with the rising run painted on Jap aircraft. As the war against the Axis moved on, it became apparent that at certain distances the white star against a blue background on our planes, the black cross superimposed on



a wider white cross on Nazi aircraft, and the Japs' red dot, all appeared in the form of a dot because all angular features take this form at great distances. In July the AAF took the lead in removing this lack of distinction by adopting a new insignia consisting of the white star on a circular field of blue, a white rectangle attached horizontally at the right and left of the circle, and a red border enclosing the entire device. Result of tests: visibility at a sixty percent greater range than the old device and the German and Jap insignia, with a distance effect of a long, narrow bar rather than a dot.

MONSTER JEEP

In the way of compliments, we thought they had thrown the book at the vehicle called the Jeep, and figured the matter would have to rest until some fresh adjectives turned up. But we feel bound to report that the enemy has outdone us.

For evidence we are going to quote you the text of an Italian order captured by our forces in North Africa. It was signed by the commanding officer of an Italian anti-tank regiment. And believe us, this is the real thing (the italics are ours).

"Subject: Enemy Jeeps.

"To: Commanders, 1,2,3 Bns.

"It is time to debunk the legend according to which 'Jeeps' seem to be considered *uncatchable monsters*.

"Some anti-JEEP actions which I have instituted recently, even with small groups of riflemen, have led to the capture of three of the vehicles in question and some prisoners.

"By these actions, I have been able to

establish that the crews of these Jeeps, when met by decisive action, make their escape or surrender without opening fire but, when not so met, open fire, inflict losses on us and make their getaway.

"You are requested to draw from the above, arguments designed to raise the morale of your units, so as to secure that, by the cooperation of everyone, we succeed in freeing the lines of communication from this *insidious weapon* of enemy attack. Every commander should give strict orders to this effect."

"EXPRESSING OUR APPROVAL"

Back in the March issue we published an article by Maj. Wade R. Cunningham, Jr., Commandant of Cadets at Foster Field, Texas, entitled "What Kind of Officers Will They Make?" It was one of the best expressions we had seen of the relationship between cadets and supervising officers during advanced training.

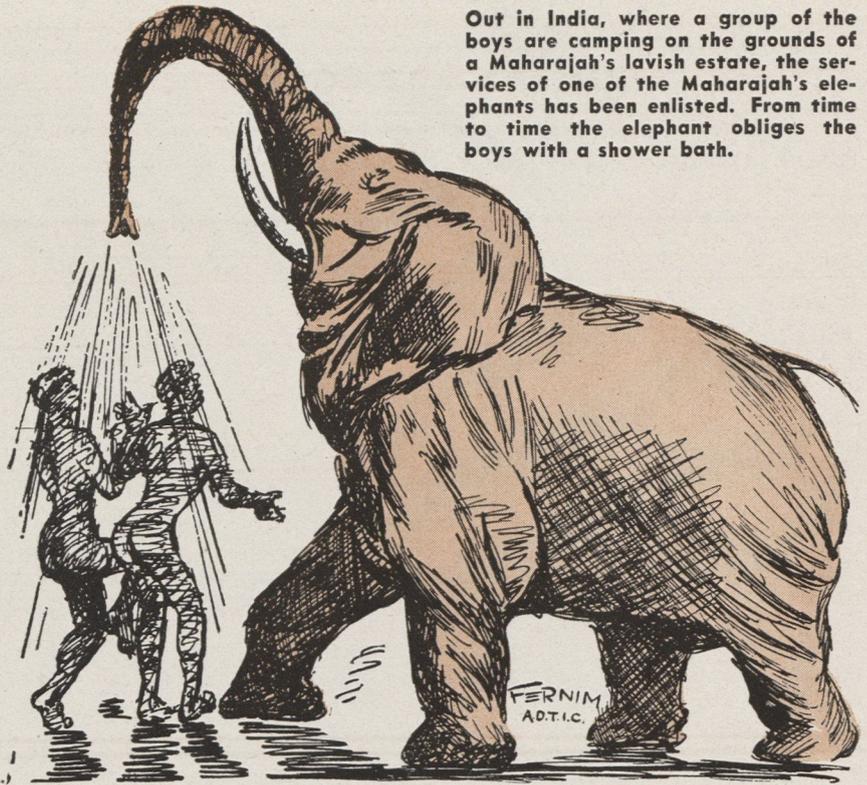
This month we received a note from Foster Field enclosing the photostatic copy of a V-mail letter from "somewhere in North Africa." The letter was addressed to Major Cunningham and bore the signatures of nineteen officers who had received their advanced fighter pilot training at Foster before going on foreign duty. With the approval of the Foster Field CO, we're happy to reprint that letter, as follows:

"Dear Sir:

In reading the AIR FORCE magazine of March 1943, we are very happy to note your article entitled, 'What Kind of Officers Will They Make?' We of the class of 42J who by chance happen to be stationed here at present take this means of expressing our approval of the ideas and ideals set forth in your article. Since our graduation, November 10, we have been several places, learned considerable, and have seen lots. It is our impression that a closer relationship between cadets and their supervising officers in advanced training will pay big dividends in the future. By way of an example, the period between cadet training and the stage of flight leadership at present is so short that experience alone is not competent. Then again the value of air discipline and, at the same time, teamwork and cooperation is best obtained through a complete understanding of all concerned. Naturally this must be first learned during cadet training for the earlier this is grasped, the better type of flying officer will be produced.

"We sincerely hope that all is well at Foster Field; for each of us has fond memories of what we consider the best, and without reservation, the most enjoyable period of our cadet training. We also wish you to convey to all that shared in our training at Foster Field the best of luck and good wishes. Then, of course, any news, items of interest or letters will be gladly received here in North Africa."

AIR FORCE, September, 1943



Out in India, where a group of the boys are camping on the grounds of a Maharajah's lavish estate, the services of one of the Maharajah's elephants has been enlisted. From time to time the elephant obliges the boys with a shower bath.

THAT FIRST MISSION

Flyers who are wondering about their first taste of combat may be interested to know that Lieut. Walter Schol, on his first combat mission, shot down a 35-year-old German veteran who had been decorated seven times. The action took place in North Africa. The German flew a ME 109G, Schol a P-40.

HOW'RE YOU VOTING?

It is one of those arguments which probably never will be settled, but the subject is inviting and we are anxious to do our part. We refer to the question of who is the better combat fighter pilot—the Jap or the German.

Lieut. Daniel Kennedy is a P-38 pilot with a few thoughts on the subject. Kennedy has been slugging it out with the Germans for the last eight months or so, which makes him a veteran in that theatre, and has shot down five enemy planes. According to Pvt. Wade Jones, who sent in this report from North Africa, Kennedy has more than 50 missions and 190 hours combat time to his credit. This is how Kennedy feels about the Jap-German pilot question:

"I read the other day," he is quoted, "that one of our fighter pilots out in the Pacific said the Jap pilots were better than the Germans. Now I haven't been out in that theatre—yet. But it just doesn't add up with the known figures. Some of our pilots out there have twenty or so planes to their credit, I hear. I've got five and the most any man in our Group has is eight. Of course they've been at it longer, but then I'll bet we've had more encounters than they have. So

if the Jap pilot is better than the German, how come so many more of them get shot down?

"Of course, I'd like to go back to the States if I can. But after that I want to go to the Pacific. Maybe I'm wrong but I bet I'd have more than five Zeros at the end of six months out there."

We were glad to get Lieutenant Kennedy's remarks and hope they will prompt further discussion. What about a line or two from the boys who have fought both the Jap and the German?

OUR APOLOGIES

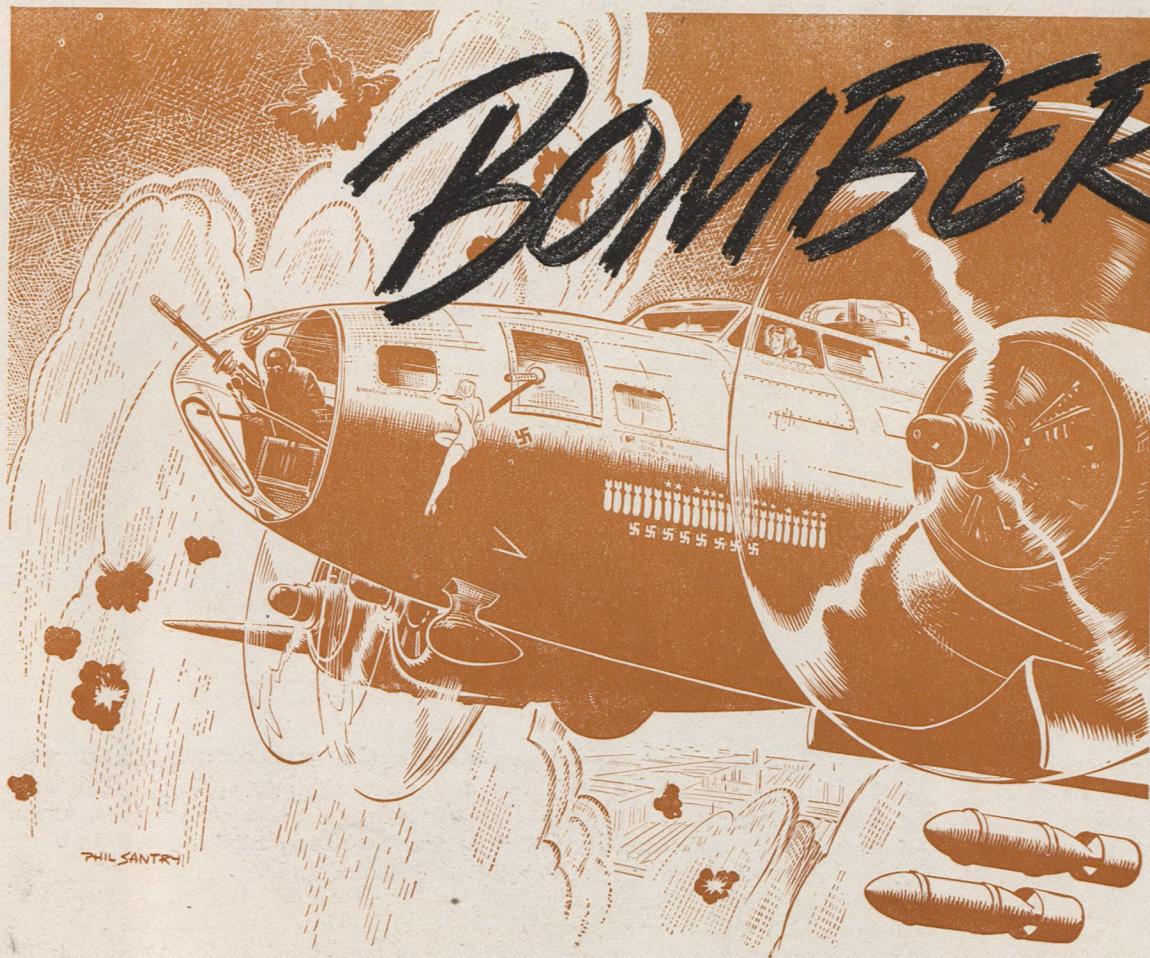
On page 3 of the July issue, we stated that the Order of Daedalians was pioneered "under the leadership of the late Brig. Gen. Harold L. George," meaning the late Brig. Gen. Harold H. George, fighter commander who was killed in the Southwest Pacific in the early months of the war. Maj. Gen. Harold L. George is the commanding general of the Air Transport Command.

THE "MILITARY REVIEW"

We've been asked to inform you that the *Military Review*, quarterly publication of the Command and General Staff School, is now a monthly magazine. The *Review* publishes up-to-date professional military information, thought and doctrine, including translations and digests of important foreign military literature. The subscription price, \$3 per year, should be remitted by check or money order with each subscription to the Book Department, Command and General Staff School, Fort Leavenworth, Kansas.

—THE EDITOR.

BOMBERS



Bombs away—and the bombardier keeps his mind on his business despite flak and other distracting elements.

As Allied invasion forces moved in on the European fortress last month, round-the-clock bombing of continental targets by American and British aircraft based on the British Isles continued with increasing tempo.

Major responsibility for daylight bombing missions remained the every-day job of AAF four-engine bombers manned by crews of the Eighth Air Force. As the

bombings increased—and more and more industrial centers and shipping points felt the blows—so increased Axis opposition. Fighter planes, the best the Nazis had to offer, and flak, often as thick as a blanket, tested the mettle of our airmen.

The Germans were trying every trick in the book—new tactical maneuvers with their fighters, air-to-air bombing, variations in flak concentrations and patterns.

Our formations and tactics were constantly being changed to meet the enemy's new techniques.

Despite sterner opposition our crews and our planes are more than holding up. In a report to Headquarters, Maj. Gen. Ira C. Eaker, the Eighth's commanding general, commented:

"None of the crews has a feeling that they are overmatched. The bomber crews

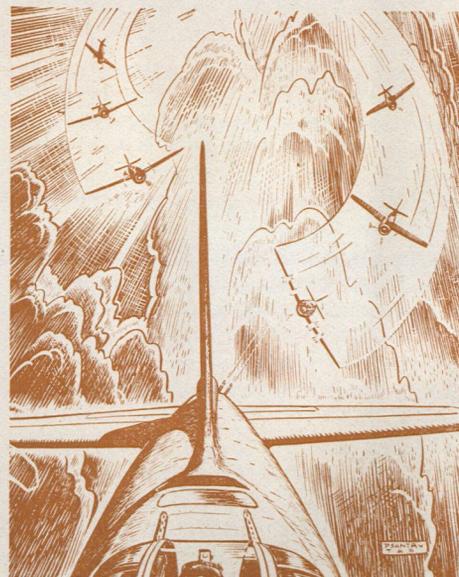
A waist gunner can watch his tracers plow into an enemy fighter. This gunner already has chalked up a swastika.



The belly turret gunner thinks he has the best spot on the ship—mainly because he gets a crack at plenty of them.



From the top turret the gunner frequently gets an eyeful, too. He takes on attacking planes from many angles.



AIR FORCE, September, 1943

OVER EUROPE

have a complete confidence in their ability to take a heavy toll of German fighters. It is not necessary to drive the men to their tasks, as they are enthusiastic about it.

"We employ all possible deception to avoid fighter concentration and radar detection. This is done in order to prevent interference with the bombing by enemy fighters. However, when a hot air battle results, we do not count the mission lost but consider it a victory when we destroy a large number of enemy aircraft."

As always, the primary job was the destruction of production facilities of the Axis war machine, with shooting down enemy fighters a defensive sidelight of the main task.

Coinciding with the acceleration of Allied air operations over the Continent

was War Department recognition of the first anniversary of American aerial participation in the Battle of Europe. On July 4, 1942, AAF crews, manning six A-20s, got their first taste of war over the occupied Lowlands. One year later, our airmen celebrated by taking over several hundred heavy bombers to paste targets at Le Mans, Nantes and La Pallice with 544 tons of bombs. They shot down 46 German planes, scored 36 probables and damaged seven more. Eight bombers were lost.

DURING that first year, the War Department reports, B-17s and B-24s of the Eighth Air Force destroyed or damaged 102 industrial targets, naval bases and rail centers with 11,423 tons of bombs on 68 daylight precision bombing missions.

They shot down 1,199 enemy planes, probably destroyed 525 more and damaged 501. We lost 276 heavy bombers.

Eighth Air Force 17s and 24s flew 7,067 sorties against Axis targets during the year and averaged only 3.91 percent losses. Enemy planes destroyed by these lost American aircraft in fighting before they were shot down are not included in the tabulation of enemy planes shot down, probably destroyed and damage.

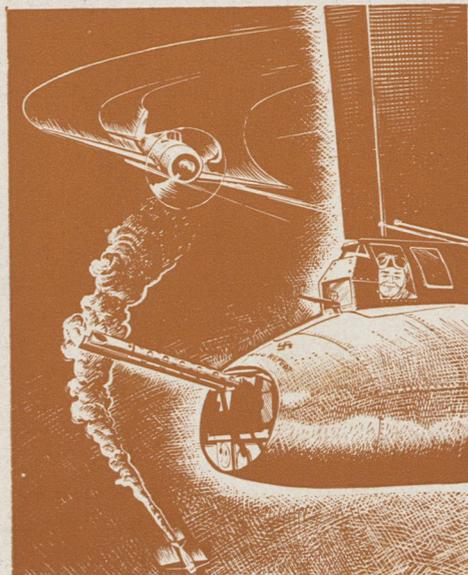
The accompanying drawings represent an artist's conception of a typical bombing raid over Europe. Key positions in the crew of a B-17 are played up in the individual sketches, which were done by Phil Santry of the AAF Training Aids Division on the basis of reports obtained in Washington.

Action as portrayed in these drawings is the type of action that has become almost routine for our airmen engaged in daylight runs over enemy target areas on the European continent. ☆

Navigators have to train themselves to keep at their navigation; a tough assignment when the fighting is heaviest.



If a tail gunner gloats over one he shot down, another tough enemy might be looking him in the face before he knows it.



In some tight spots, it takes the combined strength of pilot and co-pilot to kick the B-17 around in a vitally necessary evasive manner.





Be Ready FOR ANYTHING

By Capt. Charles D. Frazer

Maj. John Mitchell (left) and Capt. Thomas Lanphier, Jr. At top, a P-38 takes off from an airfield in the Southwest Pacific.

YOU can't be too good a gunner," said the Major. "When you jump a Zero up there at 30,000 feet, you have him in range for just a few seconds. Hit him squarely and he'll go down. Miss him and you may get your tail shot off."

"I know a pilot who has flown 200 hours as a wing man and has saved his leader's life many times. But he still hasn't a confirmed victory of his own. All because of poor marksmanship."

"I'd have knocked down at least four or five more Japs myself had I been able to shoot a little better."

And coming from the Major, this really means something, for Maj. John Mitchell is one of the best. He is credited with eight Jap planes, has flown 100 operational missions involving 200 hours in combat, and commanded a P-38 squadron in the South Pacific which has a record of sixty Jap planes destroyed and twelve probables.

Capt. Thomas Lanphier, Jr., was a flight leader in this squadron. Seven planes, seventy missions, 175 hours in combat—that's his score.

Mitchell is soft-spoken, serious, thoughtful. Lanphier is nervy, quick-witted, inclined to tell a story with dramatic gestures. Both were in the South Pacific from January, 1942, until June of this year—first in the Fijis, then the Solomons—and both know what it takes to be a front-line fighter pilot.

"Out there," said Mitchell, "a pilot must be ready for anything. You fly night and day, in rain, fog and every kind of soup imaginable. You fly in and out of short, bumpy fields that have been just chopped out of the jungle."

"The physical strain is enormous. On the ground the atmosphere is hot and humid and enervating, and you are likely to be waiting around in this heat when a raid starts and the fighters have to get up fast. There's a tremendous change in temperature, the cockpit cools off quickly, and you have pains all over."

"To an experienced combat pilot, these things are part of the game. But to the new flyer they are new problems. And there is only one answer—prepare yourself as thoroughly as possible before you ever reach the front."

LANPHIER nodded his head rapidly.

"That's a good point, Mitch. Too many kids came out there trusting to luck. Well, you can't do that because there are two kinds of luck."

"For example, a lot of men seem to think they will have little or no occasion to fly on instruments. But they will, believe me. And it's absolutely essential that they know how."

"Others don't know enough about the equipment and how it works. Oxygen equipment, especially. We knew a fellow who bailed out of his airplane at about

30,000 feet when there was apparently nothing wrong. The only conclusion was that he lost his head from lack of oxygen."

"Then there is all the emergency equipment. We have seen priceless airplanes ruined just because some guy didn't know how to use the emergency landing gear handle."

"Keep in mind," said Mitchell, "that these mistakes are mainly a matter of neglect. During his training a pilot is given instruction in every phase of the job. But there are some things to which men in training don't pay enough attention."

"I can sum these up briefly. Gunnery, as I have said, can't be over-emphasized. We have daily gun practice out at the front but that can't make up for insufficient practice at home."

"Then there is formation flying and escort flying and night flying and instrument flying and practice in landing on short fields and a thorough knowledge of engines and dynamics. A man should put in every minute possible on those phases."

"Formation flying is vital. We fought the Japs all over the Guadalcanal and Solomons area for months and I can't remember a time when we weren't badly outnumbered."

"You can meet that kind of opposition in one way only—by sticking together. You *must* stay together, at least in pairs."

"This is probably the hardest idea to

get across to a new pilot. He arrives rarin' to go. The squadron commander keeps him out of combat for a while, sees that he brushes up on the phases of training I mentioned, and lets him watch the Tokyo Express go over a few times.

"At last he is sent on a combat mission. After all, that's the only way he can become a combat flyer. You can't practice a man into perfection.

"Well, those first two or three flights are tough for anybody. You're keyed up and excited and there's a hell of a lot of shooting going on and, first thing you know, this new kid breaks away from his leader. Perhaps he dives down and away after what he thinks is a straggler.

"If he gets home after leaving a formation like that, he is very lucky indeed. It won't happen often.

"A new pilot simply must accept the fact that his leader is experienced and must be trusted to get them through the brawl."

Mitchell and Lanphier concede that the conditions they faced in the Pacific, especially on Guadalcanal, were far worse than they are today.

Mitchell arrived at Guadalcanal in October, when the front lines were only half a mile from his tent, when machine gun fire and continuous bombing by Jap planes made sleep as unlikely as a visit

Two Army fighter pilots tell why it pays to be well-prepared for combat flying.

from a pin-up girl. Conditions had improved only slightly in December, when Lanphier reached Henderson Field. Food consisted of Spam three times a day, when it was available. If you wanted a floor for your tent, you watched carefully and grabbed the crate from a new airplane.

Flyers were in "combat" on the ground as well as in the air. Jap snipers were bold and frequently slipped through the lines, one getting so close he fired a bullet into the pilots' mess table. Blackouts at night were complete, of course. You sat around a while talking over operations, but the flies and insects drove you under the mosquito nets early.

AERIAL combat was touch-and-go for many months. Major Mitchell bagged his first Jap on October 9, two days after arriving at Henderson Field, got another on October 23 while on patrol over Guadalcanal and a third on November 7 while attacking an enemy naval force.

January was very active. Typical of the operations was a bomber escort mission on January 5, when Mitchell's flight of six P-38s was attacked by 25 Japs. The

flight destroyed three planes and probably three more. Later on, Mitchell led six P-38s against thirty Zeros over Guadalcanal, getting two himself, and on January 29 he took off alone before dawn and shot down a "Washing Machine Charlie"—a Jap bomber Type 97 that was making a low-level bombing and strafing attack on the field.

Mitchell flew thirteen missions to the Kahili-Shortland Island area, 315 miles from Henderson Field, and one day made the trip twice.

Lanphier's record is no less brilliant. On December 23, the first day he flew combat from Henderson Field, he brought down a Zero over Munda while escorting a bomber sweep. Lanphier flew 24 escort missions to Munda in a single month; a 400-mile round trip, frequently on a two-a-day schedule.

On March 29 Lanphier led a flight of P-38s, accompanied by a Marine pilot, against float Zeros at Poporang Island. They destroyed eight Jap planes, then sank a Jap destroyer with machine gun and cannon fire on the way home.

When, on April 7, the Japanese attempted to raid the Tulagi-Savo Island area with 98 planes, Lanphier got three Zeros. His flight of four P-38s overtook eleven raiders at 30,000 feet, first shot down three planes, then finished off the remaining eight.

Lanphier racked up two more on April 18 while taking part in a sweep lead by Major Mitchell. While Mitchell climbed with twelve P-38s to furnish high cover, Lanphier and three others started the attack and brought down a total of six Jap aircraft.

P-38s were not the only planes they flew. On several occasions Mitchell and Lanphier flew P-39s as dive-bombers against Jap shipping or ground installations.

Frequently, when Jap units hemmed in on the island offered stubborn resistance, the pilots would dive-bomb the enemy with depth charges.

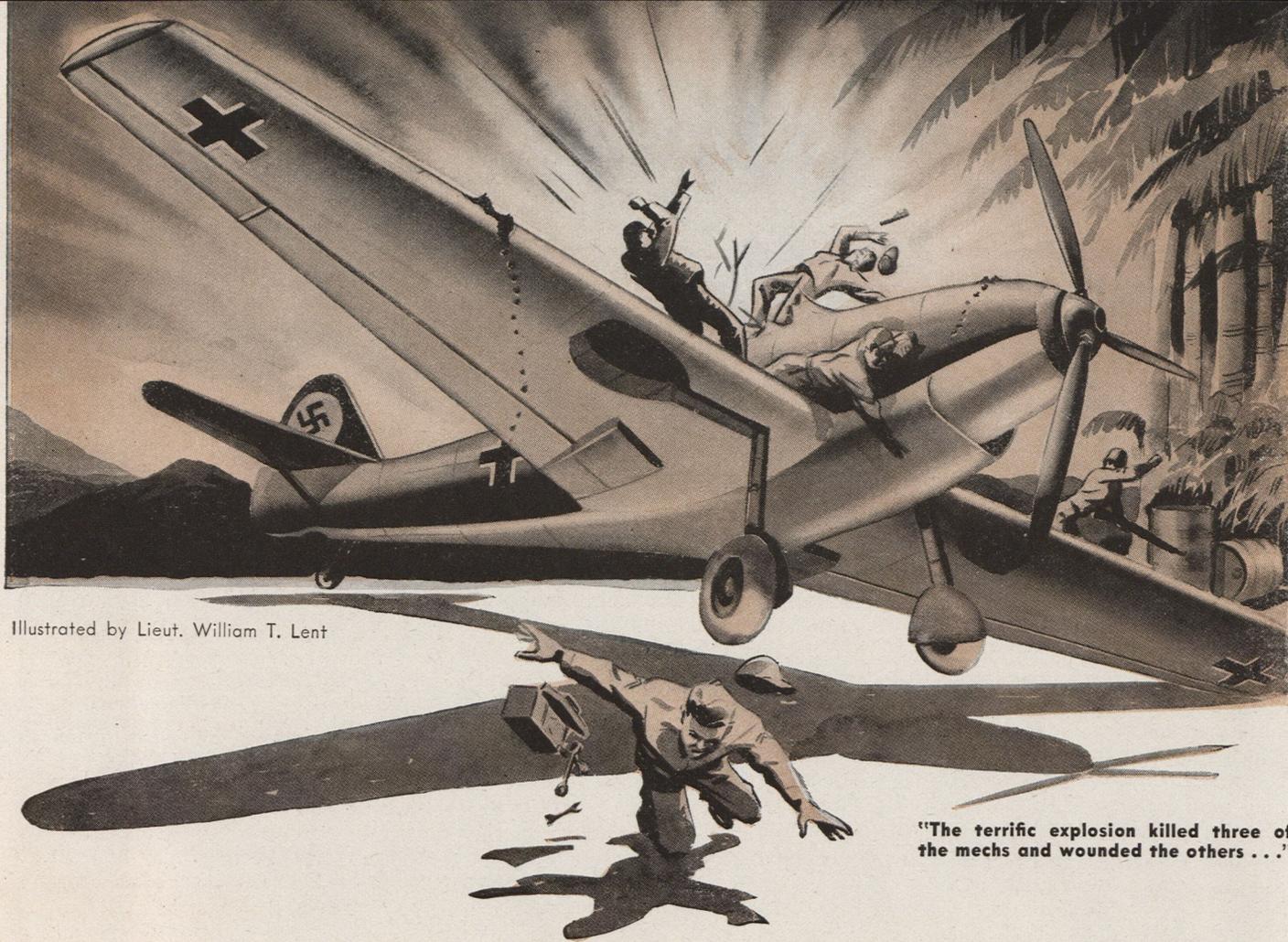
These charges left many Japanese dead without a mark on (Continued on page 44)



Changing prop blade of P-38 which nosed over.



Towing a fighter plane at a Pacific base.



Illustrated by Lieut. William T. Lent

"The terrific explosion killed three of the mechs and wounded the others . . ."

THIS IS YOUR ENEMY

-It's your life or his!

Twenty-two months of war have taught us many things.

We have learned that the enemy is not a superman—that he makes mistakes and miscalculations common to all men. We also know him to be a tough, smart fighter.

Reports from the combat zones tell of new techniques—and old ones applied more cleverly—with which the enemy is determined to outsmart us and outfight us. It is ample proof that we must know his methods as thoroughly as we know our own.

We must keep up with his tricks and his tactics, his propaganda, his national psychology, his strength and his weaknesses. We must be alert at all times—must take nothing for granted.

If you are inclined to be more curious than cautious, the enemy has special plans—and explosives—already laid for you.

Consider the ME-109 that sat there on a captured German airfield one spring day in North Africa. It looked harmless enough to the five mechs who jumped out of the jeep and ran to the plane. They crowded around the ship, comparing it with our own fighters. Then one of the more curious opened the cowling to investigate the instrument panel. The terrific explosion that followed killed three of the mechs and wounded the others.

More and more booty will fall into our hands as the Allied offensive rolls on. Often enough, as in this case, an aban-

doned piece of enemy equipment suddenly becomes a deadly weapon. The explosive charge hidden in the cockpit of the Messerschmitt did the work of a hand grenade or a bomb. The enemy had counted on our curiosity—and won!

Whenever possible, members of the Engineer Corps should inspect all captured enemy materiel. Engineers are trained to locate such traps and remove their explosive harmlessly. If the engineers don't happen to be around, only trained personnel should do the job. Regard *every* object left by the enemy as a potential booby trap. And if you discover possible traps, mark them well for the protection of others.

FAKE FOR BOMBARDIERS. The Germans have been known to flash on strings of phosphorous lights a few miles from the target to mislead our bombardiers. From the air the lights resemble incendiaries dropped by our own planes to light up the target. It is a ruse to trick bombardiers into dumping their bombs harmlessly in the phosphorous-light area.

☆ ☆ ☆

SNIPER PLAYS DEAD. One of the enemy can hold up a whole patrol—and inflict severe damage—when he plays it the smart way.

The smart guy in this case was a Jap sniper. He operated from a treetop and fired on an American patrol advancing up the New Guinea coast. The troops halted, located the sniper and fired. A body fell from a tree. The troops advanced and were fired on a second time. They stopped, fired, and scored another "kill." Then it happened all over again.

Investigation revealed that a single sniper had been holding up the patrol. The enemy had placed dummies in other trees and these dummies had been dropped by a pulley arrangement to make our troops think they had cleared the opposition.

The same technique was used elsewhere in the battle area. On one occasion the sniper's dummy was so regulated that it could be hoisted back into place. But the sniper wasn't invulnerable. He made the mistake of pulling the dummy back up too soon, giving away his ruse.

☆ ☆ ☆

ARMED PRISONERS. Walking toward you with hands held high overhead in the gesture of surrender, prisoners look very much alike. You're feeling pretty good about your position. Maybe you get a little careless. The prisoners have been disarmed, haven't they? Or have they?

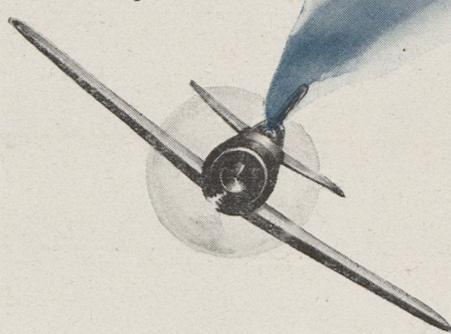
Certain German officers and men are reported to have been issued a special type revolver for use when taken prisoner. This weapon, built to fire 25 rounds, can be attached to a waist belt under the coat or tunic, with the barrel pointing outward. A wire connecting with the trigger runs inside the sleeve to the cuff. So armed, a German prisoner can hold his hands high over his head in surrender and still fire the gun at his captor. Feel good, if you like, about taking prisoners; just be sure they are not carrying hidden weapons.

☆ ☆ ☆

JAP PEP TALK. A Jap commander in the South Pacific felt called upon to address his troops in this manner:

"Endeavor to forget unpleasant incidents and to remember only the good. It is useless to brood over matters as an hysterical woman does. We are all thin from lack of food, but we must not show a haggard countenance when we get on the vessels. There is a saying that 'the Samurai displays a toothpick even when

he hasn't eaten.' This is an example worth emulating at the present time. Since we have been here, there have been those among us who have worked well and also those who have been lazy. The men of the 'suicide squads' and those with similar aspirations are among the bravest of the brave; on the other hand, those who have neglected their duty can only be considered despicable. Every individual must aspire to be a hero."



PLAYING DEAD. Enemy pilots have been known to simulate loss of control when our attacking fighters come within range and release long plumes of black smoke to give the impression that they have been hit and are out of action. At times the ruse has been employed to allay our attack and lure our aircraft into the range of other enemy planes.

☆ ☆ ☆

A DREAM COME TRUE. Nine weeks before Pearl Harbor, a Japanese soldier scribbled this note in his diary:

"September 29, 1941. Received a red letter (summons to the colors). . . . The inspiring dream of the coming war between Japan and America during my boyhood days is now a reality."

☆ ☆ ☆

THE GERMANS LIKE STRAGGLERS. "German airmen plan well and fight hard," reports Capt. Robert K. Morgan, bomber pilot veteran of 25 missions over Europe. "They don't go in much for heroics but they're cold-blooded in their estimates of results. They don't take unnecessary chances or over-match themselves if they can help it. But the Germans go after

'stragglers' every chance they get and are constantly thinking up new tactics and forms of attack to cause straggling."

☆ ☆ ☆

JAPS FAKE A DOGFIGHT. In the air, as on the ground, things aren't always what they seem. An American fighter pilot found that out not long ago during an air battle in the Southwest Pacific. This pilot was without an opponent for the moment, and the other men in his squadron appeared to be taking care of the situation. Squinting into the sun, he spotted a dogfight in progress about 2,000 feet above him. The pilot decided to climb up and help his buddy. He discovered, just in the nick of time, that the dogfight was a sham battle being staged by two Jap pilots. They were hoping to lure up a lone American plane—and almost did.

☆ ☆ ☆

"A TYPICAL NAZI BULLY." A German fighter pilot shot down in North Africa was interviewed by an AAF Intelligence officer who closed his report with these remarks:

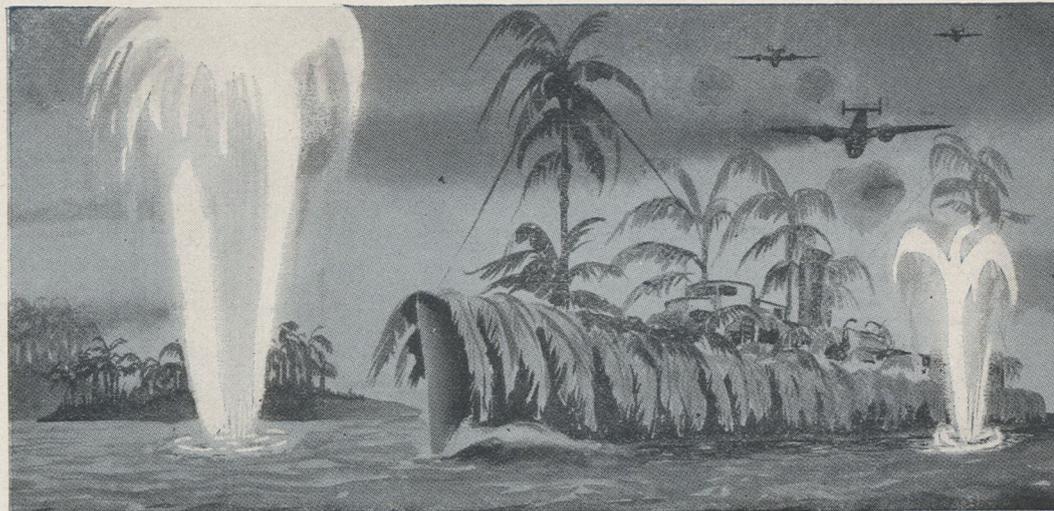
"— is a typical Nazi bully. He is full of Nazi slogans without knowing what they mean. He has a guilty conscience about his activities in France and is afraid of what the French authorities will do to him. His morale is consequently low. He appears to be a habitual and not very clever liar and his statements should be treated with reserve."

☆ ☆ ☆

MAKE-BELIEVE ISLAND. The enemy goes all the way to achieve deception. Recall the "floating island" that turned up in the waters south of the Bismarck Archipelago near New Britain.

Our airmen became suspicious and went down to investigate. They found, not an island at all, but a large transport which the Japs had cleverly covered with palm trees and other tropical foliage in an effort to escape detection in the island-studded area.

Alertness paid dividends, however, and the transport was knocked out with direct hits. The inflammable camouflage quickened the end of the Jap vessel. ☆





OUR WOMEN PILOTS

By CHARLOTTE KNIGHT

Mrs. Betty Gillies was the first woman to fly a P-47 to an Army airfield.

AT an east coast airfield a P-47 roars in for a perfect landing. The pilot steps out of the cockpit of the Army's most powerful single-engine fighter and calls a greeting to the crew chief.

A few yards away an Air Force captain who had casually watched the ship come in does a hasty double-take. He turns to a fellow officer: "Good Lord, do you see what I see? The pilot! It's a girl—and *that's* a P-47!"

A C-47 in full war paint sits at a California base, warmed up and ready for ferrying to the middle west. Two girls in flying gear step up to the crew chief. "All set? Let's get going."

"OK," he replies good naturedly, giving them the once-over and wondering if someone has kidded them into thinking they could go along for the ride. "I'm just waiting for the pilots."

"We *are* the pilots."

In a few minutes the stupefied crew chief is watching the big twin-engined transport gain the skies in a smooth take-off with the girls at the controls.

IN the control tower of an Army airfield in Texas there's a puzzled frown on the face of the operator. He'd swear that

was a woman's voice asking for landing instructions. He checks the pilot's name—N. H. Love—but that's no help. It simply couldn't be a woman pilot for the plane is a B-25. He turns to the operations officer. Together they watch the bomber roll in at 110 mph and come to a stop. They look carefully as the pilot steps out.

"Well, I'll be damned," says the control tower operator. "I was right."

Elsewhere, P-51s, P-39s, C-60s, C-78s, A-24s and seventeen different types of smaller ships are being ferried around the country by a handful of women pilots, all members of the Women's Auxiliary Ferrying Squadron and all working for the Ferrying Division of the Air Transport Command.

The WAFS were expected to be flying A-20s, P-38s and P-40s by September.

The reception at no two fields is alike. Sometimes the girls are accepted without question into a fraternity that respects a good pilot regardless of sex, but often enough the atmosphere is considerably more chilly than it is upstairs. These rebuffs the girls have come to accept as part of the game. More often the reception is of the plain "I'll-be-damned" variety.

Whatever the reaction, the only thing

that matters is that the WAFS' apprenticeship is over. Originally slated to ferry only training and liaison craft, they have now graduated to the big-league ships and can hold their own with the best of them.

The girls have been on the spot since the WAFS was organized in September 1942. Their smooth, white necks have been stuck way out and they know it. They've had to work hard and quietly to prove to a lot of doubting Air Corps Thomases that they could do a man's job. They've endured everything from patronizingly raised eyebrows to forthright resentment, and they've held their silence. And now they're saying it with combat ships—and saying it with the blessings of the Army Air Forces.

This is no sensation-begging affair, nor are these girls interested in usurping man's prior rights in the skies. They are not out to compete with men, but they *are* concerned with doing a man-sized job and doing it well. Today, woman's place is where she is needed. And until this war is won, that place is in the cockpit of ships women can fly from factory to field and, by doing so, release men pilots for combat duty.

At the moment their numbers in the

AIR FORCE, September, 1943

WAFS may be small, but many more will come, and soon.

All these women pilots, with the exception of the first WAF squadron of 25, have been, and are now being trained by the AAF Training Command. When they graduate they are eligible for membership in the WAFS.

The two organizations, although working in close liaison, are independent set-ups. There has been some public confusion about the two groups and in some quarters it is not yet entirely clear just who does which jobs. Here it is: The Women's Flying Training Detachment, organized by Jacqueline Cochran, now Director of Women Pilots, AAF, is a part of the Training Command; it *trains* the girls at Avenger Field, Sweetwater, Texas. The Women's Auxiliary Ferrying Squadron, on the other hand, is an operating unit which takes these pilots and puts them to work. A part of the Air Transport Command, it is headed by Nancy Harkness Love, now executive for the WAFS on the staff of the commanding general, Ferrying Division, ATC Headquarters of the unit is in Cincinnati, Ohio.

To date, four classes of AAF-trained graduates have joined the WAFS. They undergo a short period of Ferrying Division transitional training and then begin checking out on the different types of ships they will be called on to ferry. As it now stands, a girl will be allowed to check out on *any* plane she is capable of flying. Chances are this won't mean the multi-engined class, for there are many ships just too difficult physically for the average woman to handle. Besides, they will be kept plenty busy with one and two-engined aircraft.

A pilot must make five deliveries of a particular plane before she can go on to the next ship in a graduated scale based, presumably, on the complexity of the air-

The domestic ferrying of combat planes has become an everyday job for the fair sex in the AAF.

craft. In the Long Beach sector, for instance, this scale begins with the PTs and BTs, then graduates to A-24s, P-51s, C-47s, C-60s, B-25s, A-20s and finally P-38s. This particular range may vary in different ferrying sectors.

The WAFS is split up at present into four ferrying squadrons, located at Wilmington, Dallas, Detroit and Long Beach. Members of the original group of 25 are stationed at each spot.

Neither the WAFS nor the WFTD is as yet a military organization, so both pilots and trainees are on civil service status. Pilots receive \$250 a month plus \$6 per diem on ferrying missions. They live in regular officers' barracks turned over to them for that purpose and enjoy all the privileges of officers.

THEY wear a standardized "attire" of their own consisting of a grey-green jacket, slacks or skirt, tan shirt and an overseas cap. On ferrying trips they may wear just shirt and slacks or GI cold weather flying suits, leather jackets and, of course, parachutes and head-sets.

They take no oxygen equipment since, like domestic ferry pilots of the opposite sex, they seldom fly above 12,000 feet on ferrying missions. Proud as they are of flying combat ships, they know quite well that merely ferrying a ship is one thing and putting it through its tactical paces is quite another. They are content to leave the acrobatics and the combat tactics to the men in the Air Force they serve. The girls merely "pick up a ship, fly her, set her down."

On return trips to their bases after delivering aircraft, the WAFS usually wear

their regulation jackets and skirts, and are forever being taken for airline stewardesses. They are a little tired of being asked in airports, waiting for commercial liners to leave, whether "lunch is served on Flight 2" or "How long do we stay in Albuquerque?" or "Can I get a plane out of Kansas City tonight?" If the answer is merely "I don't know," the passenger often goes away muttering under his breath about inefficiently run organizations and letters of complaint to the president.

Nearly all of the WAFS' waking hours are spent in uniform. Since they are always on call, they figure there is little percentage in wearing their civilian clothes. When one squadron first went to Dallas, they were there three weeks before anyone saw a single woman pilot out of uniform. One night there was a dance at the Officers' Club. The girls went all-out for the occasion and donned long, flowing evening dresses, fixed their hair into evening coiffures, pinned flowers on their shoulders and arrived at the party. It was ten minutes before anyone recognized them.

Women ferry pilots have little or no private life. They work between fifty and sixty hours a week, often longer. One girl spent only four nights on her home base in six weeks. B-4 bags packed at all times, they must be ready to go on a mission on an hour's notice—even less. When they'll get back to base is anybody's guess. In winter flights the chances of being grounded somewhere along the way are high. Last December one pilot, ferrying a PT-13, was weathered in for 21 days in a small mid-western town.

At other times the in-between stops provide their own drama. Last winter, four WAFS grounded in an Illinois town narrowly escaped injury when a violent explosion blew up a garage directly opposite their dining place. The same group

Last minute map check in the WAFS comfortable "alert room." Left to right: Gertrude Meserve, Nancy Batson, Terese James, Esther Nelson, Dorothy Fulton

and (kneeling) Betty Gillies, commander of the WAFS for the 2nd Ferrying Group, Wilmington, Delaware. Below, Evelyn Sharp brings in a C-47.



was trapped the following night in a hotel fire in Springfield, Mo., and escorted down ladders in the middle of the night. But the bad luck for the week was not over. The flight leader arrived at the field next morning to pick up her plane and was greeted with the announcement, "Oh, we're so sorry, miss. Somebody ran into your plane last night. It will take some time to get it repaired." And it did.

On base, you'll find the girls either in school or in the ready room. School is in continuous session at ferry bases. Pilots, when not flying, are expected to attend. It keeps their minds fresh on such subjects as meteorology, navigation, radio and new techniques in flying. They like it.

Wherever they are, their ears are always subconsciously listening for their own names to be read over the loud speaker system. Maybe it's 0600 o'clock, 1400, or perhaps they're in the middle of a coke in the Pilot's Loft.

"Clark . . . Richards . . . McGilvery . . . Miller . . . Scharr."

Names are up. They report to Operations, collect maps and orders, return to their quarters, pick up the B-4s, draw their chutes, and they are on their way. Perhaps they go to a nearby aircraft plant by car or if it's a base some distance away, they may fly by Army transport. They arrive, pick up the aircraft to be ferried and take off. They fly no night missions, so unless they can complete the mission an hour before sundown, they land at a previously designated airport, check in at Operations, send an RON (remain overnight) to their headquarters, find a hotel and fall into bed.

UP at 0600 the following morning, they resume the flight. After their mission is accomplished, they collect their receipt forms, order a car to the commercial airport, present their Priority BB credentials for a reservation on the next plane—and wait. This is the worst part. They read, play solitaire, kill time in the airport restaurant, wander around restlessly. Finally they are on the plane and headed for home. Maybe they get back to base at midnight, but "woman's work is never done." There are shirts to wash and iron. There are clothes to clean and press, for clothes must be kept spotless. This may take until 0300 o'clock. Bed, breakfast, school. By noon, perhaps they have new orders and are off again.

Sometimes getting back is not so easy. Once they've delivered their aircraft the pilots are at the mercy of the public carriers. And many fields are hundreds of miles from the commercial airways. Not infrequently that means trains, or worse, buses—buses jammed with war-time travelers. Often they have to stand for 200 miles or more to get to a commercial airline.

There are times when sleeping quarters present their own problems. Several

WAFS, ferrying Cubs, once had to land at the Marine Base at Quantico, Va. Anxious to provide true Virginia hospitality, the Marines took part of the VOQ, partitioned it off with a sort of "wall of Jericho," and posted a sign "Keep Out! Ladies Present." This time, the ladies had the situation well in hand.

Nor are these women pilots immune from the flying episodes that keep ferrying from being humdrum. You'll hear about the time six WAFS flew some PTs from Great Falls to Billings, Mont. Twenty minutes out, the flight leader noticed all five of the flyers below circling without apparent reason. There were no radios in the ships by which she could ask the score. She flew down, straightened them out. Within a few minutes the five planes started circling again.

AGAIN the flight leader came down. Again they straightened their course. And again they circled. This routine kept up until a distraught flight leader located the first alternate airfield she could find on the course and signalled for the girls to land—a tricky business because of icy runways, high snowbanks and too little room. The leader landed, crossed her fingers and prayed. The girls came down safely, rushed up to one another and all started shouting at once.

"Look," said the girl who had been designated navigator of the flight, "I lost my maps, all of them, twenty minutes out. I kept circling to let you know something was wrong and to let someone else take the lead. And of course everytime I circled, all the other planes followed in-

Nancy Harkness Love, head of the WAFS.



structions and circled after me. Couldn't you tell I must be off course?"

But it developed she had been *on course* all the way, which is the reason the flight leader couldn't imagine what was wrong. With nothing but a watch and a compass, the girl had done quite a job of navigating.

There are no days off in the ferrying business. The girls would not take them if there were. They would much rather stay on base than take a chance of missing a flying assignment. Like the men, they would rather fly than eat.

Although many of the original group of WAFS are young in years, all of them were seasoned pilots long before they took these jobs. Original requirements called for 500 hours flying time, but the average for each of the girls in the first group of 25 members was 1,162 hours.

Mrs. Love has spent the last thirteen years flying. Before the war she was the first woman to ferry planes to the Canadian border, where they were towed across the line in compliance with the Neutrality Act. With her husband—now Colonel Robert Love, deputy chief of staff for the Air Transport Command—she initiated many flying clubs in colleges. A year before the organization of the WAFS, Mrs. Love worked with the ATC. She mapped ferry flights and learned command procedures and routes.

The first pilot to qualify for the WAFS was Mrs. Betty Gillies of Syosset, Long Island. She had 1,400 flying hours when she joined the organization, holds almost every kind of rating, was for two years president of the "99," an international club of women flyers formed by Amelia Earhart. At present she is squadron leader of the WAFS in the 2nd Ferrying Group, Wilmington, Del.

ALMOST without exception, the girls composing the original WAF squadron were professional flyers before the war. Some were instructors; several ran airports. Mrs. Lenore McElroy, executive officer of the Romulus (Mich.) group, had 2,500 flying hours and eight years as an instructor when she came into the WAFS. Evelyn Sharp, with 2,950 hours, taught flying in California. Nancy Batson came to the WAFS direct from Embry-Riddle Flying School in Miami where she was an instructor. Mrs. Esther Nelson operated a flying school in Ontario, Calif. Dorothy Fulton, who had flown 2,500 hours, ran her own airport in New Jersey.

Bound together by mutual interest in flying and in releasing male flyers for combat, these girls, all of them under 35, have put homes and families behind them until the war is won. Many are married and several have children. Almost all have relatives or sweethearts in the Air Forces who, they would like to think, are as proud of the job the girls are doing as the WAFS are of their fighting brothers. ☆

AIR FORCE, September, 1943

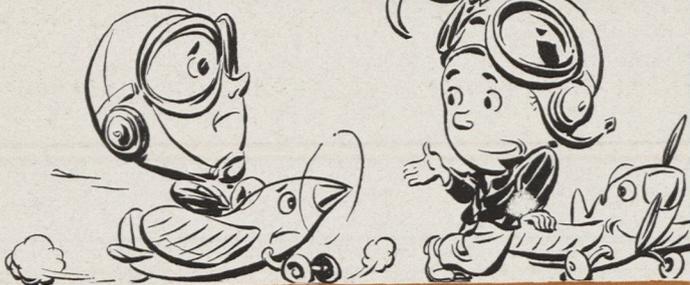


WHY "SAY AGAIN"?



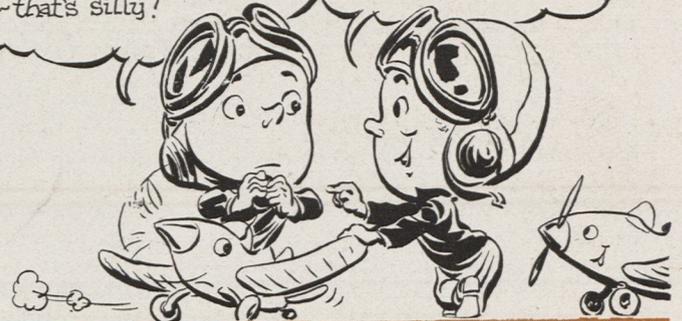
I don't get it--why use "Say again," when we've been using "Repeat" for so long?

Look, Jo-- in England, the word "Repeat" on the radio means: "Fire that last salvo again at the same range" --you wouldn't want that to happen every time you wanted a message repeated, wouldja?



Now wait, Al--you know they're not gonna be firing a salvo every time a pilot says "Repeat" --that's silly!

That's where you're wrong! A plane radio message may be confused with a firing order-- communications will get all balled up if one word means two different things!



Sounds convincing, but I hate to learn th' language all over again, Al!

It ain't that hard--you can learn all the changes in a few minutes. The British are doin' it--and regulations require it!



Okeh-- "cooperative Jo," they called me in Miami! Where'll I find a list of approved words?

Right under yer elbows-- lean over an' take a look !!



VOCABULARY

Approved Words OVER

Meaning

My transmission is ended and I expect a response from you.

OUT

This conversation is ended and no response is expected.

ACKNOWLEDGE

Let me know that you have received and understood this message.

WAIT

I must pause for a few seconds. If the pause is to be longer than a few seconds, "Wait out" should be used.

SAY AGAIN I SAY AGAIN HOW DO YOU HEAR ME?

Repeat.

I will repeat.

Can you hear me?

Approved Words CORRECTION

WRONG

Meaning

An error has been made in this transmission. The correct version is . . .

THIS IS

What you have just said is incorrect. The correct version is . . .

ROGER

Instead of the term "from." Example: "Central Tower--this is Army 1234" or "Army 1234--this is Central Tower."

WILCO

I have received all of your last transmission.

Your last message (or message indicated) received, understood and (where applicable) will be complied with.

(Combined U. S.-British Radiotelephone (R/T) Procedure Basic Field Manual 24-9)

Flight Control Command

AIRDROME CONSTRUCTION IN *NORTH AFRICA*



Filling bomb crater on North African airfield.

By Brig. Gen. D. A. Davison

CHIEF ENGINEER, NORTHWEST AFRICAN AIR FORCES.

PROGRESS of aerial operations on any front depends to a great extent on the speed and efficiency of airdrome construction. This is an obvious fact not generally appreciated. As Maj. Gen. Eugene Reibold, Chief of Army Engineers, has pointed out:

"A key to air power, the engineers now lay down in a few days airfields which a few years ago would have taken months. Engineers are still the Army pioneers."

Nowhere has this been better demonstrated than in North Africa.

When U. S. forces first landed on that coast, there were only nine airdromes in condition for use by our bombers, fighter planes and transports. There are now more than a hundred fields in the same territory. Had it not been for ample supplies of heavy equipment and the skill of our aviation engineers, the victory in Tunisia might have been long delayed.

From the beginning, manpower represented one of our major problems in North Africa. We had several battalions of aviation engineers. In view of the size of the job to be done and the elements confronting us, this was not enough, and the strength was later doubled.

We were well equipped, however. Each unit of aviation engineers had heavy earth-moving equipment, rock crushers and a fairly good supply of dump trucks, so we were prepared for construction jobs requiring the movement of a considerable quantity of earth.

This equipment is no different, piece for piece, than that which you would see on any large road-building job or other sizeable construction project in the United States. But it is vastly superior to anything possessed by the British units and probably by the enemy.

For some time after we landed, the shortage of such equipment created a

bottleneck, but this was eventually rectified. Today in North Africa there's enough heavy-duty equipment to handle almost any demand placed on our units.

Mud was our chief antagonist in Africa. Our airdromes were built during an unusually long winter and a very wet spring. We overcame the mud in the only way possible—by prodigious labor.

Our battle with African mud began as soon as we landed, when an effort was being made to pull our units forward from the bases on the west coast.

Initially, we were able to concentrate our air strength around Casablanca and as far forward as the Oran area, occupying principally the airdrome named Tafaraoui. But to any engineer from North Africa the word "Tafaraoui" doesn't mean an airport. It means a malignant

The role played by aviation engineers in the North African victory is a pattern for future offensive operations.

quality of mud—something like liquid reinforced concrete of bottomless depth. We still speak of any particularly bad type of mud as "Tafaraoui." At Tafaraoui there were two partially completed hard-surfaced runways when we took it on November 10, 1942.

La Senya, now used as a depot, wasn't available to us at first because it had no runways, and they were quite essential as we were just getting into the wet season. When the fighting ships numbered several squadrons, we still had only Tafaraoui from which to operate them.

I remember a night in November when many fighting ships were on this airfield and most of them were mud-bound because they couldn't reach the hard-

surfaced runways from the dispersal points. Something had to be done quickly so we could get out of there. Some of the ships were flown forward to Maison Blanche, at Algiers, which was hardly better from the mud point of view, but this move gave us two fields from which to operate. Maison Blanche had part of one hard-surfaced runway at the time.

Congestion was equally shared between Tafaraoui and Maison Blanche, the only difference being that we tried to operate the B-25s, B-26s and P-38s from Maison Blanche, holding the B-17s and their fighter cover back at Tafaraoui. It was necessary to fly an additional 160 miles from Tafaraoui, but there were no other airdromes. At Maison Blanche, also, we suffered from congestion because of lack of any opportunity to disperse. It was clear that we had to expand again.

Our problem seemed to be a simple one. That is, it could be analyzed simply. We needed more airdromes, dry airdromes, and some place we could disperse the planes. We knew that a drier terrain could be found in the central plateau than along the coast. So we went up into the Telergma area. There we found a small postage stamp field, but nothing from which we could operate B-26s. And it was the B-26s that General Doolittle wanted to get up forward to take advantage of the shorter range. Telergma was considered quite well forward in those days.

From December 2 until December 7 a group of aviation engineers, with some French troops and Arabs, made a field out of Telergma from which we could operate the mediums, and that field has hardly lost a day's operations since we opened it on December 7, 1942. Today, the Telergma area has been expanded until it contains ten airdromes—all of

them suitable for the operation of heavy bombardment planes. Most of the fields share some of their hard standings with their fighter cover. Two pairs of fields are so situated that they give P-38 escorts a satellite field to themselves.

The Telergma fields served to bring the mediums quite far forward and helped solve the problem of dispersal.

Next, we heard about an extensive plateau which had been used as an airport at the desert oasis of Biskra, which is well through the Sahara Atlas range and down into the Sahara Desert, where it is really dry. We flew down to Biskra and discovered that there was a field which could be expanded. General Doolittle was so anxious to open up Biskra as a new base for his B-17s, and thus get some of them out of Tafaraoui, that we made our first use of airborne companies of aviation engineers, two of which we had landed and were holding back at Port Lyautey, nearly 1,000 miles away.

We sent troop carrier C-47s back after them and their equipment and flew them to Biskra. Twenty-four hours after their arrival we had the first B-17s come in from Tafaraoui. After the shift of the base up to Biskra, it was never necessary to go back to Tafaraoui with the B-17s because before the dry season broke for the Sahara, as it did about March 15, we had already converted the Telergma area for heavies. We pushed the mediums on forward, and the heavies went from Biskra into the Telergma area. That about summarizes the struggle we had in the early part of the campaign.

Then came the task of kicking the Axis forces entirely out of Tunisia. We began to prepare our airdrome program for this second phase of operations.

From an engineering point of view, the problem presented by the needs of the Tactical Air Force was most interesting. Its airdrome story can be told in terms of two specific units—the British RAF 242 Group, under Air Commodore Cross, and the 12th Air Support Command, under Brig. Gen. P. L. Williams.

The 242 Group started out with a single airdrome at Souk El Khemis and finally developed this into a group of eleven airdromes. All are built for fight-

ers. That is, the airdromes are approximately 4,500 feet long and from 200 to 600 feet wide. They are distinctively named after London's railway stations; Euston, Victoria, Charing Cross and so on.

General Williams' Air Support Command came into the picture when the American Second Corps first fought with the British under General Lloyd Fredendall in the Tebessa, Thelepte, Kasserine and Sbeitla areas.

THE initial successes of the Second Corps permitted us to put an airdrome at Gafsa. It became General Williams' job to cover the south flank of the fighting forces right up until the time they were pinched out, or pushed forward, by the Desert Air Force. For instance, when the Second Corps was withdrawn from south of the First Army it was moved around to the north where, under the command of General Bradley, it later distinguished itself so magnificently in

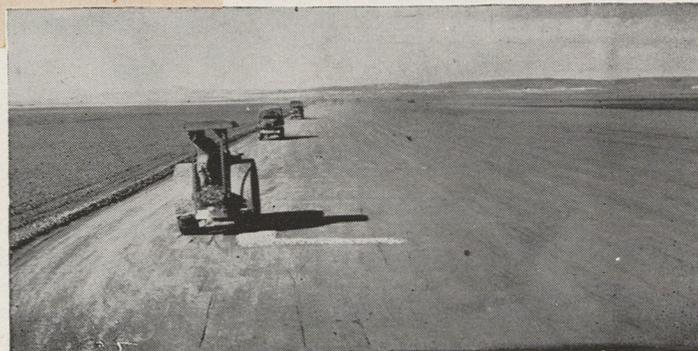
"THE BEST EVIDENCE"

This story of the aviation engineers in Northwest Africa is the best evidence yet presented on rapid airdrome construction for a large air force in a new theatre. When I visited this theatre last December, the obstacles of mud, rainy weather, shortage of equipment and difficulty of supply were handicapping the untiring efforts of our engineer troops. But more men and especially more heavy equipment kept coming, and the difficulties were overcome. As General Spaatz said in commending his aviation engineers, they "never failed to accomplish their objectives in time."

The aviation engineer component of the Army Air Forces now numbers over 100 battalions, many of which are overseas. This story of achievement will be a particularly helpful and stimulating one to the units still in training at home. It also presents strong justification for the special type of engineer unit and training that has been developed for the Army Air Forces. General Davison had assisted in this development as commanding officer of the 21st Engineer Aviation Regiment in 1940 and later as Engineer of the G.H.Q. Air Force. He thus brought to his task with the Northwest African Air Force an understanding of their needs that helped build the fine teamwork described herein.

S. C. GODFREY
Brigadier General, U.S.A.,
Air Engineer

A surveyor and grading machines work simultaneously on a new airbase site.



The same field three days later is completed and ready for aircraft operations.

I said I was looking for a certain engineer company and asked if it were out in front. They replied, "Yes, if you mean those damn fools who didn't pay any attention to us and took those big machines out. We think they are about ten or fifteen miles down the road." I found this company dug in with its defense weapons in place, already at work, and fully aware that they were in no-man's land.

General Williams told me he would trust that group of engineers to go anywhere for him and build any set of fields. He said that just as soon as he was told those fields were ready for occupation he would move his units up without even making an inspection because he was confident this engineer unit knew his needs and would supply them.

From Sbeitla we made a considerable jump forward. General Williams stayed in the Sbeitla group until the Eighth Army Desert Air Force was pretty well along. The Eighth Army had broken the Mareth Line by this time and moved in north and west of Gabes. General Williams' next jump was to the LeSers area.

Here we built six fields. The British airdrome construction units came down and helped us, so it was a combination of American and British manpower with American heavy equipment which finally finished the six fields in the LeSers sector. I remember being at one of the fields (called LeSers 3) about 1930 or 2000 o'clock one Sunday night. There were four blade graders working in tandem, slowly trimming the field into final shape. A convoy of two-and-a-half-ton trucks, driven by big, husky colored troops, was bringing in gasoline—tons and tons of gasoline. General Williams' scouts, using jeeps by the scores, were coming in, and the signal trucks were arriving. We finished the field that night. At dawn one of his groups of P-40s moved in and settled down.

The 242 Group and General Williams continued to fight here until after we were able to move forward to former German fields in the vicinity of Tunis and Bizerte. We had anticipated a great deal of difficulty with those Tunisian fields because of the thoroughness with which the Germans mined certain areas. There was very little to worry about, however, because the break came so rapidly that the Germans had no time to mine them.

However, in one runway of the group of fields between Bou Arada and Pont du Fahs we took out 1,788 anti-tank mines. That sounds as if it were a hazardous undertaking, but it was not. We used a technique for de-mining an area which the aviation engineers had developed in their school. When we discovered there were mines in a locality—which we could do by putting men out at intervals of fifty feet and moving forward each with one of our excellent mine detectors—we would close into that area. Having



Unloading a bulldozer from a transport.

determined the pattern, if one existed, and where the individual mines were, we would then send two men forward. One would creep on his hands and knees and very gingerly scrape away the earth—usually eight to nine inches.

This first man would uncover the mine and neutralize it. That, however, didn't necessarily make the mine safe for it might have been booby-trapped with another exploder screwed in on the side or the bottom. If such were the case, the mine would be anchored into the ground. If you lift or try to move a booby-trapped mine you set it off—even though the central fuse has been taken out. So the task of the first two men was simply to uncover the mine and carefully feel around it to see whether it was booby-trapped.

Next, two more men would come up and explode the mine. By lying flat on the ground we were in little danger of being hit. In fact, we never had a casualty while de-mining a field. It took us about eight hours to take up these 1,788 mines—not a particularly hazardous or long, drawn-out task.

If we had been forced to apply that technique to each one of the fields in Tunisia, however, it would have been quicker to build new fields. As a matter of fact, we had selected the sites and were prepared for the construction job.

The 242 Group later moved forward from its fighting positions and General Williams' Air Support Command moved out from the LeSers group. We built seven or eight airdromes at the new positions, including one on the beach of a dry lake. Those were not captured German bases. They were all new.

The problem of General Doolittle's Strategic Air Force was very much different from that of the Tactical Air Force and, from an engineer's point of view, much simpler. He wanted airdromes from which mediums, as well as heavies, could

carry offensive blows to the enemy. His targets were Sicily, Sardinia, Italy and Tunisian ports of Sousse, Sfax and Gabes.

The principal bottleneck of the Strategic Air Force was not so much airdromes as supply. I have described how they finally worked from Tafaraoui up to Maison Blanche and then to Biskra.

We knew from the meteorological reports that weather was good at Biskra until March 15—the beginning of the high southerly wind coming up across the Sahara, which literally covers everything with sand. We planned to get out of Biskra about March 10. We did it by moving the heavies into the Telergma group where we already had ten airdromes. There was very little work to do, since a field that will accommodate a B-25 or B-26 will very easily take a B-17.

The problem was to get new grounds for the mediums which had been occupying this Telergma group. We moved the mediums forward to the Montesquieu area where there were five fields—two near Sedrata in the west and two at Ouenza in the east—a group of fields that nicely accommodated these planes. One of the Ouenza fields is as nearly an unlimited field as I have ever seen. We just arbitrarily decided where to stop. It was three miles long, all as flat as a billiard table. That flatness is characteristic of the plateau land between the Maritime Atlas and the Sahara Atlas ranges.

The heavies, having once moved to the Telergma area, remained in operation there continuously throughout the campaign and are still using those bases.

Just as "speed" represented the key word for the Tactical Air Force, and "supply" the key word for the Strategic Air Force, the term "permanent construction" is characteristic of the problems we had with the Coastal Command. This command was charged with convoy cover and antisubmarine activities.

Coastal airdromes (Continued on page 21)

Godfrey Stuyvesant Giltedge III has just been made a corporal and is bent on overwhelming the local smart set during off-duty hours in a suit of tropicals with shoulder straps and oversize chevrons. It's "no sale" for the clerk, however, who quotes Godfrey excerpts from AR 600-35.



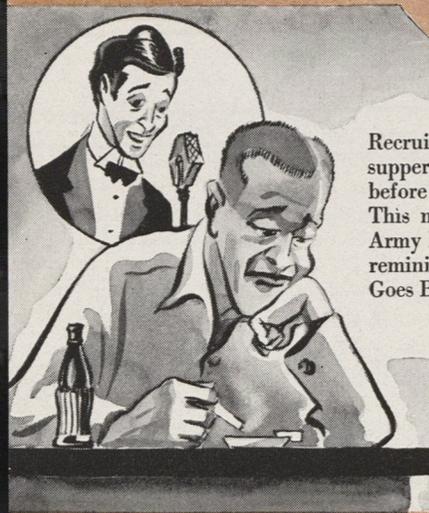
With the advent of the WAAC there came a rebirth of GI chivalry. Nowadays even dyspeptic top-kicks catch themselves smiling occasionally. Here First Sergeant Stone graciously assists a cute little auxiliary with her breakfast tray. Time was when a person speaking to the Sergeant before he had sipped his morning coffee was a cinch to pull a week's latrine duty.

PX

AAF EXCHANGE

(DOMESTIC)

by Lieut. William T. Lent



Recruit Tucker used to sing for his supper over the national networks before his draft number came up. This morning he suffered his first Army haircut and at the moment is reminiscing to the tune of "As Time Goes By" via the tired old juke box.



The Army has done wonders for the "plain girl." What with the competition and four to six weeks isolation in recruit camp, many a soldier begins to see the beauty hidden in Winnie the Waitress. Winnie has her points, at that.



The mooch. Three dollars will bring you five on payday. He must get his uniforms from the cleaners for Saturday's personnel inspection. He'll probably repay the three and forget the two on payday, but borrow ten the next day. What a system.



PX-ograms are almost as pernicious as latrine-ograms and certainly no more reliable. Staff Sergeant Bellows has it straight from the surgeon's office that all permanent party men soon will be given staphylococcus inoculations preparatory to shipping to Zanzibar.

PREPARE FOR

INSPECTION



TIMELY ADVICE FROM THE AIR INSPECTOR

Matters presented here are informative only, and are not to be considered as directives.

THE need has been felt for a medium to disseminate Army Air Forces inspection information to the field, and a section of this publication will be devoted monthly to serving that purpose. Helpful suggestions and improved methods of doing the job will be included. It is intended that the information will be beneficial not only to the inspector, but also to the man being inspected.

Inspection concerns every man in the Army Air Forces, from the private who pours gasoline into a plane to the general who ordered its flight. The man in uniform is either an inspector or an inspectee. The inspector is not immune to inspection, for on occasion he himself becomes the inspectee.

The purpose of inspection, as stated in AAF Memorandum 120-6, "is to insure the highest possible efficiency of all components of the Army Air Forces and to determine the degree of their efficiency at frequent intervals. . . . It must cover every individual, every activity, and every item of supply and equipment."

Inspection reaches down to check whether corrections in the sick book have been initialed or whether technical orders have been properly filed, but the main mission—fitness for battle—should, like Pearl Harbor, always be remembered.

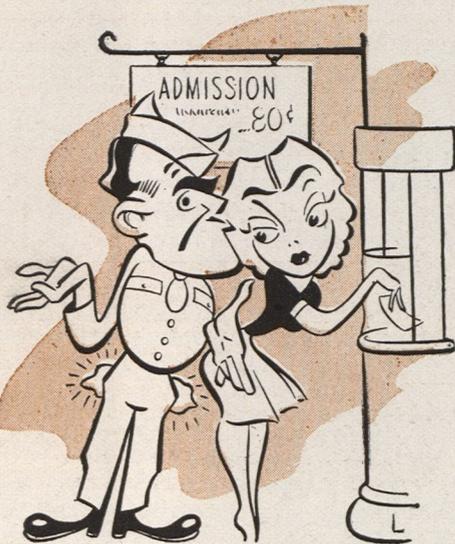
The underlying principle of the AAF inspection system is decentralization to lower com-

manders and supervision by their next higher commanders. Inspection is not primarily a "dress parade" affair, but a work-day proposition.

In the job of getting ready for battle, organizations and individuals are inspected along the line by representatives of their own and higher commands. Then, when they reach the staging area, they are met by a "POM" (Preparation for Overseas Movement) team of inspectors from the Office of The Air Inspector, Headquarters AAF. This team is composed of technical, tactical, administrative and communication experts. They want the answer, from first hand observation, to the question, "Are you ready?"

To help answer that question with a strong affirmative, The Air Inspector will provide on these pages tips to inspectors and inspectees, activities requiring inspection emphasis, and pertinent changes in regulations and directives, with a question and answer section. Ideas and information from the field are welcome. AAF Memorandum 120-6 authorizes direct communication between station, group, and higher commanders and The Air Inspector on matters pertaining to inspection.

JUNIUS W. JONES,
Brig. General, U. S. Army,
The Air Inspector.



Get Him Paid

Seeing that you are paid promptly, soldier, and avoiding embarrassing moments is a major interest of many persons in the Army Air Forces, including the Commanding General himself. Payment of troops is a function of command which receives the personal attention of all commanding officers. They are responsible for submitting to disbursing officers regular or supplemental pay rolls or individual pay vouchers. These should cover all enlisted men either permanently or temporarily under their command who are entitled to pay, so that payment may be made at least once a month (WD Circ. 114, 1943). Inspectors check frequently to see that pay is not delayed. Your job, soldier, is to have your Form 28 (Individual Pay Record) with you at all times. You are not in uniform without it. You should know when entries are to be made in it and how you can get paid on it. If you don't know, look up a letter addressed to you on the subject from AAF Headquarters (February 13, 1943). It should be on your bulletin board.

Service Record Trouble Overseas

An inspector general in the Africa-Middle East Wing points out in an action letter that many service records had not been indorsed before they left the United States. Was your station one of those which overlooked this?

Plane Facts Worth Noting

Notes from the scratch pad of a technical field inspector after making his rounds inspecting aircraft:

Fuel line clamp loose on line from wobble pump to carburetor . . . Oil separator screen plug clogged up . . . Small quantity of kerosene in magneto breaker assembly . . . Bad hose on fuel line between wobble pump and carburetor . . . Hose in need of replacement at C-2A strainer . . . Disconnected oil breather line at engine . . . Dirty filter in fuel

analysis cell . . . Rubber battery overflow line in need of replacement . . . Indication of oil leak at oil drain fitting . . . Wheel cowling top bolt loose . . . Landing light reflectors in need of cleaning . . . Hydraulic reservoir filler cap frozen tight . . . Flap universal joints in need of cleaning and oiling . . . Bolt missing from throttle quadrant . . . Airspeed indicator light out . . . Front cockpit emergency exit handle not safetied . . . Fire extinguisher in need of refilling . . . Sheared unit on spark plug cooler, No. 4 cylinder . . . Upper rear engine plug not safetied . . . Baffle plate nuts loose, No. 2 and 3 cylinders . . . Left wing spar cracked at inboard end . . . Control cables in tail section dirty . . . Left wing walk needs replacing . . . Cracked braces on wheel wells . . . Bolts loose and rubber worn on baggage compartment door . . . Mooring kit incomplete . . . Engine gauge light inoperative . . . Cockpit light reflector missing. How many of these points apply to your plane?

Efficiency Ratings for Officers

Are you commanding officers evaluating the efficiency of officers in comparison with that of other officers of similar grade? In a tactical group inspected, all officers of one squadron were rated "superior" on their Forms 66-1, and all officers of another squadron "satisfactory." The ratings were obviously worthless. We would like to think—and have the Axis think—that all the officers of a squadron are superior, but this is not the case. Likewise, all the officers do not normally fall into the satisfactory class. Ratings are particularly important overseas where there is frequent shifting of personnel.

Radio Code for Victory

"Yes, I could take code at about twenty words a minute when I finished radio school, but now I'm pretty rusty. I've even forgotten the alphabet."

Hamlet's soliloquy has no sadder words than these. Yet squadron commanders overseas, desperately in need of a radio man for a bombing mission, are familiar with them.

Unit commanders should see that classification cards are checked frequently to be sure that all their radio men are receiving code practice, whether on real or simulated equipment. (A newly activated squadron at a Nebraska base used oscillator tubes and speakers from old radio sets for code practice before receiving its regular equipment.) In training flights, numerous special messages should be transmitted between ground and flight operators to augment routine reporting of position. You yourself, soldier, should have the initiative to keep off that rusty list.

Right Tube at Right Time

Most airborne radio operators know that there is a kit of spare radio parts, such as fuses, tubes and dynamotor brushes, stowed in the airplane. But how many check the contents of this kit periodically to be sure that all necessary parts are present, and how many do enough "tinkering" to be able to spot trouble and make necessary replacements? The ability to replace the right tube at the right time may some day mean the difference between getting home for supper and eating emergency rations in a dinghy.

Plenty of Marksmanship Badges

An enlisted man wants all that is coming to him, and that includes his marksmanship badge. Many men have not had the opportunity to see how their badges would show up under a South Sea sun because

the United States base at which they fired their course had no badges. Word from the Philadelphia Quartermaster Depot is that there are plenty of badges and bars there, and base quartermasters and supply officers are advised to forward requisitions to the depot. (AGO Memo. S600-11-43). *Prepare for inspection* with a supply of badges.

Wastage of Food

Conserving food doesn't mean we must lose our reputation for being the "best fed army in the world." It means that you mess officers and sergeants in the field—in Tunisia or Texas—must check the waste going into garbage cans.

Wastage can often be traced to the fact that mess officers are not getting accurate reports on the number of men to be served. Men are transferred out, and the mess officer is sometimes the last one to be informed. This is particularly true in large consolidated messes.

Also to be checked is whether there is

prompt delivery of perishables to bases. At one midwestern base, meats were delivered in a spoiled condition. An inspection revealed that the meats were sitting out on a depot platform for long periods because a local trucking concern which had the delivery contract did not have enough trucks to handle the shipments promptly. The quartermaster then made arrangements to pick up the meats in government vehicles.

Mail Must Go Through

Mail clerks, where do you deliver the letters for the men of your squadron? If you are delivering them on bunks you are doing an injustice to your buddies. Letters (some with money from home, and you know how important these are) become lost through delivery on bunks.

Note to mail clerks in tactical units: Have you seen a copy of FM 12-105? It tells you how to *prepare for inspection* in the handling of mail overseas.

★ HERE ARE THE ANSWERS

Q. Where can details be found on the requirements for service and liaison pilots?

A. Detailed requirements are outlined in AAF Regulation 50-7, February 5, 1943.



Q. WD Circ. 303, 1942, directs that commanding officers will not require special creasing of shirts by laundries and cleaners. Can a man's wife crease his shirts at home?

A. No. Wearing shirts, the fronts or backs of which have been specially creased, is forbidden. (WD Circ. 122, 1943)

★ ★ ★

Q. Does an officer on limited service have a chance to go overseas?

A. Yes. Provisions are outlined in WD Circ. 86, 1943.

★ ★ ★

Q. Can an enlisted man in an attached service apply for transfer to another unit in the Army Air Forces for which he is especially qualified by civilian training?

A. Yes. Under no circumstances will a man possessing scientific, professional or technical skills of which there is an acute shortage in the Army be continued in an assignment which does not make full use of these abilities. (Change 3, AR 615-28). However an enlisted man will be transferred only for the convenience of the government. Transfers will not be made solely for the convenience of the enlisted man or his family (War Dept. Cir. 308, 1942).

Q. Can an enlisted man be sent back to the United States from overseas for aviation cadet training?

A. Yes. He may apply for such training through normal channels if he is between the ages of 18 and 26 inclusive and is physically qualified. (Note: Men overseas can also apply for officer candidate training.)

★ ★ ★

Q. Is there a standard WD form for maintaining a record of an officer's accrued leave?

A. No. WD Circ. 55, 1943, provides that "for the duration of the present war and six months immediately thereafter, personal certificates of officers attesting to the amount of their accrued leave will be accepted for all purposes without other supporting evidence." However, to have available the necessary information, officers should keep copies of their orders granting leave.



Q. Can the produce from victory gardens on bases be sold in town?

A. No. Food so produced will be for the consumption of military personnel only and not for sale to civilians. (WD Circ. 83, 1943.)

★ ★ ★

Q. Can an enlisted man still deposit surplus funds with any disbursing officer?

A. Yes. He will receive four percent interest on all deposits. AR 35-2600.

★ INSPECTING THE INSPECTOR

How much of your time are you devoting to actual inspections in the field? Ninety percent is not too much. . . . Command activities function on a 24-hour basis, which means all checks cannot be made between 8 a.m. and 5 p.m.

★ ★ ★

Have you rechecked recently steps taken to conserve gasoline and rubber?

★ ★ ★

Are you contacting enlisted men? Many activities requiring correction can be discovered by doing so.

★ ★ ★

Do combat crews understand thoroughly the use and operation of

life saving equipment and procedure to be followed when forced down at sea?

★ ★ ★

When an inspection reveals lack of equipment, are you accepting the answer "a requisition was submitted way back when"? You should check to see whether follow-ups have been made.

★ ★ ★

Has compliance been made with WD Circ. 118, 1943, pertaining to the disposition of ration savings funds?

★ ★ ★

Are you being instructive? Helpful? Or just critical?

Extra Spectacles

Many men are preparing for overseas movement without extra glasses. Action to obtain these spectacles should be taken long before the men reach their final phase of training.

WD Pamphlet No. 8-5, May 11, 1943, consolidates all previous directives on the issuance of spectacles, and provides, substantially, that enlisted men will be issued two pair of glasses if authorized, as soon as possible after date of induction. This issuance will be made at the home station without regard to movement overseas.

Due to a temporary shortage of spectacles, WD Circ. 131, 1943, sets up a priority system for obtaining glasses. Numbers 1 and 2 represent the cases where glasses are more urgently needed. Number 3 may be used, for instance, for personnel in the earlier periods of their basic training, and Number 4 for limited service men or other personnel more or less permanently assigned to stations in this country.

The most important consideration is to submit requisitions now. Don't wait until those last busy weeks before the boat sails or the plane takes off for parts unknown.

Good Shooting Takes

Practice

When we talk about the need for good shooting, remember we are not only discussing the men behind the guns in planes, but also the thousands of AAF ground soldiers (officers and enlisted men) who are armed. POM inspectors call particular attention to an AAF directive which states that all men will fire the prescribed course for the weapon they carry before being transferred to a staging area or port of embarkation for movement overseas. Responsibility rests on the unit commander.

(Note to base administrative inspectors: If the completion of the range on a new base has been unduly delayed, is anyone training his sights on the bottlenecks?)

Think Before You Print

Those overworked mimeograph machines in field headquarters are due for a little time off. An effort is being made throughout the Army Air Forces to reduce field printing and reproduction of forms, manuals, pamphlets, charts, orders and instructions, unless they are directly essential—not merely supplementary—to the prosecution of the war or the conduct of official business.

Inspectors too often forget to look into that room where the Army's version of a "printer's devil" works and see what he is grinding out. Is it important? Is it essential?

This is not intended to lessen or hamper the efficiency of any AAF installation or activity to any degree, but it is desirable for each commanding officer to check on reproduction work and make certain that it is really needed.

Portable Lights Working?

Take a tip from technical field inspectors and check your portable field lighting equipment. It may—or may not—be ready for emergency use. Get requisitions in for shortages now.

Obligation to Officer Candidates

It is a bright day for the officer candidate when he receives his acceptance to a school, but a low ceiling forms when he notices that his organization is treating him like an old fire horse that has been put out to pasture. If you are his CO, your obligations to him do not cease until

the day the morning report shows his transfer. If he is going to a school of another arm or service, he needs your help more than ever.

Many AAF enlisted men are being eliminated from these schools because they have not had sufficient basic training of the type given by the other arms and services. Air Corps enlisted men normally receive less basic training than the men with whom they will be competing. All candidates from the AAF should be given an opportunity to take basic training which will help them *prepare for inspection* in their school. (Letter, Headquarters AAF, June 2, 1943.)

About That Morning Report

You don't know how to keep a morning report, sergeant, unless you know how to reconcile the entries. And how about you squadron commanders—do you know how to verify the entries?

Prepare for Combat

In actual combat, a Nazi or Jap will be checking up to find out how well you have heeded the advice of your tactical inspector during training days. Below are some of the points, bearing the seal of approval of overseas combatants, which your inspector will emphasize to get you in the best possible fighting shape to meet the enemy:

Pilot and co-pilot, are you getting in sufficient hours of blind instrument flying?



Navigator, do you know how to check drift reading?

Bombardier, can you run through a good flight pre-check of your bombsight?

Radio operators, can you perform emergency maintenance in flight? Is the interphone system working—have you checked it immediately *after* getting into the air as well as *before*?

Aerial engineer, has your ship been correctly serviced? Is the oxygen equipment in shape? Have you checked *all* engines?

Gunners, how's your marksmanship? ★

begin with a permanent, all-weather paved field at Agadir, some 250 miles down the coast from Casablanca, below the high Atlas mountains. We have a paved field at Sale, just north of Rabat, which is the capital of French Morocco. We have a paved field at Port Lyautey. The only other field with concrete runways in North Africa is the permanent airdrome at Bizerte which the Germans didn't have time to destroy.

Probably of greatest interest is the story of the airdrome at Bone because it is typical of the Coastal problem and also because it is particularly interesting from an engineer's standpoint.

Bone airdrome is built on the silt which has been dumped there through the centuries by the Seybouse River. This river empties into the Mediterranean in the small gulf where Bone is located. We knew the earth there was nothing but pure gray silt mud because we had seen the craters of several 1,000-pound bombs showing pure clay down some eighteen feet. As a result, every time it rained, Bone became unserviceable, thereby making it very difficult to furnish air cover for the port of Bone—the most important forward port east of Algiers. For a long while Algiers was the most easterly port at which large ships would put in. The British Navy finally consented to carrying on as far as Bone, provided we would furnish adequate cover.

In five days we built an emergency field ten miles west of Bone, known as Tingley, by using a steel runway mat on a small bit of sand we were fortunate enough to find. We knew it wouldn't fill the bill permanently since it was in the mountains and unsuitable for night fighters.

We were asked to finish a suitable airdrome for all-weather operations within two weeks. The only way we could make it operative was to use sand, which was amply available in huge coast dunes. These dunes, however, were on the far side of the Seybouse River, thus posing a major river-crossing problem. In addition, it was raining and we couldn't send any transports out on this mud flat.

We dispatched a battalion of aviation engineers to the site and gave them all the heavy earth-moving equipment in North Africa—turnapulls, twelve- and sixteen-yard pan scrapers with tractors, and all the one-and-a-half-ton dump trucks we could lay our hands on. Then we had the job of getting across the Seybouse River. We accomplished this by starting with the sand from the dunes and building a road ahead to carry us to the Seybouse River. We then bulldozed a causeway across the river and carried our sand by road a mile and a half to the site of the runway.

We figured it would take five days to cross the Seybouse and finish the road, and that we could lay the sand for the runway in the remaining nine days—pro-

AIRDROME CONSTRUCTION IN NORTH AFRICA

(Continued from page 16)

vided we didn't get rain, which would wash away the small amount of sand we could afford to put on the road. Or worse, it might raise the Seybouse and wash out our causeway.

Luckily, we didn't have a drop of rain for two weeks. We built the road and causeway, moved 66,000 yards of sand to the Bone site and built the runway. The sand mat varied from 36 to 48 inches in thickness over a width of approximately 150 feet. As we got the sand in, we followed with the steel plank. On the afternoon of the fourteenth day, we put in the last load of sand and laid the last few pieces of plank to finish the runway. That evening we had a cloudburst. The rain raised the river and later we had major repairs to make to the causeway, but the runway was in and it stayed put.

DURING construction the airdrome was bombed by the Germans two or three times with 1,000-pound bombs. Twice they missed the runway by approximately fifty feet. All we had to do was to scrape the mud off the strip. The battalion also had its camp site bombed. They felt they were veterans. But, to my mind, the thing that pleased them most was what this particular runway meant to a certain crew that came in one afternoon shortly after we had finished it. A medium bomber had been out on a strike and came back over the mountains in a thunderstorm. The pilot had practically no gas left, nor did he know where he was. He didn't know where there was an airdrome in the vicinity either, so he decided the best thing to do was fly straight north until he reached the sea where he knew, because he had done it once before, that he could crash-land his ship and save his crew.

He flew north, reached the Mediterranean and then turned west. He was just sitting upstairs waiting for his gas to run out when a member of his crew shook him and told him to look down. There was the longest runway he had seen in North Africa. He made one sharp circle and landed on it. The plane didn't have enough gas left to taxi off the runway.

A few days before I started back to the

States, I went up to Bone and found it had become the refuge for every type of craft which had to have a place to land in a hurry. I don't think there is a type of Allied ship which was not represented there. In order to help save the runway and also because it was easier on the ships, we built a "belly-landing" strip alongside the runway and invited everybody who came in with his landing gear knocked out to use it.

Our airdrome construction program in North Africa consisted principally in the building of runways and dispersal areas. We built very few revetments. In the first place, we did not have the materials or manpower with which to do the job, had we wanted to. Moreover, the German bombing was not sufficient to require revetments. It is my opinion that the Germans themselves put more effort into this work than it was worth, for in virtually every revetted pen of the enemy's airdromes you could find planes that had been successfully strafed and burned.

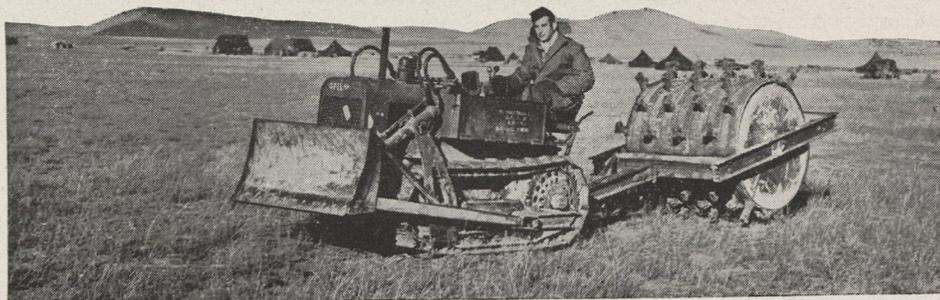
We believed that the most efficient method of protecting aircraft was to build individual hard standings for dispersal on the fields or to construct one very large surfaced area on which planes could be dispersed according to a squadron commander's own desires. This worked out very well in practice and saved a vast amount of time and effort.

As it was, plenty of effort was needed on the forward fields for defensive works, of which the well-known slit trench, a ready refuge when enemy planes came over, was the most common variety. At first, some of these fields relied entirely for ground defenses on the .50-caliber machine guns and anti-tank guns of our aviation engineer battalions.

This story of the aviation engineers with the Northwest African Air Force is not complete without mention of the headquarters and topographic companies which formed an essential part of the team. The headquarters companies undertook airfield reconnaissance and survey, and general air force camouflage work.

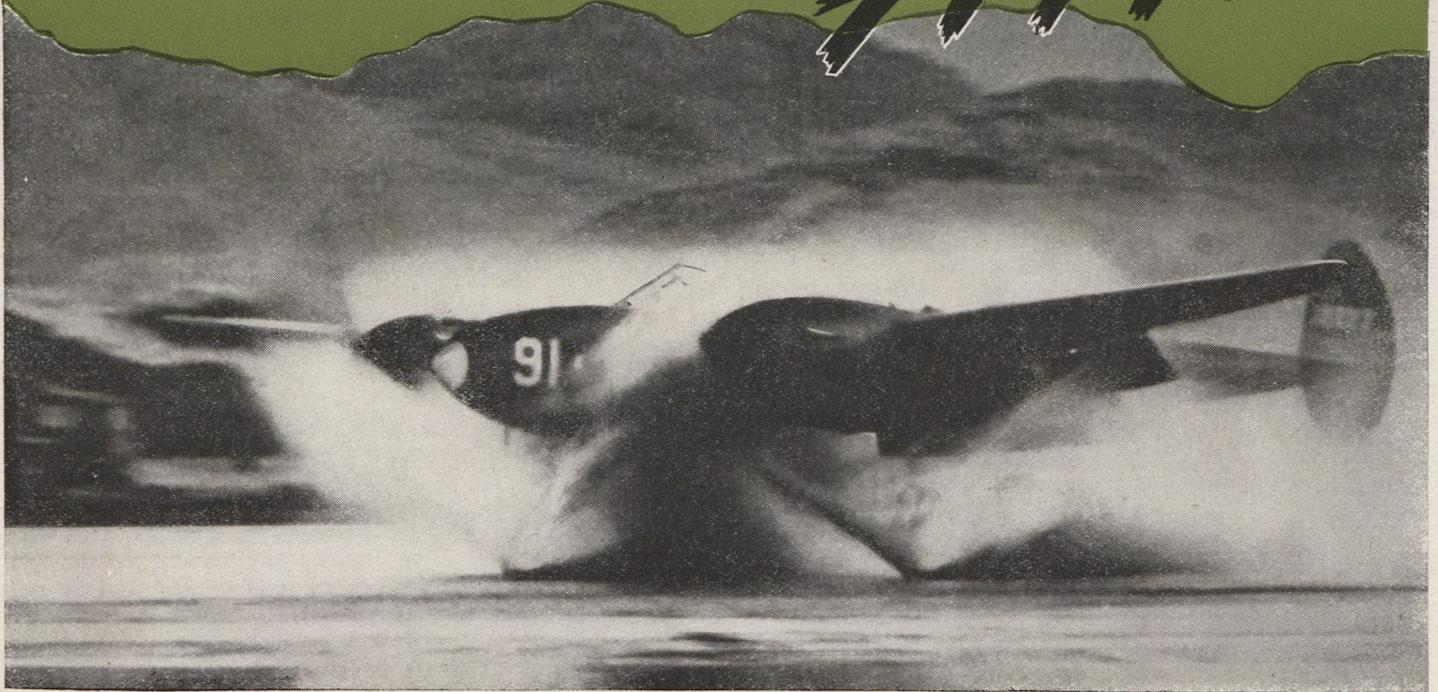
The topographic companies compiled and reproduced target and flak charts essential to air force operations. These units demonstrated in their work the unflagging zeal and devotion to duty which characterized all of the aviation engineers in Northwest Africa. ☆

A bulldozer and "sheep's-foot" roller ready for double duty.



AIR FORCE OPERATIONS IN THE BATTLE OF

ATTU



P-38 makes a wet landing after raid on Attu.

By Brig. Gen. William E. Lynd

ARMY AIR OFFICER ON THE STAFF OF THE COMMANDER IN CHIEF OF
THE PACIFIC FLEET

ONE of the principal challenges facing American forces in the Battle of Attu—almost as great as the challenge offered by the enemy itself—was the effective coordination of air, sea and ground elements in the face of severe handicaps encountered in the weather and terrain.

The Army and Navy air forces had a task to perform in complete cooperation with the attacking ground troops, and the success with which their missions were carried out is a tribute not only to those responsible for the carefully laid plans of the Attu operation but to the men who kept the planes in the air under almost impossible flying conditions.

Army Air Force operations in the engagement were carried out by the Bomber and Fighter Commands of the 11th Air Force from the recently constructed air base on Amchitka under the direct control of the Task Force Commander. Army and Navy aircraft operated in close conjunction during the entire engagement.

AAF planes participating over Attu included B-24s, B-25s and P-38s. The close, low-level support of ground troops was primarily the function of P-38s employing dive-bombing and strafing tactics.

The B-24s and B-25s were used to bomb specific enemy concentrations and, in some cases, to drop supplies to ground troops from the air. P-40s based on Amchitka were used primarily in local defense and to destroy enemy aircraft on Kiska, which lies almost astride the Amchitka-Attu run. The type of Navy aircraft employed was that best suited for an operation of this nature.

When the attacking ground forces stormed Attu from Navy-launched barges on the morning of May 11, they advanced under cover of a fog so thick that men had to be lowered by their heels over the sides of the barges to guide them through the rocky waters approaching some of the landing beaches. But while the ground troops were aided, air operations were severely hampered by this thick overcast.

The fog on the first day was merely a sample of the weather which made air operations extremely difficult during the entire action. Even the distance of 300 miles between the air base at Amchitka and the targets on Attu made every difference in the world. Time and again, bombers and fighters left Amchitka under

clear skies only to find Attu completely fog-bound. On other occasions, ground commanders saw clear weather under the overcast at Attu and watched in vain for supporting aircraft which were grounded by impossible weather at Amchitka.

Nevertheless our bombers and fighters did get through to deal severe blows to enemy positions. Missions were undertaken whenever there was the slightest chance of their successful completion. Frequently, when AAF bombers were unable to get through to Attu, they would return over Kiska and release their bombs on enemy installations on that island.

Seldom did the bombers find a hole in the Attu overcast through which their target could be sighted and their bombs dropped. In most instances they had the opportunity to make bombing runs only when the fog lifted sufficiently to permit them to get under it safely.

It might well be pointed out that despite these handicaps to air operations, there is no known instance of American aircraft hitting our own troops from the air or our troops firing on our own planes from the ground.

Perhaps the most disappointed of the

airmen participating in the Attu operation were the gunners aboard the bombers. Except for the very rare occasions when they had a chance to warm up their guns against enemy ground troops, all they did was wish for enemy fighters that never appeared.

Jap aircraft finally attempted to relieve their besieged forces on the eleventh and twelfth days of the American operations but both attacks failed completely. On May 22, twelve or fifteen twin-engine bombers attacked a destroyer and a gunboat patrolling in the vicinity of Holtz Bay on the north side of Attu but no damage or casualties resulted. One bomber was shot down by anti-aircraft fire.

On the following day, sixteen planes of the same type attempted to bomb American troops on Attu but they were intercepted by five P-38s at about 14,000 feet, well above the overcast. The enemy planes jettisoned their bombs and attempted to escape our fighters. Four of the bombers were shot down in flames, another dropped into the overcast definitely out of control and seven others were seen to go down smoking heavily. Only four of the original sixteen were observed heading west after the engagement. One P-38 was missing and another was shot down but the pilot was rescued.

As of May 24, AAF losses in the Battle of Attu totaled two B-24s, one B-25 and four P-38s. The P-38 Lightnings had definitely proved themselves to be the most effective type of fighter aircraft available to use under such operating conditions and at such distances. The feat of the P-38s in intercepting the enemy bombers 300 miles from their base on Amchitka was significant in this regard.

Actually, the role played by the AAF

Our B-24s banked into steep-walled ravines such as this to strafe Jap ground troops. This and photo at right taken by Gen. Lynd.



Despite the "worst weather in the world," the air arms of the Army and Navy played a prominent role in this first Aleutians offensive.

in the Attu operation began days before the assault troops established beachheads on the island. It was the air job to soften the Jap shore installations by bombing and low-level strafing, and to determine by thorough reconnaissance the most advantageous points at which to land an adequate striking force.

Although the Japs on Attu had no fighters for bomber interception, their anti-aircraft fire was relatively heavy and exceptionally accurate. As a result, formation flying was not needed from a protective standpoint, and by flying individually AAF planes were able to divert and scatter enemy ground fire. In this same connection, area bombing was undesirable and point bombing proved to be the only method of accomplishing the job.

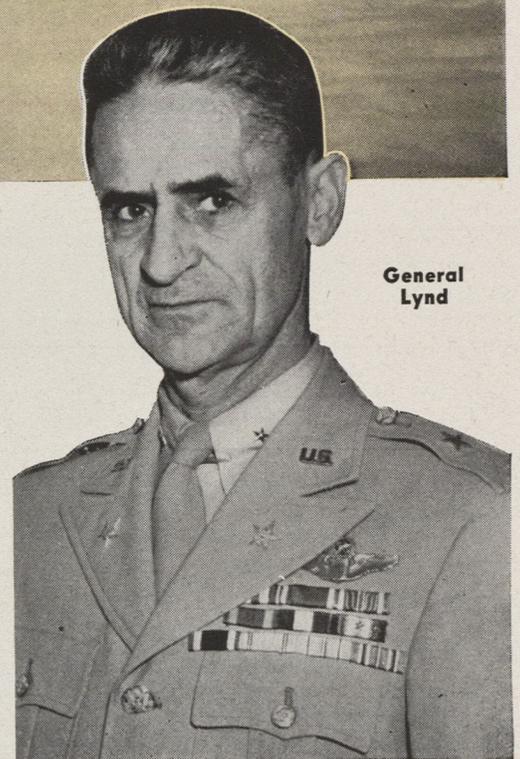
An opportunity for me to observe this phase of AAF operations at first hand came six days before American troops landed on Attu. Six B-24s took off from Amchitka to bomb enemy installations in Chichagof Harbor and in the east and west arms of Holtz Bay. I was the com-

mand pilot of one of the two Liberators assigned to bomb two anti-aircraft batteries in the harbor. As we approached the objective and went in for our bombing run, the Jap batteries opened up. Although their fire was accurate and some hits were scored, the damage was negligible. They continued to concentrate on us after we had completed our run, permitting the second B-24 to come in for an accurate crack at the target unmolested.

Despite the adverse weather conditions, one command plane flew from Amchitka to Attu every day while the battle was in progress. Its pilot was Colonel William O. Eareckson, deputy chief of the Air Staff in Alaska and air officer for the Attu Task Force Commander. I rode in his plane for the first five days of the campaign, and no tribute I could pay to this officer would measure up to the skill and efficiency he displayed in carrying out one hazardous aerial mission after another. His B-24 was in the air over Attu from eight to ten hours out of every twenty-four. Direct contact was maintained between his ship and the Task Force Commander, enabling ground troops to take advantage almost immediately of battle trends noted from the air by Colonel Eareckson and members of his crew.

(Continued on Page 55)

Here is a typical cloud blanket, almost covering 3,500-foot peaks, with which our airmen had to contend.



General Lynd

A DUCK For Our Air Fleet

BY LIEUT. HENRY G. PEARSON
WRIGHT FIELD

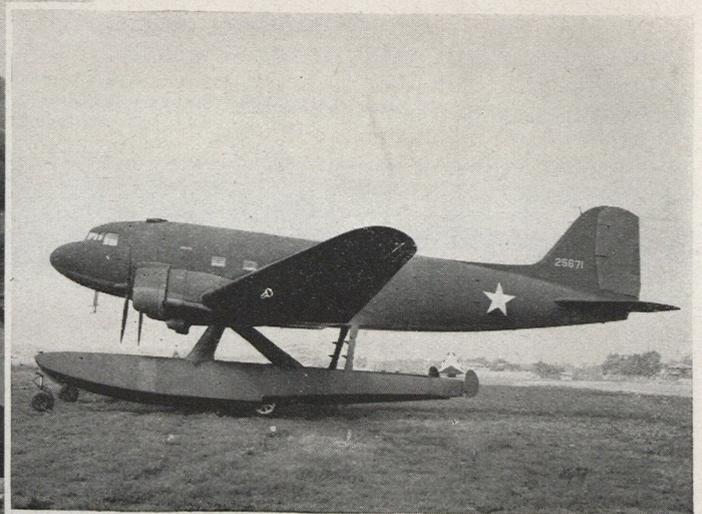
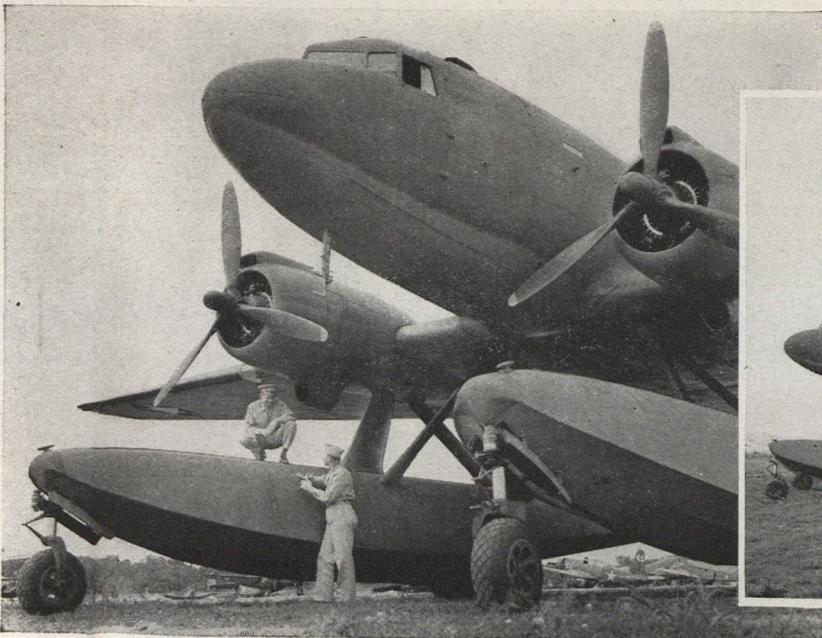
LARGE amphibious floats have been attached to the Army Air Forces' C-47, thereby opening the way to new and important uses for this workhorse of the air transport system.

By adding this flotation equipment, Materiel Command engineers have converted the C-47—military version of the familiar commercial DC-3—into a plane which can land on water, taxi to the shore and climb out on dry land under its own power. Successful tests already have been made on Long Island Sound, and additional testing is being continued at Wright Field.

The need for such a ship has become more and more apparent as a result of the difficulties encountered in rescuing AAF pilots forced down at sea in the South Pacific and washed up on tiny coral reefs and islands. The amphibious plane will be able to take off from a land base, set down on the water nearby the island and then, by lowering its wheels, climb onto a beach to load passengers and equipment. Engineers foresee in the amphibious C-47 the ideal answer to the rescue problem.

Another function of the new amphibian

The pictures below show the comparative size of the C-47's floats.



The amphibious C-47 in flight.

may prove to be the landing of this type of plane on snow and ice in Arctic climes. Such landings on amphibious floats have been made successfully, and further experiments next winter may show the amphibious C-47 to be suitable for this purpose.

According to Wright Field engineers, the floats attached to the C-47 are among the largest of their kind ever built. They are over 41 feet long, five feet high and have a maximum width of five feet. The German Blohm and Vose 139 had larger floats but they were not amphibious.

The difference in the handling of the C-47 as a result of the modification is relatively minor. The plane's center of gravity has been moved forward slightly, and landings are accomplished in much

the same manner as in a ship with tricycle landing gear. The load limit is not appreciably affected but the speed has been reduced by the extra weight and drag.

A few modifications in the fuselage were necessary in order to attach the floats. The wheels on the floats retract in the same manner as the wheels on the ordinary C-47. Small water rudders, located on the rear of each of the pontoons, are lowered when the plane is landed on water. They are operated from the brake pedal and are retracted by a device which is attached to the tailwheel lock.

More recent designs of the amphibious C-47 have utilized the center bulkhead of each pontoon as an auxiliary fuel tank capable of carrying 300 gallons. With the 600 gallons of extra fuel, the range of the airplane is greatly extended.

A limited number of these amphibians are expected to be put into service within the next few months.

Flak Suits—Bullet-Proof Vests of the Air

BY LIEUT. ROBERT V. GUELICH

Flak suits for combat crews today are protecting the lives of hundreds of AAF men who have been flying through clouds of bursting anti-aircraft shells over heavily defended enemy positions.

Because fragments of exploding ack-ack shells too often have made it necessary to hospitalize much-needed crew members, special armored vests were developed in England. Now, many of our crew members are wearing infantry helmets and flexible armor suits from the neck to the hips, with a sporan (apron) protecting the thighs. This armor has proved effective in repelling ack-ack and 20 mm shell fragments—protection that has greatly reduced the number of casualties in bombing missions.

Through the work of Col. M. C. Grow, 8th Air Force Flight Surgeon, sixteen-

pound flak suits were developed because they could be carried around at high altitudes without exhausting the crew members. These suits proved their worth on ten heavy bomber crews who first tried out the suits of mail. Scores of injuries and many deaths definitely were prevented.

For example, Lieut. Jack Fischer, B-17 bombardier, was on a mission over Europe on May 21 when a 20 mm cannon shell exploded 18 to 24 inches from his chest. Although numerous small wounds in the right arm made hospitalization necessary, several large fragments that might have caused fatal injuries were stopped by the armored vest. Lieutenant Fischer suffered no wounds on the part of his body covered by the vest.

The suits have proved so successful

and acceptable to combat crews that British establishments are swamped with orders for them and American manufacturers have been called in on production contracts.

At the Armament and Equipment Laboratories of Wright Field, special steel and plastic suits of armor have been tested to determine what materials will offer maximum protection at a minimum weight.

Types under study include riveted and cemented overlapping steel strips (approximately 2½ by 18 inches), overlapping two-inch squares of 20 gauge manganese steel, and solid breastplates. Canvas is sewed on both front and back of each section. The complete vest is hung on the shoulders and can be dropped off in an emergency by pulling one string.

In the North African campaign many pilots and crew members salvaged armor plate from wrecked planes which they wired around the vulnerable spots of their positions. This makeshift protection often stopped fragments that could have resulted in injuries.

The new armored vests are adapted to crew members according to the vulnerability of the positions which they occupy and according to location of armor-plate protection in the airplane. Because their backs are protected by the plane's armor, pilots and co-pilots need additional protection mostly in front. Other crew members wear complete armored suits that give them full protection.

(Technique Continued)

Maj. Robert J. Reed (left) of the Eighth Bomber Command dons the protective flak vest and tapered sporan, plus a steel helmet.



Tech. Sgt. Wilbur E. Kloth (right below), Major Reed's crew chief, is wearing the full vest and apron used in some positions. Lieut. J. B. Wilkinson of the Flight Section at Wright Field has on the more abbreviated type which permits necessary freedom of action in the cockpit.





Over a Utah highway en route to an air-base goes a B-17 mobile training unit of the Fourth District, AAF Technical Training Command.

Mechanical Training by Trailers

An innovation feature of the Army Air Forces Technical Training Command is a mobile training unit for visual and practical mechanical instruction. Big, van-like vehicles bring the vital inner-workings of fighting planes to aircraft mechanics on the line. The plan originated in the Fourth District of the TTC and now all Districts have similar units on the road.

To liken it to a travelling classroom is to underestimate its work. Open its stage-like doors, scan its interior and you find a complete mock-up panel system of the mechanisms of a combat plane. Every type used in the AAF is represented by a mobile unit that keeps its instructional setup in equipment and modification constantly up-to-the-minute.

Successful from the outset, the system has mushroomed considerably. Last summer the first unit was established for the P-38. Today mobile units are touring the entire country to service the tactical air forces.

For example, in a B-17 trailer unit, there is a complete cockpit assembly up front with controls and instruments that actually work and can be observed in any operation. A cut-away B-17 engine bares every essential part to close scrutiny, and a cross-sectioned propeller is exhibited in a conspicuous corner.

Nearby, mock-up panels show the construction of the plane's airframe and the operation of its hydraulic and cooling systems. Another panel illustrates the strategic arrangement for fire control apparatus that prevents the spread of a blaze set by enemy shells. Still another panel traces the entire wiring system of the ship enabling the mechanic to follow each minute wire in the circuit.

Technical construction of the aircraft supercharger and other engine accessories is revealed by actual cut-away equipment parts and even a life-sized oxygen system is carried along for instruction purposes.

A motion picture projector brings the Technical Training Command's latest training films to the attention of the ground crews.

Most of the instructional material is angled towards the aircraft mechanic, but other AAF technicians, particularly armorers, are also kept abreast of the latest developments in their specialties. Modifications on aerial machine guns and cannon are brought to the attention of the men who service them at their tactical stations.

The compact interior of the mobile unit contains all the intricate mechanisms of the battle plane it serves.

Co-founders of the system were Maj.

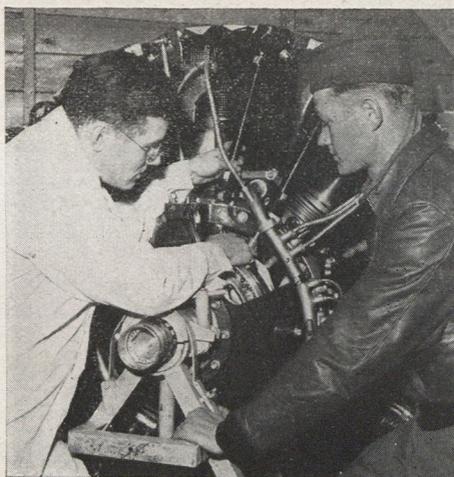


Arriving at its destination it drives right onto the line to display in panel form the "works" of a B-17 to the mechanics who service the planes.

Gen. Walter R. Weaver, Commanding General of the TTC and Maj. Gen. John F. Curry, head of the command's Fourth District. Both were not satisfied with mere classroom and factory instruction. Once out on the line, they held that the men must be further schooled in the practical application of what they had learned and kept conscious of the latest developments.

Then, too, they knew that the planes used in tactical units were not readily available for instruction purposes. These

Inside the trailer a cut-away B-17 Cyclone engine reveals its working mechanism to an onlooking mechanic.

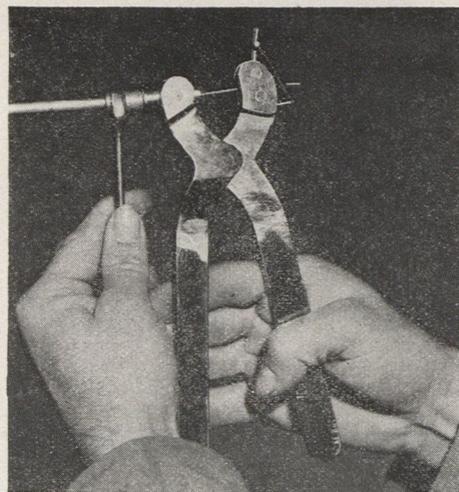


planes might be kept from the hangar for days, perhaps longer, and when they did return to their hangars the fast maintenance necessary to put them back in the air as soon as possible eliminated the possibility of any further mechanical training.

The answer was the development of a mobile unit designed to bring to the aircraft technician on the line all the facts about the plane he was servicing. It was practical application of the knowledge he had learned in a technical school and by means of actual visual instruction he would be better equipped to diagnose the ills of an ailing craft and cure them with speed and assurance.

Each truck trailer unit is staffed by an officer in charge, six non-commissioned instructors, an Army driver and one or two civilian specialists. The soldier-instructors are usually graduates of a TTC school and experienced hands in machinery. Civilian specialists are from the aircraft factories whose planes are represented by mobile units.

"The Mobile Training Unit is a good deal more valuable for its purpose than the technical classroom," says Lieut. Col. Thomas E. O'Connell, in charge of the Fourth District Mobile Training Units. "When line mechanics can see and familiarize themselves with the vital mechanisms for the plane's maintenance they will grasp the fundamental idea of what to do and how to do it faster and more thoroughly." — Staff Sergeant Jack Angell, Public Relations Office, Headquarters Fourth District, AAFTC, Denver.



Cable Tightener

Staff Sgt. Norman Wolfley of Allansville, Pa., has simplified the work on the engines of AT-11 bombardier training planes at the Victorville (Calif.) Army Flying School through a new way of adjusting cables on the engine control. He developed a new instrument (shown above) which is a combination socket wrench and pliers. It tightens cables accurately and easily. — PRO, WCAFTC, Santa Ana, Calif.

Individual Light for Code

Formerly visual code instruction signals were given to aviation cadets at the Enid Army Flying School by a large light in each corner of the code room. They had to glance at a light in a corner, then look down at their paper to print the letter.

Under a new arrangement, each code booth now has a radio pilot light in the center only a couple of inches from the cadet's paper when he is receiving the visual code, enabling him to watch both the light and the paper with a minimum amount of eye movement.

Mr. W. B. Teitzel, instructor, states that the new system allows the average cadet to receive from one to two words faster per minute. — **PRO, Enid Army Flying School, Okla.**

Safety Device for Tire Inflation

Not long ago a man was killed at Tinker Field while inflating the tire of a bomber. Recently his fellow workers put into operation a new device which will allow the pumping up of an airplane tire to be done in safety.

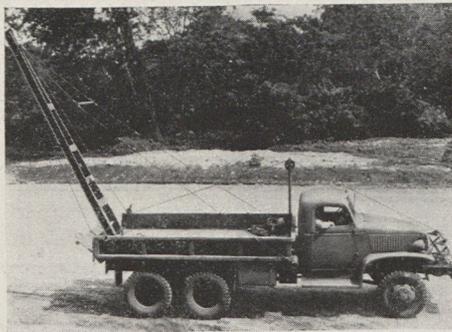
General plans of the device include a metal bin made of boiler plates into which the tire is rolled for inflation. Through an opening in the side of the bin the tire can be blown up to its proper pressure from a regular air hose. Attached to the top of bin is an air regulator which automatically allows a maximum amount of air to enter the tire. Gauges attached to the air hose register the amount of air in the tire at any particular time and the other one shows the maximum pressure of the control gauge setting. A red light flashes while the tire is being inflated.

The idea was advanced by Miles J. Smart, foreman aircraft mechanic in the Landing Gear Installation department, who passed his designs on to Winfield Smith, foreman of the welding section. The pair turned their invention over to Tinker Field, where it is now in use. — **Tinker Field, Okla.**

Combat's Child—C3-1B Crane

On arriving at an island in the South Pacific, the 40th Service Squadron of the 13th Air Force found itself minus a C-2 wrecker or its counterpart, so the engineering section set to work and evolved a crane assembly from a meager supply of parts—mainly salvage—that would do such work as picking up engines, wings and fuselages, and other tasks which occur in the normal course of aircraft repair work.

Two non-commissioned officers, Master Sgt. Gerald V. Eady, Decatur, Ind., and Tech. Sgt. Jack R. Sowers, Rockwell, N. C., working under the direction of First Lieut. Reuben Yarri, Shreveport,



The C3-1B crane, pictured at its birthplace on a South Pacific island.



Lifting a fuselage.

La., developed after two modifications a crane since designated the C3-1B, which has proved very successful. The crane consists of an "A" frame-boom constructed of six-inch by one-quarter-inch channel iron. The frame is bolted to the rear of the bed of a two and one-half ton truck equipped with a power take-off winch. The "A" frame is sixteen feet long with a two-foot base and is welded throughout. Lifting power is derived from the power take-off winch at the front of the truck. The cable is passed by a series of pulleys over the cab to the base of the boom, then to an eight-inch pulley at the top of the boom to the load which is picked up either by cables or a hook.

Loads weighing as much as two tons have been picked up with the C3-1B

Hoisting an engine.



crane but it is not advisable for steady use to lift loads greater than 2,500 pounds, it was found. However, this weight limit permits its use for all aircraft engines, most wings and other aircraft accessories.

Although designed primarily for use while waiting the arrival of a C-2 wrecker, the crane assembly is not replaced by the wrecker. On the other hand, it is a very useful adjunct to the C-2 wrecker, for example in the lifting of B-17 wing inner panels or in picking up a B-17 fuselage. Working together, the two pieces of equipment do such jobs easily.

Should the designation "C3-1B" appear strange to those familiar with stock lists, here's the explanation for it. The letter "C" indicates crane, the figure "3" was so used because this was the third one made; the "1" represents the "A" frame which is the same as the original, and the letter "B" stands for the second modification made on the present crane. — **Lieut. Col. Franklin K. Reyher.**

Artificial Icing in Flight

There was a time when research projects involving test flights in natural icing conditions rarely could be completed on schedule because icing areas are strictly will-o-the-wisps, easy to locate only when you're trying to evade them. Now by the flip of a switch, ice formations can be produced on prop blades during flight.

Wright Field propeller engineers, with a series of anti-icing and de-icing projects coming up, resolved to work out a method by which prop blades could be exposed to icing in flight tests whenever needed.

In one arrangement a special spray was installed in the tail turret of a B-24. Water from two large tanks in the bomb bay is pumped through the nozzle as the B-24 flies in front of the plane being flight-tested. At the right altitude ice forms on the plane trailing in the spray.

In the alternate scheme a single plane is employed. Here an outrigger spray was built which throws moisture from bomb bay tanks into the No. 2 propeller of the B-24 in which it was installed.

To obtain motion pictures of the propeller while it is icing up and throwing off ice during flight tests, the Motion Picture Branch assisted in solving several problems. Propeller engineers prescribed that only one blade be photographed in identically the same position during each revolution at a speed which would result in a sharp image.

This stroboscopic effect was secured by synchronizing the shutter speed of the camera with the rpm of the propeller, thus showing successive stages of icing and de-icing.

It was a tough job but the resulting motion pictures show the pattern and speed of ice building up and being thrown off of the prop during flight. — **Arden R. Strang, Wright Field. ☆**

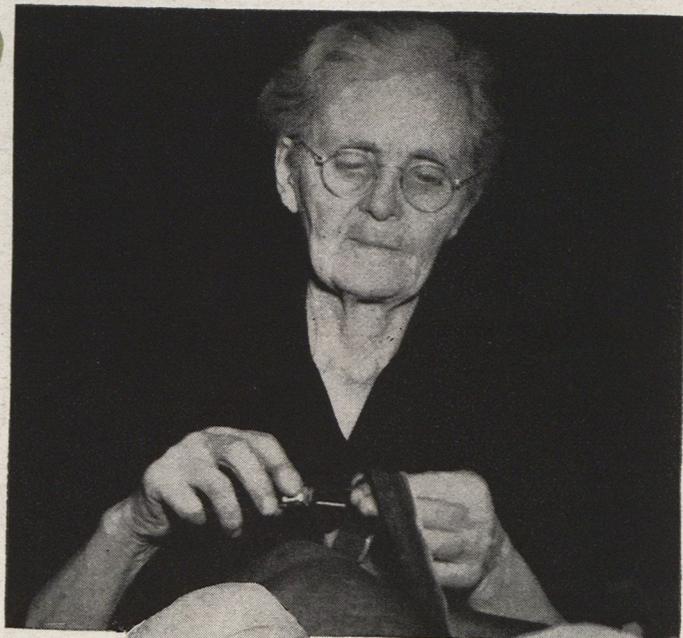
AS YOUNG AS THEY FEEL

THOSE who think of this war only in terms of youth and the present generation forget the thousands of men and women who, though they may have reached their three score years and ten, still have the skilled hands and youthful outlook needed for dozens of tasks which must be done to insure the successful prosecution of the conflict. Many of these young-oldsters have taken their talents into AAF depots and sub-depots throughout the country. They not only are performing their duties well but, more important, they are relieving younger men and women for service where youth in years—and the stamina that goes with it—is a prime essential. Many of these older war workers have left the ease of retirement to share in the fight against our enemies. Some of them are literally backing up their grandchildren who are pilots and mechanics, weather officers and mess sergeants. They have turned again to the lathe, the forge, the saw and the hammer to perform tasks that are just as vital as dropping bombs on Axis factories or building airdromes in the jungle. AIR FORCE presents this picture story of a representative few of the thousands of these men and women who are contributing so effectively to the Army Air Forces' and the nation's war effort.



Six years ago, A. J. Bruce was retired after a half century as carpenter for Santa Fe Railway. Today, at 79, he works the swing shift at the San Bernardino (Calif.) Army Air Depot.

All honors are not claimed by men, even in the upper age brackets. Many grandmothers have dropped knitting needles and peacetime sewing to become full-fledged war workers. Mrs. Myra E. Bradburn, 63, who raises canaries as a hobby, is shown here repairing flyers' clothing at the 29th Sub-Depot, Enid, Okla. She did alteration work for an Enid department store for 21 years.

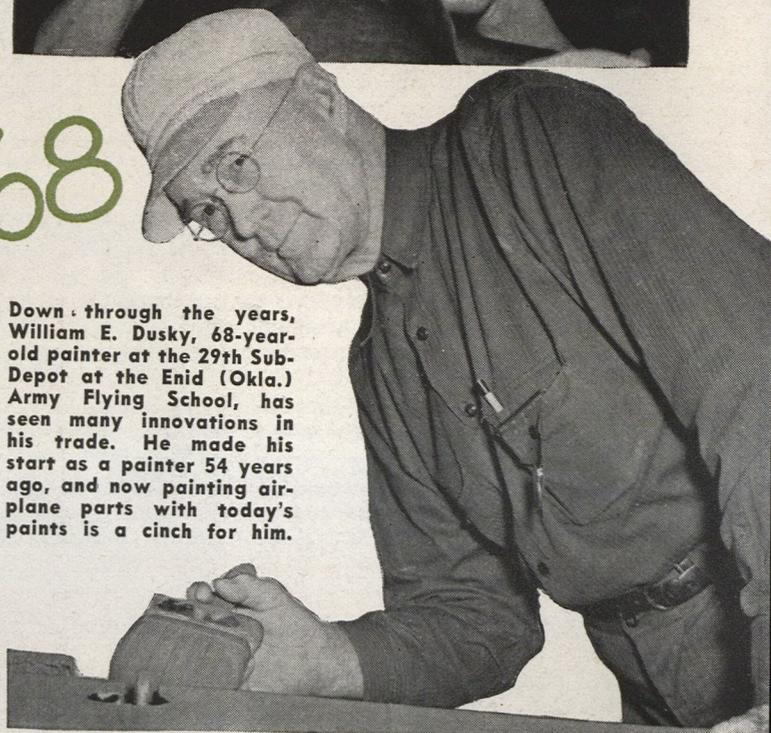


Despite his 73 years, Alfred M. Frothingham commutes daily from Detroit to his job as mechanic and blacksmith at the 96th Sub-Depot, Selfridge Field, Mich. In his earlier years, Mr. Frothingham was engaged in vaudeville and blacksmithing, except for his five years in the Army from 1916 to 1921.



68

Down through the years, William E. Dusky, 68-year-old painter at the 29th Sub-Depot at the Enid (Okla.) Army Flying School, has seen many innovations in his trade. He made his start as a painter 54 years ago, and now painting airplane parts with today's paints is a cinch for him.





After a lifetime spent farming and operating a blacksmith shop, John C. "Uncle Bill" Denham, 69, works at the 9th Sub-Depot, Harding Field, La. He has two sons and one grandson in the armed forces.

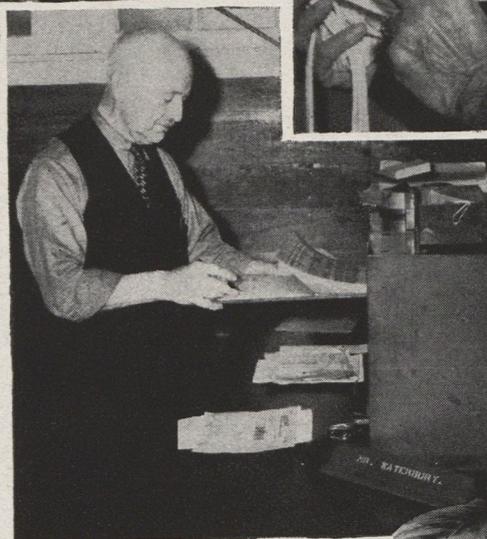
After retiring in 1941 as terminal agent of the Canadian Pacific Railroad, Francis Dow, 68, has returned to "active duty" as a packer in the shipping department of the 46th Sub-Depot at Houlton, Maine. He has one son in the armed forces in Africa.



AIR FORCE, September, 1943

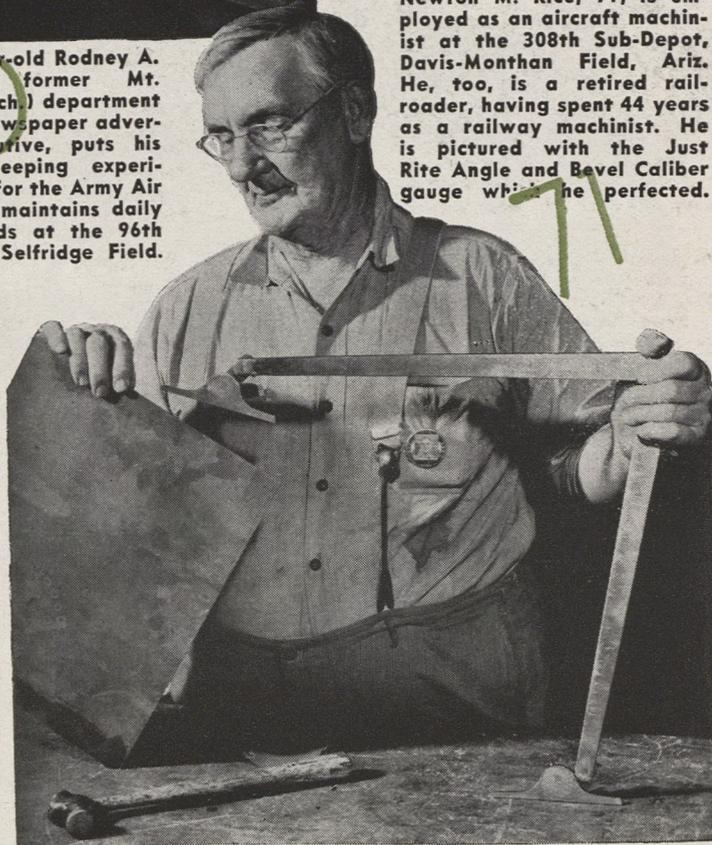


Seventy-year-old Charles E. Baldwin as a parachute jumper (from balloons) at the age of seventeen, was billed as "Professor Baldwin, King of the Air." Now a driver at headquarters of the 40th Sub-Depot, Buckley Field, Colo., Mr. Baldwin takes time out to inspect modern chutes and reminisce. He once performed with Ringling Brothers, Barnum and Bailey Circus.



Seventy-year-old Rodney A. Waterbury, former Mt. Clemens (Mich.) department store and newspaper advertising executive, puts his long bookkeeping experience to use for the Army Air Forces. He maintains daily stock records at the 96th Sub-Depot, Selfridge Field.

Newton M. Rice, 71, is employed as an aircraft machinist at the 308th Sub-Depot, Davis-Monthan Field, Ariz. He, too, is a retired railroader, having spent 44 years as a railway machinist. He is pictured with the Just Rite Angle and Bevel Caliber gauge which he perfected.



THE WORLD IS THEIR

OYSTER



By Herbert H. Ringold

Illustrated by Capt. Raymond Creekmore

"BET a dime."
"I see."

"Up a dime. Say, where's Klotz?"

"I'm out. He went to Russia yesterday."

"How about Dick Kight? There's my twenty."

"By me. Kight's around. Saw him two days ago."

"I play. No, he left for India this morning."

"I'm out. Let's throw away this deck and get one with some aces in it. If these cards don't get any better, you guys will have to wait until I get to China again. The adjutant over there owes me 47 bucks. And it's about time that weather officer in Cairo came through with the six I loaned him."

"Come on, let's play poker. I need some dough myself. I got a date coming up with that British nurse in Karachi."

That's the kind of conversation you get around the poker table, when the players are members of the 26th Transport Group of ATC's Domestic Transportation Division. This is a "special mission" outfit, on call for any emergency—anywhere, any time. To these guys, flying to Moscow or Chungking or Melbourne is about as exciting as going to the nearest latrine.

You sit down beside a couple of them listening to the phonograph playing "Coming in on a Wing and a Prayer."

"Say," says Captain Ralph Reed, "next time any of you guys get down to Natal, pick up a couple of my shirts. When I came back from Africa last time I was too damned tired to get them."

Reed explains why he didn't stop to get his shirts.

"There were 400,000 pounds of high priority materiel piled up at Natal. Rommel was in El Alamein then and the Allies needed that stuff in a hurry. Our CO, Lieut. Col. Willis H. Proctor, was on hand to supervise the job. We had seven ships, and in 36 days we moved 388,339 pounds of equipment over to Africa. All of us made two round trips a week. Each plane had a double crew and one crew would leave Natal at 1700 o'clock and get into the West African base in the middle of the afternoon. We would leave Africa that night and land back in Natal the next morning. The mechanics worked on the ship for five or six hours and then the other crew went out. We got two good nights of sleep out of every five. Let's see, I think I left Natal on Wednesdays and Sundays."

Four meals on four continents in three days is not unusual for these flyers of the Air Transport Command.

Reed hastens to explain that it was all routine flying. Nothing to get excited about. Nothing interesting happened. Very dull and monotonous. A job to do.

"Yeah," says Captain Vernon M. Byrne, "after you jump the ditch once, it gets sort of boring. The only real fun I've had was the time I took 100,000 one-dollar bills over to Africa so the ghost could walk on pay day." (You find out later that he has made eleven round trips across the South Atlantic.)

Captain Joseph E. Kimm agrees with Byrne. "Nothing exciting happens to us. It's the boys in combat who are really doing the work. We just fly around."

"Flying around" to Kimm has meant pioneering the air route up to Alaska, making ten round trips across the ocean and flying the first C-87 to India.

"The fellow who had some fun," Byrne continues, "was Captain Alexis Klotz. He's been around more than most of us anyhow. I think he's in Russia right now. On one trip he carried 7,000 pounds of mercury fulminate. If you sneeze twice that stuff will blow up. If I know Klotz he just set it down nice and careful like, yawned, and made a routine report to operations. His flight plan called for four stops but with that delicate load on board he made it in two."

"Speaking of odd cargo," says Kimm, "Why don't you ask Reed about that stuff he brought in from Iceland?"

Reed laughs. "Oh, I just picked up some Danish pastry in Iceland one morning and my wife and I had it for dinner that night in Washington."

You ask about the kind of cargo they usually carry and are told it is all critical materiel or high-ranking dignitaries. As a matter of fact, the 26th Transport Group claims: "If we haven't flown you, you're not a big shot statesman." Most of the time, the men don't even know the kind of cargo they have in their ships.

Somebody walks over and starts playing "Wing and a Prayer" again. That reminds Reed of the time he was flying a C-87 to Africa. About an hour out of South America, he lost his gasoline cap and the gas started to siphon and leak into the cabin. They cut off the radio for the slightest spark would have blown the ship to hell and gone. They just had to fly around praying until the gas got low enough. And they couldn't contact their base or any curious gunner to announce that they were friendly.

What kind of weather do they find?

Byrne says, "Around Africa you'll find a lot of fronts, but they aren't much to worry about if you play it safe. Go around or underneath them and look for

holes. The best thing to do is run parallel down the coast of Africa and hunt for a spot to get through. But don't try to tear into the fronts at medium altitudes or you'll get yourself a pretty rough ride."

"That's right," Reed adds. "Stay down around 1,000 feet. You'll find that the turbulence is very much lighter. But be sure you are out at sea before you start letting down to 1,000. Otherwise, you'll spread yourself all over an African mountain."

"All you have to do," Kimm says, "is listen to your briefing officers. You get briefed from station to station by experienced men who know their business. Every one of them has flown your route and they go out on periodic flights to check up. Just do what they say."

"Around Puerto Rico, the weather's different," says somebody whose name you don't get. "Down there, you'll find a lot of severe electrical storms. Keep out of the clouds and you'll be all right. It's a good idea to put your wheels down so you can handle the ship better. That slows you down and gives you more control."

You find out that these men run into all kinds of weather. One day they are in a hot climate and the next day it's way below zero. They start out in khaki and wind up in electrically heated suits. A lot of peculiar things can happen when you fly from hot weather into cold, or the other way around. Your oil tanks should be covered in cold weather, but when you get into the hotter climates be sure you remove that cover. In the hot countries don't screw the gas tank caps on too tightly because the gasoline expands and you are liable to burst a tank. If you use a thin oil for winter weather, change it the minute you land wherever the temperature is high or it will congeal and you'll never get it out. If you are flying through severe icing conditions and your manifold pressure starts dropping, don't increase the throttles. You are losing speed because of the ice—just apply heat to the engines, don't boost the manifold.

Captain Reed gets up and says, "Let's go down to the enlisted men's quarters and talk to the men who know that kind of stuff." You walk down to a day room and run into Master Sergeants Wells E. Brown, Clyde W. Nowlin and Leo J. Zulkowsky and Sergeant M. A. Greco.

Brown helped evacuate Java and flew in the last American plane out of the Philippines. Zulkowsky ran the first survey route of Greenland in a B-24. Greco has made nine round trips across the South Atlantic. Nowlin, a charter member of the old Ferrying Command, made the first ferrying hop to Russia and 34

other crossings over both oceans.

Their experiences? "Routine flights, nothing much ever happens." Nowlin does admit that when he landed after his first trip to Moscow, they put a yardstick into the gasoline tank to check their supply and it came out completely dry!

They talk about the fact that they never know where they're going until two hours before the ship takes off. "When we went on one trip," Greco recalls, "we were given maps for both Russia and Japan. Just before we left they told us we were going to Casablanca."

"Talking about Africa," says Nowlin, "if you have to make a forced landing there the bush will seem deserted, but there are few places you can land without being seen. Just wait a couple of hours and some natives will come to investigate. Be sure not to frighten them with a display of firearms. While waiting, don't leave your ship. It's easier to find a plane than a man. If you burn the oil from your engines it will give out a heavy black smoke which is easy to see from above."

"And watch out for the Wogs around Africa," Greco adds. "The Wogs are African soldiers serving the Allies. They do sentry duty and they only understand two words of English—'stop' and 'go.' When they say 'stop,' freeze or you'll get a couple of feet of cold steel through you. Don't play around with those boys."

You ask for maintenance tips.

Zulkowsky says, "Be sure to keep your radio off when you transfer gas in a B-24. The slightest spark will blow you up."

"And when something goes wrong with your radio equipment," adds Brown, "don't take the set apart. Check the plugs and fuses. Instead of ripping out the equipment, look for the minor troubles. You'll usually find a loose plug or a blown fuse causing the difficulty. And when the radio won't work on compass position, nine times out of ten the trouble is in the inverter. Check it thoroughly."

"And tires," Nowlin continues. "In cold climates you check tires for leaks by spitting on your finger, putting it on the valve and seeing if any air comes out. Be sure to blow the vapor out of the valve when you're finished. Otherwise, it will freeze, expand, and you'll get a flat tire."

"Tell the mechs," says Zulkowsky, "to carry enough tools with them to do their jobs. They'll be getting places where there just aren't any tools."

Together they agree that everybody in the crew should know how to do every job. When you are flying for ten and twelve hours at a time the fatigue element plays a big part, and if one man gets tired somebody else can relieve him temporarily. It's always a good idea for everybody to know everybody's business.

As you close the door on the enlisted men, one of them is saying, "Drive into town with you? Not the way you handle a car. It's too damn dangerous." ☆

EVERY day in some sections of the United States, Army pilots hear the words, "Army Flight Control advises..." followed by such warning messages as:

"Heavy icing vicinity of Cleveland between 5,000 and 7,000 feet. Advise change in altitude."

"Your destination closed to all except instrument flights due to low ceilings. Advise landing at alternate or continue CFR to Redfield."

"Violent thunderstorms along your route. Advise you proceed via Yorktown to destination."

These and dozens of other warning messages are keeping Army flights in this country out of serious trouble. No longer is the military pilot a "lone wolf" of the sky. Today for the first time in U. S. military aviation, a system is being installed to plot and trace the progress of every military airplane engaged in point-to-point flight in this country.

This system is being set up by the Flight Control Command, Winston-Salem, N. C. Specially trained flight control officers are being placed in control centers throughout the United States to trace the progress of each airplane and stand ready to dispatch emergency warning messages, with minimum loss of time, through communications stations nearest the pilot.

Here's how the new Pilot's Advisory Service works: A pilot, while planning his flight, selects the radio range stations he will call en route and lists these on his flight plan. All flight plans are sent by the operations offices to the flight control centers for the area, whether the flight is on or off the airways, CFR or instrument, day or night. Every flight is plotted, either on the airways flight progress boards or on specially designed magnetic maps.

Take a look at a flight control center in action. Before you is the magnetic map with markers scattered over it. A moment ago a flight plan came in by interphone from a base operations office. Within a few seconds this flight plan is in the hands of a control officer who inspects it to see that all necessary information has been furnished. An abbreviation code is used to mark up a slip of paper giving the serial number of the airplane, its type, its air-speed, the point of departure, destination, actual time of take-off, estimated time en route and the radio ranges which the pilot will contact.

This slip of paper fits into a slot in the top of a movable arrow marker which is placed on the magnetic map at the point of take-off. Every fifteen minutes this marker is moved along the stated heading for the flight consistent with the airspeed

At the AAF Flight Control Center in East Boston, Mass., Lieut. Franklin D. Harrington, Jr., maps the positions of military planes in the control area.

ARMY FLIGHT CONTROL

Advises...

By Lieut. Col. Ralph J. Moore

HEADQUARTERS, FLIGHT CONTROL COMMAND





Two officers note the movement of aircraft from the magnetic map while the East Boston control center CO, Maj. William L. Thorburn, studies flight plans and progress reports coming in by teletype.

Lieut. Joseph W. Reeves checks a flight plan while sitting in the control position. Before him are the Flight Control Panel, weather sequences and other data pertinent to a pending flight.

of the plane. From time to time the positions of aircraft are adjusted to coincide with pilots' position reports which are relayed through range stations. At any moment the flight control officer can tell you with surprising accuracy where each airplane is and through which radio range the pilot can be contacted.

Meanwhile, other officers in the flight control center are collecting data on weather conditions in the area. Sources of weather information include the Army Weather Services, United States Weather Bureau, and data furnished by pilots' reports on ceilings, icing, turbulence, etc. From this composite of information an analysis of weather movements is made and studied in terms of the weather conditions likely to be met by each flight.

While this is in progress, another control officer is receiving position and arrival messages, and the teletype is hammering out warning notices concerning fields that are closed, runways under construction, hazardous obstructions, practice tactics that are a menace to planes, and other valuable information.

Thus, at his finger tips, the chief Army flight control officer has complete information on weather, changes in radio navigational aids, traffic and practically every other hazard about which the pilot should know. This is the information on which Pilot's Advisory Service is based.

Let's, for example, take the story of a warning message that got through to one pilot and not to another. The two planes take off from nearby fields for the same destination on cross-country instrument flights. Their flight plans come in to the flight control center and are posted on the Army flight control plotting maps. Every fifteen minutes for two and one-half hours they are moved along on the map. Suddenly the forecaster receives information of unexpected bad weather. A severe

cold front is pushing rapidly across the line of flight, closing both the destination and alternate airports of these aircraft. A warning is prepared and interphoned to the range stations nearest the two planes as indicated on the map plotting board.

Within less than a minute the pilot of the first ship, who has made regular position reports and whose radio is tuned to the range station, hears the attention sig-

Operation and aim of the new Pilot's Advisory Service of the Flight Control Command.

nal, a sputter of "dits" in his ear. He switches over to "voice" and hears the radio range calling him. Responding, he is told, "Army Flight Control advises heavy icing thirty minutes ahead of you, and your destination and alternate closed due to low ceilings. Suggest you reverse course and land at . . ." This pilot has no love for heavy ice or low ceilings. He executes a 180-degree turn and in a few moments is sipping a cup of coffee with his feet planted on a stout plank floor.

MEANWHILE, the other plane is moving rapidly toward the heavy weather. Flight Control is getting anxious and has every range station along the line calling the pilot. A dance band or other diversion keeps his radio tuned to everything except the range stations that are trying to reach him.

The weather is thickening. The pilot plows on and finally calls his destination as icing becomes a serious problem. An hour after the other plane is safely on the ground, this pilot is informed his destination and alternate are closed by low ceilings. In reversing his course he encounters even worse weather. Before long, heavy ice is dragging the plane down rapidly. In the nick of time most of the

crew bail out, but the pilot jumps too late.

Here were two planes that took off at about the same time, traveling the same route toward the same destination. In one case the flight was safely terminated. In the other case, a potentially good pilot was killed, a crew demoralized and a badly needed airplane was destroyed—all due to lack of proper radio communication with the right stations at the right time.

This is not a bedtime story pulled from thin air to help put the children to sleep. Too often Army Flight Control tries to raise a pilot with an important radio message without success. Sometimes the plane runs smack into the trouble and only by resourceful action is the pilot able to bring the airplane and crew home safely. At other times Flight Control watches planes go on and on to certain disaster while warning messages go unheeded and the pilot and crew either get a free parachute ride or end up in a tangle of wings and twisted props on some lonely hillside.

Army Flight Control will be nationwide in its operations by December 31, 1943. On June 1, 1943 it was activated in the Seattle and Boston Flight Control Centers. Early in July four more centers went into action, in the New York City, Washington, D. C., and the Oakland and Burbank, Calif., areas. Several other centers were to be activated this month. Base operations offices can inform pilots of areas in which Flight Control is offering the Pilot's Advisory Service and pilots should plan their flights accordingly.

Full use of radio facilities is part of the essential training of the young pilot and his crew. It is force of habit with the older and more experienced pilots. Use your radio; tune in on every radio range on your route. You may be the pilot they are trying to locate. And use the Pilot's Advisory Service whenever you pass through an area where it is offered. ☆



How the U. S. Army launched its first great land-air offensive across the Owen Stanley Range.

On July 21-22, 1942, the first units of a Japanese army under General Horii succeeded in landing at Gona Mission. Allied air action against the Jap naval unit of three transports, two light cruisers and three destroyers was intense but insufficient to prevent the beaching of some 4,400 troops and supplies. One transport was set afire and became known as the "Gona Wreck," to be used later by the Japanese in an interesting manner.

This Jap army was subsequently reinforced by several thousand additional men and by September 27 had crossed the Owen Stanley Range, driving to within 32 miles of Port Moresby.

Here Allied resistance stiffened and a strong defensive position was established at Iorabaiwa Ridge.

It is noteworthy that the Japanese never gained air superiority. From July 20, 1942, to January 23, 1943, they raided Port Moresby only about thirty times, with no really serious results, and molested our ground forces only occasionally. Our air units harassed their dromes at Buna and elsewhere, knocked out many enemy aircraft and later, when our offensive was under way, completely dominated the sky.

However, before our air power could be brought into full play, it was necessary to recapture the landing field at Kokoda, on the enemy's side of the Owen Stanley Mountains.

This was a slow, costly process. Ground units had to drive the Jap back up the jungle track, wiping him out of ravines and pockets in dense foliage where observation was always difficult. Six weeks were consumed before our troops succeeded in fighting back across a gap in the range to take Kokoda on November 2.

By November 4 a landing strip at Kokoda was ready for our use and supplies for our troops began to be flown in. The Japs retreated six miles or so down the Kokoda-Wairope track to make a stand at Oivi, but they were subjected to such heavy ground attack and strafing from the air by Beaufighters and A-20s that on November 11 they were forced out of Oivi with considerable losses.

In this phase of the operation, our airmen kept the enemy's supply lines under daily attack. Particularly heavy bombing and strafing of Wairope, Kakendetta, Popondetta, Soputa, Sanananda and Buna was done by A-20s, Beaufighters and B-26s.

One of the important troop transport operations began on November 5. American units were flown from the Australian mainland to Port Moresby and from there

THE PAPUAN CAMPAIGN

By Colonel Frederic H. Smith

WHEN the Papuan campaign ended in January, 1943, with the Allied occupation of Buna, Gona Mission and the Sanananda sector, and the complete destruction of General Horii's army, there came to a close the first fully integrated land-air offensive ever undertaken by United States forces.

The action was most significant. Air power was used to its highest advantage, not according to old and narrow concepts of air support but with an eye to all its manifold functions.

In fact, the transport of ground troops and supplies over difficult terrain with a vast resultant saving of time and life was concededly the air arm's most important contribution to the victory. Bombardment and strafing operations were relentless and effective. But always they were subordinate to the mass hauling by air of ground troops, artillery weapons and supplies.

Probably sixty percent of the Allied ground troops were flown by air across the Owen Stanley Range and were landed fresh and in full force close to the battle lines. The troops flown to combat amounted, conservatively, to a full division.

Our aircraft also transported jeeps, machine guns, Befors, 25-pounders and even some 105 howitzers. Other supplies were dropped continuously. Our record day saw approximately 350 tons transported, and a fair daily average would be around 115 tons. The distance was 110 miles

from Port Moresby to the front.

It was this campaign, moreover, that witnessed our first mass air evacuation of casualties. All Allied sick and wounded were flown back across the mountains, accomplishing in less than an hour a journey which normally would have required a couple of weeks by donkey-back.

While no comparative figures are available, it is believed that our air units hauled more—on a per ton-mile basis—than the Germans at any time in this war.

Proper evaluation of the Papuan campaign calls for a brief review of its development and of the circumstances with which our forces were confronted.

Strwn along a New Guinea beach are Jap barges wrecked in an Allied raid. Heavy strafing has stripped the palm trees.



across the mountain range to the east coast of Papua, at Wanigela Mission. By November 15 the whole force with its supplies had been landed at Wanigela, from where it set out on foot for Buna.

THE Japs had obtained some reinforcements but these represented only a fraction of their casualties. Reports at the end of November indicated that some 8,000 to 9,000 of their troops were dead, wounded, sick or missing, and that their force had been reduced from approximately 13,000 to, at most, 4,000. General Horii had drowned in a crossing of the Kumusi River.

After the defeat at Oivi, the next real stand made by the Japanese was on the coast east of Soputa. Enemy resistance was soon reduced to three sectors: Buna, Sanananda-Soputa and Gona Mission.

Gona Mission was the first to fall. The Japs held strongly defended positions and, despite the fact that our A-20s, P-40s and Beaufighters reduced all buildings to wreckage and repeatedly strafed their lines, stubborn resistance continued until Allied ground troop reinforcements were flown right into the forward area. They went directly into action and Gona Mission was finally occupied on December 9.

At Buna there were two fronts—the "New Strip" area and the Giruwa Village area. In the former, the Japs had sturdy pillboxes impervious to 81 mm mortars and 25-pounders. Tanks, however, finally broke the deadlock.

Resistance around Giruwa was also obdurate until the enemy was overwhelmed with fresh troops flown from Port Moresby to nearby Dobudara.

Air attacks had leveled the Buna Government Station and other buildings to ashes (although much credit for this destruction must go also to the 25-pounders of the artillery). But it was not until

'A New Form of Campaign . . .'

General Douglas MacArthur issued the following statement on January 24, 1943:

"The destruction of remnants of the enemy forces in the Sanananda area concludes the Papuan campaign. The Horii army (Lieutenant General Tomatore Horii commanded the estimated 15,000 Japanese troops in Papua) has been annihilated.

"The outstanding military lesson of this campaign was the continuous, calculated application of air power inherent in the potentialities of every component of the air forces employed in the most intimate tactical and logistical union with ground troops.

"The effect of this modern instrumentality was sharply accentuated by the geographical limitations of this theater. For months on end, air transport with constant fighter coverage moved complete infantry regiments and artillery battalions across the almost impenetrable mountains and jungles of Papua and the reaches of the sea, transported field hospitals and other base installations to the front, supplied the troops and evacuated casualties.

"For hundreds of miles bombers provided all-around reconnaissance, protected the coast from hostile naval intervention and blasted the way for the infantry as it drove forward.

"A new form of campaign was tested which points the way to the ultimate defeat of the enemy in the Pacific.

"The offensive and defensive power of the air and the adaptability, range and capacity of its transport in an effective combination with ground forces represent tactical and strategical elements of a broadened conception of warfare that will permit the application of offensive power in swift, massive strokes rather than the dilatory and costly island-to-island advance that some have assumed to be necessary in a theatre where the enemy's far flung strongholds are dispersed throughout a vast expanse of archipelagos.

"Air forces and ground forces were welded together in Papua, and when in sufficient strength with proper naval support, their indissoluble union points the way to victory through new and broadened strategic and tactical conceptions."

tanks and other ground units had forced withdrawals from the pillboxes and had captured the Buna drome, driving the Japs into a grove on Giropa Point, that an end was finally brought to the enemy's resistance in this sector on January 3.

The Sanananda-Soputa sector was the most difficult of the three. Here the Japs held out until January 23. Our aircraft pounded the area relentlessly, making it a mass of bomb craters and wreckage. From November 2 to January 23 there were 43 missions directed against Sanananda. These included strafing operations by Beaufighters, A-20s and P-40s, and bombing by B-25s, B-26s and B-17s.

THE Japs held on doggedly however, in an area about a mile in diameter, even after they had been surrounded. But they were at last broken up into small pockets, which gradually succumbed to our ground troops. Except for minor mopping-up activities, the campaign ended on January 23 with the Allies in complete possession of Papua.

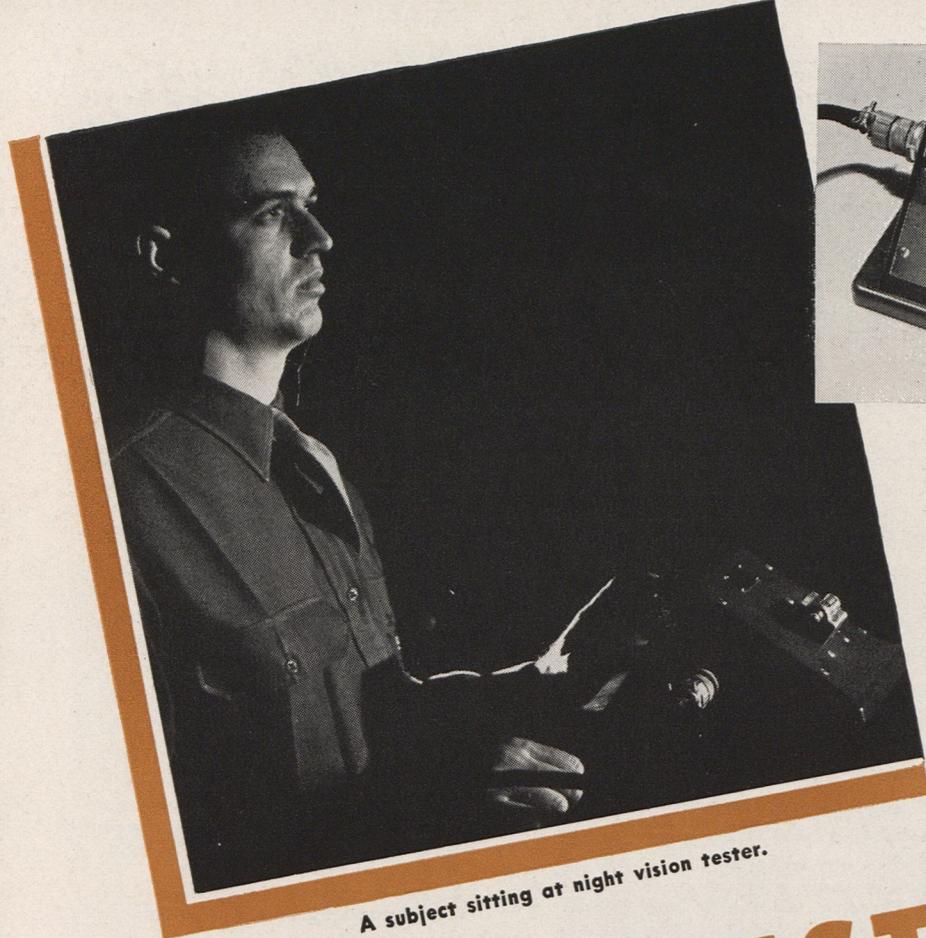
Air power had contributed to the success of this offensive in three principal ways: the transport of troops and supplies; the prevention of worthwhile reinforcement, and the harassment of enemy supply lines.

These operations, all under the direction of Major General Ennis C. Whitehead, commanding the advance echelon of the 5th Air Force with headquarters at Port Moresby, were accomplished in the face of severe weather conditions and difficult terrain.

The Owen Stanley Mountains rise to 14,000 feet at certain points and almost always the ceiling above the range is low. Rain falls every day in this area, with as much as forty inches a year at Moresby and perhaps triple that in the mountains. Also, there are tremendous thunderheads

Rifles and ammunition salvaged in action around Buna are brought back by air to an Allied base.

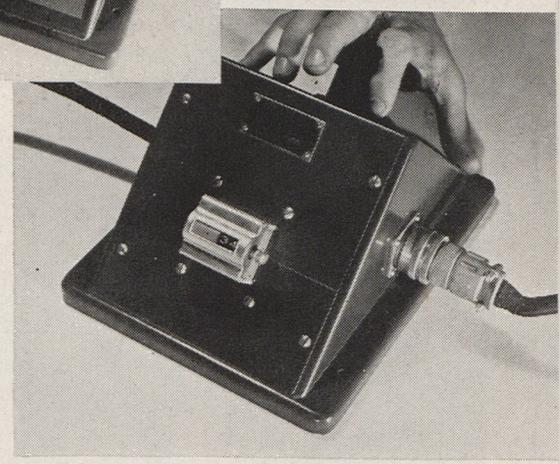




A subject sitting at night vision tester.



The notched knob at left must be oriented with break in lighted "C" flashed across the room. Recorder (below) clicks when the setting is correct.



TESTING FOR

By T. A. Berchtold
WRIGHT FIELD

A NIGHT vision testing machine that determines the ability of soldiers to see objects at night is now in use, and may soon be placed in the Army's classification centers and gunnery schools. The machine was largely developed at the Aero-Medical Laboratory at Wright Field.

Earlier in the war it was discovered that airmen who made the poorest scores in night vision tests generally returned to their bases with the poorest night combat results. This finding immediately stimulated extensive study of the peculiarities of night vision.

Scientists recently have discovered that an entirely different part of the eye is used to spot objects at night than during the day. One can see objects most distinctly at night by looking, not at but *to either side* of an object, while during the day the clearest image is obtained by looking directly at the object.

Here's how scientists explain the phenomenon:

The eye has two different sets of nerve elements, cones and rods. The cones, located in the center of the retina, make it possible to see objects in daylight or under artificial lighting. Through them, colors and fine details can easily be distinguished. The cones are concentrated in the center of the retina and are scattered thinly toward the periphery. These cones

are of practically no use in discerning objects in dim light.

The rods, on the other hand, are most numerous toward the periphery, *away* from the center of the eye. For this reason, objects are distinguished at night by the rods because they are about 1,000 times more sensitive than the cones in dim light. Perception of color and detail is a function of the cones, rods are good only for spotting objects in dim light.

Hence, under darkened conditions, objects can best be seen by looking to one side—from five to ten degrees off center. The cones in the center of the eye constitute a "blind spot" at night which few individuals know they possess.

ARMY scientists at Wright Field's Aero-Medical Laboratory, working with the new night vision tester, discovered that the lowest-scoring individuals of any group tested need approximately ten times more light to discern objects at night than do the highest-scoring individuals.

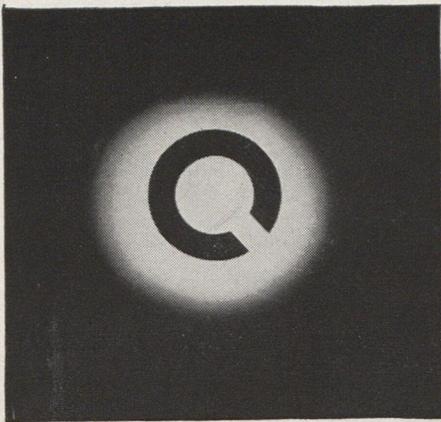
Translated into combat terms, this means that lowest-scoring airmen see an object only if it is twice as large as that same object viewed by men with the highest scores. In more vital terms, it means that those having the best night vision can see an enemy plane at twice the dis-

tance than those with the poorest. This may well mean the difference between success and failure of a mission.

According to the scientists who developed the machine, the average individual has a wide range of night vision and, moreover, men from the country have a more highly developed sense of night vision than those from the city. Experiments have shown that five percent of any group taking a night vision test for the first time fail in the test because they cannot immediately accustom their eyes to looking at an object off-center instead of squarely in the middle. Less than one percent, however, fail the test entirely after being given a second chance.

The night vision testing machine, which will enable the Army to classify its men as to their night vision aptitude, consists of two parts: a rotating white disc (located twenty feet from the subject being tested), in the center of which is a black letter "C" with a one-inch break in it, and a manual recorder with a C-shaped knob which the individual must match with the "C" on the revolving disc.

During the test, the rotating white circle with its black "C" stops forty times, each time in a different position. The duration of each stop is seven seconds, and after each stop is an interval of nine seconds of darkness. At first, the



Lighted "C" flashed on screen.

You don't have to be endowed with cat eyes to see objects at night. This tells you why, and how you can best adapt your eyes for night vision.

NIGHT VISION

NIGHT ADAPTER GOGGLES

white circle is fairly bright, but with each succeeding five stops the light becomes more faint so that by the time the test is concluded, only those with superior night vision can detect the round patch of light. There are eight levels of brightness, each level with five successive stops and each stop in a different position.

During the seven seconds that the white circle is illuminated, the individual must place the "C" knob which he is operating in the identical position of the "C" shown at the other end of the machine. When the light goes off, he is permitted another three seconds in which to make a quick change on the recorder if he feels he might have made an error. An electrical impulse then registers whether he has correctly coordinated the two Cs. Each of the correct matchings is recorded and the total score at the end of the test reveals his rating. A click lets the student know whether he has "hit the mark" each time the machine registers.

On the present system of scoring, those getting from 31 to 40, inclusive, are above average; those with scores from 21 to 30, average; those from 14 to 20, below average, and less than 14, unsatisfactory.

It requires half an hour for one's eyes to become accustomed to seeing objects in dim light. Therefore, men taking the test are either placed in a dark room for that length of time before the test is begun, or they are equipped with red goggles which achieve the same effect.

The night vision tester is operated by a single individual who can test from 250 to 300 persons a day. ☆

THOSE red goggles you are just before taking off at night do the job that was formerly accomplished by sitting quietly in a dark room for the same length of time. Use of goggles permits you to read, move around, play poker and, in general, spend a pleasant half-hour just taking it easy. You know, of course, that in order to adapt your eyes for seeing objects in the dark or under dim lighting, a half-hour period is necessary to prepare your eyes for such activity. Remember, too, that if you look at an illuminated object or

instrument light without those goggles after you have prepared your eyes for night work the "spell" is broken, and you'll need to go through a half-hour adjustment period all over again. Once your eyes have been adapted for night work, even a brief exposure to a bright light will destroy the efficiency of your eyes for spotting objects in the dark — unless you wear the goggles.

You'll discover, too, that the new goggles are extremely flexible, can be folded in the middle, and fit snugly into your shirt or blouse pocket.



These night adapter goggles when worn for thirty minutes prepare pilot's eyes for night flying. Designed for flexibility, they fold in the center and fit into a handy pocket-size case.



THE AIR SERVICE COMMAND



By Maj. Gen. Walter H. Frank
COMMANDING GENERAL, AIR SERVICE COMMAND.

KEEP 'EM FLYING — everybody has adopted this slogan. But the Air Service Command is really in the business. The Command's mission is "to maintain the maximum possible percentage of aircraft furnished the Army Air Forces in combat readiness." And the activity of the ASC is a business. On December 16, 1942, the ASC was reorganized on that basis—"the activities of the Air Service Command are more closely related to those of business management than of military operation; the Air Service Command is an industrial organization managed by the military."

This is big business, too. Eight months ago figures on the ASC far exceeded comparable ones for General Motors, reputedly the world's biggest corporation. The Command had more personnel and warehouse space, and it handled more material.

The ASC is operated by 300,000 civilians, and the military management consists of approximately 8,000 officers. Another 7,000 officers and 150,000 enlisted men are under its command being trained for Command activities overseas. The civilian personnel represent eighty percent of the total civilian employees of the AAF. In contrast to employees of most other government agencies, only a very small percentage of these civilians are stenographers and clerks. In the ASC they are highly skilled mechanics, technicians, engineers, administrative assistants and executives. The officers, excepting those with service groups, air depot groups and the related training activities, were commissioned mainly from responsible positions with our large peacetime corporations.

These officers bring their experience and

knowledge immediately to bear on their job and find a minimum of military procedure to deal with. The problems they find in the ASC may be bigger than those to which they were usually accustomed, and time is always pressing, but the principles are similar and the solutions of some of these problems have given the Command better systems of property control and maintenance methods than have ever before existed. In fact, when aerial puddle-jumpers become commonplace after the war, the ASC will already have solved, in principle, the problems of supply and maintenance in the age of flight. The ASC has already trained enough personnel to give such industry a good experience level.

How the world's largest "corporation" functions under a decentralization program.

The Air Service Command is the typical expression of modern war. Its organization illustrates the fact that a distinction between industrial activity and military operations is no longer clear-cut. The Command represents a merger and it successfully transfuses industrial experience and effort into military action.

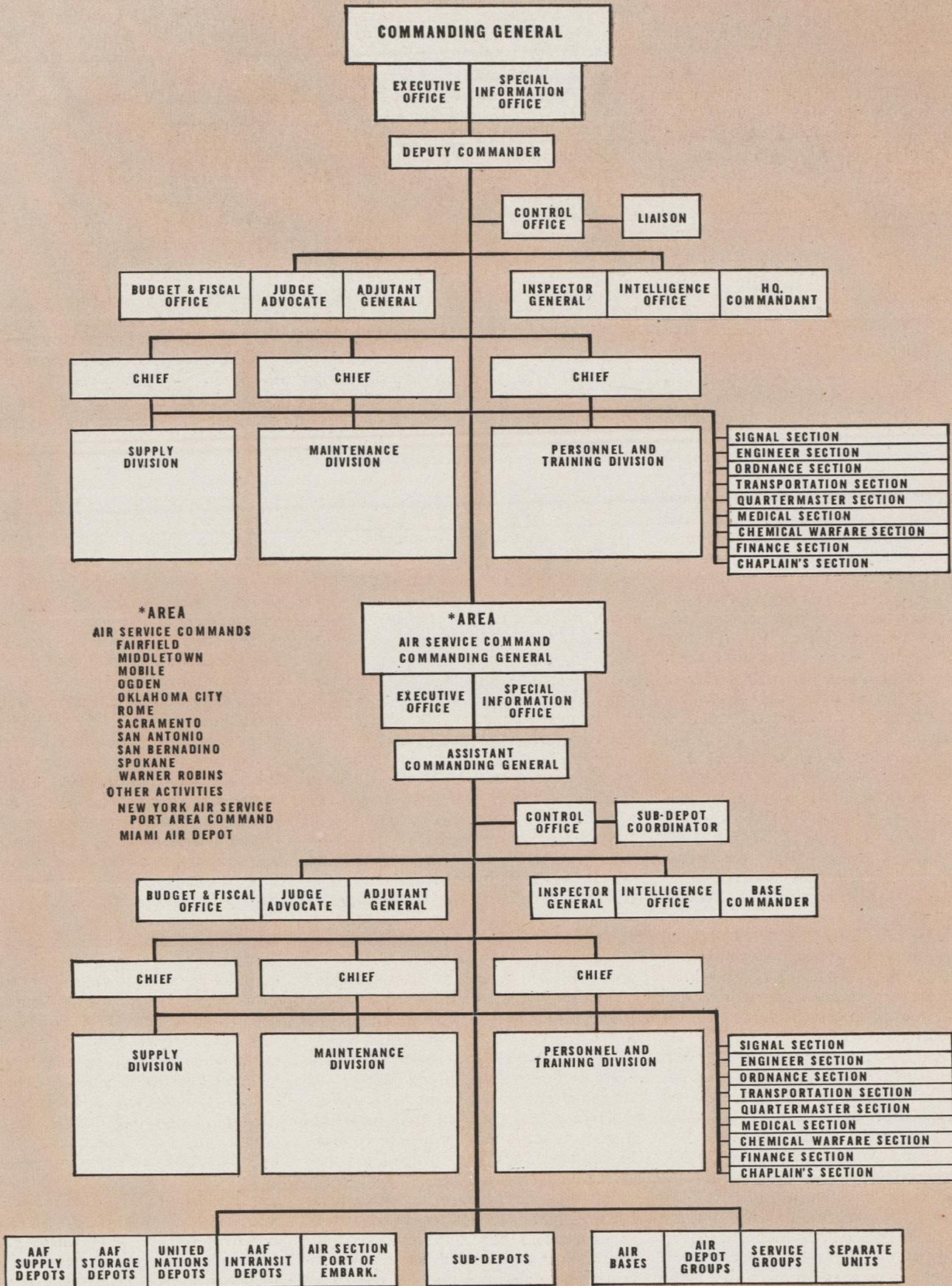
Having recognized its status as an industrial organization, the ASC has abandoned the traditional military staff and introduced a component into the armed forces which embodies a new concept. It was found that the staff organization was not adapted to ASC operations. The activities of the Command did not divide themselves along the lines of the usual staff functions but of the functions of supply, maintenance, and personnel and

training. Experience at sub-depots and control depots had shown that this was a natural grouping. Our headquarters followed suit. The real change effected in the ASC headquarters was not in the abandonment of staffs as such, because their functions are still exercised somewhere among the divisions, special sections and administrative officers; it was the decentralization of authority at the same echelon. The commanding general designated those officers who formerly had been his advisers only, to be definitely responsible for certain functions, and gave them sufficient authority to discharge this responsibility. And now when he requires advice his experts are at hand. Overall planning was established as a function of the control office.

A standard organizational framework was developed and *all* echelons of the ASC were organized alike. The chiefs of the divisions at Command headquarters were the big operators and had the responsibility for their respective functions throughout the entire Command. This same relation exists between all components at any echelon. Thus, activities which had been traditionally organized along the concept of installation or command were organized vertically without regard to location.

THE idea of management was introduced to the ASC with specialists in organization, procedures and administrative practices. The commanding general was provided a control room where the status of his program was portrayed and all the information leading to necessary decisions was available. The control room of the ASC, which is closely guarded because

AIR SERVICE COMMAND



of the nature of the Command's activities, probably presents as complete a picture of the AAF program and operations as exists outside of Washington.

The committee type of operation was adopted. Instead of a piece of paper, outlining a proposal, being routed through a series of officers for comment and then back again when the comments have been considered, the responsible persons are informed of the problem and called as a committee; final decision is obtained without further delay. The flood of paperwork between echelons was reduced by the application of straightline control and personal contact between echelons.

Most AAF personnel are familiar with the ASC through contact with sub-depots which are only the terminal activities of this Command in the United States. As a result, they frequently are unaware of the huge activities which support these sub-depots and keep the supplies flowing overseas. More supplies are now required overseas than in the United States. The supply division has devised automatic supply tables, pack-ups and ingenious crating procedures. The automatic supply tables are lists of supplies by type airplane for a certain number of combat units, usually thirty- to ninety-day periods, and are shipped without requisition in accordance with movements of plane. Operations from various theatres and changes in design of plane cause these tables to be constantly under revision, and the ASC sends observers overseas to report on these matters. Pack-ups represent a method of putting supplies together for special purposes, eliminating unnecessary unpacking and re-crating on the other side and special requisitions.

In the United States the supply division has numerous depots for special purposes and by teletype controls the distribution of hundreds of thousands of items. If a part is required for a plane out of commission and the sub-depot is contacted, it is not just the sub-depot facilities that are being tapped but the whole supply setup in the ASC, because if that part is available anywhere in the United States it can be located immediately on the same network system of property control.

But these operations are routine and do not represent the magnitude of the supply division's task. The real problem of the division is to analyze consumption data, study strategical problems and tactical operations in order to determine projected requirements for planes of the AAF, and those furnished our Allies under lend-lease. The job of preparing a spare parts consumption list for a new type of plane is so difficult in itself as to be mostly "by guess and by God," but the revisions necessitated by experience and changes of design in the plane after it has been in combat all over the globe stagger the imagination. By the time a stock is established it may be obsolete.

But the supply division is on a day-to-day basis and is in constant contact with manufacturers, returning obsolete parts to the production line and flying critical parts directly away. It is safe to say that nowhere in the world is so much material on such a fluid basis.

PERHAPS the best way to explain what the maintenance division does is to begin by saying that this division at Command headquarters receives all Unsatisfactory Reports and issues all Technical Orders. Whenever there are American planes there are T.O.s. They are almost a part of the plane itself and those who operate aircraft must be as familiar with them as they are with the planes and their tools. The job of publishing T.O.s is probably the biggest continuous editorial activity in the world. T.O.s are printed in all languages of our Allies to accompany lend-lease aircraft. They are distributed to every part of the world where there is an American plane. Most frequently this is accomplished by microfilm sent to overseas activities where reproduction and distribution are handled by publication cen-



"Gotta Get Those Spares"

ters. The sheer bulk of T.O.s is not of great significance; it is their standard of technical excellence and accuracy which represents a publishing feat. Furthermore, it is not their world-wide circulation which is really impressive but the efficiency of the distribution system and the rapidity with which it can be effected.

The story of Unsatisfactory Reports is probably the most dramatic aspect of the ASC. It is these thin red sheets of paper that come into headquarters at the rate of 8,000 a month which frequently tell a story beginning with some pilot's death, the end of which will be the saving of many of his comrades' lives. These URs are the means by which the collective experience of thousands of pilots and mechanics may be brought into the solution of the deficiencies of our aircraft and thus enable their constant improvement.

But the maintenance division is far from being a paperwork organization. Its shops perform third and fourth echelon maintenance on all AAF planes. Production lines of aircraft industries may make the plane but the maintenance division makes it over again two or three times in

its career. Maintenance activities extend from the repair of the most delicate instruments in the world to the replacement of whole wings on the biggest planes, and from air-conditioned instrument shops to canvas maintenance shelters in the middle of the desert. The headquarters of the maintenance division may be in Dayton, Ohio, but it is affected by weather conditions all over the globe—sandstorms on the desert and the cold of the Arctic. A small army of manufacturers' representatives is in all parts of the world acclimating their type of planes to the combat conditions encountered and reporting back to the maintenance division and their companies.

The maintenance division does the work and the supply division furnishes materials with which the work is done, but it is the personnel and training division that supplies both the men who supply the materials and the men who do the job.

Obtaining trained civilian personnel is now out of the question. In fact, it is hard to obtain personnel of any sort, and the men who have been trained through the years are being drafted. Consequently, the personnel and training division now relies almost entirely on the procurement of women who are then trained in the complicated techniques of aircraft repair and maintenance. Thirty-nine percent of our present employees are women.

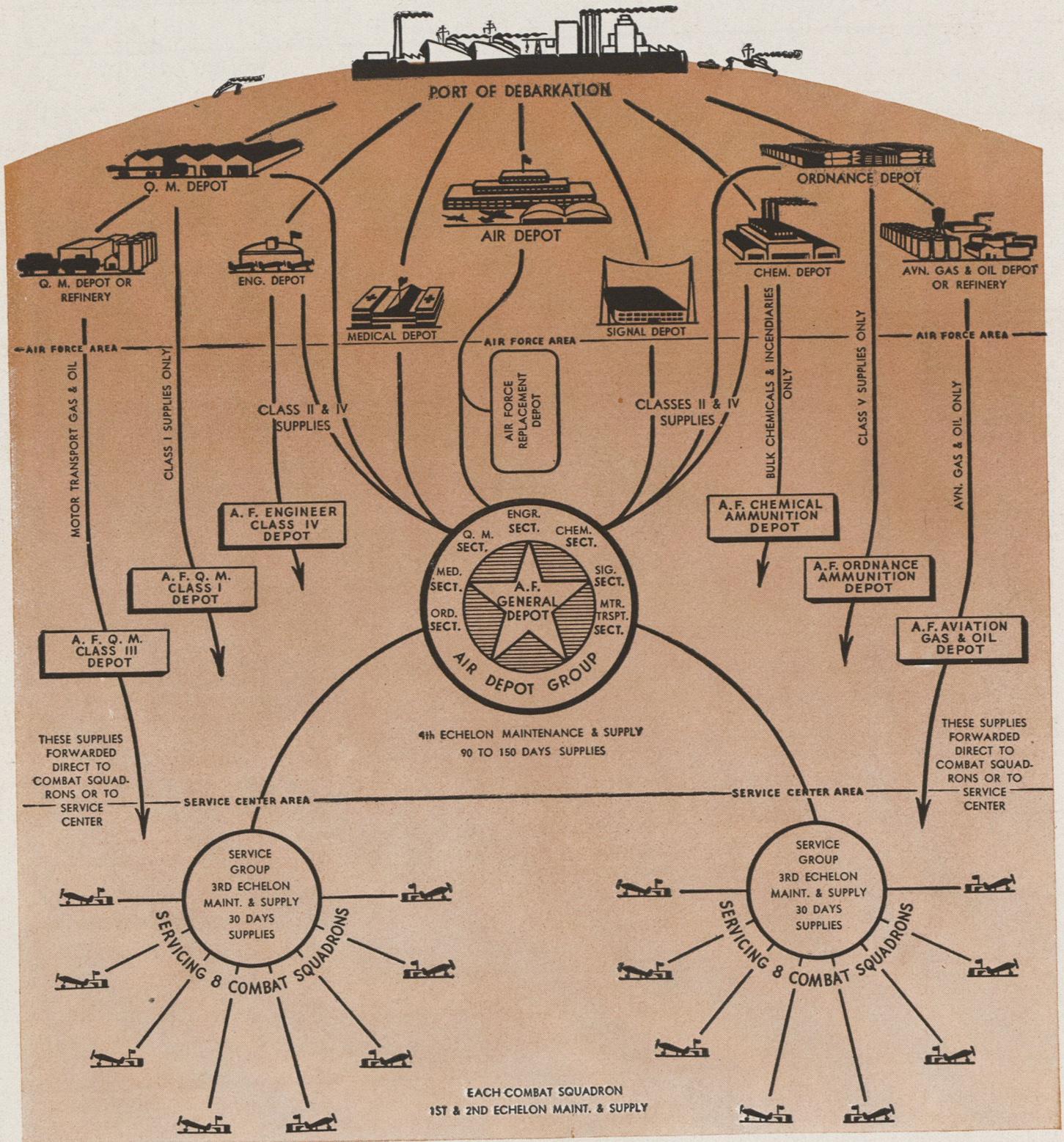
The problem of employment in the ASC is complicated by the fact that our installations are, of military necessity, removed from the large centers of population, with consequent housing and transportation problems. In the face of the many difficulties surrounding our reliance on civilian personnel for basic operations, the personnel and training division has come to be a sociological service spending almost as much time with the problems of housing, transportation and recreation as with the routine personnel procedures. But, as the largest employer of civilian personnel in the AAF, the ASC is making every effort to comply with the spirit and directives of the War Manpower Commission. The policy of utilizing civilians in order to release soldiers was adopted years ago and today every emphasis is on the improvement of functional efficiency in order to effect savings in manpower. Stenographic pools and a system of office management have been established. Occupational Standards are the basis of all personnel actions and the use of machines in all operations such as the preparation of payrolls is universal.

Yet civilian personnel does not represent the division's primary responsibility which is to furnish trained ASC groups and air depot groups for overseas service. These units are probably the largest and the most complicated of the basic organization in the AAF, if not in the whole

(Continued on Page 55)

AAF SUPPLY

IN THEATRE OF OPERATIONS



BE READY FOR ANYTHING

(Continued from Page 7)

their bodies. Soldiers who weren't killed by the blasts were finished off by Marine bayonets.

"We worked closely with the Marines and Navy all the time," explains Lanphier. "And raids would be made by groups of planes. Sometimes, for example, we would fly along at 30,000 feet in P-38s, with a flight of P-40s several thousand feet below us and perhaps some Grumman several thousand feet below them.

"We were so high, in fact, that it was entirely possible for the Grumman to get into a scrap without our seeing or knowing a thing about it. When they wanted to rile us, they called the P-38 a 'high-altitude fox hole.'

"But, seriously, everybody out there knows that the P-38 is good, and far superior to the Zero. It has an exceedingly fast rate of climb, high speed, long range and its guns throw plenty of lead. And it's pretty sweet having two engines when one gets shot out miles from home and the other brings you back."

That business of getting back, say both Mitchell and Lanphier, really taxes a pilot's ability.

In the Solomons campaign missions were long and were flown in all kinds of weather. Time and again, planes would go out on escort under extremely hazardous conditions and upon their return have to land after dark in a heavy rainstorm with no landing lights. Enemy bases were always close and the Japs always outnumbered our aerial forces by four or five or six to one.

"Both living and fighting conditions were about as tough as I want to see them," said Lanphier. "But don't forget,

it's *always* going to be rugged for a fighter pilot. As this war moves into new areas our men will again have bad food and bad quarters and will again be outnumbered, probably. That sort of thing can't be helped. All you can do—as Mitch says—is be ready for it."

"That raises another point," added Mitchell. "Physical condition. I can't tell you how important it is for a man to be in shape when he gets to the front.

"In the Pacific, for example, it was terribly hot all the time. Many a man came out there in poor physical condition and got sick. You just can't fly when you're sick, though lots of them try and as a result get hurt or killed.

"Especially new men. They don't want other pilots to think they have lost their nerve. So they conceal their illness, take off when they should be in bed, and too often don't come back.

"If you are in shape and have stored up plenty of physical energy, the chances are you won't get sick at all."

Mitchell paused briefly, his face troubled and serious.

"Here's a tough thing to talk about," he said finally, "but it's the truth and should be realized. The majority of pilots who get lost are lost on their first two or three missions.

"Perhaps they grow rattled and leave a formation. Perhaps they're sick. Perhaps they don't know their equipment well enough and something goes wrong. Perhaps they are not familiar enough with the ship itself, with its climbing or turning capabilities. Acrobatics will correct this; it helps you get so used to the plane that you can do things in combat that you will never remember doing. Or perhaps they are just not expert enough at night flying or instrument flying.

"A squadron commander can and will provide last-minute training in combat work. But the prime responsibility is the pilot himself. He must take such advantage of his training here in the States that he is ready when he gets to the front.

"If he does that he has little to worry about. Our planes and equipment are far superior to those of the enemy. Our ground crews do a wonderful job of keeping the ships in fighting trim and they get a kick out of it when you bring down a Jap.

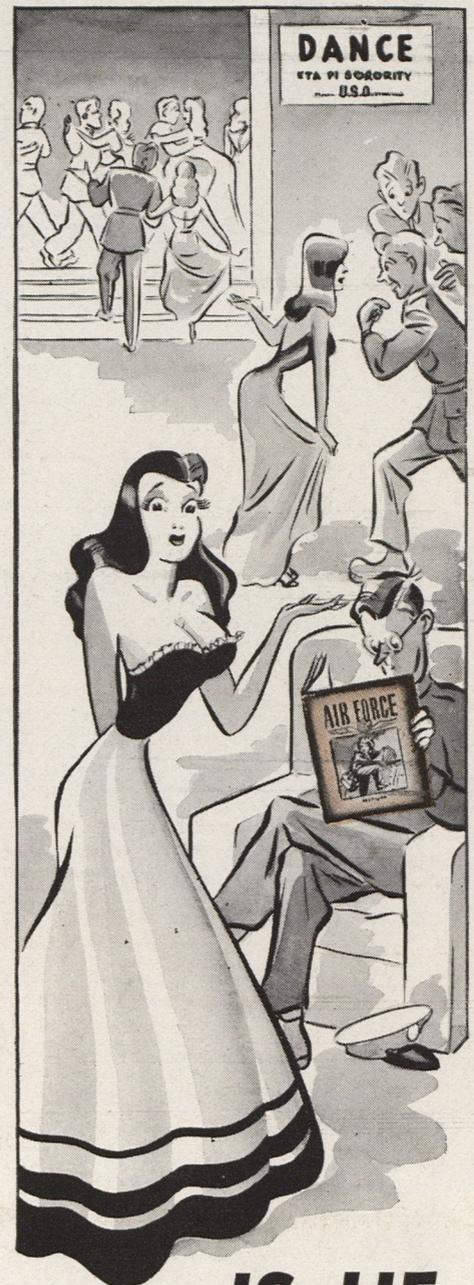
"All that's expected of you is to know how to bring them down." ☆

PICTURE CREDITS

Front Cover: AIR FORCE Editorial Office. 14-15-16-21: Signal Corps. 34-35: Signal Corps. 40-41-43: Air Service Command. 46-47: Civil Air Patrol. 51: Jack Holland, Albany (Ga.) Herald. 52: Patterson Field. 54: Vega Aircraft. Third Cover: Acme. All other photographs secured through official Army Air Forces sources.

ANSWERS TO QUIZ ON PAGE 37

1. (b) Two .50 caliber machine guns.
2. (b) Give him a burst and let him know you see him even though you can't hit him.
3. (a) Flying by use of maps and recognition points.
4. (c) Wearing night adapter goggles for about half an hour.
5. (c) Mister Smith.
6. (d) Put it under your armpit or between your legs. 7. Spitfire.
8. (b) Watch the white caps.
9. (c) Pays out a dollar.
10. (c) Attacking a target in waves of planes.
11. (c) Sighting land when you come in from over water.
12. First Air Force, Mitchel Field, New York; Second Air Force, Colorado Springs, Colorado; Third Air Force, Tampa, Florida; Fourth Air Force, San Francisco, California.
13. (a) 2840 miles.
14. There is no navigator in a P-39.
15. (b) False. 16. (b) California.
17. (c) A composite photograph formed by matching a number of photographs of contiguous parts taken from the air. 18. Lancaster.



IS HE KIDDING?

We don't know whether he is or not, lady—but we agree with you that it's time for him to pass on that copy of AIR FORCE! How about it, soldier? Share your copy of the service journal with the other men in your unit.

PASS IT ON!

AIR FORCE, September, 1943



TARGET FOR TONIGHT...

Well planned and brilliantly executed night operations are becoming more and more important. They depend in large measure on excellent night vision—a faculty which this amorous airman obviously doesn't have.

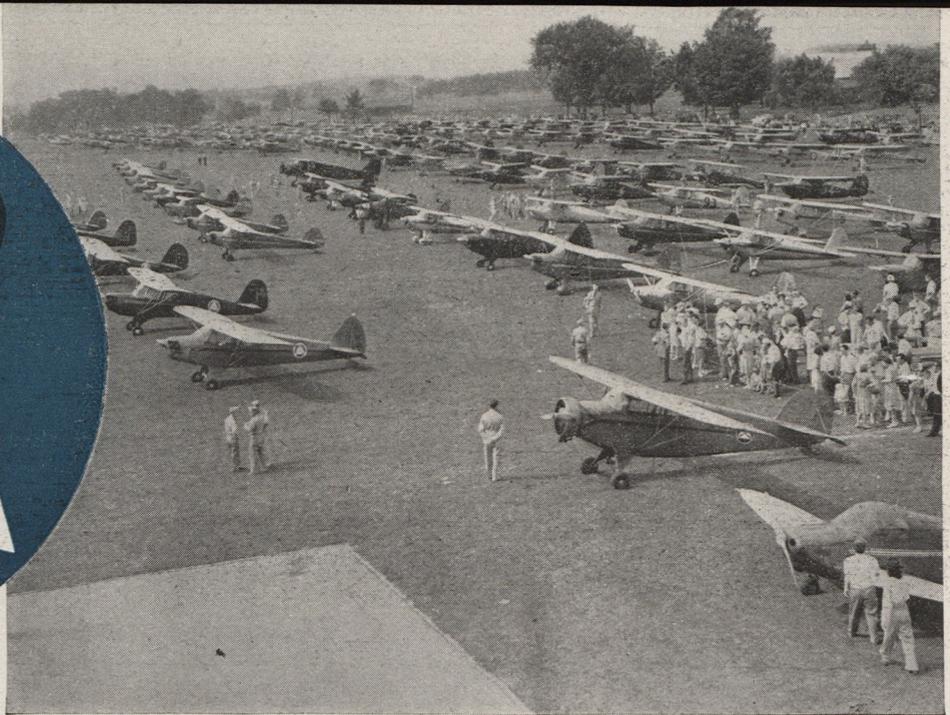
And if he were up 12,000 feet—without OXYGEN—his effective night vision would be only about half what it is now because of anoxia. His chances of locating that "target for tonight" would be practically zero.

(If by now you're wondering how to kiss a girl through an oxygen mask, CHECK WITH YOUR OXYGEN OFFICER.)

More good advice: You can adapt your vision to the dark by wearing special red-lensed, night vision goggles or by staying in a dark room for thirty minutes before a night flight. Eat foods rich in vitamin A—carrots, spinach, eggs and the like. Keep your windscreens clean, and USE YOUR OXYGEN FROM THE GROUND UP AT NIGHT!

With a little study on this night vision problem you won't have to worry about the "MISS" in "NIGHT MISSION."

(This is the first of an oxygen series prepared for AIR FORCE by the Flight Control Command.—Ed.)



By Lieut. Col. Earle L. Johnson

NATIONAL COMMANDER, CIVIL AIR PATROL

Now that Civil Air Patrol has become an auxiliary of the Army Air Forces, its members at more than 1,000 flying fields throughout the United States want nothing more than to be given further work.

CAP was formed a week before Pearl Harbor as a division of the Office of Civilian Defense to mobilize the civilian pilots and planes of the country for volunteer wartime duties. From the beginning, a large and steadily increasing part of its work has been of a military nature, carrying out assignments for the Army Air Forces.

A short time ago the entire organization was transferred to the War Department by Presidential order. Robert A. Lovett, Assistant Secretary of War for Air, declared:

"The transfer is a recognition of a job well done and it is motivated by the desire to make the Civil Air Patrol more directly available to perform its services to the armed forces."

What the disciplined and uniformed volunteers of the CAP can do and earnestly want to do may be briefed under the following headings:

1. Flying services including coastal patrol and light-plane courier work to relieve military personnel and aircraft for other assignments; and ground duties such as guarding airfields and planes.

2. Training of thousands who are headed for the Army Air Forces.

3. Maintaining civil aviation facilities as a wartime auxiliary and as the foundation for post-war development.

The last point could be important to Army pilots, navigators, servicemen and others who desire careers in aviation after the war is over. If home town airports become overrun with weeds, progress we all want to see will be retarded. Meanwhile, a good many Army pilots owe

their lives to the fact that these fields have been kept open for landings.

The CAP has enlisted 80,000 citizens. The minimum age is sixteen and most of the youngsters join the service as soon as they are permitted. The oldest CAP pilot, A. I. Martin, is 81. He has an airport on his farm near Montour Falls, N. Y. Some of the lads who got their private licenses on Mr. Martin's farm are flying for the armed forces in various parts of the world—and there are more coming.

Approximately 100,000 private pilots, a comparable number of student pilots and 25,000 privately owned aircraft were in the United States at the time this country entered the war. The initial task of the CAP was to mobilize pilots and auxiliary workers, such as radio operators, mechanics and photographers, into a military type organization.

UNDER a National Headquarters staffed by a dozen officers of the Army Air Forces, a Wing Command was activated in each of the 48 states and subdivided into groups, squadrons and flights. From the wings on down, the CAP organization is composed of civilian volunteers who receive no salaries and pay their own expenses, except while on active-duty missions. Then they are paid a per diem to cover living costs and a moderate hourly rental for the flying time of their planes.

The largest and most important of CAP's active missions to date is the Coastal Patrol conducted from a series of special CAP bases along the Atlantic and Gulf coasts from the Canadian Border to Tampico, Mexico. The Patrol keeps a

constant daylight watch over the shipping lanes as far out as 100 miles at sea.

Early last year, when enemy submarines began to take a heavy toll of tankers and merchant ships within sight of shore, the Civil Air Patrol was ready although its organization had just begun to function.

The volunteers came with their planes, radios, monkey wrenches, \$4.98 kapok life vests and very little else except their boundless enthusiasm. With no federal funds for many weeks, though aided by contributions from the oil companies, they carried on from their improvised bases, spotted subs and summoned Army and Navy bombers to the kill until the subs were scarce in the waters they patrolled.

These "Flying Minute Men," as they were called by Maj. Gen. Follett Bradley, then Commanding General of the First Air Force, kept their secrets so well that U-boat commanders crash-dived at the approach of CAP planes, not knowing they were unarmed. It was months before bombs and depth charges were hung on these little airplanes at General Arnold's orders—and to good effect.

With the success of the first experimental bases, the protecting chain was extended, first on the Atlantic seaboard and then along the Gulf, until the last gap was closed. Thus the heavier equipment of the Army and Navy was released for other theatres or for patrols further out. By close cooperation between the Army, Navy, Coast Guard and CAP, sinkings close to the mainland were reduced month by month.

These CAP Coastal Patrols, still operating along the entire Atlantic shoreline,

have flown more than 75,000 missions involving more than 20,000,000 miles of over-water flying. They have spotted more than 170 enemy submarines and seven-teen floating mines, often in the path of troop convoys. They have reported 83 vessels in distress, observed hundreds of irregularities at sea, made hundreds of special investigations and flown thousands of convoy missions.

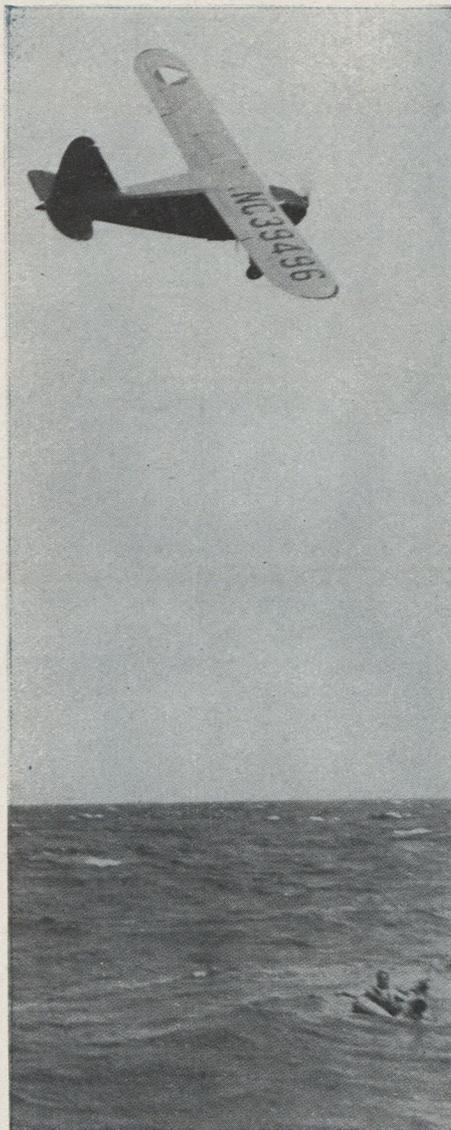
Bombs have been dropped against 81 enemy submarines, at least two of which have been listed as definitely damaged or destroyed. These are in addition to the subs which the Army and Navy have accounted for on radio call from CAP. The patrols have located 352 survivors of ship and plane sinkings.

In the course of these missions, twenty CAP airmen have been lost at sea and four in accidents over land. Seven have been injured seriously and 79 planes have been destroyed. Flying over the ocean in single-motor landplanes is hazardous, especially in the winter when flights are maintained at temperatures far below zero. Inland there have been three fatalities on Army courier missions and three on volunteer missions, making a total of thirty CAP members who have lost their lives in the service of their country to date.

High standards of maintenance have been achieved under the most adverse conditions. By pooling their funds and by private contributions, the men on the bases have developed first-class repair centers, sometimes at sites where they have leveled fields and erected the buildings by their own labor.

They are ingenious in devising their own methods and equipment. On one northern base a remarkably successful machine for thawing out motors in cold weather was built from an old oil drum and the bellows from a forge. In high-wing planes the cabin is immediately submerged when forced down on water; to enable pilots and observers to escape under such circumstances, a lever device was invented to pull off the door hinges

The Civil Air Patrol, with an enviable record already on the books, comes to the War Department ready to take on even more work.



This CAP pilot on a training mission drops to low altitude to identify "survivors."

before crashing. Special flotation gear also has been fabricated on the bases.

CAP's Southern liaison Patrol flies along the Mexican border, in cooperation with the Mexican Government, to spot irregularities and stop illegal crossings in either direction. Operating from bases similar to those of the Coastal Patrol, the liaison pilots follow every bend in the Rio Grande, flying so low that they can read the license numbers of suspicious autos and give personal descriptions of individuals spotted. More than 1,000,000 miles have been flown on this service without a single fatality or serious injury to personnel. When CAP took over this job, an Army unit previously assigned to the work was transferred to other duties.

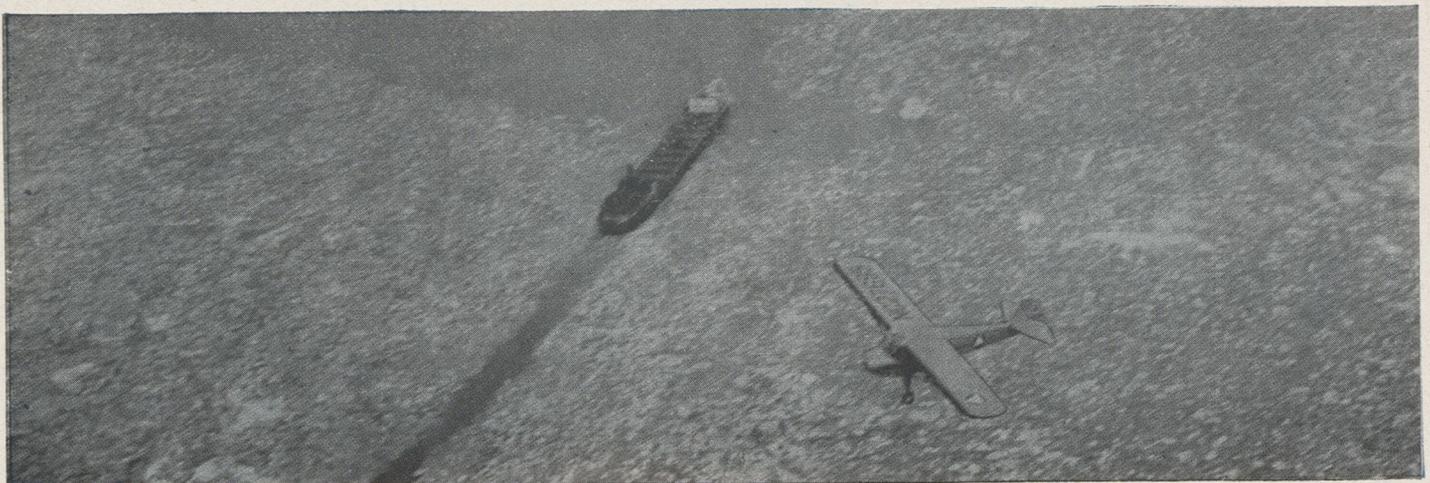
Most of the CAP pilots cannot qualify for military duty. One of the pilots on liaison patrol lost both legs flying in the last war yet, with artificial limbs, he not only flies but even marches in the drills at his base. CAP duties involve no draft exemption. Many members, hopeful of going into the Army Air Forces, are working to build up qualifying flying time and experience on CAP missions.

Potentially larger than the coastal and liaison patrols is the growing network of inland services which CAP has established. For the Second Air Force, CAP pilots coordinated by the Washington State Wing are flying on regular routes and schedules totaling upwards of 20,000 miles daily. More than 2,500,000 miles have been flown on this service to link widely separated Army posts which otherwise would have had to use Army planes and personnel at high operating costs or rely on slow ground methods.

Pilots who know the terrain fly through the mountains rather than over them, winding low along the valleys. They have carried approximately 350,000 pounds of cargo, often including urgent parts and materials, and 40,000 pouches of Army mail.

In the east, CAP planes are standing by at sub-depots ready (Continued on Page 56)

CAP plane set to drop food supplies to icebound freighter on Lake Erie. Fifty-pound bags of food were held from right window of plane on a sixty-foot line and dropped to deck as plane came upwind.





RIDING THE MESSERSCHMITT MAYTAG

By *Private Charles M. Macko*

BASIC TRAINING CENTER NO. 8,
FRESNO, CALIFORNIA

I HAD always thought that if my end as an Army pilot came, it would happen with a 20 mm shell exploding in the cockpit during fierce combat with a Focke-Wulf.

I didn't know that plenty of pilots'—or, rather, would-be pilots' careers are ended less bloodily during flight training, particularly in primary. Sometimes over half a class are victims of the Messerschmitt Maytag in the washing-out process. It may seem ruthless, but it's a way of getting only the best possible pilots to fly Uncle Sam's hot ships.

How do they determine if a cadet isn't up to the high standards and fast pace of training?

Let's recall my final check ride in primary at Thunderbird Field, Arizona.

Lieutenant Gillesby and I are adjusting our parachutes beside an innocent-looking, blue and yellow Stearman. I knew I had to give him a good ride or I would be washed. I hadn't passed the others. I was nervous, desperately determined.

The lieutenant, blonde, big, solid-looking, smiled reassuringly at me. Well, I thought, at least it's different from the movies. The lieutenant and I aren't in love with the same girl, and he isn't torn between vindictiveness and —

"Mister," the flying officer said, "I want you to relax. Then take me up, and — How many hours do you have?"

"Thirteen, sir."

"Solo?"

I shook my head.

"I see," he said. "Well, the ship's all yours. I won't take over at all unless I want to demonstrate something. You take it off, climb to 2,000 feet and show me power-on and power-off stalls. Then climb to 3,000 and do a two-turn spin. After that, gliding turns to 500 feet, and let me see some S-turns across a road. Maybe I'll pull a simulated forced landing on you. Then take me home."

I knew the routine, all right. In the past three days I had ridden with three different civilian check riders. I had been put up for check when I hadn't soloed after eleven hours and twenty minutes of dual instruction. If my landings hadn't been off, I might have soloed. Now I was being checked on all I had learned to see if I were good enough to be given additional instruction.

Now we were in the plane, the prop was turning over, and the cadet wing-walkers were throwing me well-wishing looks. I released the brakes, turned it and went S-ing toward the take-off point on the runway.

I paused just before take-off and put my goggles over my eyes. I picked out a reference point on the horizon by which I would try to keep the Stearman straight on take-off.

Muttering the old cadet war-cry, "Habba Habba," I pushed the throttle full forward. The engine roared and the plane shook, gathering speed. I pressed right rudder to correct the swing to the

left due to engine torque, and pushed the stick forward to lift the tail off. I noticed I was swerving to the right. Too much right rudder. Then as I corrected, I over-corrected, and I swerved too far to the left. I was now fishtailing and bumping along the ground, almost airborne, and I was relieved when by pulling the stick back slightly I was up in the air where the ship was more easily controlled. A poor take-off, I had to admit. Get on the ball, I told myself.

In flying, you don't have to be a 1,000-hour veteran to tell if your piloting is bad. Even with my microscopic time, I could tell when I rolled out too abruptly in turns that I was not smoothly coordinated.

I was now thinking of the stalls and recoveries I'd do. It is an important safety maneuver, particularly the recognition of the exact second you are in the stall, to enable you to recover before you go into a spin. A stall occurs in almost any position, climbing, turning, where airspeed falls off and controls mush ineffectively. To recover, you should recognize the stalling point and then apply the proper correction for a recovery. In the recovery, drop your nose below the horizon to pick up more air speed and increase the engine power.

At about 2,000 feet I made some turns and banks to make sure no planes were below me. I then tried a power-on stall. What you do is set the throttle at cruising and then go into a steep climb. This I did, and soon the Stearman was shuddering uphill with its airspeed down to sixty mph. I kept pulling the stick back as the ship wanted to nose down. Then the controls began to mush. Now—!

I jerked the stick forward and shoved throttle full forward and pressed right rudder, in one motion. The nose pitched down and I held it below horizon in a glide. But, damn it, I was veering definitely to the left. I hadn't used enough right rudder. I did other stalls but somehow I just couldn't get those three movements of stick, throttle and rudder properly synchronized. The stalls were roughly executed. I was glad when I finished the last one.

I went up higher for a two-turn spin. After seeing that the area below me was

clear, I put the plane in a power-off stall, but instead of recovering, I pulled the stick all the way back, held it and then kicked right rudder. The nose dropped off to the right, and I soon was twisting nose down toward the earth which looked like a spinning platter of houses and fields.

A spin and a recovery from one is a test of many things—timing, judgment and keeping your head in a bewildering, befuddling position. In most maneuvers a gentle, silky touch is required on the controls. But in recovering from a spin you have to use smooth but definite violence.

Sure, I can tell you how to do it. Now watch me. I have started revolving to the right. I have picked a house as a reference point. It is upside down. I have gone 180 degrees around it. Now it appears right side up in the view below me. I have completed one turn. I still keep the stick back. Full right rudder. The house becomes upright again. I kick left rudder, pause a fraction of a second and dump the stick forward. The plane shudders in the stress of recovery. And now I notice, instead of gliding, I am plunging straight down in a dive. I have pushed the stick too far forward.

I pull the stick back to get out of the dive before I go into an outside loop, and for pulling back too sharply in my eagerness, Newton's law of inertia punishes me. The plane comes up but my body wants to keep going down, particularly my stomach.

LIEUTENANT GILLESBY, up front, says nothing through his speaking tube. Maybe he's too scared to talk, I tell myself humorously.

I made gliding turns to 500 feet and picked out a road for S-turns across it. I did a fair job correcting for drift, which is one of the purposes of the maneuver. I completed my turns the same distance across each side of the road.

And when Lieutenant Gillesby cut the throttle suddenly, I made a pretty good simulated forced landing. First, I put the nose in a glide to maintain flying speed, then made a turn into the wind for approach to a fairly level green field. It would have been an OK forced landing.

With throttle forward again, I headed for home and my biggest test—landing.

The idea of landing a plane is simple. Gliding in with motor idling, you merely stall the airplane a few feet off the ground.

The first problem is to fly the correct approach to the field or get into the "pattern," which changes with the direction of the windsock or tee. You first fly downwind outside the field, then make two ninety-degree turns, finally gliding down into the wind.

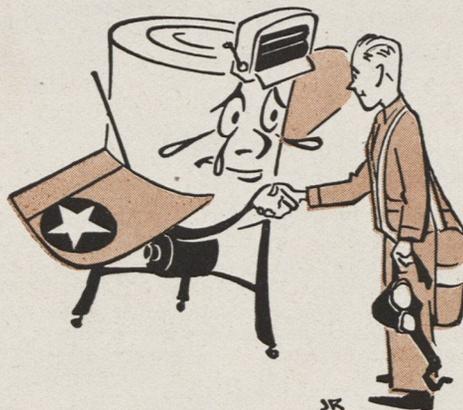
I got into the pattern at 500 feet and kept watch for other planes. I made my first ninety-degree turn, straightened out

This former aviation cadet gives a straight-from-the-shoulder account of his wash-out in primary and his feelings in the matter.

and looked rapidly for a landing lane clear of planes. I found it and then cut the motor to make my last ninety-degree turn a gliding turn. Because your airspeed is lower in such a turn, your airfoil reactions are less effective so I generously gave plenty of left rudder. I thought the ship would never stop turning. I had given enough rudder to turn a Flying Fortress. After some violent fishtailing, I finally established a straight glide down.

I watched a fixed point to see if any cross wind was causing me to drift. It wasn't. Otherwise I would have had to dip one wing slightly into the wind and use a little opposite rudder.

The ground was steadily coming up to meet us as we glided over the edge of the field. Now only about fifty feet. Shifting my eyes, I looked down below. The ground was going past in a blur. Idiot! Remember what your instructor told you: look ahead to a point where the ground doesn't blur. I did but I lost my refer-



ence point ahead. Confused now about my actual altitude, I instinctively pulled the stick back to take the plane out of glide and into a stall. But with too much airspeed left, the plane zoomed, and now I could see I was going to stall—but about twenty feet off the ground. Never a dull moment with Charlie!

I pushed the stick and the nose of the plane down to gain airspeed. I gained some but before I could pull it out of the glide, my wheels hit the ground and the plane bounced—but hard. That was unexpected and a little too fast for me. I pulled the stick back to stall it and keep the tail down, but still the plane had too much airspeed and it leaped some ten feet off the ground, then bang, down again with a terrific jar. Still worse, the Stearman began veering to the right.

Lieutenant Gillesby grabbed the controls and, in a fast blur of movement,

averted a wing-scraping. He retained control of the airplane, taxiing back to the hangar. I felt ashamed of myself.

As I got out of the cockpit to talk to Lieutenant Gillesby, I knew what the decision was.

But I asked anyway, "Well, sir?"

"Mister, you don't have it. Not enough coordination. Your turns were rough. You don't match pressure on rudder and stick. You muffed your stalls because you couldn't coordinate all the movements required. I don't know the reason for that bad landing, but it was bad. Sorry, but I will have to recommend you for elimination."

THAT was straight from the shoulder. Automatically, I saluted and left. My eyes smarted, for it is damn hard to take a defeat of hopes and dreams.

My old instructor, one of the civilian flyers employed by the field, saw me in the flight room and tried to cheer me up.

"You can still fly. You just can't learn fast enough. The Army wants men who have a high degree of aptitude because they have to learn fast—first in PTs, then BTs, then ATs and finally in even hotter combat ships."

"If I only had some stick time before I came here," I mused. But then I got realistic, "But, hell, my trouble is coordination, or a lack of it."

"In that case," he said, "we are just saving you from some fatal mistakes you might have made later in a hot ship."

I was too disappointed, however, to appreciate the implication that Lieutenant Gillesby had saved my life.

I joined the other wash-outs in another barrack.

"Why did you wash out?" is the question we eventually ask each other.

The answers may be evasive as, "Oh, I gave the final check rider a rough ride," or perhaps some more bitter comments on the check riders' judgment.

Most of those who are eliminated usually fail, as I did, because of insufficient coordination. There are others who carelessly get into such accidents as groundloops and can't survive the checks given after an accident. There are some victims of airsickness. Others wash because they disobey regulations, engage in dogfights or formation flying before they are ready. A very small percentage is eliminated because they have threatened cadet officers or have overstayed passes.

The number of men who wash out always strikes one as being wasteful. Most of the boys can fly, and fairly well, too. But even I, disappointed as I am, can appreciate the Army's aim. It wants the cream of the crop to make the best pilots in the world. The standards for Army pilots haven't been lowered in this war. you don't believe it, ask those young men who have ridden the Messerschmitt Maytag. ☆

Illustrated by James T. Rawls



**A MONTHLY RECORD OF DECORATIONS AWARDED
TO PERSONNEL OF THE ARMY AIR FORCES**

Roll of Honor

DISTINGUISHED SERVICE CROSS

MAJORS: Ronald D. Hubbard, Herman F. Lowery, Kenneth McCullar* (Also Distinguished Flying Cross with Oak Leaf Cluster), Robert F. Strickland. **CAPTAINS:** James R. Smith (Also Distinguished Flying Cross), Iran Sussky. **LIEUTENANTS:** Bernard E. Anderson, Kenneth W. Howat (Also Purple Heart, Distinguished Flying Cross and two Oak Leaf Clusters to Air Medal), Robert G. Oestreicher. **SERGEANT** Wilbert R. Burns. **PRIVATE** Ray J. Matchitt*.

DISTINGUISHED SERVICE MEDAL

LIEUTENANT GENERAL Delos C. Emmons (Also Air Medal). **MAJOR** William G. Benn.

SILVER STAR

COLONEL Leon W. Johnson. **MAJORS:** Harvey J. Scandrett (Also Distinguished Flying Cross and Air Medal), John A. Thompson (Also Distinguished Flying Cross). **CAPTAINS:** Thomas T. Dabney (Also Air Medal), Fred P. Dollenberg (Also Distinguished Flying Cross and Air Medal), Justus A. Emens (Also Purple Heart), Curran L. Jones (Also Distinguished Flying Cross with Oak Leaf Cluster and Air Medal with two Oak Leaf Clusters), Thomas G. Lanphier, Jr. (Also Distinguished Flying Cross). **LIEUTENANTS:** John G. Brennan, Henry D. Chism, Jr., Leonard E. Edington (Also Distinguished Flying Cross and Air Medal), Paul Pestel, Byron R. Work (With Oak Leaf Cluster), R. W. Yundt (Also Distinguished Flying Cross and Air Medal). **STAFF SERGEANTS:** Fred J. Best, Adolph Buda, Clarence E. King (Also Distinguished Flying Cross), Tom P. Rogers (Also Distinguished Flying Cross). **SERGEANTS:** Arthur Karlinger* (Also Purple Heart*), Robert B. Lowrie (Also Purple Heart), Ollie Michael (Also Air Medal).

OAK LEAF CLUSTER TO SILVER STAR

LIEUTENANTS: E. J. Nossam, Horace E. Perry. **PRIVATES FIRST CLASS:** Edward Van Every, Herbert M. Wheatley, Jr.

* Posthumous

PURPLE HEART

LIEUTENANT COLONEL Stuart M. Porter. **MAJOR** Chauncey B. Whitney*. **CAPTAINS:** John A. E. Bergstrom*, Edward W. Robinson. **LIEUTENANTS:** Kenneth L. Alspaugh, John D. Crawford, Donald Eaken, Marshall L. Forshey, David L. Gaede, Paul J. Gruesser, Thomas L. Hayes, Jr., Arthur N. Inman (Also Distinguished Flying Cross and Air Medal with Oak Leaf Cluster), Donald J. Kundingler, Joseph F. Kane*, William A. Lorence, William W. O'Neil, Arnold W. Postelle, Burt H. Rice, Eugene A. Wahl. **WARRANT OFFICER** Jack E. Day. **MASTER SERGEANT** Edwin F. Rhodes. **TECHNICAL SERGEANTS:** Almond E. Caird, Thomas J. Coburn, Otto T. May. **STAFF SERGEANTS:** Nicholas T. Brozack, Carl A. Knutson, Myrvan R. Morley, Gerald H. Watson, Terrel Henry Wood. **SERGEANTS:** Oscar R. Billings, John G. Cottros, Archie Cothorn, Eritreo E. Del Vecchio*, Ray L. Draper, Bobby H. Gordon, Russell L. Hultgren, Charles E. Stafford, William R. Whalon. **CORPORALS:** Edwin W. Burns, Jennings G. Beckwith, Angelo P. Delucia, Leonard K. Florence, Carroll J. Ferguson, Darwin A. Garrett, Harold Kissel. **PRIVATES FIRST CLASS:** Robert R. Kelley*, J. B. Sparks*, Edwin A. Tischbirek, Anderson G. Tennon*. **PRIVATES:** Jack H. Feldman*, Stuart H. Fiander*, Stanley R. Foster, Leo E. A. Gagne*, Robert H. Gooding*, Joseph Jedrysik*, Bethel L. Kniphfer, Roderick O. Klubertanz*, Otto C. Klein*, Andrew J. Kinder*, John A. Mayberry, Russell M. Penny*, Hal H. Perry*, Clarence M. Poulsen, William T. Rhodes*, Halvor E. Rogness*, Anson E. Robbins*.

DISTINGUISHED FLYING CROSS

CAPTAINS: Robert C. Beebe, Raphael Bloch, Jr. (With Oak Leaf Cluster and Air Medal), Howard Burhanna, Jr., Robert M. Creech,

Robert E. Hawes (With two Oak Leaf Clusters and Air Medal with two Oak Leaf Clusters), Earl R. Kingsley (Also Air Medal with Oak Leaf Cluster), Clayton L. Peterson (Also Air Medal), Wayne H. Rathbun (Also Air Medal), Lloyd L. Reynolds, George Simmons (Also Air Medal), Richard Taylor (Also Air Medal). **LIEUTENANTS:** Malcolm K. Andresen, Walter O. Beane, Jr. (Also Air Medal), Jesse M. Bland (Also Air Medal), Hubert S. Bronson, Bernard Cederholm, Andrew Cook, Jr. (Also Air Medal), Thomas D. DeJarnette (Also Air Medal), James W. Egan (Also Air Medal), Irving A. Erickson (Also Air Medal), Cleveland D. Hickman, Glenn L. Johnson (Also Air Medal with three Oak Leaf Clusters), Robert S. Knight, Melvin C. Lewis, William G. Newman, John Y. C. Roth (Also Soldier's Medal and Air Medal), Glenn J. Schaffer (Also Air Medal with Oak Leaf Cluster), John F. Stroup, Anthony C. Yenalavage, Howard N. Young. **FLIGHT OFFICER** Wilbur M. Hackett. **MASTER SERGEANT** Gust D. Portl. **TECHNICAL SERGEANTS:** Nicholas J. Andreas, Anton J. Budgen, William Ludkiewicz, Daniel F. Morton, Jr., James R. Shackelford (Also Air Medal). **STAFF SERGEANT** Theron R. Jones. **SERGEANTS:** Jack Archer, Clarence L. Campbell (Also Air Medal), Charles J. Geyer, Albert K. Will. **CORPORALS:** Elmer F. Awtrey, William C. Myers. **PRIVATES FIRST CLASS:** Louis D. Gardiner, John R. McNellis.

OAK LEAF CLUSTER TO DISTINGUISHED FLYING CROSS

COLONEL Emmett O'Donnell, Jr.

SOLDIER'S MEDAL

CAPTAIN Alexis Klotz. **LIEUTENANTS:** Dale Davis, Elmer J. Gedeon, Robert Kernan, Paul M. Lindsey*, Harry Patteson. **MASTER SERGEANTS:** Howard W. Deal, George M. Dun-

AIR FORCE, September, 1943

can. **TECHNICAL SERGEANTS:** Kenneth Addis, Richard J. Barrett, Jr. **STAFF SERGEANTS:** Forrest M. Beckstead, George W. Gunn, Douglas H. Logan, Clarence L. Singsank. **SERGEANTS:** Wayne C. Martin, Victor P. Minkoff, Howard S. Petersen. **TECHNICIANS FOURTH GRADE:** Edward J. Dowling, Malcolm B. Levison. **PRIVATE** Joseph W. Adrian.

AIR MEDAL

MAJOR GENERAL George E. Stratemeyer. **BRI-GADIER GENERAL** Frank A. Armstrong (Also three Oak Leaf Clusters to Distinguished Flying Cross). **COLONELS:** Walter W. Gross, Kenneth B. Hobson, George F. McGuire. **LIEUTENANT COLONEL** Dale O. Smith. **MAJORS:** Donald J. Green, Francis H. Matthews, Marvin E. Walseth. **CAPTAINS:** Benjamin C. Adams, Archibald D. Anderson, William H. Arthur, James F. Berry, Edward D. Black, Howard F. Butler, George C. Cranston, Kenneth C. Dempster, Charles G. Esau, John E. Fox, John K. Hall, George W. Haney, Carl David Hoffman, George K. Hughel, Frank MacDougall Hunt, Donald M. Hyland, Virgil Ingram, Jr., Lawrence E. Jarnigan, Jr., Edward L. Jenkins, William D. Jernigan, Ralph E. Jones, Jr., Jacob P. Sartz, John Urlick. **LIEUTENANTS:** Louis M. Abernathy, Lloyd Adonson, Peter K. Arpin, William E. Ayres, John A. Balaban, Junior M. Barney, Charles J. Barr, Jack Best, Rachel N. Bethune, Ralph A. Birk, David B. Bishop, William Emanuel Black, Jr., Alfred D. Blair, Raymond W. Boggs, Charles Felk, Clyde V. Knisley, Jr., Martin E. Lichle, Allan R. Lind, Herbert E. Lindhe, Marion G. Lloyd, Robert H. Long, William A. Loudermilk, William D. Lown, Raymond Lunenfeld*, Alvin M. Lusk, Raymond

B. MacDonald, Donald L. McKay, Edward Joseph McPherson (With two Oak Leaf Clusters), George R. Mason, Thomas F. Magruder, Harrison L. Marshall, Paul M. Means, Orval H. Michelson, Maurice L. Minnett, Howard A. Moore, Charles E. Morris, Clement K. Miller, Albert C. Naum, Edward R. Neff, Joseph H. Nesbit, Kenneth L. Ogle, Jr., Clifford R. Oliver, Ben L. Parker, Harry G. Peterson, Michael G. Phipps, Ray L. Pittman, Belah O'B. Price, Darwin E. Rasmussen (With Oak Leaf Cluster), Levon L. Ray, William J. Rhodes (With Oak Leaf Cluster), John E. Richards, William M. Riddle, Charles F. Rogers, Arnold Z. Rosoff, Hardin E. Ross, Jr., Joseph P. Schilling, Jr. (With Oak Leaf Cluster), David Herbert Schreiner, Meldrum L. Sears, Robert L. Shedden, Robert E. Speer, Arland Stanton, Roger P. Stein*, Benjamin J. Stone, Jr., Floyd F. Strohl, Don L. Sutliff, LaVern B. Terrell, Donald V. Thompson, Walter E. Thorne, Oliver E. Tilli, Fred Herman Towne, Jr., Claude A. Trotter, Jr., Robert F. Valentine, Robert C. Velan, Hussell M. Vifquain, Irving W. Voorhees, Jr., Harold E. Ward, Lucian K. Wernick, Robert W. Wert (With two Oak Leaf Clusters), Roy E. Whitaker (With Oak Leaf Cluster), Robert H. Wilder, Rayburn A. Wilks, Howard C. Williams, Jr., Raymond R. Yahr (With two Oak Leaf Clusters), Edwin A. Yelton. **TECHNICAL SERGEANTS:** Walter B. Belleville, Jr. (With two Oak Leaf Clusters), John F. Clark, Lawrence A. L. Craig, James G. Dorsey, Leslie T. Figg, Jr., Clarence W. Gilmore, Robert A. Guy (With Oak Leaf Cluster), Leslie O. Hansen, William P. Hoben, Howell G. Hubbard, Charles E. Mayhugh. **STAFF SERGEANTS:** Elmer J. Alifano, Mark A. Battles, Sebron D. Bristow,

John D. Thomson. **SERGEANTS:** Francis L. Bennett, Warren Riley Bishop, Carl L. Bixby, Maxwell A. Blue, Gregory Bournazos (With Oak Leaf Cluster), Harold J. Brothers (With Oak Leaf Cluster), George A. Burke, Mervin C. Bush, James B. Cahley, Joseph F. Conchiglio, Thomas W. Crook, Jr., Jimmie N. Davis, Carmen C. Dimuzio, Clarence W. Durbin, Theodore J. Elfrink, William C. Fields, James P. Fitzgerald, Jr., Curtis N. Foster, Zane A. Gemmill, Graham C. Hancock, Donald R. Hardwick, Willis D. Harris, Franklin P. Hohmann, Claude D. Hooks, Jerry D. Johnson, Donald L. Kerns (Also Oak Leaf Cluster to Silver Star), Robert Knight, Alton D. Leman, Henry T. Lukowski, Peter G. Lupica, Theodore J. Nastal, Carl C. Nelson, Stanley E. Nichols, John L. Nixon, Edgar L. Phillips, Morris T. Quate, Louis L. Romanelli. **CORPORALS:** Herman C. Detwiler, William M. Donahoo, Charles R. Dunn, Salvatore L. Ferraro, William E. Filgo, Irving W. Krause, Edward M. Lemons, William Malone, Andrew C. Mitchell. **PRIVATE FIRST CLASS:** Donald J. Rahe, Charles H. Seltzer, William T. Wimbish. **PRIVATEs:** Jack Holloway, Stanley A. Douglas, Philip O. McGovern, Jodie B. Thornell.

OAK LEAF CLUSTER TO AIR MEDAL

MAJOR Donald J. M. Blakeslee. **CAPTAINS:** John L. Ryan, Reynold A. Soukop. **LIEUTENANTS:** Jack Cohen, William J. Crumm, Harold E. Snider, Ashley C. Woolridge. **TECHNICAL SERGEANTS:** Karl L. Masters, Robert G. Mummaw. **STAFF SERGEANT** Harold F. Lightbown. **SERGEANT** Bernard Jurosek. **CORPORAL** Jack E. Leverone. ☆



M/Sgt. Gust Portl



Maj. Gen.
G. E. Stratemeyer



Lt. Clyde V. Knisley



Capt. Jacob P. Sartz



T/Sgt. J. R. Shackelford



Lt. Benj. J. Stone



Major William Benn



Lt. Robert Valentine



Lt. E. J. McPherson



Lt. Ben L. Parker



Capt. Charles G. Esau



Lt. Robert L. Shedden



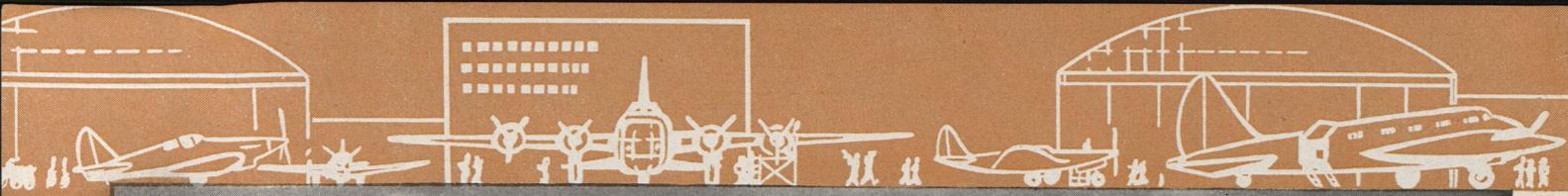
Capt. K. C. Dempster



Lt. Charles Felk



Capt. John Urlick



What's wrong with this picture?

HERE we go again, mechs. Gather 'round and pick out the boners. A fighter plane is pictured this month and it seems that there are a number of things happening to this P-39 which aren't strictly according to T.O.s You should be able to spot the mistakes as easily as shooting fish in a barrel.

Naturally at advance bases in combat theatres and often in extreme emergencies in the United States, you'll find it necessary to improvise and use the ingenuity that makes AAF mechs supreme in their job. But as long as you can, it pays to use the right tools and methods for the job; those skillful tricks used of necessity in the combat theatres can only

be done by mechs who knew how to do things the right way in the first place.

This month's picture was posed by men of the 88th Repair Squadron, Air Service Command, Patterson Field, Fairfield, Ohio. Left to right, they are Private First Class Joseph Buffamonte, Staff Sergeant Peter Kasprzyk, and Privates First Class Frank J. Cussio and Gene Rankin.

They deliberately acted out these boners in the interest of better maintenance procedures.

Crew Chief Kasprzyk can point out seven mistakes in the photograph. They are listed on Page 55. Can you find any more?



ON THE LINE

RU CONSCIENTIOUS ABOUT URS? . . .

Upon discovery of a failure in any part of an airplane it behooves the mech to report it. The reason for URS (Unsatisfactory Reports) is to eliminate trouble at the source, saving lives and planes as well as headaches for mechs ON THE LINE who have to cope with the defect. It's your responsibility to make use of URS.

What happens to the UR you fill out? It goes from your hands through a sub-depot, a depot or field unit to Air Service Command Maintenance Division engineers. It is studied by them in addition to getting careful scrutiny by manufacturers and AAF laboratories. Frequently action is taken by the Materiel Command if design or material is involved.

Of utmost importance, URS furnish necessary information to enable corrective measures to be developed. Without them, flaws and failures may go unheeded and are repeated. Complete statistics are kept on all URS and the number of failures reported often determines the action required. The clinic studying and adjusting the faults must have representative figures on which to base its study. See AAF Regulation 15-54 for complete information on URS.

So turn 'em in, men. Those URS are a vital AAF instrument.

MAINTENANCE AT BORINQUEN . . .

It is the boast of many engineering officers at Borinquen Field, Puerto Rico, that the base, if necessary, could completely break down and rebuild any airplane in the AAF.

There, at one of the principal stepping stones on the route to England, Africa, the Middle East, Asia and other points, they have to be ready to service or repair every American airplane flown by the United Nations. An enlisted man or civilian at Borinquen may be called on to work on an A-20, B-17, B-24, B-25, B-26, A-29, A-30, C-54, C-53, C-47, C-87 and heaven knows what else.

The big problem is to keep abreast of supply requirements. Parts and other stock needs are anticipated far in advance and flown from Air Service Command depots. At Borinquen they do both second and third echelon maintenance and operate on a 24-hour basis at all times. Chief concern is engines but they also

carefully check hydraulic and electrical systems, and, occasionally, even armor and armament.

Construction at Borinquen was begun in 1939 and the base was just about ready to operate when war broke out, having been through a period when it was little more than a tent city. In fact, experience gained there in handling maintenance work right in the open showed the feasibility of operating exposed to sun, wind and the elements.

Now there are several gigantic hangars with a German-designed roof, reinforced in a complicated manner, and supposed to be hurricane-proof and able to resist direct bomb hits.

Salt water corrosion is the great worry for mechs there, because the salt air causes corrosion in planes even when they are just parked.

Men at Borinquen recall many of the early planes to go through after the war started. These included LB-30s and B-17Es sent out to reinforce the 19th Bombardment Group in the Southwest Pacific.

Several hundred Puerto Rican civilians now work at Borinquen and have become quite proficient. They are naturally good with their hands. One, formerly an artist, is operating the plexiglas department. Another is a high-grade propeller expert and many others are skilled with fabrics.

Classes are scheduled constantly to keep all enlisted men and civilians acquainted with new developments, and training films are shown frequently.

A monthly maintenance roundup prepared in collaboration with the Air Service Command and the Technical Inspection Division, Office of the Air Inspector.

SHARPS AND FLATS . . .

We heard of a case in which a nail was found in the tire of an ambulance, ready—apparently—for emergency duty on the flight line. Drivers of crash trucks and ambulances ON THE LINE must make an inspection of their tires and running gear *immediately* upon arriving at duty posts. You might loiter behind the wheel all day with nothing to do, but if an emergency comes up everything must click. When a crash truck or ambulance is needed, it is needed right now!

WHO'S HOARDING? . . .

At an AAF flying school using BT-13 aircraft, 21 tool assembly cans moving wrenches were found in storage. These wrenches are used on hydromatic propellers and no hydromatic propellers are used at that station. One wrench should have been issued to the transient aircraft crew, another to sub-depot engineering, and the remainder reported as excess equipment as outlined in AAF Regulation 65-2. Keep in mind that tools hoarded at one station probably keep planes grounded at another! ☆



THE TEN COMMANDMENTS

1. Thou shalt not turn propeller without checking ignition switches.

2. Thou shalt not warm up engines without wheel blocks.

3. Thou shalt not leave airplane without checking parking brakes.

4. Thou shalt not leave airplane without locking controls where applicable.

5. Thou shalt not start engines without seeing that crew is clear of propeller.

6. Thou shalt not taxi airplane if not qualified to do so.

7. Thou shalt not clean engines inside hangars with inflammable fluids.

8. Thou shalt not leave cowls where they will be blown away by other airplanes taxiing or warming up.

9. Thou shalt not use jacks without being sure of capacity.

10. Thou shalt not leave a job until a final check indicates that it is finished.



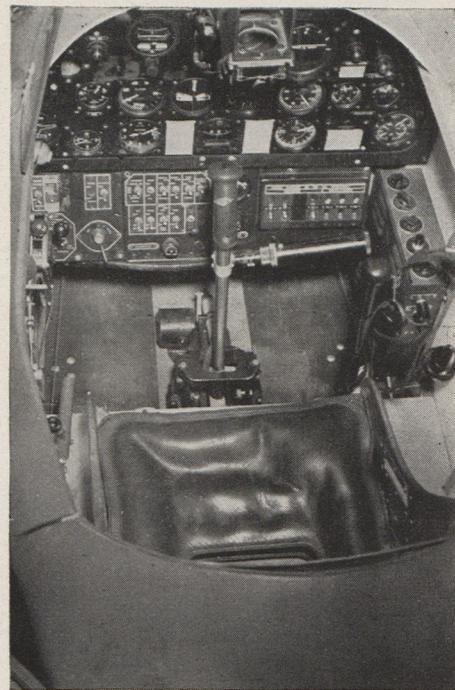
SYNTHETIC DEVICES

THE men who deal with synthetic training devices use the term "mock-up" to describe one broad category of their wares. Generally, it may be defined as a replica or facsimile model which looks and acts enough like the real thing so that the student may use it effectively for practice or study.

Hundreds of such gadgets are in effective use in the AAF training program. Some are made in local workshops of training activities, some are factory-built. Mock-ups used for practice by students usually are life-size models. Those in-

tended for demonstration or study may be reduced in size for easy handling or enlarged to permit effective demonstration to large classes.

Typical of this type of training device are cockpit mock-ups in current use at AAF training stations. By using models of this kind instead of the real thing, students may be familiarized with specific types of airplanes without the necessity of grounding operational equipment. The three cockpit mock-ups described and shown on this page will illustrate the possibilities of such devices.



P-40 Type Mock-up Instrument Trainer

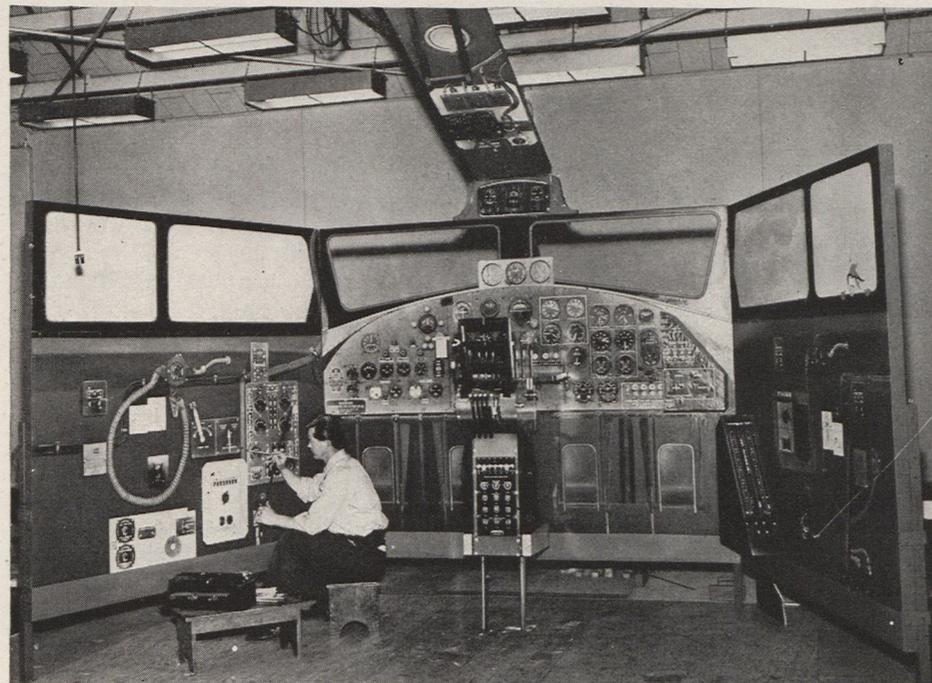
THE P-40 trainer shown here was developed by the AAF School of Applied Tactics, Orlando, Florida. Designed to orient new pilots, this cockpit has the regular P-40 instrument and switch panel, landing gear, landing flaps and cowl flap controls with functions simulating those in actual flight.

On the front of the trainer there is a complete set of controls so that difficulties in the flight of the trainer may be set up at any desired time. For example, the landing gear may be locked and the student required to make necessary correction. A fuel tank selector valve may be used to check the pilot in using the correct tank in take-off and landing.

AT-6A Cockpit Mock-up

CORRECT cockpit technique adds to the life of the airplane, engine and auxiliary equipment. To teach this technique and to provide a method by which the student may practice until good procedure is instinctive, the AT-6A panel shown here was devised.

In addition to the instruments, which simulate those of the aircraft, the student is provided an index and a set of publications for additional study.



B-17F Cockpit Instruction Panel

THE B-17F cockpit mock-up shown here is actually a series of photographs, which have been enlarged and mounted on panels at appropriate points so that the whole set-up looks for all the world like a cockpit model.

The panels were designed to assist instructors at the Hobbs Army Air Field, Hobbs, N. Mex., in teaching pilots the operation and flying characteristics of the aircraft.

This method of instruction was designed and used originally at Luke Field, Ariz., about two years ago. Since that time, it has become widely recognized and many have suggested that it be made a standardized training procedure. This teaching method is supplemented by other mock-ups, charts, diagrams, training films, film strips and other training aids.



WHERE TO GO

Information on the availability of training films and film strips, aircraft recognition materials, synthetic training devices and training literature may be obtained from the Training Aids Division, Army Air Forces, Park Avenue and 32nd Street, New York, N. Y.

THE AIR SERVICE COMMAND

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army. There is the task of welding all the arms and services together with Air Force personnel into a single organization. The training of such an activity is complicated by the different sources from which the men must be procured—the different sources of their technical training and technical control. If the magnitude and complexity of the ASC setup in the United States can be appreciated, then the great number of men required to perform the similar functions all over the world can be understood and the job of the personnel and training division in furnishing these men realized.

The establishment of the Command in

accordance with the principles under which it was reorganized was not without its problems. A general re-education of all the personnel was involved in order to get them to appreciate the difference between technical control and command control, on which straight-line organization is based. It took some time to convert officers to the fact that a committee was not a "bull session" or a conference but a temporary unit of organization, more analogous to a board in its type of action. It was difficult reconciling straight-line control with standard Army administrative procedures which are based on the concept of posts, camps and sta-

AIR FORCE OPERATIONS IN THE BATTLE OF ATTU

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In addition to its observation operations, Colonel Eareckson's Liberator joined other aircraft in strafing enemy positions. This naturally called for low-level flying, much of which had to be done through fog which billowed well below the 3,500-foot mountain ridges. Some of the beach recesses into which he flew his plane to reach stubborn enemy ground positions were just large enough to permit the B-24 to turn around without crashing into one of the vertical walls.

One of these recesses was behind Sarana Bay. About sixty Jap troops, with two trench mortars and two machine guns had stationed themselves behind a small embankment facing the beach to oppose any landing in that area. Despite a 200-foot ceiling which completely obscured the top of the ravine, Colonel Eareckson twice took his B-24 into the narrow recess, banking vertically around the Jap position and materially reducing its effectiveness with machine gun fire from the nose, waist and top turret of his plane.

Although enemy troops spotted in fox-holes were strafed occasionally from the air, the usual procedure was simply to make their position known to the ground commanders. In this way aerial observation aided considerably in reducing casualties caused by enemy snipers and in accelerating mopping up operations.

A striking example of the manner in which the element of chance enters into combat operations took place during the first days of the battle, when a small U. S. scouting force of some 350 officers and men who were attempting to cross a knife-like ridge in a flanking movement were observed from the command Liberator.

These troops had landed at Scarlet Beach and were working their way back of the enemy concentrations along Holtz Bay to come in from the rear just as our northern force attacked down the beach.

Observers in the command plane were aware that the scouting party was turning in too soon and was headed toward a deep, fog-filled ravine back of the west arm of the Bay. Late in the afternoon, a map giving proper directions was dropped for the troops, along with twenty parachute loads of food, medical supplies and ammunition dumped from another B-24. But the map was never received; it was found tangled in the tail structure of the command Liberator after it had returned to Amchitka.

The next day a B-24 carrying additional supplies went up to locate the party but it crashed on one of the fog-hidden peaks. On the third day, although they could not be seen through the thick fog, it was apparent that the troops had slid down the sides of the ravine and were facing the fire of the Japs who had them bottled up from the beach. Food and ammunition were dropped into the ravine through the fog until the little band was finally relieved by the advancing northern force which fought its way down the beach.

THAT little piece of paper catching in the tail of a B-24 had cost the scouts many casualties and the AAF an eleven-man bomber crew and a B-24, not to mention equipment and flying hours which might well have been spent in other phases of the operation.

This incident also serves as an illustration of the lengths to which our airmen went time after time in supporting the Attu landing. All air personnel participating in the operation did a magnificent job considering the handicaps encountered.

The work of the navigators and radio-men in taking the planes through the worst weather in the world and bringing them home again without a single major error on their part was superb. The pilots

tions rather than on a division of activity by function, irrespective of where the function occurs.

In the end the Air Service Command has profited tangibly by its new organization. The number of planes out of commission due to lack of parts or proper maintenance by the ASC has decreased. The new organization has improved our overseas activities despite a lack of adequate overseas control. Considerable reduction in estimated personnel requirements has been accomplished.

The Air Service Command is now in full swing. It is realizing the capabilities of its personnel and the system of organization it has perfected—and these are being expressed in action everyday in AAF combat operations. ☆

flew extremely hazardous missions day after day with coolness and efficiency. Maintenance crews, who operated under anything but ideal conditions on the ground, kept the fighters and bombers in topnotch flying trim.

To the men of the Army Air Forces must go a large share of the credit for the success of an operation which reclaimed the first piece of American territory from the enemy in this war. ☆

MISTAKES IN "ON THE LINE" PICTURE ON PAGE 52

1. Let's get on the beam, men. You know a P-39 is always towed properly with a towing bar. Reference: T.O. 01-1-50. (Incidentally, consult T.O. Handbooks applicable to each airplane for the recommended method. When a rope is called for, it's length should be three and one-half times the tread of the airplane. Reference: T.O. 01-1-50. The rope should not be around the scissors or tied with loose ends. See T.O. 01-110FB-2.)

2. What is this? The tire on the right landing gear is really soft—in fact, almost flat. Obviously this will break down the sidewalls of a precious rubber tire, and turning a corner will strain it even more. Reference: T.O. 04-10-1.

3. We don't like to keep harping on this, Sergeant, since other crews in previous pictures have made the same mistake. But, once more, no objects should be placed on the wings. This applies to those chocks you have there and also to the mech peacefully seated thereon.

4. Wanted for safety: Men walking, one at each wing tip. We can't see the right wing tip but there's no one out at the left.

5. Say you, were you raised in a barn? The cockpit door is open, and it should be closed while the airplane is being towed. What's more, a man should be at the controls.

6. Oh, oh. One prop blade is pointing downward. Surely at least one of you four mechs knows that when towing an airplane with a three-bladed prop, one blade should always be at twelve o'clock.

7. And what about you two extra men on the tug? Did you come along just for the ride? If you don't have anything else to do, you could be out at the wing tip.



CAP cadets at Des Moines, Iowa. Upon graduation from high school, many CAP cadets enter the AAF for further training.

CAP AT YOUR SERVICE

(Continued from Page 47)

to fly emergency shipments where they are needed. Tracking missions to give practice in sighting to anti-aircraft gun and searchlight crews, tests of the aircraft warning system, camouflage inspections, blackout observations and other miscellaneous missions involve thousands of miles of flying each week.

Searches for lost Army planes are conducted by CAP as a matter of regular routine in many regions, especially in the west. Flying slowly and at low altitudes, with pilots and observers trained in methods of precision reconnaissance, the CAP puddle-jumper planes find what they are looking for. In one instance, wreckage was found by looking up rather than down. This Army plane had crashed along a canyon wall.

Many CAP squadrons have developed elaborate ground units with transportation, first aid and communications facilities. The Nevada Wing has formed some excellent cavalry units to go to the scene of accidents spotted in the mountains from the air; it also has motorized and foot auxiliaries. The New Hampshire Wing has ski units for the same type of missions. Michigan has parachute units.

The purpose of CAP has been to get ready for missions that will be useful to the Army Air Forces. Volunteer flights and squadrons in all parts of the country have drilled, trained and conducted practice missions so that every member will know what to do in emergency.

On many occasions when Army planes have been in distress, this CAP ground training has resulted in a safe landing for the aircraft. One evening in an Ohio town, a private pilot and his wife, both CAP members, heard a plane circling overhead. They notified the police and fire departments. A field was illuminated. They flashed landing directions with an auto spotlight in a code they had learned in CAP classes. After the Army pilot had landed, it developed that he had



Cavalry unit of the CAP Nevada Wing en route to search for lost Army plane.

been in CAP and had learned the Morse signaling that saved him from a crash.

The Coastal Patrols have made possible the rescue of more Army airmen than the total of their own losses. The survivors of the "ghost" plane which flew to Mexico after the crew bailed out off Florida were first spotted by CAP planes. Near a northern base, when an Army fighter pilot bailed out and was injured, his crashing plane set the woods afire. Skimming the tree tops through the smoke, CAP pilots located him just in time for a rescue.

BACK of these missions is the intensive training in military procedure, aviation and civilian defense subjects which is required for all members so that flying personnel will learn military discipline and ground workers will understand the fundamentals of flying. While CAP does not give flight training, its courses cover much more than the requirements of a private pilot's license. Members are encouraged to learn to fly at their own expense and thousands have done so in the CAP program.

Practice flying missions include area searching, bombing with flour bags, picking up messages and dropping supplies by paper parachutes. Mobilizations and maneuvers are practiced. Since there have been no enemy air raids yet, CAP units have not been called on for the home-guard duties for which they were originally formed. But many a squadron has shown what it could do by going into action during floods and other natural

disasters, performing aerial reconnaissance and relief duties as well as guard and labor tasks on the ground.

In addition to missions for the Army, CAP conducts extensive courier services for war industries. Often, by rushing in vitally needed supplies, the stoppage of assembly lines at war plants has been averted. Recently the departure of a fleet of Army trucks was delayed by lack of a shipment of tie rods. A CAP courier plane from Cleveland dropped the parts by paper parachute and saved many hours.

Through its training program and its detailed files of personnel, CAP has been able to furnish many specially qualified men on request from the armed forces; upwards of 15,000 of its members have gone into various branches of the service, including the Army, Navy and Marine Corps, as well as into flight and ground school instructor jobs and to the airlines.

CAP women members, comprising about ten percent of the total enrollment, have gone into the WAACs, WAVES and WAFS. The commandant of the Marine Corps Women's Auxiliary, Major Ruth Streeter, is a former CAP officer.

CAP units in all areas are now engaged in a drive to find well-qualified aviation cadets for the Army Air Forces and encourage them to visit cadet examining boards. The CAP has its own cadets, in addition to its regular organization. Each local CAP squadron or flight is authorized to form a counterpart unit of cadets—boys and girls in the last two years of senior high school. Hundreds of these units, with a membership of approximately 20,000, have been formed. The young people get the same drill and training as the adults in CAP and are thus given a running start for military service.

CAP members are authorized to wear the Army uniform with red shoulder loops and silver CAP insignia as distinguishing features. Officers of the patrols and inland units are commissioned in CAP with ranks up to major.

Because these men who cannot go to war are doing their duty on the home front, there is reason to hope that the post-war development of aviation will be much more rapid than otherwise would have been the case. In addition to the big airlines and flying boats which will encircle the globe in peacetime commerce, it is predictable that a great network of feeder lines and air-mail pickup services, together with a great volume of private flying, will be developed with light planes, gliders and helicopters.

In the tens of thousands of aircraft which thus can be used there will be opportunities for many thousands of the demobilized members of America's military air services. That is one way in which CAP, by maintaining local air progress even in the grounded areas where civilian flying has ceased, is trying to do a service for every member of the AAF. ☆

LIKE A FIGHTING SQUADRON . . .



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FOR YOU AND YOURS

Army Emergency Relief is available at ALL times to ALL military personnel regardless of rank, grade, branch or component — and to their dependents, regardless of relationship.

AER may be consulted on all problems involving the personal affairs of a soldier and his dependents. When assistance or advice is needed, contact the Army Emergency Relief Officer at your station; dependents may apply at the nearest Air Force station, Army camp or direct to the Air Forces Branch of Army Emergency Relief, 703 Maritime Building, Washington, D. C.

Assistance may be in the form of a loan, cash grant or relief in kind, depending on the nature and worthiness of the case. AER will also aid in arranging for prenatal care and hospitalization of wives of Air Force men, for hospitalization of dependents, and for employment of dependents and discharged personnel.

When in need of assistance . . . Contact
AIR FORCES BRANCH
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Yes

YOU can still apply for AVIATION CADET TRAINING



Enlisted men between the ages of 18 and 26 inclusive (whose organizations have not been alerted for foreign duty) are eligible to apply for air crew aviation cadet training. An enlisted man interested in becoming a bombardier, navigator or pilot should submit his birth certificate and three letters of recommendation together with a completed application, Form 60, through his commanding officer. The application blanks can be obtained from C O 's or from the nearest aviation cadet examining board, USO club or recruiting office. Successful enlisted applicants who pass their mental and physical tests and qualify before the aviation cadet examining board are eligible to receive air crew training. (Officers below the rank of captain who meet the age requirements are also eligible to apply.)

Army regulations (AR 615-160) provide for transportation, at government expense, of enlisted applicants for air crew training to the nearest aviation cadet examining board to determine qualifications.



NOTE: Your seventeen-year-old friends who also would like to apply for this training may do so now by qualifying before an aviation cadet examining board. Successful applicants will be enlisted in the Air Corps Enlisted Reserve and called to active duty after reaching their 18th birthday.