

AIR FORCES NEWS LETTER

JULY 1942





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Technical and Art Director--James T. Rawls

FRONT COVER

Airborne troops are one of the most potent striking forces in modern warfare. Not neglecting this vital department, the U.S. Army is developing the best airborne force in the world. The cover picture shows what our aerial troops look like while they are being loaded into one of their big transports--Curtiss-Wright's C-46, christened "The Commando". The two powerful Wright engines of this plane are capable of hauling a large number of fully-armed troops, complete with war equipment, deep into the heart of enemy-held territory.

PHOTO SOURCES

Curtiss-Wright Corp., cover; Boeing Aircraft Co., inside cover; U.S. Navy, p. 3, 4; Rudy Arnold, p. 10; Army Signal Corps, p. 18, 19; Fred Hamilton (Three Lions), p. 20; Sovfoto, p. 31, and official U.S. Army Air Forces photos.



Morale

GALLONS OF PRINTERS' INK HAVE SPILLED OVER MILES OF TYPE DISCUSSING THE MORALE OF THE AMERICAN SOLDIER. IT HAS BEEN ADMIRER, PRAISED, FRETTER OVER, CRITICISED AND CHEERED, BUT NEVER HAVE WE SEEN IT DEFINED. A LOT OF US HAVE OFTEN WONDERED ABOUT THIS MORALE OF OURS THAT IS SO FINE, SO POOR AND SO MUCH THE SUBJECT OF EVERYONE'S CONCERN. WE CANNOT DEFINE IT, BUT WE WOULD LIKE TO MAKE AN ATTEMPT AT INDICATING WHAT WE THINK THE WORD REFERS TO.

MORALE IS A SOLDIER STRUTTING DOWN THE AVENUE WITH HIS CHEST OUT, HIS CHIN UP AND THAT "I CAN LICK THE WORLD" GLINT IN HIS EYE.

IT IS HIS ABSOLUTE CONFIDENCE IN THE ABILITY OF THE AMERICAN FORCES TO CLEAN UP THE WHOLE MESS AS SOON AS HE CAN GET THERE.

IT IS HIS READINESS TO FIGHT ANY MARINE OR SAILOR WHO CLAIMS THEIR OUTFITS ARE BETTER THAN HIS, AND HIS EVEN GREATER READINESS TO FIGHT ANYONE WHO CLAIMS THAT ANY OTHER MARINES OR SAILORS ARE BETTER THAN OURS.

IT IS HIS GRUMBLING ABOUT MOPPING THE FLOOR, SHINING HIS SHOES AND STRAIGHTENING THINGS UP, YET HIS INDIGNATION AT EVEN THE SUGGESTION THAT HIS TENT IS NOT THE NEATEST ONE IN THE SQUADRON.

IT IS THE PROUD FEELING OF SMARTNESS HE EXPERIENCES AS HE GIVES A MILITARY SALUTE TO AN OFFICER ON THE STREETS IN TOWN.

IT IS HIS UNCONTROLLABLE RAGE AS HE SEES NEWSREEL SHOTS OR READS NEWSPAPER REPORTS OF AMERICAN DEFEATS OR TRAGEDIES DUE TO "SUPERIOR NUMBERS OF ENEMY FORCES."

FINALLY, IT IS HIS UNSHAKEABLE OPINION THAT HE IS THE BEST SOLDIER IN THE FINEST SQUADRON IN THE HIGHEST BRANCH OF THE SERVICE IN THE GREATEST COUNTRY IN THE WORLD.

Richard Dann,
Private, A.C.,
Brookley Field, Ala.

Cross

Country

FIGHTER COMMAND headquarters in an eastern city recently got a new slant on aircraft identification. A feminine aircraft spotter telephoned in and excitedly reported the presence overhead of "something that looked like a couple of planes with their arms wrapped around one another." It turned out to be a P-38.



FLYING GENERALS form a powerful weapon for the Air Forces. The loss of one of them, like Maj. Gen. Clarence L. Tinker, commander of the Hawaiian Air Force, leaves a deep gash in our fighting machine. So did the earlier deaths of Maj. Gen. Herbert A. Dargue and Brig. Gen. H. H. George.

But when your generals are flying generals you can expect action, and therefore casualties. General Tinker was a good example of what we mean. It's no secret that he was itching for action, that he didn't have to participate personally in the Midway action, and that you couldn't have kept him out of it with a .50 calibre machine gun. They didn't come any tougher than "Tink."

The name "general" has too often been linked with brass hat." In the Air Forces it can only be associated with leather helmets. The record of our general officers is a record of action--of dog-fighting in the last scrap, post-war barnstorming and test piloting, of bailing out, crash landings and pioneer long hops. Our generals are made of the same sort of

grease and dirt every Cadet and mechanic knows about.

All told, there are 83 Air Force generals--five lieutenant generals, 23 major generals, 55 B.G.'s. Every one of them is a pilot. Every one has been through the mill. The names Doolittle, Royce and Brereton stand out as generals who have personally led missions in this war. But you can expect plenty of our other generals to be in the thick of it. They are built that way.



ONE OF THE FEMININE gender, so help us, called her soldier at Fort Bliss, Tex., all the way from good old New York. Company Headquarters informed her he was AWOL. She expressed her thanks for this information and hung up. A minute later the sweet young thing was back on the line. "Is there any way to reach him at AWOL?", she asked.



COMBAT ACTION by Army aircraft is often announced through the newspapers in Navy department communiques. If you're wondering why, here's the reason: the Navy controls all press releases covering combat activities which take place in a zone of action under Navy command.



BACK IN 1937 and '38, when the country still thought of pattern bombing in terms of paper dolls, Sam Stone of Wichita, Kansas, knew there was a war on. He was in one--a machine gunner with Loyalist Spain's volunteer International

Brigade battling Franco's troops. Stone was in the thick of war, was wounded in action, lay in a Spanish hospital for a spell, and went back to the front again.

Today Stone is a 27-year-old private, Air Corps, and a student gunner at the Harlingen (Tex.) gunnery school. He first joined up in the infantry but swung over to the Air Forces and aerial gunnery and for good reason. As he explains it:

"In Spain we were short of tanks, planes and equipment of all kinds; anti-aircraft guns were almost useless. I laid out there a thousand times--just taking it while they bombed and strafed us. I swore that if I ever got the chance that's where I'd be--up there, dumping it down on 'em."



AT CARLSTROM FIELD, Fla.. Lt. Wilson M. McCormick, director of physical training, requires each cadet to pass a 25-yard swimming test before completing primary training. "It is important that every cadet be able to swim," he explains, "as it may mean his life in the event his plane is forced down into water."

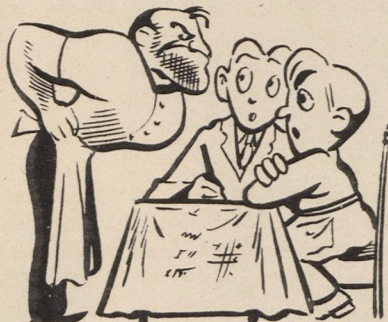


CONCENTRATED FIRE from hundreds of troops equipped only with small arms has played a major role in bringing down attacking aircraft along the Russian front. A purportedly secret document seized from the Germans by the Russians states: "It has been found that our loss of planes from small arms ground fire has been exceptionally high.

In one of our air units which supported a ground attack, the loss from enemy small arms ground fire was 50 per cent. The reason for this lies in the well organized Soviet anti-aircraft fire."

The Germans aren't familiar with this tactic themselves, even reporting that a Russian plane has been brought down with an automatic pistol.

But the Russians seem to be the past masters of the art. Every Russian ground unit is said to attack low flying German planes with rifles and other infantry weapons. Russian cavalry dismount and fire from a standing position with rifles placed on saddles. Infantrymen lie on their backs and fire. Even mortar fire is reported in use. Said to be especially effective are well camouflaged four-barreled machine guns.



AT FOSTER FIELD, Tex., the men in advanced flying school are plugging for paper napkins with war zone maps printed on them for the mess hall tables. It seems that the "table generals" like to chart out new ways to surprise the enemy, and the linen is now taking a beating as the strategists gulp down their food. So, war zone napkins might do something to lower the laundry bills.

"IT HAS LONG been customary in this country to refer to the Navy as our First Line of Defense.

"We of the Army Air Forces like to consider ourselves the First Line of Offense."--Maj. Gen. H.R. Harmon at Lubbock Field dedication.



FROM THE BULLETIN BOARDS
McClellan Field, California:

"One sentry shall walk this post continuously in opposite directions."

OUR PRETTY cover girl of last issue, Miss Kathleen Nelson, Tyndall Field secretarial worker, appears to have scored a hit with the boys. Reports from Tyndall say her picture--showing Miss Nelson in the field's snappy new uniform for women employees--has been picked up by the nation's press. The result has been a flood of letters from male admirers, young and old. One of them came from a 14 year old, who wrote "all the girls around here write to the fellows in the service and don't even bother with little me anymore. So, I wish to get back at them (the girls I mean) by writing a soldier lady and that is why I picked your picture. . ."

IT MAY do some good to mention that the swanky Ambassador Hotel in Los Angeles offers a flat 50 per cent discount for the duration on all rooms occupied by commissioned officers. The hotel has also waived cover and admission charges to its Cocoanut Grove, its theatre, and the Turf Field Club.

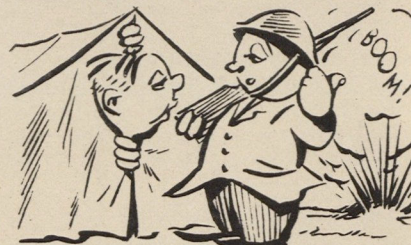
"TOKYO SHOULD be informed that our supply of Chennaults is practically unlimited," comments Brig. Gen. Laurence S. Kuter, Deputy Chief of the Air Staff.

What he means is this: Brig. Gen. Claire Chennault, famed for his leadership of the AVG "Flying Tigers" in China, has five sons helping to win the war. Captain John of the Air

Forces commands a fighter unit in Alaska; Charles has just joined the Army, hoping to get in the Air Forces; another son is in the Navy; another in the Field Artillery reserve, and still another in the merchant marine.

THESE "FLIGHT STRIPS" you hear and read about (page 34) are not widenings of the highways. They do not always run parallel or close to highways, as commonly believed. "Flight Strips" are near highways, all right, but completely independent of them. The highways make it possible for supplies and troops to be rushed to these auxiliary landing areas.

WE WON'T SWEAR by this one, but the story is told about three Canadians, sleeping in a tent at one of the training centers in England, who were suddenly awakened by a terrific crash not far away. "What was it--thunder or bombs?", asked one, "Bombs," was the sleepy reply. "Thank God," said the third, "I thought we were going to have more rain."



SERGEANT BILL LENT, Chanute Field's creator of the comic strip "Reggie", described in the last issue, scored such a hit with his art work that he has been ordered to temporary duty at headquarters in Washington to produce on a national scale. His series of comic strips, features and cartoons, all on flight safety, have been made available to the field and should show up presently in camp newspapers. The sergeant's deft touch is evident in this issue of the News Letter, which contains quite a bit of his work.

Revenge Was Sweet Off Midway

By Lieut. Colonel Walter C. Sweeney, Jr.

EARLY in June it was my good fortune to be in command of three bombing flights against the Japanese fleet off Midway Island in two days. Every man in my command brought credit to himself and to the Army Air Forces. We acted jointly with naval and marine personnel, and all of us have only the most profound admiration for the coolness, courage and bravery of such competent officers and men.

At Midway the morning of June 3 Navy patrol planes reported that a strong enemy surface force was approaching the island from a bearing of 265 degrees true.

Positive information came in about noon, and our flight of nine B-17Es took off immediately. After flying about three and a half hours we found the Jap ships, some 600 miles out, just where we had expected them.

It looked like an awful lot of ships down below. There were cruisers, transports, cargo vessels and other escort ships. We must have surprised them, and we felt so at the time, because they started maneuvering at once. The maneuvering was orderly, but unquestionably violent.

This attack was made in flights at altitudes of 8,000, 10,000 and 12,000 feet, respectively. My flight picked out a large one and bombed it.

At the bomb release line very heavy anti-aircraft fire was encountered. It continued throughout the attack, and, as in the attacks that followed, was plenty heavy. We didn't claim any hits in my flight on this one; we hit all around it, but we didn't see any evidence of damage.

Our second element, under the command of Captain Clement P. Tokarz, attacked a cruiser or battleship--we weren't worried about identification at the time--and left it burning.

The third element, led by Captain Cecil Faulkner, went after a cruiser and is believed to hit it at the stern. One pilot in the second flight, Captain Paul Payne, couldn't get his bombs away on the first trip in so he returned through the ack ack and got hits on a transport, setting it afire.

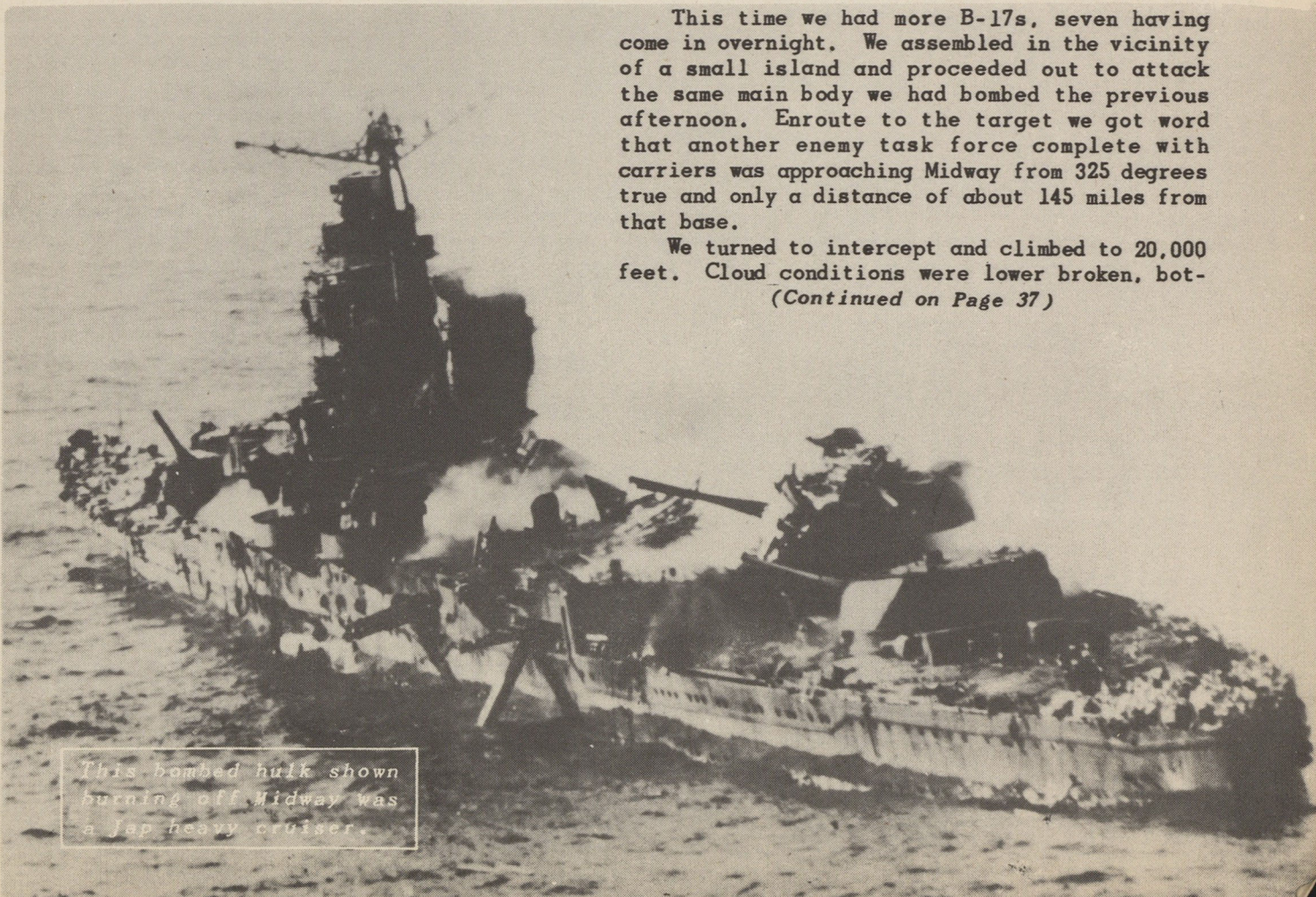
Then we headed for home in high spirits, our only regret that we had no more bombs. On the way back, from about 30 miles away, we could see the heavy ship and the transport burning. They were both out of column and appeared motionless, with huge clouds of dark smoke mushroomed above them.

We returned to Midway in the dark, got a little sleep and were up before daylight the next morning (June 4) to continue the attack.

This time we had more B-17s, seven having come in overnight. We assembled in the vicinity of a small island and proceeded out to attack the same main body we had bombed the previous afternoon. Enroute to the target we got word that another enemy task force complete with carriers was approaching Midway from 325 degrees true and only a distance of about 145 miles from that base.

We turned to intercept and climbed to 20,000 feet. Cloud conditions were lower broken, bot-

(Continued on Page 37)



This bombed hulk shown burning off Midway was a Jap heavy cruiser.

Air War in the Aleutians

Fighting Fog and Japs



A Jap transport burns and sinks in Kiska Harbor, Aleutians, after hits by an Army bomber.

AMERICAN airmen are slugging it out with the Japs in a weird air-sea battle along the Aleutian island chain where the rain drives in sideways off Siberia at a mile a minute clip and volcanic islands jut out of a fog-covered ocean like telegraph poles.

It's the soupiest flying country possible. Daylight runs 20 hours a day, and the nights are never really dark but the fog is always around. You chase the shore line in and out of bays, coves and inlets and you dodge the cliffs. Or you stay under the fog by hugging the water for miles on end, never over 100 feet, sometimes as low as 10. Distances are great and the bad weather eats up your gas. The fog hides your target and blacks out your results. But you dump your load and go back for more. After a while you get used to it.

We've been fighting the enemy and the elements in that sub-Arctic muck since early June, when the Jap squeezed a task force into the Aleutian chain while simultaneously pointing a spearhead toward Midway.

Our Navy states that the Jap invasion force in the Aleutians amounted to approximately two aircraft carriers, several cruisers and destroyers, a couple of seaplane tenders and from four to six transports. The presence of troop transports indicates the attack was aimed at capture and occupation, the Navy reports.

The first attack came on the morning of June 3rd, when the Jap sent 15 Zeros and four Kokekiki carrier-based bombers over the Dutch Harbor naval base and the Army's nearby Fort Mears. Next

day the Jap came again, this time with 18 carrier-based bombers and 16 fighters. In this attack, he included Fort Glenn, an Army post about 70 miles west of Dutch Harbor on the island of Umnak.

He did better the second time, but all told, according to the Navy report, the Jap accomplished only minor damage not impairing the military effectiveness of the American outposts.

As this is written, no further attacks have been reported on Dutch Harbor and the Army stations. The enemy has occupied the undefended islands of Attu, Kiska and Agattu on the westernmost tip of the Aleutian chain and has constructed temporary living facilities ashore. A Navy-approved report states that here "The Japs are getting set for what may become a major push against continental America."

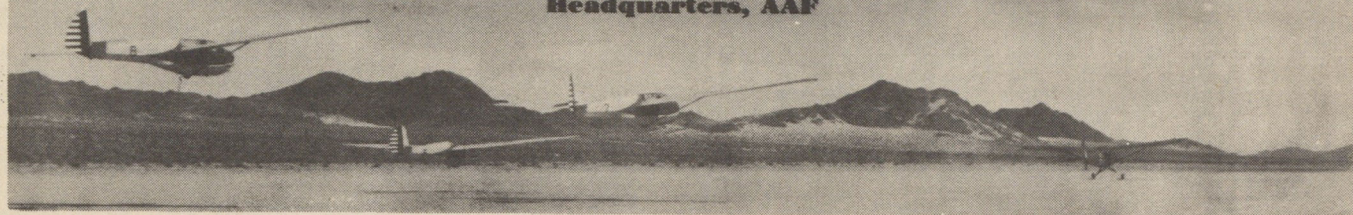
Whatever the result, from the very first move of the enemy, our Air Forces and our Navy were ready for him. On the day of the initial attack our B-17 heavy bombers and the Navy's PBY flying boats were searching for the Jap before his first plane appeared. Anti-aircraft batteries at Dutch Harbor opened fire five minutes before the first bomb was dropped.

"Our bombers in Alaska are carrying the fight to the enemy," reported Brig. General Laurence S. Kuter, Chief of our Air Staff, upon his return from the combat area. "American airmen are also devising special means to put the Japs within range of fighter planes operating from our Aleutian bases. Never have I seen such

(Continued on Page 38)

Gliders For War

by Captain Herbert O. Johansen
Headquarters, AAF



JUST a year ago at Elmira, N. Y., Lieut. General Henry H. Arnold promised the nation that the Army Air Forces would have a glider force second to none.

A recent tour to centers of glider activity throughout the country shows that General Arnold's promise is being kept. The war-going glider is here. War-going glider pilots have been trained and are ready for action.

The "Commandos of the Air" are no longer a promise but a reality.

Everywhere one finds a serious and enthusiastic acceptance of the glider as a military weapon and the glider pilot as a spearhead in mass air assaults on the enemy.

A little more than a year ago no one took gliding seriously in this country, except the few sportsmen who enjoyed the thrills of thermal and ridge soaring. Now the factories that were then turning out a few small and impractical sailplanes are engaged in mass production of huge and business-like troop-carrying gliders.

Today the glider is as much a part of our war plans as the Flying Fortress.

The reason for the glider's coming of age is simple and obvious. Perhaps it was too obvious, for it embodies a principle man has been using since the beginning of transportation: You can pull more than you can lift. The tug with its string of barges, the locomotive and its train of freight and passenger cars, and more recently, the automobile or truck and its trailer are all examples of the economy and increased efficiency of towing. Its adaptation to air transport was a long time coming but now is here in a big way.

It is a startling fact that by towing a single glider, a cargo airplane can double its load with the loss of only about 12 per cent in efficiency. With a tow of two and three gliders, the advantage is naturally that much greater. Colonel David M. Schlatter, Director of Ground-Air Support, of the Army Air Forces, furnishes this excellent example:

"It has been calculated," explains Colonel Schlatter, "that a single DC-3 transport plane flying the route of the Burma road can carry in a month the same amount of equipment that could be handled by 56 trucks. If you double the carrying load of the transport by having it tow a glider, you are doing the work of 112 trucks. Then instead of using one transport and glider team, have many. You can readily see what this

means in the transport picture all over the world."

Going further, Colonel Schlatter predicts the day when single airplanes are an oddity, when planes with trailing baggage and passenger "cars" are common.

Limitless Possibilities

Our whole thinking on the subject of gliders has changed almost overnight. We have suddenly awakened to the fact that in the widespread use of large gliders we have the solution of warfare's complicated transportation problems--not only the transporting of cargo but of troops and equipment for invasion. The possibilities are limitless.

There was a great deal of excited talk about Hitler's "Secret Weapon" when the Germans used gliders in the invasion of Belgium in 1940 and later in the taking of Crete in May 1941. Talk has now given way to action.

At Wright Field there is a Glider Unit working day and night testing and flying and perfecting gliders of all types, from small trainers to large troop-carrying ships.

At factories in St. Louis, Wichita, Elmira and a dozen other places gliders of a size and capacity that will astonish even the glider-conscious Germans are rolling off the production lines.

At preliminary schools in Kansas, Arkansas, Oklahoma, and South Dakota thousands of men are being trained in power-off "dead stick" landings to prepare them for the job of piloting big war gliders.

At advanced schools in Texas and California full fledged glider pilots are being graduated in large numbers, trained in the art of bringing down their gliders on any available patch of ground.

At our Tactical Training Centers huge troop-carrying gliders and their pilots rehearse with the air-borne troops that will be their "cargo".

Yes, the American glider is definitely ready for war.

Now a glider is of no earthly, or rather aerial use unless there are means for getting it aloft. The glider's power plant is the tow airplane. In fact, an aeronautical engineer recently pointed out that a glider is simply an airplane with a remote power plant.

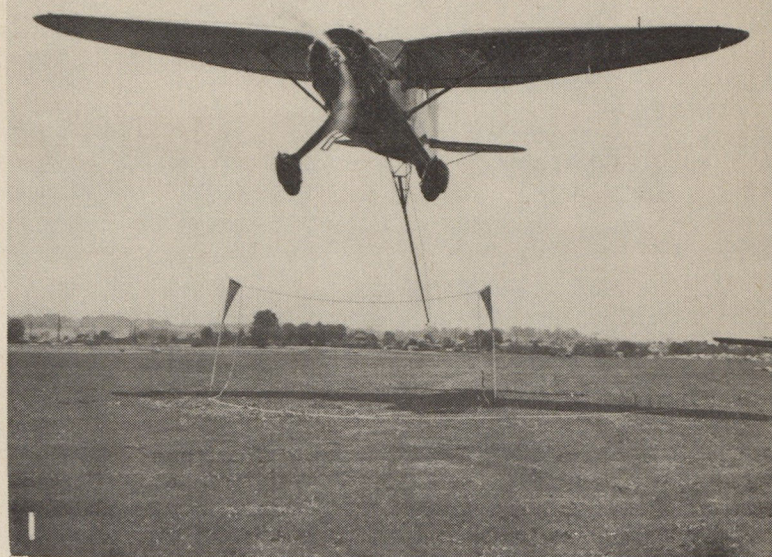
The towing, once the glider is in the air, and

HOW IT WORKS:

1 With pick-up arm lowered, the airplane pilot swoops down toward the ground station at more than 100 miles an hour. An instant after the first picture was taken, the grapple hook at the end of the arm snatched up the glider tow line seen suspended between the two posts.

2 At the moment of contact, the airplane is only about 14 feet off the ground. The pilot quickly gains altitude and a winch inside the plane goes into action, taking up the slack in the tow line which is attached at the other end to the glider seen in the background. A 2-place training glider, the TG-3, was used in this first actual demonstration of a non-stop glider pick-up at Wright Field.

3 And up goes the glider with the greatest of ease as its pilot expertly guides his craft to one side of the ground station posts. The nylon tow rope and an attachment on the cable winch in the airplane act as automatic shock absorbers.



the setting free by the pilot when the enemy objective is reached, presents no real problems, but getting the glider aloft--the pick-up from the ground--does, or did, present its difficulties.

First there was the problem of the take-off for the tow airplane. The added weight of the glider called for a longer runway. With a train of two or three gliders in tow it required a runway longer than is ordinarily practicable, especially for operations from our fighting fronts.

Then there was the all-important corollary to the first problem; getting the glider and its occupants off the ground again once the mission behind the enemy lines was accomplished. Were gliding missions to be one-way tickets with no means of getting out in a hurry? Were costly gliders to be destroyed or abandoned to the enemy in case of reversals? Wasn't there some way in which gliders landing in small fields could be emptied of their equipment and men and brought back to deliver more troops.

Until recently these were both real problems. Now the Army Air Forces is experimenting with a non-stop glider pick-up by means of which our gliders that go to war will be able to come back when their job is done, and load up again.

Pick-Up System

This pick-up system is simplicity itself. It is an adaptation of the mail pick-up by an airplane in flight, widely used for many years.

A few weeks ago the writer witnessed a highly successful demonstration at Wright Field during which a two-place glider was picked up from the ground time and again by a power plane zooming low at more than 100 miles an hour. The demonstration didn't attract much attention, but its significance from a military point of view is

clear-cut. What is accomplished by a small airplane picking up a small glider can be duplicated by a large transport airplane picking up a war-going glider or train of gliders. The principle is the same. All that is needed is larger and stronger equipment.

The essential ground element of the non-stop pick-up device is a set of posts resembling the goal posts on a football field, except that instead of the cross bar a tow line--one end attached to the glider--is suspended between the poles.

The actual pick-up mechanism is in the airplane and consists of two parts, a revolving reel or drum on which 700 feet of light cable is wound and a 12-foot pick-up arm with a grapple hook on the end attached to the bottom part of the fuselage.

The tow plane comes in and as it approaches the pick-up ground station, the pilot levels off much in the same manner as he would in making a landing, except that his speed is greater, anywhere from 95 to 120 miles an hour. He lowers the pick-up arm, and as he swoops down the hook at the end catches the suspended tow-line. At the moment of contact, with the airplane from 12 to 14 feet above the ground, the cable reel inside the plane is permitted to spin freely, paying out additional tow-cable to cushion the initial load imposed by the dead-weight of the glider. Some of the shock is also taken up by the tow-line itself, which is made of nylon to give maximum strength with a high degree of resilience.

Gradually the reel-brake is applied, the glider accelerates smoothly, and by the time the speeding tow-plane has levelled off, the glider is air-borne. Then the brake is locked and the glider is in full tow. If at any time while



the glider is in tow the acceleration becomes greater than 1 G, an automatic shock absorber goes into action.

No Shock or Strain

During the demonstrations at Wright Field, even with the airplane making the pick-up at more than 100 miles an hour, there was no noticeable shock or strain on either the airplane or the glider.

Lest this solution to the pick-up problem makes the job of the glider pilot seem simple, don't forget that there is no mechanical device that will bring the glider to a perfect landing within the limits of a small pasture behind the enemy lines. That is up to the skill and judgment of the pilot.

When he once cuts loose from the tow-ship, 5,000 or 10,000 feet up, miles away from the small pasture that is his objective, the glider pilot is on his own. He must know air currents, rate of glide, and the performance of his glider. As he silently glides down, carrying his precious cargo of men and guns and ammunition, responsibility for the success or failure of the mission is his alone. He must make his approach just right.

Top Man

It is true that the Army Air Forces' troop-carrying gliders are equipped with flaps and spoilers to cut down the speed and increase the rate of glide, but if the pilot misjudges and undershoots his mark there is no engine to throttle and gain altitude for him. That is why the glider pilot will be the top man in the air-borne troop invasion on the books of our high command.

GROWING UP:

A FAR CRY from the sailplane of the sportsman is this 9-place transport glider of the Army Air Forces, shown below. War-going gliders of this type will be the spearhead of our aerial offensive against the enemy. The pilots at their controls will be the key men when our "Commandos of the Air" go into action.

The advantages of transporting air-borne troops by gliders are many. One power airplane can tow several gliders of the type shown below and even larger ones, each glider carrying nine or more fully equipped fighting men. By cutting the gliders loose thousands of feet up and miles away from the enemy objective, they can glide in noiselessly to strike their blows without warning. Also, gliders can be constructed in a fraction of the time it takes to manufacture a power airplane, with the use of practically no strategic materials, and at about one-fifth the cost. The cost of a glider of the type shown here is between \$10,000 and \$12,000, while a transport airplane of the same load capacity costs about \$50,000.

Troop carrying gliders now being built for the Army Air Forces are equipped with flying instruments and 2-way radio. In the larger gliders structural provisions have been made for the loading and carrying of mechanized equipment.

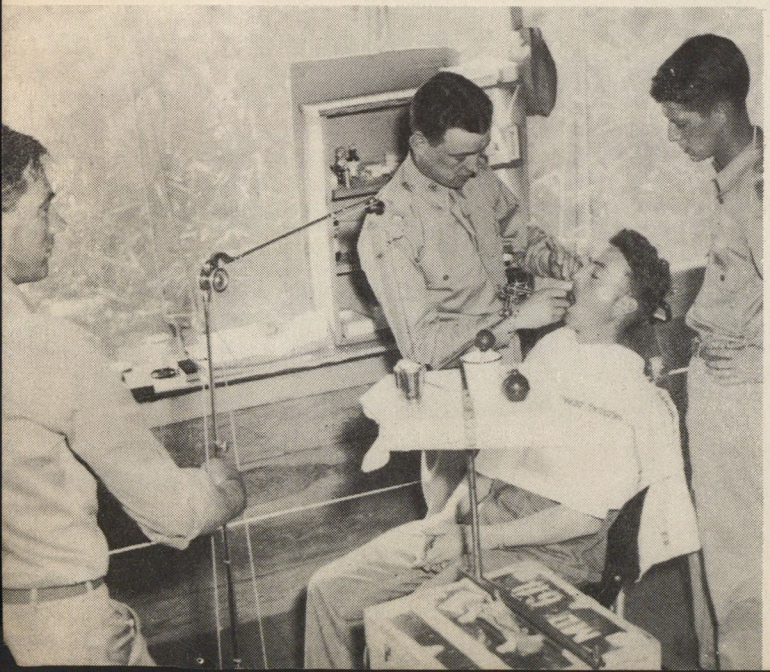




An improvised field headquarters, using packing crates for furniture. Below, elaborate hangars and runways are dispensed with at the front.



A dental clinic, (below) set up against a jungle background at a Third Air Force field, handles toothaches under combat conditions.



Roughing Up For Combat

By Lieut. Robert B. Hotz
Headquarters, AAF

THE gnats dive at you like Stukas and the flies sound like a heavy bomber formation. The swamp turns your GI shoes from brown to black. You eat standing up, sleep under mosquito netting, and shake the snakes out of your shoes. Your workshop is a sweltering tent, and you wish you could find a job to do in the air conditioned trailer where flight instruments are checked. The heat bounces off the runways and hits you in the face. Sweat soaks your shirt and sand whirls up in your eyes.

It might be an advanced airdrome on any one of a half dozen combat zones, but it is just a field somewhere in Florida where heavy bombardment groups of the Third Air Force Operational Training Units are learning how to rough it.

The life is tough, designed to be as tough as anything a combat zone offers. All that is missing is an enemy raid. It's a long way from operating out of a fixed base with long concrete runways, brick and steel hangars, and big permanent repair shops and barracks to running mission from a jungle clearing, filled-in swamp land or leveled hills. Here your control tower is a precarious camouflaged perch in a tree top, your repair shop a row of tents and trailers, your kitchen a hole in the ground with iron grates, and your quarters a bug-filled tent.

Transition Training

It is a transition that AAF outfits are making in increasing numbers as they swing into action on more battlefronts of the global war. It is training designed to teach them how to operate under the worst possible field conditions without softening the blows they strike against the enemy.

A heavy bombardment group always covers a lot of ground, but when it is dispersed to camouflage all its ground installations it really spreads. Everything is on wheels: first, to cover the distances around the base; second, to enable the base to be evacuated in a hurry. By the time an outfit finishes its operational training it is able to evacuate its 200,000 pounds of equipment on wheels in less than six hours.

Improvising and making the best of what is available is the keynote of this type of field training. Furniture is made from old packing cases. Every bit of scrap metal is salvaged and used for something. An old tenant's shack near one field was converted into a beer garden for the PX. Traveling PX's were rigged up in trucks to deliver cigarettes, candy and cokes to the group squadrons scattered under camouflaged groves

The operations office and the weather station are a pair of tents in which lights burn all night. Field trunks have been rigged to unfold as desks to hold weather and operations maps. A Link trainer is set up under a canvas and the pilots put in time on it in underwear, shorts and shoes. Model identification airplanes are strung from the trees. The guard-house is a log stockade made from native timber.

Open Fire Cooking

The cooks preside over great pots, grates and steam cookers heated by open fires. Mess tables are built for stand-up eating and the only utensils are those from individual mess kits.

Gasoline comes in drums from concealed underground storage depots instead of the conventional hose at a fixed base. Ammunition is also kept in underground storehouses. Barbed wire entanglements and machine gun nests surround vital installations. A brake drum hung from a limb serves as a gas alarm and when its clang sounds on the field every man in the outfit wears his gas mask until the all-clear is given.

Problems that are non-existent in an ordinary base tax the ingenuity of men in the field. A barber sets up shop with a packing case chair and a tree for a shop. His razor strop is hung from the trunk and a board wedged in a crotch holds his tools and soaps. The waiting room is a soft spot in the sand. The field de-lousing equipment is re-rigged to provide open air showers with hot water.

First aid stations are set up in each squadron and a group hospital is fashioned from a pair of tents and mosquito netting. The group dentists operate their drills by hand power. Chaplains hold services in the open air. A blackout proof screen is erected between a pair of trees to show training and entertainment films to the men at night.

Out on the line another row of tents houses each squadron's armament, supply and repair units. There are no hangars for the big four-engined bombers scattered in the far corners of the field. Turrets and other vital parts are protected against the sun and sand on the ground. Sentries guard the planes at night.

Planes operate day and night simulating all

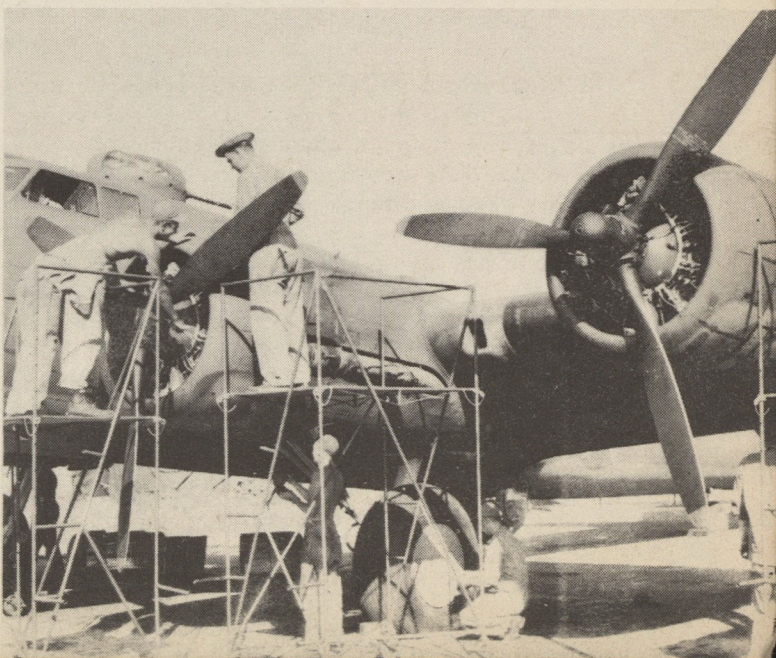
(Continued on Page 21)



Polished desks are out when flight planning time rolls around. Above, in a rude operations building, a bomber crew gets its instructions.



"Tent shops", (above) set up as they would be under combat conditions. Below, there won't be any air-conditioned repair shops at the front.





U-Boat Hunting . . . **Hide and Seek Warfare**

THE airplane and the submarine are engaged in one of the war's strangest but most important duels.

It is a game of hide-and-seek that has few equals--played along thousands of miles of rugged American coastline.

The game matches two unnatural enemies, pitted together because of a relatively defenseless third party--the surface vessel. It is the plane's job to defend it, the sub's job to destroy it. But in defending, the plane must seek and get results. Against the plane, the sub has only to hide.

If you stop to think of a duel between an air weapon and an underwater weapon it smacks of Jules Verne at his best. But when a sub is spotted down below, you really don't have time to stop and think.

Sporadic Action

In hunting submarines you swap hours of monotonous, nerve-wracking patrol for infrequent flashes of furious action, and doubtful rewards. You know the odds are against you, but you can't afford to give a damn. Day in and day out you continue to skim low over the water, looking for a needle in an ocean haystack, always hoping to get a shot at the needle and strike oil.

If a U-boat's silhouette is painted on the nose of your plane, feel free to carry a puffed-out chest. And if by any chance you're sprouting the Air Medal, burst your buttons--you've had it coming.

The plan of action in sub hunting is logically shaped around the known facts concerning the submarine's method of operation. Subs usually

hunt in packs--sometimes as many as 10 or 12 U-boats concentrated in one shipping lane. During the daytime they cruise at periscope depth, or with decks awash and the conning tower visible.

On surface passage, a sub proceeds on diesel power at about 10 knots an hour. The noise of its motors makes it virtually impossible for the U-boat to hear an approaching aircraft before seeing it. That's a definite advantage. But at night, when the sub has surfaced and is idling about charging batteries, an aircraft can be heard as far as three miles away before it is seen, even in bright moonlight. And remember that U-boats do a lot of their dirty work at night.

The theory is that if depth charges or bombs are placed reasonably close to a U-boat, the attack is never wasted. But spotting the sub is the first big job. And that, in itself, is fast getting to be an exact science.

The U-boat lookout system is so thorough that two out of three times the sub will sight an aircraft and dive before it can be sighted by a plane. Three members of the U-boat crew usually stand in the conning tower, arranged back-to-back in such manner that each man commands a 120-degree view.

When the sun is bright, you have your troubles. Try looking for U-boats against the glare in a mighty big expanse of water and find out for yourself. You learn to play "hard-to-find" in broken cloud formations on the clear days; and if the underparts of your ship are painted white you become much less visible from the water.

In thick weather you can make the heavy spray
(Continued on Page 29)

ROLL of HONOR



DISTINGUISHED SERVICE MEDAL

LT. GEN. GEORGE H. BRETT--*"As United States Army member of War Councils in England, Egypt, Burma, China, Java and Australia, as Deputy Commander-in Chief of the Southwest Pacific and as Commander-in-Chief of the United States Army Forces in Australia he has shown a keen perception of existing conditions, excellent judgment and a superior quality of leadership, thus rendering exceptionally meritorious service to the Government in a position of great responsibility."*



DISTINGUISHED SERVICE CROSS

LT. COL. CHARLES A. SPRAGUE--*For exceptional valor in action against the Japanese in the battle of the Philippines. Colonel Sprague has been missing since February after engaging Japanese fighters over Bali. (Also awarded the Purple Heart.)*

CAPT. FRANK P. BOSTROM

CAPT. WILLIAM P. COLEMAN

LT. HOYT A. JULY

For gallantry in action against the Japanese, while stationed somewhere in Australia. No details available. (Captain Bostrom was also awarded the D.F.C.)



DISTINGUISHED FLYING CROSS

For gallantry in action against the Japanese. No details available.

MAJOR WILLIAM LEWIS, JR.

LT. WILLIAM H. CAMPBELL

CAPT. ALBERT J. MOYE

M/SGT. KARL G. JOHANNSSON

CAPT. HARRY E. SPIETH, JR.

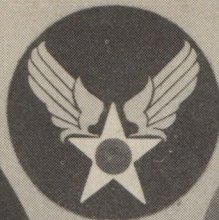
S/SGT. JOHN C. HADDOW

LT. JACK CARLSON

PFC. CLYDEL HORN



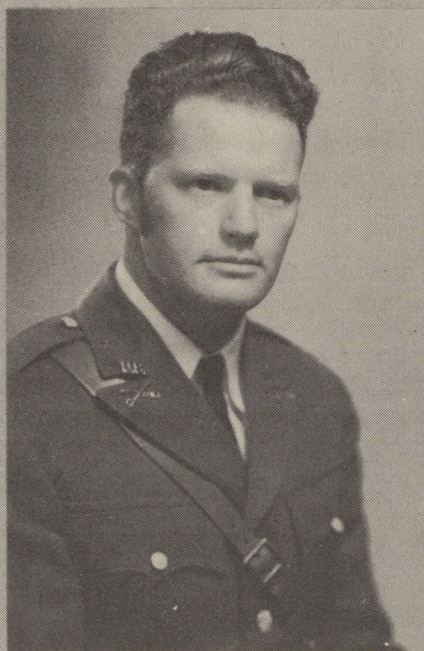
BRIG. GEN. MARTIN F. SCANLON



LT. GEN. GEORGE H. BRETT



CAPT. ALBERT J. MOYE



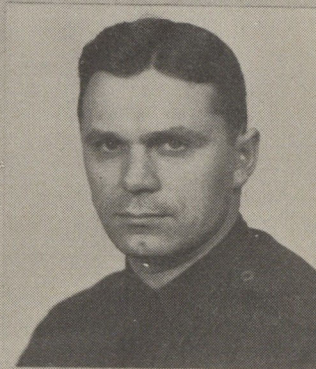
LT. COL. SPRAGUE



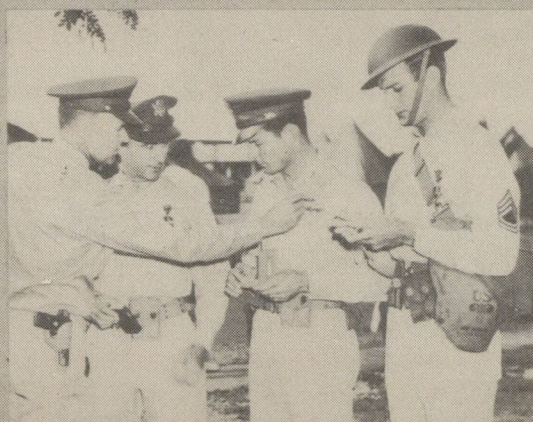
CAPT. HARRY G. SPEITH, JR.



LT. W.H. CAMPBELL



LT. JOHN T. COMPTON



LT. COL. ELMER P. ROSE

LT. SAMUEL W. BISHOP

SGT. HENRY SANDERS



LT. WILSON L. COOK



LT. VERNON A. HEIDINGER



SILVER STAR

For gallantry in action against the Japanese. No details available.

BRIG. GEN. MARTIN F. SCANLON

LT. JOHN T. COMPTON

MAJOR WILLIAM LEWIS, JR.

LT. HAROLD E. SNIDER

LT. WILSON L. COOK

S/SGT. RALPH E. MOUSER

LTS. DONALD K. EMERSON (Posthumous) and VERNON A. HEIDINGER--
*For bravery while participating in a successful bombing raid on
an enemy airdrome north of Australia.*

LT. SAMUEL W. BISHOP--*For bravery during the Japanese attack on
Pearl Harbor.*

SGT. LUTHER B. WARD, CORPLS. HENRY R. SHEPPARD and ANDREW J.
SWAIN--*For extraordinary heroism and bravery in an aerial fight
against an armed enemy. These gunners shot down two Jap Zeros
when their plane was attacked over New Guinea on May 1.*

PVT. FRANCIS J. CARVEY--*For bravery in saving the life of an Aus-
tralian soldier on Mar. 16, when Japanese planes attacked an
airdrome at Port Darwin.*

PVT. HENRY E. SMITH--*For conspicuous bravery and courage in ac-
tion. (Posthumous) Private Smith was killed while repairing
airplanes at Pearl Harbor during the Japanese attack.*



PURPLE HEART

LT. COL. ELMER P. ROSE--*For bravery during the Japanese attack on
Hawaii. Colonel Rose attempted to take a plane off in the face
of enemy fire. Wounded in the first part of the attack, he re-
ceived first aid treatment and went back to duty as post oper-
ations officer to direct for several hours the work of defense
and aid to the wounded. Other Air Forces men to win this award
for bravery during the attack on Hickam Field are:*

S/SGT. WILLIAM S. MOCZAN

SGT. RUSSELL M. WEISS

SGT. HAROLD J. O'CONNELL

CORP. WILLIAM G. KENNEDY

SGT. HENRY SAUNDERS

PVT. JOSEPH SILVA

CAPT. DEAN HOEVET--*For outstanding skill and achievement in an
aerial fight against an armed enemy. While piloting a B-17
bomber on Feb. 21 against a Jap convoy approaching Bali, the
plane developed engine trouble 170 miles out over sea. Captain
Hoevet dived from 28,000 to 4,000 feet and on his approach to
Java was informed of the expected Jap attack on his base. He
managed to keep the plane in the air an hour with the engines
almost failing, and when the field was clear, landed safely.*

CAPT. RAYMOND SWENSON--*For his cool leadership during a 45-minute
engagement with the enemy while on a night attack against Jap
installations at Rabaul on Feb. 23.*

LTS. WILSON A. CHAPMAN and CLARENCE T. JOHNSON--*For displaying
bravery in aerial combat over Horn Island north of Australia
on March 14. Although wounded in an attack by 9 Jap fighters,
they continued to fight, knocked down one attacker and got safely
back to their base.*

'Ole Miss' Goes to Java

By Captain Al Key



Back in 1935 the Key brothers, Al and Fred, established a heavier-than-air endurance record by flying a low powered Stinson monoplane, "Ole Miss", continuously for 653 hours and 34 minutes over their home town of Meridan, Miss.

On January 1 of this year Captains Al and Fred Key of the Army Air Forces, piloting the most powerful long range bombardment planes in the world, took off a few minutes apart from a Florida airfield. They had dubbed their ships "Ole Miss 11" and "Ole Miss 111." They were bound for Java.

The brothers, flying in the same squadron, bombed and fought the enemy all over the South Pacific until the evacuation to Australia. Fred stayed to carry on the fight from Australian bases. Al was ordered back home for combat instruction duties. At this writing he is stationed at Barksdale Field, La. His story adds another chapter to the story of that heroic handful of American airmen who waged the Battle of Java--The Editor.

THE first stop in our flight to the Far East was to be the West Indies. I told the crew as we passed over Miami to take a good look down because it was going to be the last lighted town they'd see. I was just joking at the time, but it turned out to be true.

The Navigator said we would arrive at our destination in the West Indies at 2:05 P. M. We did, and my opinion of navigators rose 100 per cent right then and there. It was his first long distance trip as a navigator, too.

Sometime later on, over water and headed for Africa, the navigator called me on the phone system and said, "Captain, you've passed the point of return."

That meant that we were out too far to turn back, even if we'd wanted to. Just then a storm struck and we flew on instruments for almost an hour.

Just as the weather cleared I got a call on the radio. It was Fred. "Al, where in the hell are you?" he asked.

That's a fine question to ask a man who is right out in the middle of the ocean. I thought a second and said, "You see that cumulous cloud ahead; well, I'm just going into it." Fred said, "I'll be damned; so am I." I looked out and saw Fred's plane right on my wing. We hadn't moved 100 feet apart.

Delayed

As it turned out, our ship was delayed due to engine trouble, and when we landed in Java Fred was on hand to greet us. He already had been bombing the Japs, who at that time were advancing on the Indies.

I was a little shaken up from the flight across the Indian Ocean, but the commanding officer informed me that I would go on my first bombing mission the next morning. I didn't sleep a wink that night.

Takeoff came next morning before daylight, and we found the Japs at Macassar straits. We dropped our bombs and on the way back were jumped by pursuits. We were flying the first

B-17E's that the Japs had come up against and they didn't know we had those stingers in the tail. We managed to shoot down everything that attacked us. Fred's plane was shot up pretty badly, but he wasn't hurt, nor was his crew."

American flyers kept shuttling back and forth from Java for about 10 days. But no matter how many Japs were killed they kept coming.

Next the Japs started on the Celebes and the Dutch set fire to the oil wells on those islands. One night the Dutch reported that the Japs were attacking and that the light from the burning oil wells would serve as a good beacon.

Three flights of us took off that night, and the Japs were right where the Dutch said they'd be. Fred, Lieutenant Hillhouse and I were in one flight. I told the other two to fly around, and I'd see if I could stir up some trouble. We "sashayed" around and let go some bombs. Then the Japs turned on their flood lights.

Fred hadn't cut off his radio, and I could hear him giving orders to Soupy, his bombardier. The bombardier's name was Campbell, so Fred nicknamed him Soupy.

"Soupy", said Fred, "you see those lights down there? Well, put 'em out." A few seconds later I heard Soupy say, "Captain, they ought to go out soon; there's eight bombs on the way down." The lights went out.

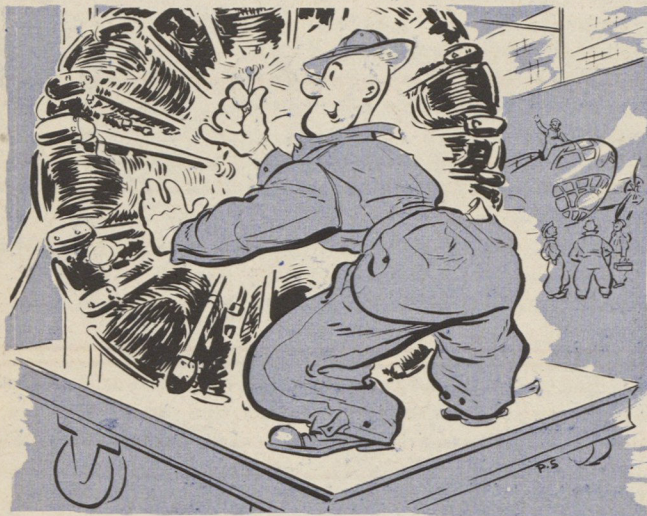
When the Japs started moving in on Sumatra, a squadron of American flyers caught thousands of them in small barges in some of the narrow straits. The Americans dropped bombs from 1,500 feet and blew Japs, barges and water almost as high as the planes.

But the Japs kept coming. And since American and Dutch flyers had to take time to refuel and service their planes, the Japs could get considerable troops through.

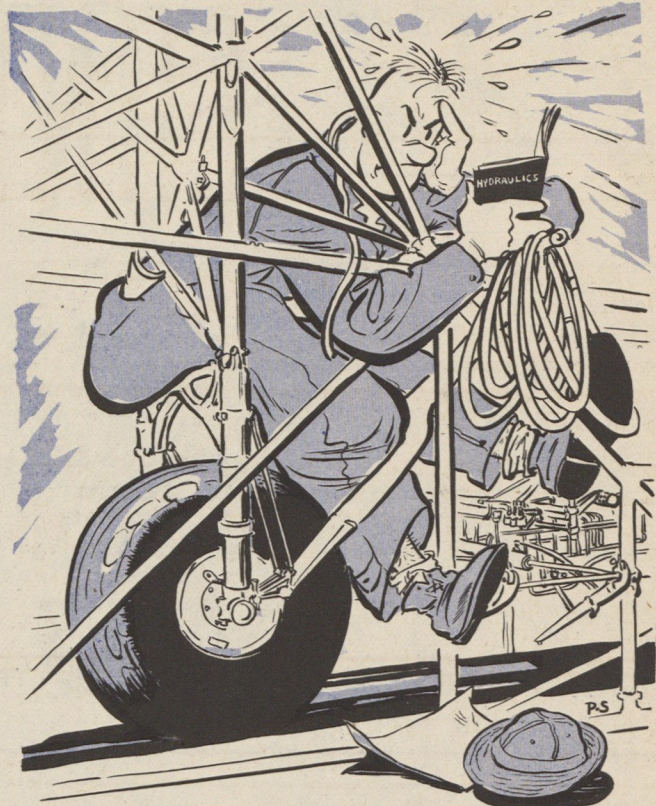
After Sumatra came Bali. Americans sank 16 Jap ships at Bali. In one raid we destroyed an airfield which had fallen to Jap troops, together with a number of Jap planes. Then, when it became certain that the Indies couldn't be held, the evacuation to Australia began.

All in a Day...

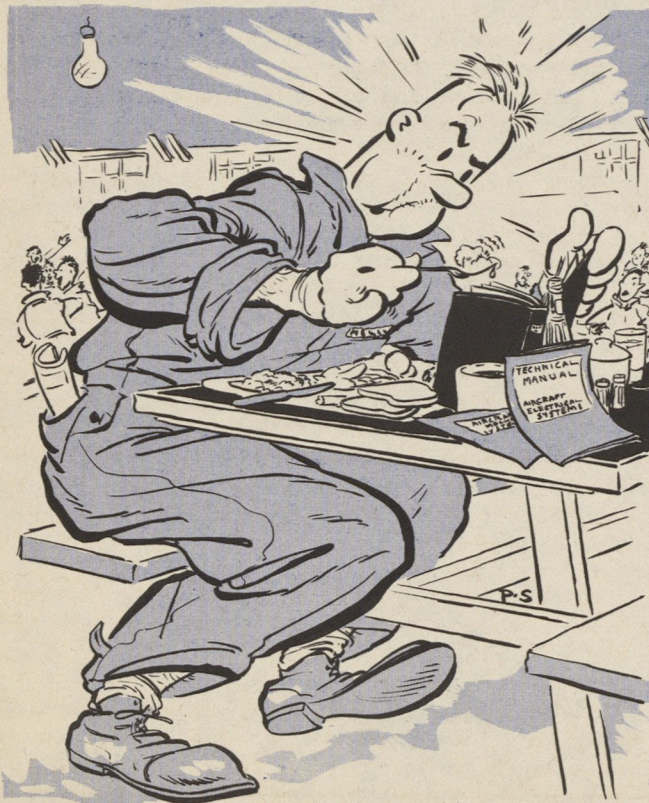
A few of the trials and tribulations of a student mechanic have been caught by Private Paul Snyder, of Kessler Field, Miss., in a series of cartoons reproduced here. Inspired by the technical training course at Kessler, they show what the neophyte mechanic has to contend with before he is graduated. Hard work, boners, constant study--all are part of the picture. But they all combine to make good mechanics--and AAF mechanics have to be good.



"The Optimist"



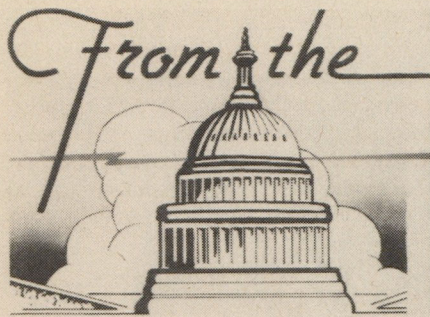
"Hydraulics - one of the most simple studies"



"Cramming"



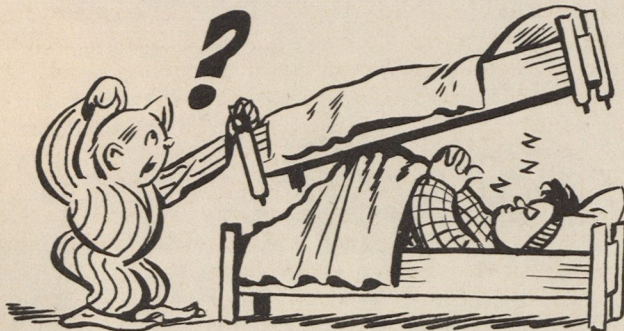
"The testing blocks test more than motors"



CONTROL TOWER

ELIMINATION of the red circle in U. S. military aircraft markings in no way effects the design of the AAF shoulder patch. The red dot was removed because it could be mistaken for the Japanese rising sun emblem. . . but the dot in the shoulder patch is still with us.

RESERVE officers, commissioned before Sept. 26, 1941, are now entitled to the \$150 uniform allowance, *PROVIDED* they had not completed any three periods of active duty (of three months each or less) when called to extended active duty. The grant does not extend to National Guard officers; to AUS officers commissioned since Sept. 26, 1941 who had prior commissioned service, or to AUS officers above the rank of captain. But it still holds for AUS officers **ORIGINALLY** commissioned since Sept. 26, 1941.



THE old Army cot is **OUT**--tossed into limbo for the duration. The infamous steel torture device, cleverly designed to look like a piece of furniture, is to be replaced soon by a wooden contraption arranged to form one-half of a doubledecker. The new bed promises no more midnight collapses; no more smashed fingers, no more pain-wracked forms. It's wonderful.

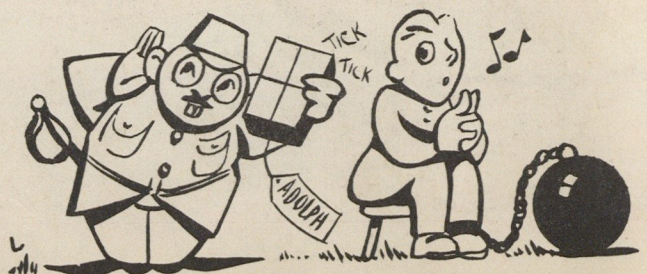
YOU can now perpetuate the name and memory of your lost or missing buddy through the AAF Aid Society. Your cash contribution to the Society's trust fund will be acknowledged in your behalf to the bereaved widow or family. A card will explain that you have donated an undisclosed amount, to be added to the general fund that the Society will use for post-war assistance to AAF personnel and dependents. Send any amount to the AAF Aid Society, Room 703, Maritime Bldg., Washington, D. C.

THE Adams apple emerges from official obscurity under the terms of a ruling which now

permits your C. O. to make the open neck-band without tie legal for the duration--when circumstances warrant. Within proper restrictions governing neatness, the C. O. may now dispense with the tie when personnel are engaged in duties that must be continued at maximum speed regardless of mid-day heat. And on the subject of ties, have you seen the blue and gold striped jobs now available at most Post Exchanges? These are intended for off-duty wear by AAF'ers, under the same restrictions that apply to civilian dress. (Wear only when participating in sports, or in private quarters with less than three persons present).

YOU, too, may be entitled to wear that yellow faille ribbon with red and blue stripes that recently made its appearance over left breast pockets. It's the American Defense Service Ribbon, and as widely publicized, appeared to be restricted to officers and men who completed a year of active service between Sept. 8, 1939 and Dec. 7, 1941. Actually, however, **ANY** officer or soldier who **STARTED** active service at any time within the above dates is eligible to wear the ribbon and receive the award of the American Defense Service Medal.

WELL, the word "Air Corps" is back again. That is, for use on signatures. The name Army Air Forces still goes, and the designation of General Arnold remains Commanding General, Army Air Forces. But for the rest of us, the official moniker is now John Doe, Lieutenant, Air Corps. It was that way for years and years, but changed over to John Doe, Army Air Forces, a few months ago. It seems that the name Air Corps is a designation of an arm of the service fixed by an act of Congress and would need an act of Congress to change it. The name Army Air Forces was adopted for administrative purposes by executive order.



HOW TO SAVE MONEY DEPARTMENT: Next time you cash a money order at a post office window, don't be a sucker and pay the fee ordinarily charged for this service. The rule regarding collection of the fee has been suspended for the duration of the war, for properly identified service men. . . .If you were

a Federal employee before joining the Army, any accrued leave to which you may have been entitled can be converted into CASH, according to WD Bulletin No. 19 (4-16-42). . . .A free legal service is being maintained for officers and enlisted

men at McChord Field, Washington. The service, which includes the otherwise costly preparation of wills, powers of attorney and other legal documents, will be extended to other fields. . . . All soldiers honorably discharged for injury or disease incurred in line of duty, (or aggravated thereby) and not the result of their own misconduct, are entitled to apply for pension benefits with the Veterans Administration. Organizations commanders will help prepare application papers

. . . .A pamphlet, "Are You a Responsible Person?" is available by mail (10¢) through the Book Dept., Command and General Staff School, Ft. Leavenworth, Kan. It furnishes a valuable check list of things-to-do to put your personal affairs in order, anticipating service overseas.

SAFE arrival of U. S. Army personnel overseas will be heralded in the future by "arrival" cards, which the soldier fills out and addresses to Mom and Pop, the girl friend and relatives before leaving. The cards stay right here, and when the safe arrival of the contingent abroad has been confirmed, the cards are mailed by the Army.

SPEAKING of Officer Candidate Schools, note that a ten-day leave of absence is authorized for all graduates before reporting for duty. If you insist on the official wording, struggle through Par. 21, AR 605-115 and Par. 12 C, WD. Cir. 126, cs, 1942.

IF you draw the short straw and get yourself captured, don't forget that an effective procedure exists for communicating with relatives and friends. Within the framework of the Japanazi interpretation of these codes, contact with the luckier ones left behind can be

arranged through the Red Cross. Captors are required to permit the prisoner to send his name, rank, serial number and address of prison to the International Red Cross Committee at Geneva, Switzerland, postage free. Letters only are allowed; parcels are banned. Mail to

prisoners of war works the other way. If you want to write to a captured civilian, the full amount of postage must be attached to the envelope. Standard forms are supplied by your Red Cross representative; they limit the message to 25 words.

WHEN a pretty young stranger sends you a sweet-scented letter, describing herself as "Rich, lovely and lonely"--run, don't walk, to the nearest ash can. Deposit the billet-doux firmly therein, to avoid Uncle Sam's frown. Correspondence between Army personnel and unknown civilians (sex not specified) is out for the duration. No approval will be given "Lonely Heart" clubs or other plans intended to encourage such correspondence. However, this policy is not designed to discourage normal letter writing between soldiers and friends, relatives, or--of course--the girl back home.

A soldier who is physically qualified can now be appointed directly to an Officer Candidate School of his choice without having to appear before the usual board of officers for acceptance. Any general officer is now authorized to direct in orders that an enlisted man under his command, who has been especially selected by reason of his demonstrated fitness, will be detailed as an Officer Candidate. Such appointments are limited to ten per cent of the quota currently allotted to the command for the school.



For the **DEFENSE** of the **AMERICAS**

VENEZUELA



LT. JOSE GUERRERO of Venezuela (above) is taking a refresher course at Kelly Field. Below, a student from Argentina handles the control tower at Randolph Field.

ARGENTINA



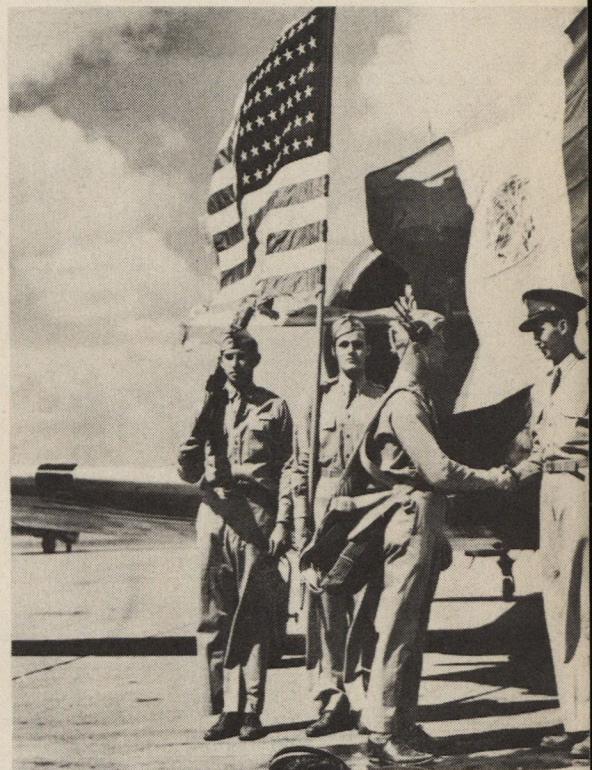
Being a good neighbor to the rest of the Americas is one of the specialties of the Army Air Forces.

In the effort to help build a united American air front against aggression, AAF training centers have opened their facilities to flying students from our neighbor countries south of the Rio Grande.

In cooperation with the CAA and the Coordinator of Inter-American Affairs, the Gulf Coast Training Center is training a large number of Latin American cadets

who have Most of or soldier training.

In addition, all refresher flying of in order study A ques. So are am



NICARAGUA

BRAZIL

been sent here to win their wings. These students are either civilians or military who have had no previous flight

tion to this fledgling training program. AAF training centers are offering refresher courses to a number of junior officers of Latin American countries to give them an opportunity to refresh their flying and training technique. Some of these refresher students are among the best flyers in Latin America.

MEXICO



"DEATH TO THE AXIS" is the pledge of AAF fliers and Mexican trainees at Foster Field, above. Lt. Edmundo Vargas, of Nicaragua, (left below) and Lt. R. K. Simeral, AAF.



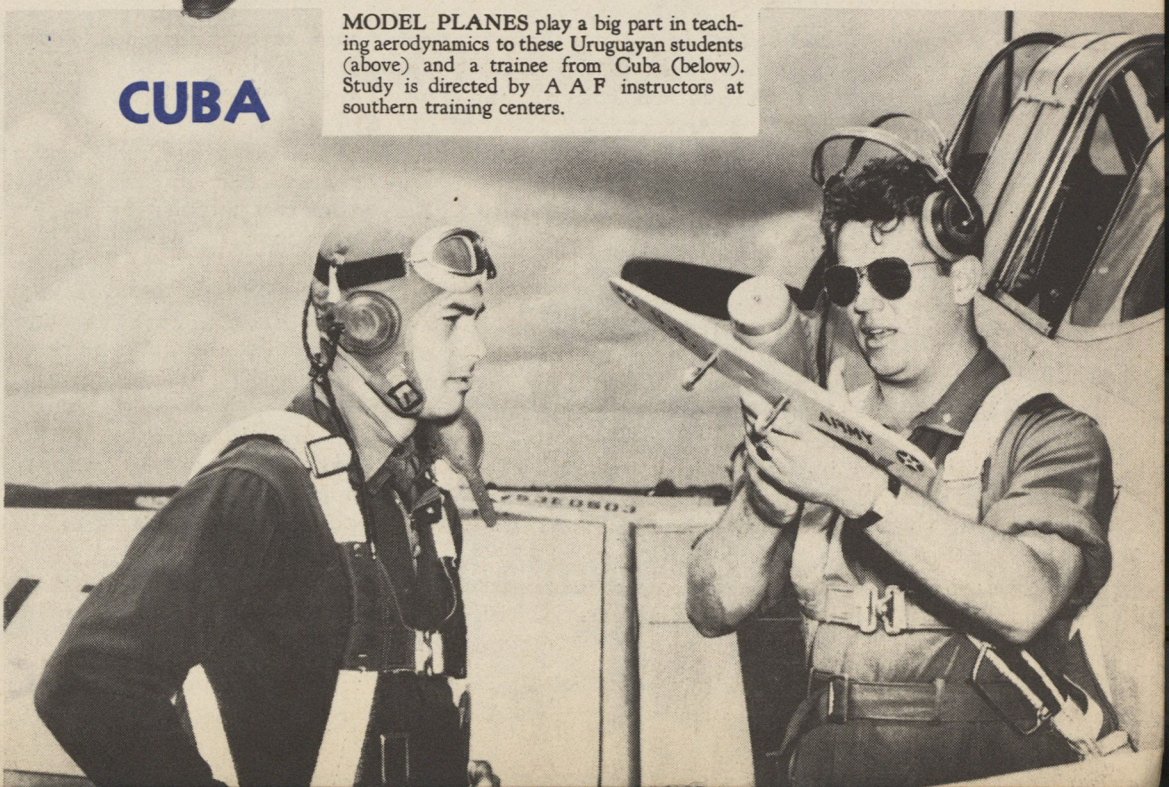
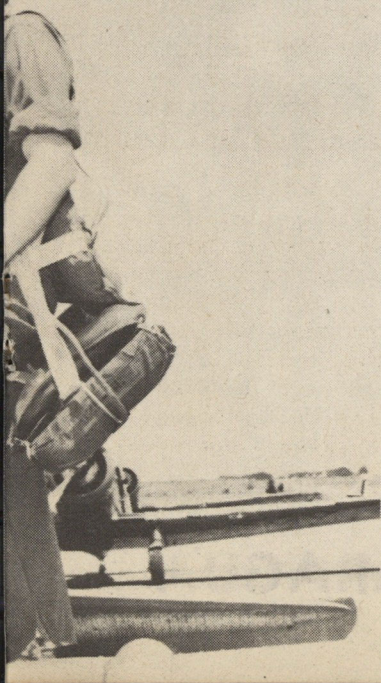
BRAZIL sends these student fliers (above) to Randolph Field.



URUGUAY

CUBA

MODEL PLANES play a big part in teaching aerodynamics to these Uruguayan students (above) and a trainee from Cuba (below). Study is directed by AAF instructors at southern training centers.



The Next Raid on Japan

By James R. Young



The author, for 13 years a noted foreign correspondent stationed in Japan, was held captive by the Japanese government for two months prior to his return to this country a year ago. He is the author of two books on the Orient, Behind the Rising Sun and Our Enemy, and has appeared before lecture groups throughout the nation, including several Air Forces units. The views expressed in this article are the views of Mr. Young and must not be considered the official views of the War Department or of the Air Forces News Letter--The Editor.

IN the next American flight to Japan, two strategic spots must be bombed--the highly fortified Imperial Palace at Tokyo, and the Grand Shrine of Imperial Ancestors, located at Ise, near the Nagoya aircraft plants.

The Palace is located on a 531-acre plot of ground in the center of the world's most vulnerable capital.

The Imperial Palace and environs are as military in nature as a munitions dump.

A small artillery unit is barracked in the grounds. The Imperial Bodyguard, the elite of the Jap army, is stationed therein. The central telephone switchboard is a clearing house and signal station for air raid alarms. Wires run north about four blocks to the notorious Gestapo headquarters. The main dug-out is across the moat, in the basement of the Dai Ichi Life Insurance Building.

Germany's best Zeiss and Bosch anti-aircraft equipment were purchased and installed five

years ago inside the Palace grounds by the Imperial Household, under direction of Baron Tsuneo Matsudaira, father-in-law of Prince Chichibu.

One of the city's modern fire fighting units is stationed in the Palace precincts. The army, standing watch, is under an Imperial Prince. Some cavalry are kept there in the barns, for the Imperial Polo grounds.

The entire Jap war machine, functioning as a joint board under the title of Imperial Headquarters, presided over by the Emperor and two Imperial Prince's of the Blood, meets in the Palace.

All plans formulated for attacks on the United States, China, Australia, Alaska and India, are mapped in the special room which might have been occupied on that April mid-day Doolittle attacked; the Imperial commission always convenes at 11 a.m. and adjourns about 1 p.m.

The supreme Imperial network of tactics,

strategy, communications and planning, all center in the Palace grounds--the most military objective of the Japanese Empire.

The Palace must be pulverized. On the next trip, our airmen must bomb the Palace as viciously as the Sumida river arsenals or the Yokohama chemical rubber, tank and auto plants.

The Grand Shrine at Ise is the burial place for Japanese ancestors of the Imperial Family. If the Palace is bombed, and the Shrine demolished, a wholesale hara-kiri will follow, and the entire government will be overthrown.

Mass Hari-Kiri

Imperial Household authorities would commit suicide. The head of the Metropolitan Police Force would kill himself. Premier Gen. Hideki Tojo and his Nazi trained staff would resign. The Minister of War and the head of the Imperial Western Defense Command would be put in shame. The Board of Shinto would be tossed out. Hysteria would prevail.

The fact that a high placed general resigned after the first American attack, and that the chief of the defense command was out from loss of face, proves the vulnerability of the Imperial system. Others have been thrown into prison.

A close study of the report by Brig. Gen. James H. Doolittle on the epic flight of his 80 men over Japan, the third attack on Japan since 1937, points up the extreme vulnerability of the Axis empire partner, and reveals that the Japs are not the calm, composed residents they have been interpreted.

Often, it is said, the Japanese are a people who can endure floods, earthquakes, typhoons, monsoons, tidal waves, landslides, volcanic eruptions, great conflagrations and epidemics. Such were natural events. Air raids are not in the Japanese book of rules of experiences although air raid drills have operated since 1934.

The first raid, on Formosa, Japan's giant Gibraltar of the Pacific, the spring-board for her Philippines attacks, and earlier the debarkation point for Hainan and Indo China, caused severe damage to a field near Taihoku, the capital, in 1937. Chinese, and it is believed some Soviet pilots, did the trip. Though nearly 2000 miles distant, Tokyo ordered a blackout for two nights following that attack.

Chinese appeared over western Japan in 1938 to drop pamphlets instead of bombs. The psychology of the pamphleteering was poor for it advised the Japanese farmer peasants to "overthrow the Imperial shackles." Workers who fear the Jap police and revere their god-emperor, instead of carrying through the Chinese hint, picked up the handbills and carried them to nearby police stations.

A year ago I began a research job for *Flying*

and *Popular Aviation*, on a pattern of air attack on Tokyo. The result, in 5000 words, was published in *Flying* for December, under the title "Stop Japan Now", the theme being to "give her Hobson's choice otherwise drop our compromise policy and face the dilemma with firmness and force."

Gen. Doolittle remarked in Washington that there was little difficulty in finding the assigned targets. My research job stated "a flight of bombers will find, in one glance, three vehicular bridges and approaches of the mile-wide Shinagawa river south of Tokyo. Tokyo's suburbs have mushroomed thousands of armaments factory smokestacks."

Japan cannot have effective air defenses because it will be practically impossible to organize sufficient anti-aircraft defense on boats to strike at enemy craft before they arrive at their objective.

One month after the Tokyo bombing, a great and famous Japanese ship, the Nagasaki Maru, hit a mine in Nagasaki harbor and was destroyed. The Captain, a veteran in the Japanese marine service, shot himself in the offices of the N.Y.K. line. Three months after Pearl Harbor, a well-known Jap diplomat, Satomatsu Kato, "fell" from a window in his Paris embassy and was killed.

To bomb the Imperial Palace on the next trip will hasten an end of the war and by suicide, many of Tokyo's leaders will save the day of an Axis hanging.



Roughing Up

(Continued from Page 9)

types of combat missions. Nearby towns used as enemy installations day after day are "annihilated" by the squadrons in training. Missions are changed while planes are in the air, and all hands are taught to operate while under fire. Ground crews learn to cut servicing time to a minimum to prevent planes being caught on the ground by enemy attack.

A comprehensive plan for defense of the field against enemy bombers, paratroops or ground attack is worked out; constant drill in defending the field and its installations accompanies the rest of the training routine.

This field practice is designed to make AAF units bound for combat duty able to operate entirely on their own, to build them into self-sustaining units that can provide their own supply and maintenance wherever they may be and can defend themselves against any type of attack. Anyone who has seen the Air Forces in action in the bug-filled blistering sand and swamps of Florida will know that when these men go into action on foreign soil they will be ready for anything.

PRO PATRIA MORI

A partial list of officers and men of the Army Air Forces officially reported to have died in the service of their country since December 7, 1941.

Lieutenant Colonels

Stanley K. Robinson

Technical Sergeants

Herman C. Reuss

Majors

Clarence R. Davis

Hugh F. McCaffery

Captains

Timothy J. Sargeant

Walter W. Sparks, Jr.

Lieutenants

Karl F. Harris

Leroy W. Smith

George C. Rodge

John W. Gentry

Cilio S. Guerriere

Addie J. Hogan

Dalton R. Hardy

G.O. Peel, Jr.

Walter V. Wilcox

T.J. Majors

Charles W. Page

James J. Orr

Charles W. Van Eeuwen

Randall R. Schamp

Foster L. Walker

Harold William Wolfe

Clayton Lafayette Head

Darrell Stewart Wing

Elmer Milton Munn, Jr.

Rush Howard Willard

Raymond A. Sloan

Francis H. McAllister

Richard V.W. Negley, Jr.

William T. Morgan

Oscar D. Wyatt, Jr.

Gail Thomas Updegraff

Francis Peter Smith

Harris Allen Stuart

Melvin W. Schoephoester

Charles Steen, Jr.

Kenneth Wayne Sprinkle

Richard Spotswood Smith

Stewart L. Swenson

Herbert F. Soest

Reul Carter Shows

Leroy Earle Grindle

Andrew John Francisco

John Bradley Rush

Richard James Sandner

James O. Reed

Melvin L. Rake

Donn William Piatt

Frank G.J. Micieli

Samuel Seay Pattillo

Jesse Peter Ottosen

Charles K. Nelson

Boyd Vaughn Mann

Norman Richard Meeks

Rudd Van Mann

James Edward May

Lewis Howard Miller

Elmer Munn, Jr.

Joseph Benedict Maloney

Frank Andrew Kobal

Harry W. Moseley

Harry Lamar Matthews

William Thorpe Morgan

Gordon Durfey McKenney

Francis Kinner McAllister

Lathon E. Henson

Jack Thomas Laughlin

Fergus O'Conner Luscombe

Erwin Roy Kriel

Gordon Otto Kibbee

Ralph R. Johnson

Walter C. Isely

William Rawls Hogg

Gordon E. Houston

John Ernest Linwood Huse

James Valentine Hamilton

Conner Garth Hopkins

Henry Thomas Horton

Owen R.S. Graham

William Thomas Gardner

Philip D. Freeman

Robert William Finwell

Lucius Diebrell Edwards

Louis G. Moslener, Jr.

Robert H. Markley

George A. Whiteman

John A. Potter

Henry J. Humphrey

Billy O. Brandt

James E. Guthrie

Paul V. Fellman

Staff Sergeants

Andrew A. Walczynski

Joseph E. Good

Harold C. Elyard

Virgil W. Dickey

Sergeants

William Hislop

George M. Martin

Edwin N. Mitchell

Morris Stacey

George R. Schmersahl

Robert O. Sherman

Wilmer L. Inlow

Joseph J. Chagnon

Lewis B. Shoemake

Benjamin W. Kerr

Corporals

Patrick L. Finney

Lumus E. Walker

Cecil W. Green

John R. Botelho

La Verne J. Needham

William H. Offcutt

Emmett E. Morris

John G. Mitchell

Stanley A. McLeod

John J. Kahl

Privates First Class

Anderson G. Tennison

Edward F. Vernick

C.J.B. Sparks

Robert L. Avery

Joseph Hriczko

John R. Gagliardi

William R. Briggs

John R. Fletcher

George J. Smith

Julian C. Stultz

Roger A. Vaillencourt

Merrill W. Riner

Boyd E. Halcom

William C. Killin

Howard L. Ellis

John R. Leyerly

Privates

Leo Surrells

Joseph M. Vellner

Frank B. Cooper

Robert A. Bailey

Paul L. Staton

James L. Bartlett

Felix S. Wegrzyn

Jackson A. Chitwood

Russell E. Gallagher

Edwin Corsuch

Frank J. Lango

David C. Lyttle

Richard L. Coster

Robert L. Palmer

Paul R. Eichelberger

James A. Ross

Leroy R. Church

Robert H. Westbrook

George W. Baker

Ernest M. Walker, Jr.

Frank R. Dallas

Joseph S. Zappala

Martin Vanderelli

Russell P. Vidoloff

Allan G. Rae

Elmer W. South

Andrew J. Kinder

Harry E. Smith

William F. Shields

George A. Moran

Joseph G. Moser

Maurice J. St. Germain

Merton I. Staples

Victor L. Meyers

PRIVATE DOAKES~FINANCIER

from
TO KEEP 'EM FLYING
MIAMI BEACH, FLORIDA



IN January, 1943, the pay raise finally caught up with Pvt. (NMI) Doakes. One Monday morning he couldn't get up for sick call, so his Sergeant, a kindly man, called an ambulance. The Medical Officer gave Doakes a long, diagnostic look and whistled.

"Spots before your eyes, Private?" he asked.

"Well, not exactly spots, sir," Doakes whispered. "More like dollar signs they are."

"Hm. And you feel tired at Reveille?"

"Yes, sir."

"I see. When, exactly did you start feeling like this?"

Doakes considered. "As near as I can remember, sir, it was back in August, a couple of months after the pay raise went into effect. That was when I started to slip behind."

"Slip behind?"

"Yes, sir. I suddenly noticed it was coming in faster than I could spend. And then, sir, I decided to take steps. I stayed up in my room all one evening tearing up my old budget and making out a new one. It took a lot of figuring, sir, I can tell you."

"I can imagine," said the Medical Officer. "Go on."

"Well, sir, I had this old budget worked out exactly to twenty-one dollars a month--right to the last penny. Fifty cents for photographs, two-fifty for laundry, three dollars insurance, three dollars beer, seventy cents haircuts, eighty-five cents toothpaste, soap, blades and so on, twenty-five cents stationery, twenty cents shoe polish, fifty cents papers and magazines, two dollars movies, three dollars cokes and four bucks fifty cigarettes."

"A good, conservative, sound budget," said the Medical Officer, approvingly.

"Yes, sir. Well, I got to thinking--just a little, of course, sir. I could see there were a lot of items in my old budget I couldn't possibly spend any more on--

"So I saw I'd have to spend lots more on some things. I ran my insurance premiums up to seven dollars and bought only the best engraved, monogrammed stationery. Instead of fifty cents for photos, I got five bucks worth and sent them out, special delivery air mail, to a lot of people whose names I found in the phone book. Along with my haircuts, I got shampoos, facials,

manicures, shines and violet ray treatments. Instead of comic books and newspapers, I bought Fortune and Harper's Bazaar. I only used each razor blade once and took to drinking cokes before breakfast. If a fellow asked me for a cigarette, I gave him the whole pack. But of course the other fellows were getting fifty a month, too, and pretty soon they stopped asking. The best I could step it up to was forty-one seventy-five."

"Surely that didn't make you as sick as you look, Doakes."

"I haven't told you about December yet, sir," Doakes said, painfully.

"What about December?"

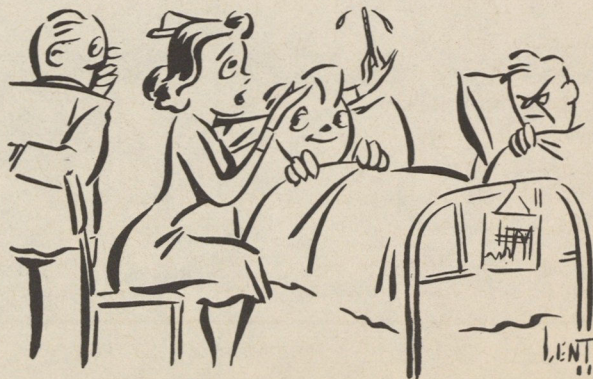
"That was when I ran into real trouble, sir. Almost all through the month I suffered reveries, sir. First there was a long session of KP--I'd had a little trouble with an MP--then I got a series of special duties that kept me busy all the time. First thing I knew pay day was here again, and I hadn't even gotten into my November pay."

"Tsk, tsk," said the Medical Officer.

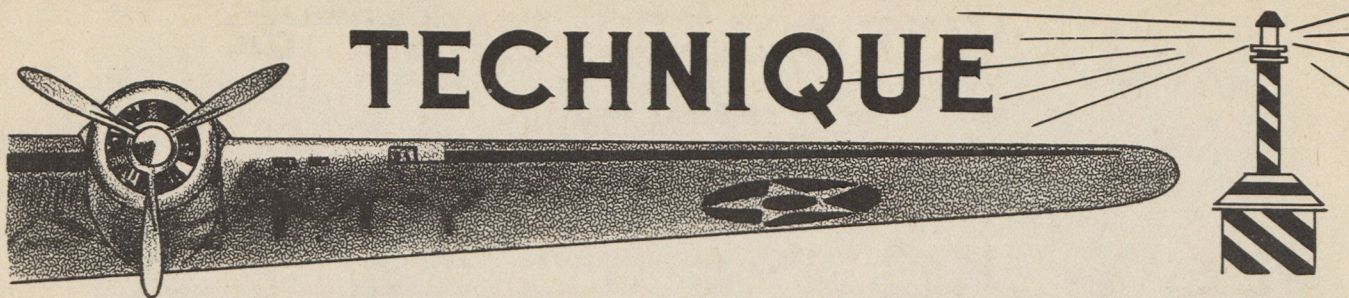
"Well, sir, last week I really went to town. On my feet all day long I was, sir, trying to catch up with myself. But my heart wasn't really in it. I knew when I was licked, sir. Haircuts every day, pictures until I couldn't stand up to pose any more and had to have them lying down. Cokes for the Squadron. Then came the dawn this morning, sir, and I just couldn't seem to get up."

Doakes closed his eyes and shuddered.

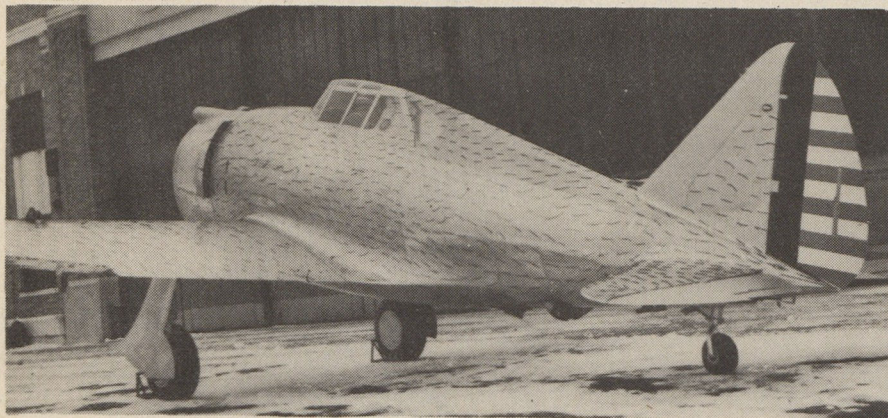
"Nurse!" the Medical Officer shouted, "nurse! Wheel this man into the contagious ward and pull down the blinds. He's to have absolute quiet, and on no account is anyone to rattle any coins near him. And--oh, yes--mark his card 'in line of duty' so he won't have his pay docked."



TECHNIQUE



AIRPLANE "GROWS HAIR" FOR TESTS



Engineers Use Hair Forces

THIS P-43 is covered with hair—but it didn't grow there. The hairy tufts visible in the photograph are really pieces of string which were fixed on the plane by engineers who use them to study air-flow direction during wind-tunnel tests. Pictures taken of the tufts while the plane is undergoing tests show up inefficiencies in aerodynamic design.

PROSPECTING FOR BOMBS

THE men in the picture below get a terrific "bang" out of their work. They are looking for unexploded bombs on the practice range at Kelly Field. The bombs are left over from World War I, and some of them have remained underground for over 25 years.

The man in front is operating a metal locator which signals him when he is over a shell. The men behind are carrying a litter containing a dynamotor and batteries, used to operate the locator. When the searching crew finds a bomb, a demolition squad moves in with TNT and explodes it.



Dud Hunting at Kelly

NEW FLYING SUIT



Pilot Toaster

THIS is the Air Forces new electrically-heated flying suit, described in the May News Letter. Little heavier than an ordinary uniform, it will keep air-crews warm down to 60 degrees below zero. Several thousand of these suits will be in use by next winter.

The new suits will replace the bulky woolen uniforms now used for high-altitude flying.



FROM RUBBLE HEAP TO AIRPORT

THIS is a before-after series showing how steel landing mats and aviation engineers together can turn a rubble pile into a modern runway, even in such out-of-the-way places as this far northern outpost.

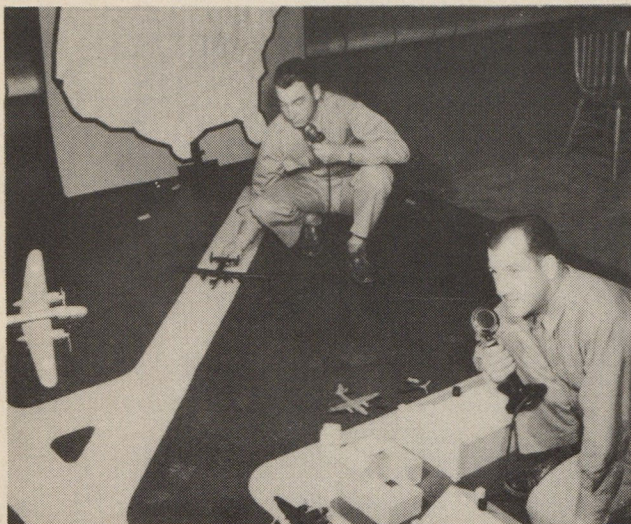
Landing mats such as these are making it possible for Air Forces planes to land and take-off in the farthest corners of the earth--sometimes where planes were never seen before. These mats were laid on roughly leveled subgrade, which was later ballasted with clean cinders, making the surface smooth and hard.

The picture above shows the kind of ground that greeted the aviation engineers. The completed runway in use is shown below.



Continued Next Page

CONTROL TOWER CLASSROOM

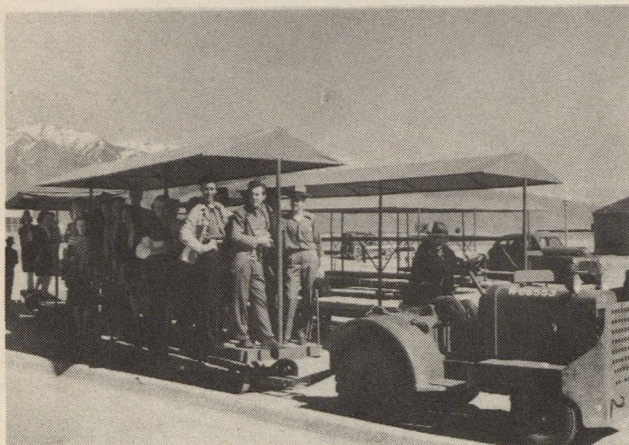
*No Crack-ups Here*

MAXWELL Field makes sure Air Forces control tower operators know their job before they are permitted to play for keeps. To do this student operators are provided with a miniature airport, complete with runways, buildings and control tower, to practice on.

In the above picture Private Ferdin F. Terry brings in a B-24 while Private Jack V. Nelson operates the control tower. They communicate over a standard two-way radio.

The control-tower course lasts three weeks, and is taught by Staff Sgt. Glen Mackay. It is patterned after the system developed by the Civil Aeronautics Administration for the control of commercial airline operations.

OGDEN "ELEPHANT TRAINS"

*Transportation at Ogden*

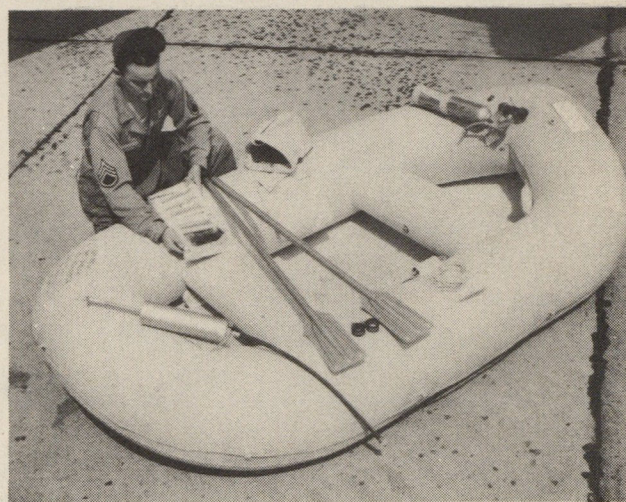
DISPERSED parking lots for employees are no problem at Ogden Air Depot. Colonel R.J. Minty, Engineering Officer at the depot, has put the "elephant trains" shown below into use carrying employees from the parking lots to headquarters and supply buildings. The trains operate on a 24 hour basis, and accommodate all shifts.

MODELS FOR GUNNERS

*Learning to Spot at Tyndall*

SO they won't blast the wings off a friendly plane, prospective AAF gunners down at Tyndall Field, Florida, learn what both Allied and Axis planes look like by making a close study of wall charts and models. Here Private Francis Grant is getting tips on aircraft recognition from Corporal Harold Ellis.

NEW AAF LIFE RAFT

*Raft and Equipment*

CREWS of Army bombers patrolling over water aren't going to drown if Air Forces engineers can help it. One of the latest life-saving devices developed is the collapsible rubber raft shown above. The raft can carry five men comfortably, plus emergency rations, 20 feet of line and a waterproof bag containing a Very signal pistol. The raft is inflated by pulling a lever which releases carbon dioxide into the tubing. The oars are collapsible and may be stored away.

Twelve Pounds of Prevention

By Captain Harry Barsantee

Directorate of Flying Safety



BACK in college we had a course in English Literature and the textbook was an enormous tome entitled "Twelve Centuries of English Prose and Poetry."

After lugging it to class a few days we re-named it "Twelve Pounds of English Prose and Poetry."

I was reminded of this when I arrived in Washington a short time ago and somebody handed me a stack of manuscripts a foot high and weighing a round dozen pounds. (I know: I've toted them back and forth from home to the office a number of times.) This pile of manuscripts was the answer to General Arnold's recent directive asking pilots of the AAF to write and submit to him accounts of their narrowest escapes from fatal airplane accidents.

"Here they are," I was told. "See what you can do with them."

The manuscripts were already somewhat dog-eared through constant study by statisticians, engineers and other experts in the field of accident control who had gleaned much valuable data on accident causes from them. My task was to select the most typical narratives and re-write them for publication in booklet form.

Prevention Wholesale

"Talk about an ounce of prevention," I mused to myself after leafing through the first few, "Here's at least twelve pounds of it!"

Actually, some 500 narratives were submitted, ranging from a couple of paragraphs to 10 pages in length. The narrators included raw cadets who hadn't yet soloed and two-star generals who were flying before World War I. Virtually every type of ship ever used by our Army was mentioned; the locales ranged from Alaska to Puerto Rico to France; just about every conceivable situation in which a pilot would ever find himself was described.

Naturally, it looked like a rich vein of information on accidents and their causes; a technician's bonanza and a writer's dream.

A few days of refining, however, brought the realization that the lode was not as rich as it appeared. There was a sameness about the stories which soon grew almost monotonous. There weren't 500 basic causes of accidents, I soon discovered; as a matter of fact, there weren't 50, or even 25. Lieutenants with a dozen hours made the same mistakes as did Col-

onels with thousands of hours, and these errors caused trouble in heavy bombers and basic trainers alike. Ships changed greatly in design, but accident hazards common in 1917 were still prevalent in 1942.

However disappointing this discovery, it certainly was illuminating. If accident causes are so few, so basic and so simple, surely corrective methods can be equally basic and simple. Of this I am thoroughly convinced after poring hour after hour over these hundreds of narratives.

Cockiness and over-confidence, it seemed, popped up in one out of every two or three manuscripts. Listen to this:

My most hair-raising experience came one fine clear day while I was making sport of sailboats by blowing them off course with prop wash. About the third pass around, I became just a little too much interested in the boat's reactions and before I had time to realize what had happened my prop hit the water. There was a roar, a jerk, a huge spray and one moment of a thousand years. So ended my days of blowing sailboats!

Weather was a factor in a good 20 per cent of the near-accidents, but in almost every single case the pilot admitted that he deliberately invited disaster by digressing from the regulations or the rules of common sense. For instance:

.....My face is red as I write this, but I must admit that the very same weather report that I got after landing had also been available at my point of departure and I hadn't even bothered to check! Only luck and a crazy hunch had prevented what certainly would have been a nasty smear.

Improper preparation on the ground before taking off is a major cause of accidents, as every experienced pilot knows. Stories in support of this fact were legion. This excerpt from one is typical:

In my eagerness to get started on that long-cherished trip I jumped into the newly repaired plane and took off in the general direction of Detroit. No maps, you understand; no drawn course of any kind, no flashlight--and, I realize now, no brains!

The accounts having to do with just plain "boners" made a sizeable pile in themselves. Typical is this fragment:

As I taxied up to the line, burning to crucify the inspector who had passed on a plane in that condition, the clerk ran out. "Lieutenant", he yelled, "you took the wrong plane. I said number so-and-so but you took number this-and-that. This plane hasn't even been finished by the assembly department!" Yes, sir; I had been flying a ship that was literally falling apart, and the horse was 100% on me.

Carelessness

Inattention, carelessness, thoughtlessness--call it what you will--it is the reigning cause of accidents in our Air Forces. Not more than 15 per cent of all mishaps reported can be attributed to forces over which the pilot himself has no direct control. I rather expected, since it would be only human, that many of the pilots would have a tendency to place the blame on their ships in order to cover their own mistakes or shortcomings, but such was not the case.

Pilot error and faulty supervision is responsible for the vast majority of accidents.

In view of this, it would certainly seem that the remedies are obvious and not too difficult to apply. Education will do the trick among those amenable to it; disciplinary action must be taken among those who will not respond to education.

One of the first steps in the program of education is a booklet which is now being distri-

buted. Entitled "Lessons that Live, as Told by AAF Pilots", it contains eighteen of the most typical among the hundreds of accounts submitted.

There is nothing of an admonitory nature in the book except that each story naturally points a moral by implication.

The theme of the brochure is aptly pointed up in a foreword by Colonel S. R. Harris, who heads the Directorate of Flying Safety.

There is an old axiom to the effect that experience is the best teacher. It's a good axiom and I wouldn't quarrel with it. Where accidents are concerned, however, experience is likely to be bitter and costly. The first lesson can be and often is the last. In flying, it's a whole lot better to learn from the mistakes of others than to make them yourself. Presented here are true stories of accidents or near-accidents, written by Air Force Pilots who lived through them. Each could have resulted in one or more fatalities if Lady Luck had not smiled at precisely the right moment. Read them; yes, study them and resolve right now that you will never make the same mistakes. This booklet should help you to grow old in the business of flying!

The booklet also contains a vital message from General Arnold, as well as charts, tables and other oddments of information of especial interest to pilots. It is profusely illustrated in full color.



Courtesy of Chicago Tribune--New York News syndicate.

I GUESS IT WAS OUR FAULT, MAJOR -- WE SHOULDN'T HAVE BEEN READING THIS SAFETY MANUAL WHILE COMING IN FOR A LANDING

Hide-Seek Warfare

(Continued from Page 10)

and whitecaps work for you. Lookouts on U-boats surface cruising on such days have difficulty locating aircraft that patrol near the water because seaspray gets in their binoculars, forcing them to go below now and then to dry out their goggles.

In case this suggests that U-boats lie around on the surface like decoy ducks, consider that a submarine can make a crash dive 25 seconds after it spots you. And within 40 seconds after a U-boat submerges, count on it as being out of range. That gives you a total of 65 seconds actual working time, not very long; so spotting a sub is just the beginning.

It all means that you can't have too much speed. And it also means that you can't relax, because that crowded 65 seconds may come anytime--sometimes after eight hours of patrol duty--and you don't want to miss the fun.

To counteract the speed with which a U-boat can submerge, you usually make for the sighted vessel in a straight line, hoping to drop your eggs before the sub has dived. Once it has dived, the only aiming mark for the bombardier is the swirl left behind on the surface, caused by the conning tower.

The after-effects of an attack on a U-boat are usually informative, although often disheartening. But they do give the bomber crew an opportunity to evaluate the success of the hunt. Depth charges themselves give off an oily residue after they explode, so a slight smear of oil and minor debris is not considered significant. Even a considerable quantity of oil may mean only that the relatively flimsy external fuel tanks on the sub have been broached, or that the bellows-action of the depth charge blast has forced some oil through the self-compensating system. Appearance of large quantities of oil, however, are considered evidence of a "near miss", and the escaping oil leaves a trail by which the sub can sometimes be followed for hours.

Bubbles Can Fool You

Don't get too excited over bubbles rising to the surface in a small stream. They may only mean that the U-boat is adjusting a temporary upset by "blowing" some of its air or water ballast to regain even keel. But bubbles in large and continuous quantity are evidence of damage to the external connections of bottles of high pressure air, often carried in the casing under the upper deck and above the pressure hull. While this is annoying to the sub crew, it is seldom serious.

Large bubbles that produce an active boiling of the water's surface over an extended period intimate that Hitler & Co. is having its troubles down below. Such commotion generally means

that serious internal flooding is taking place in the U-boat, and that its commander is blowing out the main ballast in an effort to restore buoyancy. When accompanied by large masses of oil, it may even mean that the fuel tanks are being emptied. It is possible, however, for a sub to fill and sink without any considerable external evidence such as large quantities of debris. Consequently, the bombardier always tosses over an extra egg or two for good measure.

A submarine under attack frequently will break surface momentarily at large angles, either stern up or bow up--but this may only be due to temporary loss of trim or control, and in itself is not conclusive evidence of serious damage.

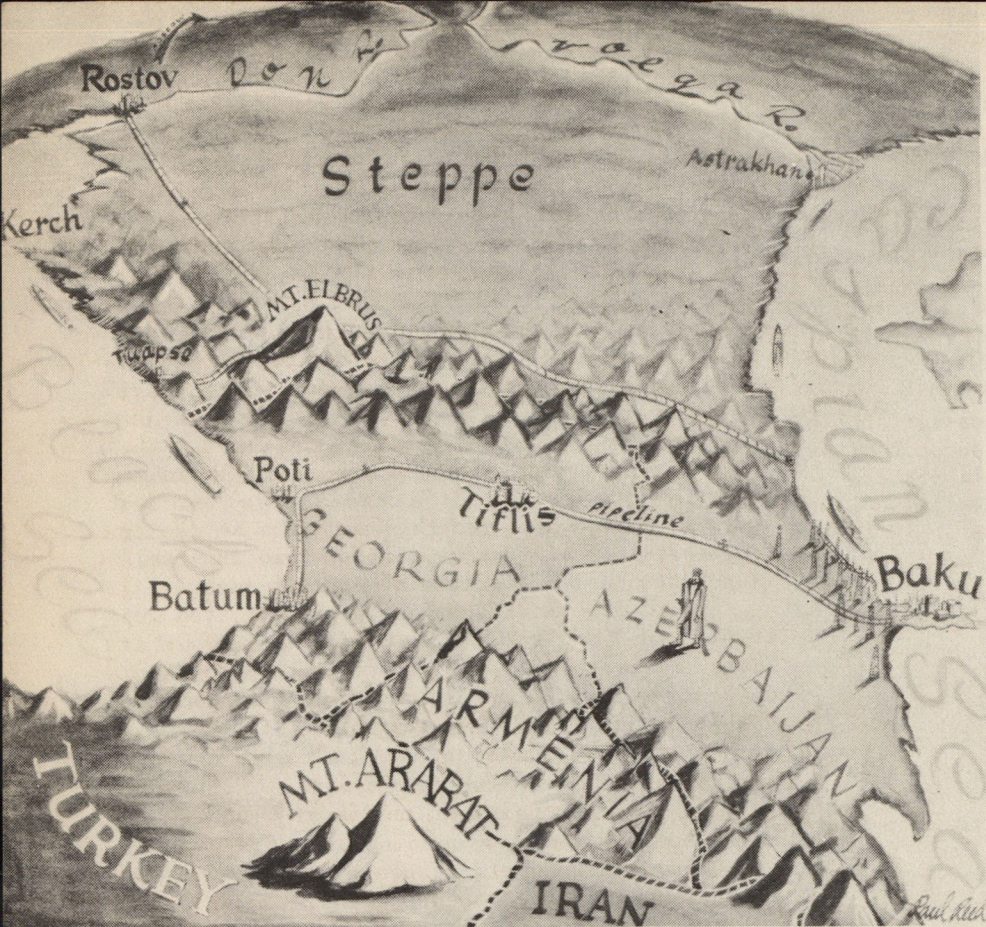
All in all, with speed at a premium, you get to work on the "shoot first and talk about it later" basis. It is not surprising to hear that depth charges have been tossed on unsuspecting whales. And no one should complain at this. It might have been a U-boat, and it's always worth an explosive egg or two to find out.

And you must remember that more U-boats are being bagged than are announced in the papers. It's hard enough getting them without reporting to Hitler each time it happens.



"ALWAYS WARM 'ER UP BEFORE TAKING OFF"

GERMANY'S newest heavy bomber, the Heinkel HE-177, appears to have two radial, but actually has four liquid cooled engines. Two are placed side by side for each nacelle, with a circular nose radiator. Dive-brakes are a notable feature of the new plane.



The Russian Caucasus

By Oliver H. Townsend
Headquarters, AAF

JUST north of the Holy Land, in the very shadow of ancient Mount Ararat where Noah ended his nautical "cross-country", lies the rich Transcaucasian valley of the Soviet Union.

Stretching along the border between Russia and Turkey, where Europe ends and the oriental East begins, the Caucasus is the focal point of German drives through Russia and the Middle East.

And for good reason. Here are the great oil fields that feed the mechanized forces of the Russian Army. Here also is the world's largest supply of high-grade manganese--enough to keep the wheels of the steel industry of Europe and America turning for centuries.

Tucked away between the two great mountain ranges that run from the Black to the Caspian Sea, the Transcaucasian valley has remained pretty much of a mystery to the outside world. Even the natives themselves know little about their homeland.

Americans, like everyone else, have never bothered to find out much about the Caucasus. Now they must, however, as they join the rest of the United Nations in the defense of this area from the Axis pincer drives.

Although the Caucasus has a much more tropi-

cal climate, it is actually in about the same latitude as New York City. You could get there by going out to Mitchel Field, taking a plane and heading due east for about 5,000 miles.

The trip would take you out over the Atlantic, then over the northern tip of Portugal, Spain, the Mediterranean, Italy, Greece, Turkey, and finally the Caucasus itself. Once there, you would probably "set her down" at Baku, the oil capital of the Soviet Union.

Baku is a big, bustling, cosmopolitan city. Located on the shores of the great inland Caspian Sea, it is the shipping point for the tons of oil sent every day up the Caspian waterways to the industrial cities to the north, and westward through the great pipelines across the Caucasian isthmus to the Black Sea ports of Batumi and Poti.

Baku is a modern, yet an ancient city. The job of getting the oil out of the ground and into the boats and pipelines has brought a western industrial air to the old oriental town. Streetcars, busses and automobiles whirl passed donkey-riding peasants. Modern business centers

have sprung up among the ancient shops and dwellings, and modern homes and parks are making residential suburbs out of the city's outskirts.

The thousands of workers and adventurers that have been attracted to Baku by the oil industry give it a gay, holiday air even in wartime. Most of the 800,000 to a million people speak Russian, mixed in with the scores of native dialects that stamp Baku as a crossroads between the East and West.

Look Like Forests

At night the oil wells that fill the countryside around Baku look like great forests against the moonlit sky. Out beyond the oil wells there's desert--desert that stretches westward for miles toward the foothills of the Caucasian mountains.

Back in this "hill country", west of the desert, outside the big centers of population, many of the ancient customs of the natives are still preserved. Each small community has its own language, few of which were ever reduced to writing until a few years ago. Russian is not even spoken, and is rarely understood, by most

of these people. Up until a few years ago they knew very little of the "outside", and few of them realized there was any country in the world except Russia. Parts of the Caucasus even remained unexplored until recently.

Although the benefits of sanitation and cleanliness are still largely unappreciated in the Caucasus, the natives are very friendly, and, like their country, very picturesque. Their horsemanship, their black lamb-skin caps, their long black coats and knee-high boots are echoes from the day when the Cossacks were the pride and the scourge of southern Russia.

The Soviet government in recent years has brought many of the benefits of western civilization to the Caucasus, including education, the Russian language and rural electrification. Such westernization, however, hasn't changed the native taste for foods. If you want to eat their food, you'll have to be educated to it. One of the favorite dishes is bread made out of corn meal and water, finished off with a swig or two of sour milk.

Life Not Bad

The life for the men, though, isn't bad. They let the women do all the work. Between wars they sit in the village squares smoking and swapping stories while the women raise the children, do the housework and till the fields. Today the village squares are empty--the men are in the Red Army.

In the middle of the Caucasian isthmus, between the Black and Caspian Seas, is the second city of the region--Tiflis. Tiflis is even more of a Babel than Baku, with Armenian, Turkish, Jewish, Greek, Russian, Iranian, German and scores of Caucasian dialects all mingled in the market places and cafes.

Tiflis is the capital of the Soviet Socialist Republic of Georgia. Russia's Georgia, although not as large as our own, has nearly as many people--and Tiflis is almost twice as big as Atlanta. The other two Russian Republics that comprise the southern Caucasus are Azerbaijan, where Baku is located, and Armenia, in the mountain's south of Georgia. The money used in these Republics is the same as that used all over Russia--rubles, worth roughly about 20 cents.

The climate of the Caucasus varies greatly. Along the Caspian it's dry and hot. Along the Black Sea it's tropical, and up in the mountains it's cold--especially in the Greater Caucasus range, running just north of the Transcaucasian valley. These mountains are higher and wilder than the Alps (they contain the highest peak in Europe--Mount Elbrus) and form an effective barrier to an invasion force heading southward across the great barren steppe from Rostov, Kerch and the Don River basin.

And the Russians know how to use the mountains as a barrier. For years they've trained special troops to fight their way across the glaciers and crevices of this forbidding range. They know they have to defend the Caucasus not only for itself--but also because it is a stepping stone to Iraq and Iran, and a link in the German attempt to join forces with the Japs in southern Asia.

There are two other gateways to the Caucasus besides the isthmus--the Black Sea to the west and the Holy Land, to the south. The fight to gain these approaches is a tough one. Americans who get in the battle will have some of the best fighters in the world on their side--and some of the United Nations' most prized possessions to defend.



THE GREAT ZERO

By **Lieut. John M. Jenks**

Headquarters, AAF

JAPAN'S "How to Fool the Enemy" Department must have stayed up nights working on its wacky system of aircraft designation. But once you have the key, the great Zero mystery folds up like a parachute.

The so-called Zero is generally described as a fast, highly maneuverable fighter plane. Its chief claim to fame was gained in action against Allied aircraft in the Southwest Pacific. Matter of fact, it is one of the best operational fighters in the world. Actually, there is no single Japanese plane with the exclusive designation of Zero. Every Jap plane of every type placed in service during 1940 is a Zero. To make it more complicated, this includes both Army and Navy ships.

The Japanese designate their military aircraft with two numerals representing the year the plane went into service. To start with, the Jap calendar begins at 660 B. C. As a result, our year 1940 becomes 2600 (according to the Son of Heaven). Only the last two numerals are applied to plane designation. Consequently, 1940 models are designated by "00", or just plain "Zero." The letter T which precedes the numerical designation stands for "type".

"Strange Setup"

This strange setup appears to be a deliberate attempt to baffle unsuspecting foreigners, but even the Japs must stew and fret to understand it. For example, there is a Navy single seater fighter; an Army single seater fighter; an Army heavy bomber; a Navy torpedo bomber; an Army light bomber and a four-engined Navy flying boat--all designated as T-97. This designation merely means that they all went into service during the Jap year 2597 (our 1937).

The Zero fighter generally referred to is a single seater Navy ship made by Mitsubishi. It is sometimes called the Mitsubishi Zero. Its official Japanese name is the "Mitsubishi Navy Fighter T. O."

The Zero looks like a North American AT-6 with a slimmer fuselage and wing guns. It retains its raw metal silver color and is often identified by the sun flashing on its duraluminum stressed skin. It carries one 20 mm cannon

and a 30 caliber machine gun in each wing and a pair of 30 caliber machine guns mounted to fire through the propeller. Early models of the Zero lacked pilot armor and were extremely vulnerable to machine gun fire. Later Zeros carry some pilot armor but offer much less protection for the pilot than standard American pursuits. It carries a jettisonable auxiliary fuel tank slung under the fuselage which adds about 500 miles to its normal cruising range of 1500 miles.

One of the United Nations' leading authorities on the Navy Zero is Lieut. Col. Boyd D. (Buzz) Wagner of the AAF, who has had considerable contact with them both in the air and on the ground. He describes the Zero as follows:

Description

"It's not a wonder plane, but it has the respect of all our pilots. The Zero's wings and fuselage are made in one piece, which means the Japs can't change wings if they are damaged, but must replace the whole job. The system has an advantage in less weight and speed of manufacture if the Japs can make enough for replacements, which I doubt. I doubt if even we could with that system.

"The landing gear folds completely into the fuselage, creating no additional drag, and the plane is entirely flush riveted with only a few drag-creating protuberances. The cockpit is roomy and comfortable. Armament is controlled by a lever on top of the throttle which permits the pilot to fire either cannon or machine guns or both.

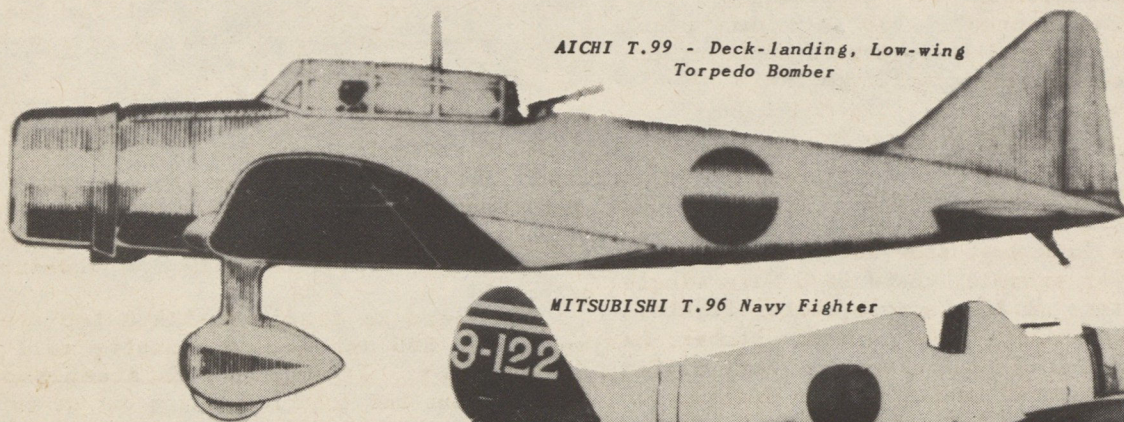
The Zero is credited with a top speed of well over 300 mph and does pretty well up to 30,000 feet. It can dive as steeply as AAF fighters but has trouble pulling out as rapidly. It has outclimbed AAF pursuits, however, and a favorite maneuver in the early days of the war was for a Zero to allow an enemy pursuit to get on its tail and then go into a steep climb, flip over in a sharp loop and come out on the tail of its opponent. The Zero's cannon have not proved effective against other fighters but have caused considerable damage to heavy bombers.

AAF fighters have an advantage over Zeros in their sturdier construction, pilot armor, leak-proof tanks and heavier armament, 50 caliber machine guns and 37 mm cannon.

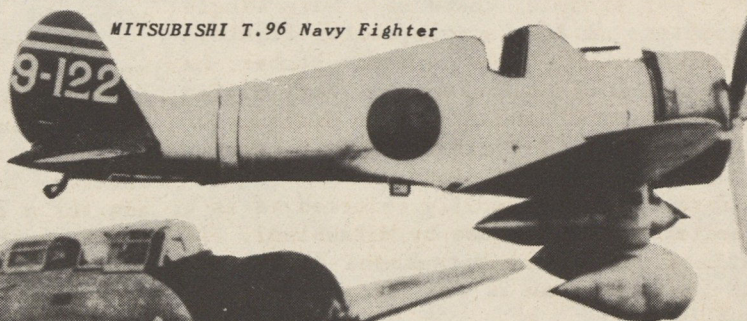
MYSTERY



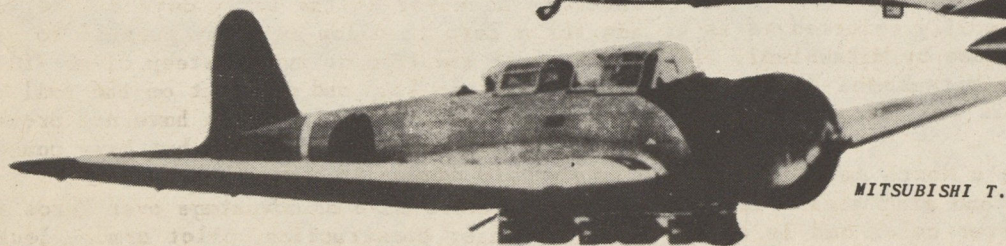
Other Jap Planes Now in Service



*AICHI T.99 - Deck-landing, Low-wing
Torpedo Bomber*

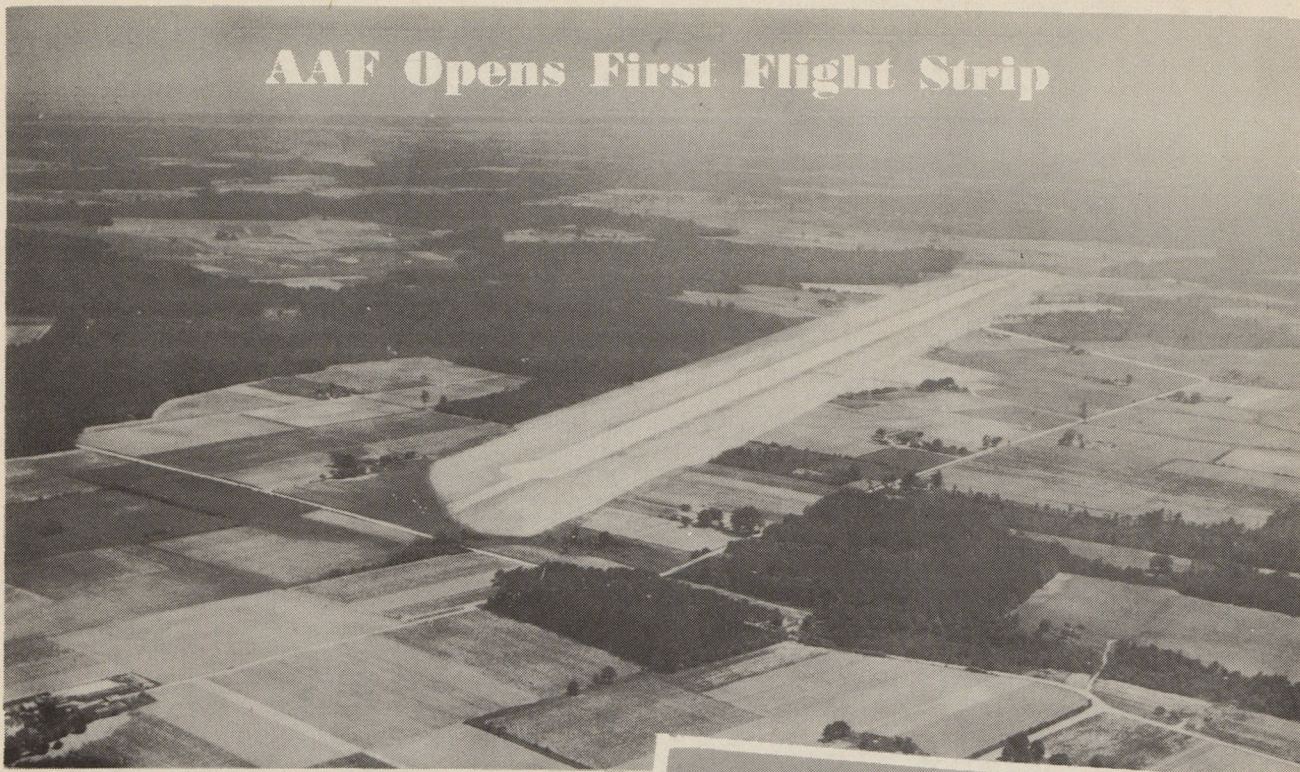


MITSUBISHI T.96 Navy Fighter



*MITSUBISHI T.97 - Deck-landing
Torpedo Bomber*

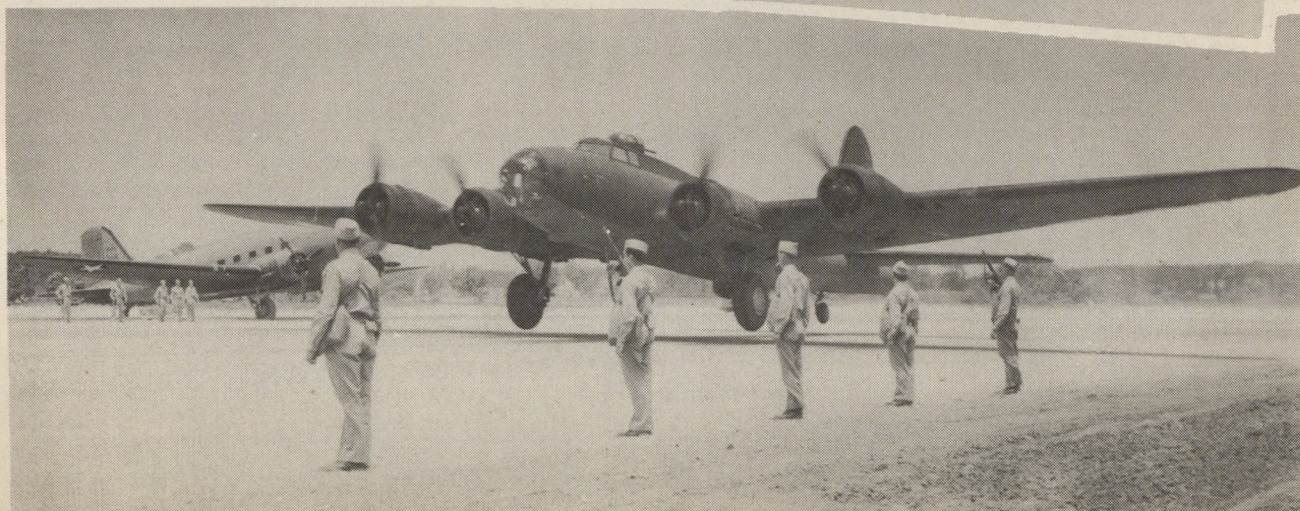
AAF Opens First Flight Strip



THE AAF has opened its first flight strip, "somewhere on the middle Atlantic seaboard." The strip, shown above, is 8,000 feet by 500 feet, with a runway down the center 7,000 feet long and 150 feet wide, paved with concrete eight inches thick.

Roomy enough to accommodate the flight operations of two full squadrons, the number one strip is also capable of handling the largest of AAF planes, as shown by the Flying Fortress taking off at right, and landing below.

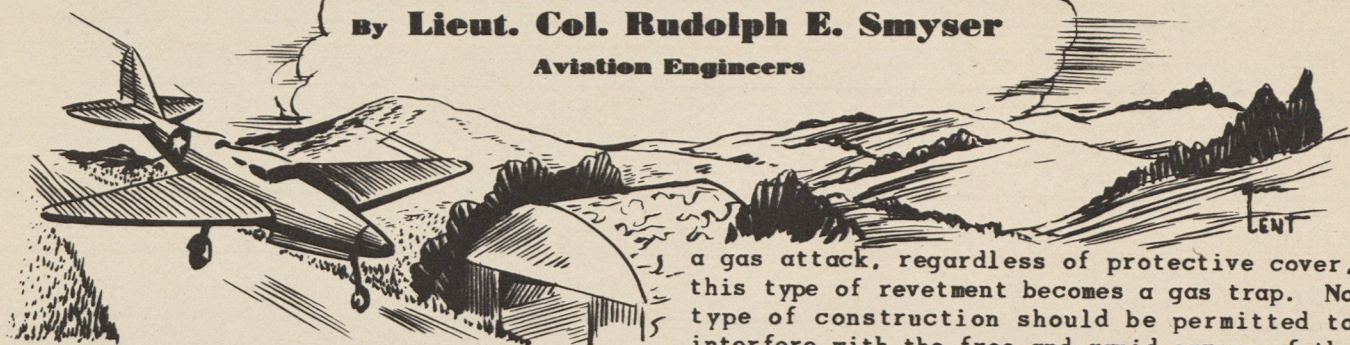
Flight strips such as these are being erected in many defense areas as auxiliary landing fields and dispersal points.



Airdromes in Wartime

by Lieut. Col. Rudolph E. Smyser

Aviation Engineers



PEACE-time practices governing the construction of airdromes have followed a conventional pattern. A large tract of land is obtained and the entire area is graded and leveled. The runways are laid out in rigid geometric patterns, every effort being made to obtain pleasing symmetry. Special efforts are taken to make the runways conspicuous.

All this, of course, is undesirable on an operational airfield.

Regardless of the shape of the landing area or the relationship of the runways to each other, taxiways are necessary to permit maximum utilization. All runways should be connected to each other and to the dispersal parking or revetment area to permit the rapid movement of airplanes from dispersed positions to the runway. Taxiways in general follow the perimeter of the landing area, but like runways should avoid conventional patterns; whenever possible, they should follow the trace of existing roads. The required width is 50 feet, with a clearance of 15 feet from wing tip of plane to nearest tree or obstacle; paving thickness may be slightly less than for the runway. Taxiways should be laid out in a series of tangent, rather than in a sinuous trace. A two per cent grade is acceptable. These taxiways also serve as service roads for supplying airplanes at their dispersed locations.

Except when undergoing major repairs, airplanes at operational airdromes will be dispersed, generally in protective pens or revetments. Hard standings and route of access to these dispersal areas are essential. For safety and control, dispersed airplanes not in revetments should be in groups of three planes, each plane at least 150 yards from the next, and with no group closer than 200 yards at any point to any airplane or another group. Revetments should be 150 feet apart, and must not be laid out on straight lines nor be in prolongation of the runway or other natural bombing runs. The floor of the revetment should provide a hard standing and be above ground surface. Sunken revetments can be built, but are operationally unsuited. Not only does the depression become a sump unless underground drainage is provided, but the difficulty of getting aircraft in and out of the revetment is increased. In event of

a gas attack, regardless of protective cover, this type of revetment becomes a gas trap. No type of construction should be permitted to interfere with the free and rapid egress of the aircraft.

Whether the revetment will be covered depends on local climatic conditions and the supply of materials. A removable, fire and chemical resistant covering will give protection against weather and liquid chemical; it is also valuable in deceiving the enemy as to whether or not the revetment is occupied. Considerations of major maintenance, such as engine changes, must not be permitted to influence the height of the roof. The covers must be as low as possible to permit concealment. The impracticability of concealing a large structure mitigates against such covers for bombing planes. Considering the clear span required, the provision of a cover becomes a definite engineering task of some magnitude. Air raid shelters for the combat and maintenance crew are a necessary part of a revetment.

Pursuit Remains

Pursuit aircraft will remain on the actual airdrome area, near the down wind ends of the runways, as they must be able to take-off with minimum loss of time. Although not desirable, it may be necessary to permit parking these planes within 300 feet of the centerline of the runway.

For bombardment and observation airplanes, the ability to take the air rapidly is less necessary. Accordingly, it is these airplanes that can well be dispersed some distance from the airdrome proper. No exact guide to this distance can be given as it depends not only on local terrain, but also on the requirements for protecting the dispersed aircraft from sabotage by local inhabitants, or from possible hostile airborne action. One mile is not excessive if it facilitates concealment.

So far it has been assumed that the landing area can be seen by the pilot, but in actual practice, a great proportion of landings will be made at night or under adverse weather conditions, for which provision must be made. Peace-time systems of lighting, visible for miles, are manifestly inappropriate. Present practice is to place beacons, visible from certain positions only, some distance from the airdrome. Having located the beacon, by means of a series of hooded lights, designed to be visible at varying

altitudes, the pilot is brought to the proper runway at the desired altitude. Further hooded lights, of minimum intensity, frequently with colored filters, give the pilot his angle of glide, and indicate the edge of the runway. A few floodlights may be available, but are not employed except under unusual conditions, the additional illumination needed being obtained from the landing lights of the plane. Whenever possible, lights will be set flush with the ground, but only under unusual conditions will elaborate underground conduits be used to carry the power. Normally a flexible cable to a portable generator in a trailer unit will suffice.

Servicing and Storage Facilities

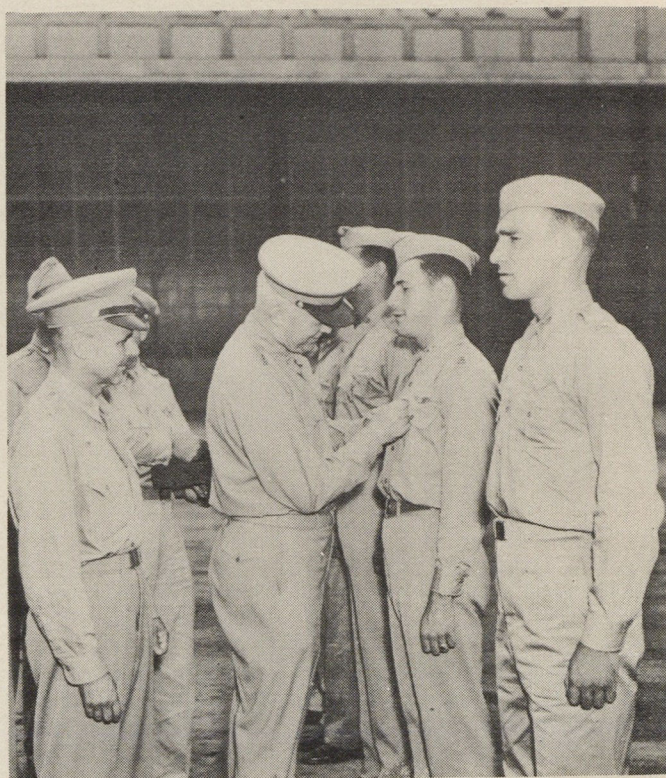
Fixed servicing and supply facilities are not built at field airdromes. Not only do these elaborate systems take larger quantities of material and require much time to install, but they are tactically unsound in the presence of an enemy. Gasoline, small arms ammunition, bombs, and other supplies must be delivered to aircraft at their dispersed locations. For this purpose air force tactical and service units are provided with special trucks, trailers, and dollies. The construction of the storage units of the following types is normal:

Storage of gasoline will be preferably in underground tanks not exceeding 25,000 gallon capacity. Tanks should be in pairs with individual tanks separated by 3 feet of earth or equivalent concrete wall with the same amount of overhead cover. Pairs should not be closer than 100 feet with duplicate but separated pipe connections. If underground units cannot be built, above ground tanks should be dispersed, and surrounded by a protective earth traverse on all sides. Tanks of 25,000 gallon maximum capacity, if given this protective traverse, should be spaced at least 150 feet apart; without protection individual tanks or storage piles should be spaced not closer than 200 yards. Regardless of spacing, all above ground tanks must be located in woods or other areas suitable for camouflage. In lieu of large capacity tanks, storage frequently will be in drums. Piles of drums should be treated the same as above ground tanks. Where opportunity presents, gasoline may be delivered in tank cars to a railroad siding near the airdrome. This siding should be at least $\frac{1}{2}$ mile from the airdrome, and on a road suitable for heavy trucks. In lieu of delivering to tank trucks at the siding, it may be necessary to lay a temporary pipeline from the siding to a distributing point on a road nearer the airdrome.

Underground storage of small arms ammunition, bombs, pyrotechnics, and chemicals

will be exceptional. Normally, all storage will be above ground in dispersed and concealed splinterproof magazines or igloos. For bombs and other supplies which are not affected by weather, open storage in revetted traverses is ample. Whenever possible, the standard safety distances given in Ordnance Technical Manuals should be followed, but modification will have to be made to fit the actual terrain.

Spare parts for engines, airplanes, wings and other items of Air Corps Supply require protection primarily from weather. Although valuable, the quantity on hand at field airdromes will not justify attempting to give protection against small arms fire or bombs. Theater of Operations type warehouses only should be built, care being taken to get maximum camouflage by the fullest possible use of any existing structures, or by siting to obtain the maximum inherent concealment. These warehouses need not be on the landing area itself, but should be on roads within 500 yards of any repair hangar that may be erected. *(This is the second of a series of articles on wartime airdromes by Colonel Smyser. The third article will appear in the August issue.)*



Lieut. General H. H. Arnold, flanked by Brig. General James H. Doolittle, awarding medals to Tokyo raid flyers at Bolling Field, D. C., on June 27.

Midway

(Continued from Page 3)

toms at 1,000 feet, tops at 6,000 feet with high thin-scattered at 18,000 feet. The carriers were circling under the clouds and we had to search for them. There isn't much doubt that they had seen us and were trying to avoid our planes.

All elements of the main body of the fleet could be observed except the carriers; then, after a search, three carriers were seen to break cloud coverage. Again it was Captain Payne who spotted the first carrier. He directed us over his radio, and we went in to attack.

The enemy started firing as soon as we opened our bomb bays. The fire wasn't effective, but a bit disturbing. The fighters came up to attack, maneuvering beautifully, but they failed to follow through. It appeared that their heart was not in their work, and in no case was the attack pressed home.

We divided our ships into three groups. Each group was instructed to take a carrier, and we bombed away. We are fairly certain we hit the first carrier, but we didn't claim it. The second group, under command of Captain Cecil Faulkner, hit its carrier amidships. Lt. Colonel Brooke Allen, commanding the last flight, secured hits on the third carrier. We didn't have time to wait and see them sink, but we left knowing they were badly crippled.

Captain Faulkner's tail gunner sustained the only injury, a cut finger. There was some damage to the ships from machine gun fire and anti-aircraft fire, but we all returned to Midway successfully. We found the island had been attacked in our absence. During this attack we lost a crew chief and an officer who remained on the ground.

Japs Sink Their Own

That afternoon (June 4) we went out again to attack a troop ship convoy reported to be approaching from 265 degrees true and estimated to be about 260 miles from Midway. Enroute we got orders to attack a carrier bearing 334 degrees true and about 180 miles from Midway. We searched that vicinity, but although a burning carrier and a burning capital ship were sighted, no commissioned carrier was located. We learned later that the others we had hit sank or were sunk by the Japanese.

As sunset was approaching we decided to attack a heavy cruiser. All remaining units of the enemy fleet were now deployed and weaving. We attacked at 25,000 feet. Visibility was perfect and the bombing run excellent. At the bomb release line an anti-aircraft shell burst at our altitude off the wing of the number three plane followed by fairly heavy fire. As soon as our bombs were dropped we adopted evasive tactics.

We scored hits on the cruiser and left it

burning, a heavy cloud of smoke issuing amidship. Numbers two and four planes were unable to release their bombs on the first run so they returned and attacked another ship. They did not remain to determine the results of their attack as the Japs had gotten a bracket on them and the fire was extremely intense and all around them. About 25 enemy fighters were sighted below on a northerly heading as we put out for Midway, but none reached our altitude.

This same afternoon Major George Blakey led another flight of B-17s in and attacked the burning carrier. Attacking at very low altitude, they succeeded in scoring many hits.

Fortresses Blast 'Em

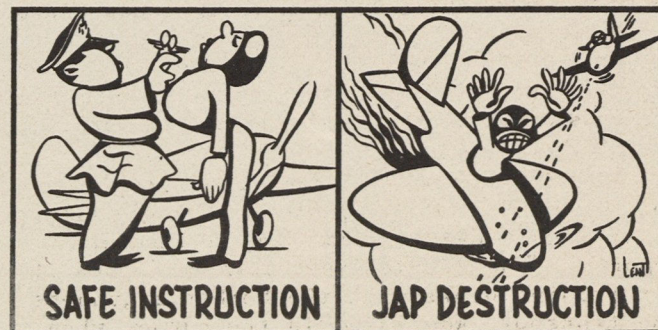
All told, on the afternoon of June 4 our B-17s are credited with scoring three hits on a damaged carrier, (probably the AGAKI); one hit on a large ship; one hit on a cruiser which was left burning, and to have damaged one destroyer, believed to have sunk.

Other B-17s carried on the attack the next day (June 5), contacting an enemy contingent of battleships and cruisers to the westward of Midway despite unfavorable flying weather. Quoting the Navy's official report on that action by our Army bombers:

"They attacked, and scored a direct hit on the damaged cruiser. Another bomb damaged the same cruiser's steering gear. She was last observed listing badly and turning in tight circles. This attack was followed quickly by a second Army Air Force attack which scored a hit on the stern of a heavy cruiser. Meanwhile, at about noon (June 5) U.S. Marine Corps aircraft located the damaged enemy cruiser and delivered one direct hit.

"In the afternoon of June 5, Army 'Flying Fortresses' attacked enemy cruisers again and scored three direct hits upon one heavy cruiser. On the return trip, one of these planes was lost; a second was forced down at sea 15 miles from Midway. All except one of the crew of the second plane were rescued."

Our morale was high throughout, but after it was over we were as tired a bunch of flyers as you ever wish to see.



Aleutians

(Continued from Page 4)

a belligerent, bristling and scrappy outfit as we have up there."

Army fighters and bombers were up after the enemy from the outset of the June raids. That is reported by newsman Keith Wheeler of the Chicago Times, whose series of Navy-approved articles have come straight from the Aleutian theatre, where Wheeler has lived and flown with the airmen.

"A ranging P-39 encountered two Jap cruiser type observation planes in Umnak Pass and shot one down in flames," writes Wheeler.

During the second day's raid, Army fighters shot down two of nine enemy pursuits which strafed Fort Glenn installations; the remaining seven attackers withdrew without inflicting damage.

That same day, Wheeler reports, "Catalinas led Army bombers through the fog to two carriers hanging out 250 miles south of Umnak island. That day a torpedo-carrying B-26 established contact long enough to attack. He bored in at the carrier's looming hulk, one of Japan's largest, and cut loose his tin fish. Instead of going into the water, where it could aim itself, the torpedo dropped on the carrier's flight deck, and worked as much destruction as a 2,000 pound weight can work anywhere it happens to fall. It did not explode."

B-26 Torpedoes

Wheeler describes "our first sizeable lick at the enemy" as action by two B-26 bombers "that suddenly found themselves out of the mist and sitting over a 10-gun heavy cruiser, one of Japan's best. They attacked and hit her bow and stern with two torpedoes. It appeared, they reported laconically, as though 'destruction seemed certain."

Impossible weather made contacts with the enemy few and brief after those first grueling 48 hours, until June 10, when a scouting Catalina located the invaders in Kiska harbor. Then, five B-24s launched the first concentrated attack on Kiska. Describing this action, Wheeler states that the 24s came in low over the harbor, got caught in heavy anti-aircraft fire, climbed back to 18,000 feet to drop their loads, "and left one heavy cruiser flaming in the harbor, hit squarely by heavy bombs." Later that same day, he adds, B-24s made direct hits on two cruisers and a destroyer and left them burning. Two of the 24s were lost.

A battle-scarred B-17 bagged an enemy transport ship and a fighter plane in a single flight to Kiska in mid-June, according to Wheeler, who reports: "The fighter went down in flames after trading blows with the bomber's gunners. The transport was lying in the harbor when a

500-pounder caught it squarely amidships. The next plane to visit the island found the Jap transport belching a mile-high tower of flame and black smoke. The next day only her stern showed above water."

Our aircraft have continually attacked enemy shore installations. On one raid Army bombers dropped 56 eggs on the Japs at Kiska. But, as always, the glue-thick fog made it difficult to determine results.

Based in the Alaskan theatre, according to Wheeler, are our B-17 and B-24 heavy bombers, P-40, P-39 and P-38 fighters, B-26 medium bombers also used as torpedo planes, and airliner DC-3s converted into Army transports.

The same writer describes the "workhorse" Navy PBV Catalinas, whose squadrons are making history by tirelessly flying patrols and searches, shadowing Jap surface ships, fighting Zeros, loosing torpedoes, strafing subs, carrying cargo and troops, and even serving as makeshift dive bombers. Wheeler reports that some Catalina airmen flew 102 hours in two weeks, with the planes beached for repairs only when they would no longer fly. Meanwhile, the Navy's submarines search for underwater targets, and are credited with sinking several destroyers.

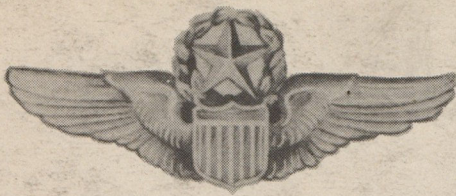
Land-based aircraft, fighting under unified Navy command, often operate from bases cut out of areas Wheeler picturesquely describes as "muckymorass that looks like land God plowed experimentally and then wisely decided to throw away."

It is a "blindman's bluff" sort of aerial warfare, waged hour after hour in the pea-thick soup. You fly clad in heavily-lined rubberized parka and pants, high boots and thick wool underwear. You sleep in tents and burrows and pare living down to its lowest essentials. An underground chamber is likely to serve as "HQ." Canned sausage, canned corn beef, canned salmon become the order of the day. You gulp down steaming black coffee between flights. The pilot calls the navigator "the key man up here;" the navigator says a mile visibility "is all we need." When crossing the dateline you argue about whether the bombs will be dropped today, tomorrow or yesterday.

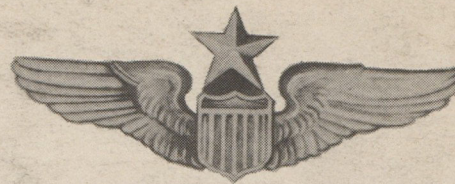
Heading the Air Forces bomber command in the Alaskan theatre is Colonel William O. Eareckson, who not only directs but leads bombing missions, and has served as co-pilot, squadron leader, navigator and even gunner. An Alaskan fighter unit of the Air Forces has all its planes decorated with the sign of the "Flying Tiger", and is commanded by Captain John S. Chennault, son of Brigadier General Claire Chennault, whose Flying Tigers of China have made themselves well known to the enemy.

As General Kuter expresses it: The Japanese are now between two Flying Tigers, "and both of them clawing."





COMMAND PILOT



SENIOR PILOT



PILOT



SERVICE PILOT



GLIDER PILOT



LIAISON PILOT



NAVIGATOR



BOMBARDIER



AIR CREW MEMBER



COMBAT OBSERVER



FLIGHT SURGEON