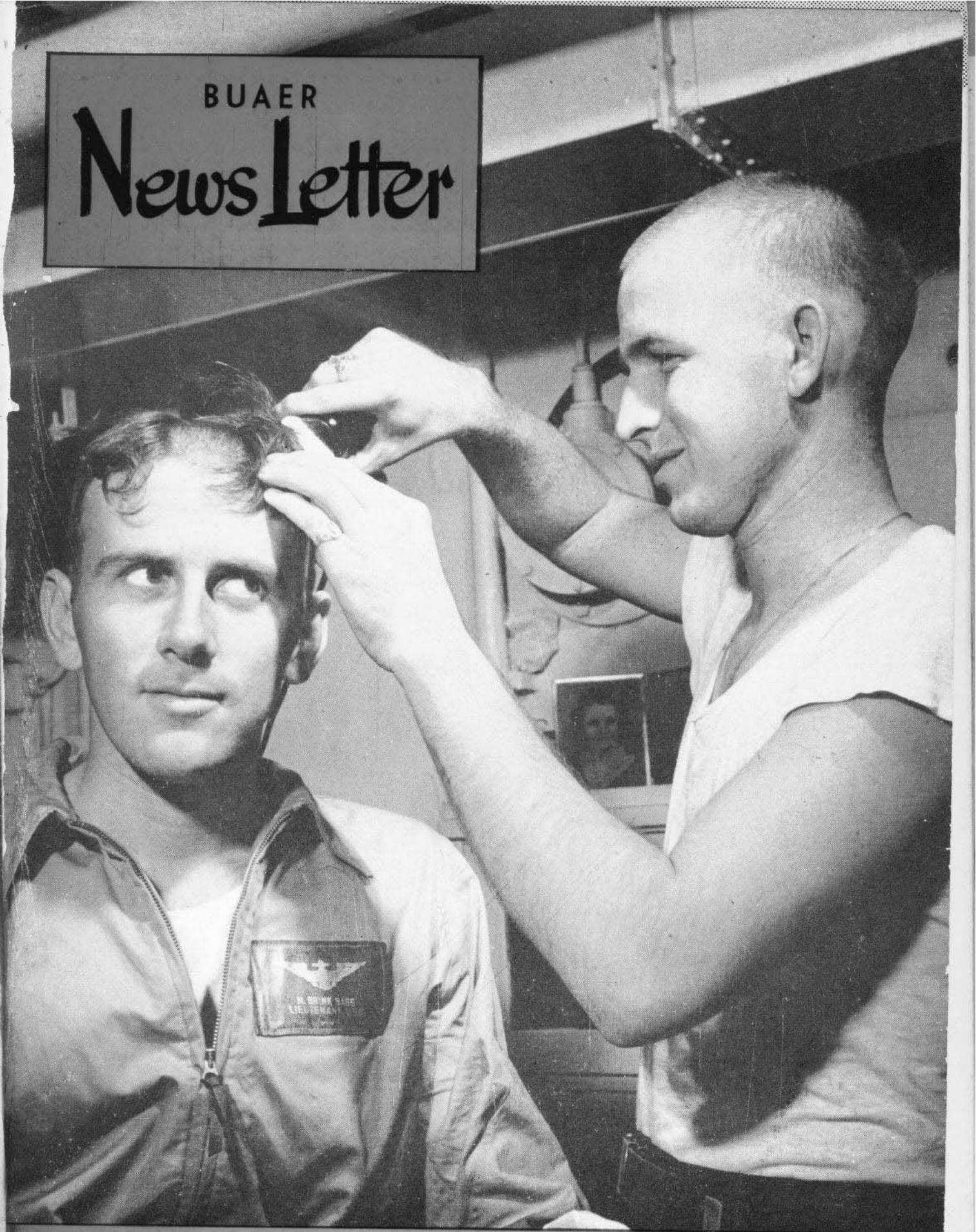
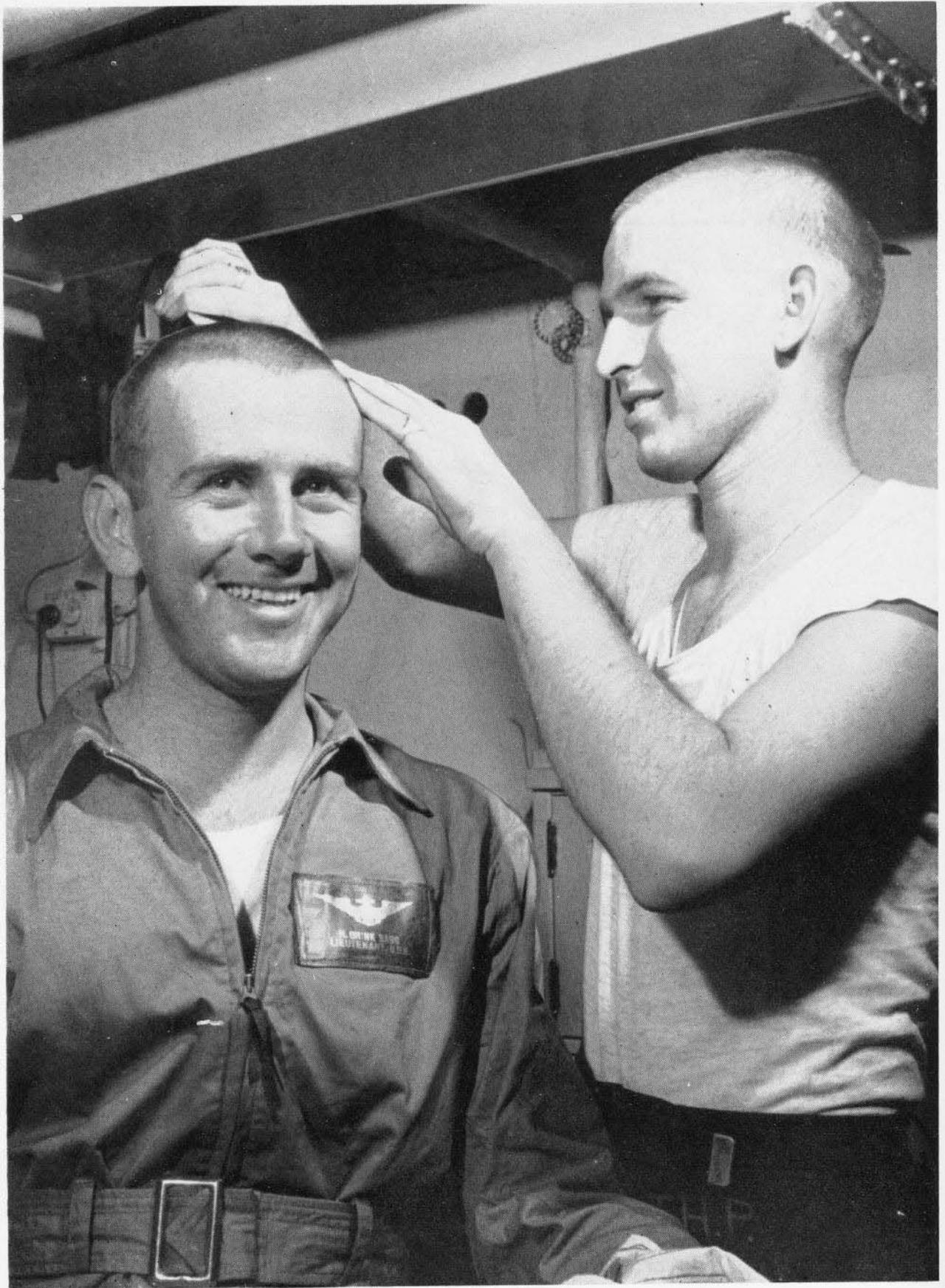


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News Letter

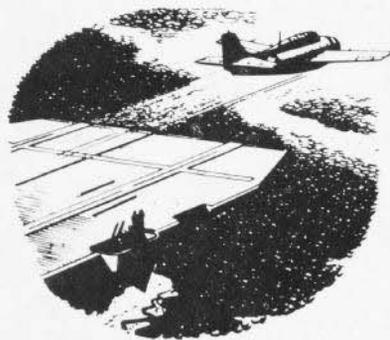




C O N T E N T S

This Pamphlet Will Be Destroyed
When It Has Served Its Purpose

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BUREAU OF AERONAUTICS NAVY DEPARTMENT



SAVE A PILOT

Thinking of bailing out over a swamp? Probably not, at the moment--but in case that time should come along, it might be well to remember what happened here.

Forced to bail out over the Florida Everglades, this U.S. Navy student pilot follows instructions by standing on his spread 'chute in a clearing. This practice facilitates search as the light colored 'chutes are easily seen from the sky. The spread chute also temporarily prevents the pilot from bogging down in the swamp. Team work goes into action when the pilot of a Navy plane spots the stranded flyer and guides an amphibian tractor (or maybe you call it a "swamp buggy") to the scene.

And in the absence of a "swamp buggy" the Navy can still save a pilot. One ingenious flight surgeon has devised a swamp mat connected by long



"Swamp buggy" comes to the rescue.

strips of doubled canvas. Other helpful rescue items include swamp shoes, swamp skis, and a swamp sled. The shoes are patterned after snow shoes and admirably serve the purpose. The swamp sled takes the place of a swamp wagon, with facilities for the necessary equipment.



Both engines dead, an SNB-1 from the Lake City, Florida, Naval Air Station recently made a forced landing in a tree-fringed, alligator-infested lake that is located in the midst of a large turpentine timber tract.

A good landing was made under difficult circumstances, but the airplane porpoised once, then dived into the murky water and as it sank, water-looped almost 180°. So rapidly did the plane go under that the crew escaped with difficulty, making shore in

a rubber life raft.

The aircraft was practically new and much needed for training. The extent of the damage could not be seen due to the darkness of the water, and the possibility of salvaging the plane was somewhat in doubt; also, the manner of landing and the attitude of the plane seemed to dim the prospect of intact salvage.

Nevertheless, it was decided to raise the plane and float it intact to a sloping beach a mile from where it lay.

The answer was a rig based on home-made pontoons using thirty-two 54-gallon steel oil drums for flotation and chain hoists to raise the plane from the lake's bottom, so it could be towed.

These drums have approximately 15,000 pounds of buoyancy. With some water in the wings, the airplane was

SAVE A PLANE



Salvage operation in Florida waters

estimated to weigh 9,000 pounds, while the lumber, drums and other flotation gear added another 3,000 pounds. This gave a net buoyancy of 3,000 pounds which proved more than adequate to raise the aircraft.

Four floats were constructed on the spot, each consisting of eight drums, which were borrowed from a gasoline dealer. They were held together in a wooden framework of 2-inch rough lumber.

On top of each float an 8x8 column was countersunk and further held in place by angle-irons.

Two of the floats were made into a set by mounting an 8x8 beam on top of the columns of two floats.

The set was constructed to straddle comfortably a wing of the SNB-1. Two sets, one on either side of the aircraft, were held together by a pair of 8x8 cross-pieces joined to the horizontal beams, which were also used to support two chain hoists. The falls were in turn attached to the airplane by the regular hoisting eyes in the wings.

Each set was towed to the airplane, put in place, and then the cross-pieces mounted. This made a simple, but strong, support for the plane to be hoisted upon.

With the chain falls, the aircraft was hoisted until the wings were awash. The whole rig and airplane were then towed a mile to the beach by a dinghy mounting a 10-horse power outboard motor,

On reaching the beach the wheels were cranked down, the wings removed and the aircraft pulled ashore by a 4-wheel drive truck, after the road to the beach was readied by cutting a wide enough path through the trees that grew up to the water's edge.

The aircraft was hoisted on to a flat-body open-bed truck and taken sixty miles to the Naval Air Station at Jacksonville, Florida, where all major overhaul work is done for the Lake City Station.

Preliminary examination before

transporting showed, surprisingly enough, slight structural damage to the aircraft and that it was completely salvagable.

After initial assembly of the flotation gear--which is now being kept in case of another lake forced landing--salvage operations took only three days.

Until removal of the wings, the crew at various times was only five to eight men, working a total of about 100-man hours for less than \$100.00 to bring back an aircraft that soon again will be giving students operational training before they leave for the far corners of the world.

Army Has Version Of SB2C-1

Described as having "greater speed, range and striking power than any dive bomber now in action," the first of an undisclosed number of a new type of dive-bomber, designated Curtiss A-25's, already has been delivered from its Missouri plant to the AAF. The warplane is an Army version of the Navy Curtiss (SB2C-1) Helldiver. In fact, it is said that with minor changes it can be used by either the Army or Navy. It is a two-place, mid-wing monoplane powered with a 1700 hp, Wright Cyclone engine and equipped with electric propeller and retractable landing gear. The first A-25 was test-flown some time ago and presented formally to the AAF on Christmas Eve. The factory flight tests, observers said, were "very satisfactory". A major expansion program at the Missouri plant has been carried out, with a shift in emphasis from the production of other Army and Navy airplanes to that of the A-25. Quantity production now is underway.

I DIDN'T KNOW IT
WAS LOADED



FLIGHT STATISTICS

Formation Take-Off Accident:- A division of F4F-4's, in overload condition, was making a formation take-off with a wind approximately 6 knots broad on the port bow. One airplane swerved approximately 60 degrees to the left during the take-off run. The pilot maintained full power and attempted to continue his take-off. He became airborne near the edge of the field, but crashed into obstructions which resulted in fatal injuries.

BUREAU COMMENT:- Current instructions fully explain the marginal rudder control of this airplane for take-offs with wind on the port bow. Formation take-offs with full overload under these adverse conditions appear unwarranted. Rudder modifications to eliminate this condition are now under test.

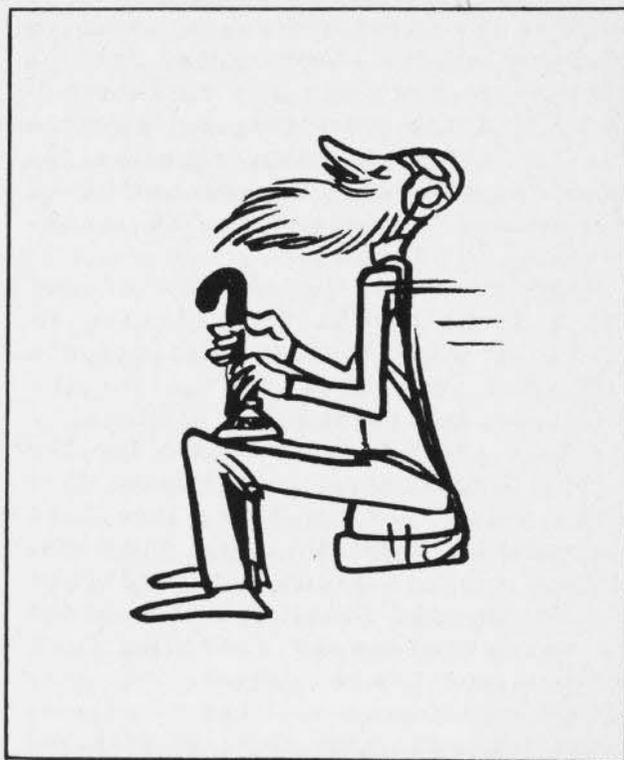
The pilot in this case made a serious error in judgment in attempting to continue take-off after encountering difficulties which made a successful take-off doubtful. This type of pilot error was recently reported on under the heading "The Lesser of Two Evils".

Forced Landings At Sea:- During a recent 18-month period 45 forced landings at sea, (British, "ditching") have been reported for carrier based aircraft. Landings reported in this category include only pilot-controlled landings made at sea, due to engine failure, gas shortage, etc.

There are several points of interest which appear in connection with these forced landings:

(a) Fatalities occurred in only two of these 45 landings; one an F4F-4 and the other an SBD-2. The F4F hit a swell, head-on and the SBD was reported as having made an exceptionally hard landing. Personnel were believed to have been knocked unconscious upon impact, in each case.

(b) Very few serious injuries were reported. Many reports indicated "no injuries". Most of the injuries



With Comments by GRAMPAW PETTIBONE

reported were minor head and face injuries. These should be largely eliminated by the use of the lap and shoulder type safety belt. The use of this safety belt might even have prevented the two fatal accidents referred to above.

(c) The time aircraft remained afloat varied considerably, but with the exception of the two fatal accidents previously noted, it was sufficient in each case for pilots to get clear and into their life rafts.

Understand Your Fuel Consumption Curves:- A student pilot undergoing operational training recently made a crash landing in an SB2A-4 when his engine suddenly failed approximately one hour after take-off. The pilot escaped without injury but the airplane received major damage.

It was the opinion of the Trouble

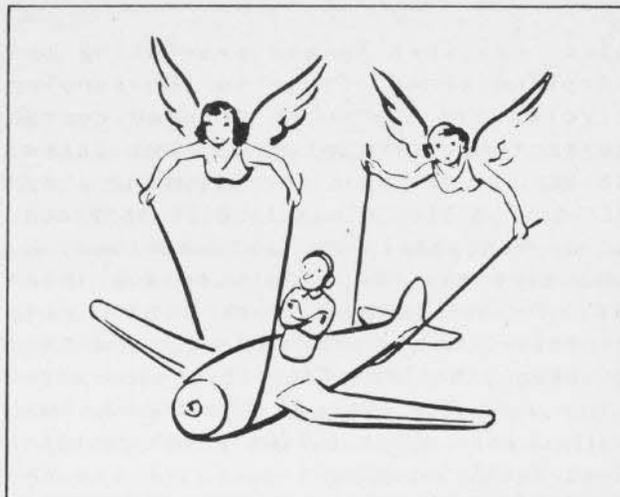
Board that the engine failure resulted from depletion of fuel from the left main tank which was found dry, and that the pilot had failed to shift to either of the other tanks, both of which were full. It was further believed that the underlying cause of the pilot's failure to take proper action was due to his lack of understanding of engineering fundamentals, as illustrated by the following:

Shortly after the receipt of the SB2A-4 airplanes at this station an instructor flew a student pilot on a flight for area check-out. After the flight he instructed the student to ascertain the fuel consumption for the flight. The student reported later that it was 56 gallons per hour, then told the remaining students of his findings.

When subject pilot returned from this crash, the first question asked him was relative to shifting fuel suction, to which he replied, "No, sir, I didn't shift because I had 87 gallons in the left main tank to start with and the plane only uses 56 gallons per hour. Since I knew I had plenty of fuel left, I didn't shift." It was determined that this pilot was averaging considerably more power than the instructor previously mentioned.

There were no fuel consumption curves on the SB2A-4 airplanes available at this station at the time this student commenced his familiarization; however, it was assumed that all students had enough of an engineering background to realize that fuel consumption varies with the power used. Fuel consumption curves have now been received at this station and are being fully explained to students before flight.

Grandpaw Pettibone says:- This accident gives me a chance to sound off on a point I've been wanting to mention for a long time; the question of hangar and bunk flying. There is probably more misinformation passed out during an average bull session of partially trained pilots than in any other group discussion in the world. Mark you, I'm not against these sessions, in



fact I think they are one of the finest things in aviation; they indicate an interest and enthusiasm for flying and much valuable information is picked up in this manner -- BUT . . .

Much of this good is offset by the incorrect and incomplete dope which is so freely given. It's a case of a little knowledge (about airplanes) being a dangerous thing. The good things you learn will help you, but acting on one wrong bit of advice may be fatal. Look at the above example: one guy says, "These SB2A's burn 56 gallons an hour; my instructor and I checked it this morning." This happens to be true, but is very incomplete. Some student takes this as the whole truth, flies accordingly and, as a result, almost kills himself.

Do you get the point? Sure, continue these bull fests, but be careful; careful in what you say -- your roommate may try out your theory and bump himself off -- and careful in what you believe -- don't put your roommate's half-baked ideas into practice without first checking them with your instructor. Your roommate will be sad and lonely when you are gone.

BUREAU COMMENT:- See article in last News Letter, "Let's Get Fuel Conscious".



Collision Danger During Night Landing Practice:- Case 1. The student pilot of an N2S-3, during night landing prac-

tice, saw that he was overtaking the airplane ahead of him in the landing circle. He thereupon changed course to increase the interval, but failed to keep his eye on the airplane ahead of him. While on his landing approach, at approximately 30 feet altitude, he suddenly saw the same airplane ahead of him again and on a converging course. In his attempt to avoid this airplane, he inadvertently snap-rolled his own airplane and struck the mat with power on, in an inverted position. Remarkably enough, this pilot was not killed.

Case 2. During primary night flying there were eight solo students in the landing circle around a well-lighted field. The traffic pattern gradually became elongated at the down-wind side of the runway, until the students were making long, flat, transport-like approaches. One student temporarily lost sight of the plane ahead of him and after commencing what he considered a normal approach, collided with the plane preceding him, which, in following the other traffic, had been forced to make a long approach. As a result of this collision, one pilot was killed when his airplane crashed, out of control.

BUREAU COMMENT:- Pre-flight lectures to students should emphasize, stress and accentuate the absolute necessity for maintaining sight contact, at least on the airplane next ahead in the landing circle.

A poor traffic pattern is also considered to have been contributory to the collision in case #2. Planes should not get bunched at the landing end of the circle; this results in the traffic pattern here noted. Planes should be fairly evenly spaced and if more distance is needed, it should be taken on the upwind side of the circle.

The following letter was recently received from Fleet Air Wing Five:

"Dear Grampaw Pettibone:

"In the days of one hour endurance

flights, within sight of the pasture and salvage facilities, Chapter 60 of the Civil Air Regulations, PX's, etc., must have been unknown. However, such things must have appeared on the visionary screen of those far-seeing pioneers.

"Recently the pilot of a flying machine took off after a respectable lunch, for a destination in excess of three hundred miles. Expert navigation enabled him to arrive twenty-six minutes ahead of the predicted ETA. The pilot "walked away" and filed a PX. No arrival report came in and the operator could not go to dinner until his board was cleared. Things then started happening. ATC released a ZZZ message, all communication personnel were aroused from their normal complacency. Ensigns were recalled from cocktail rooms, lieutenants junior grade were taken from their courtships, lieutenants from their card games, lieutenant commanders



from their after-dinner naps, and commanders from their study of the "broader aspects". The state police of three states and coastal aircraft spotters were notified, the latter asserting that no such aircraft had penetrated. The telephone lines were buzzing; the destination was called by long distance only to declare that the plane had not arrived and to inform the caller that a physical check up had been made.

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"A coordinated search was planned involving aircraft at three different localities. Density of search, character of terrain, endurance and number of searchers to be lost were all considered. Invaluable training was conducted between 0200 and the dawn.

"Unfortunately when one of the searchers was briefed for his mission, he let the cat out of the bag by asserting he had seen the lost plane and pilot arrive at his destination. Another physical check disclosed that such was the case. Then telephone lines started buzzing again. This time they were carrying messages calling off the search and putting the flyers and flying machines back to work combating the submarine menace.

"Please tell us, Grampaw Pettibone, does this appear as the work of gremlins and if so, what type are they? The job definitely is of the white collar variety, but since when have they invaded the field of communications? All other research points to flyers as being the only form of life capable of being confused by their tactics."

/s/ (Name withheld)."

Grampaw's Reply -

'Tain't gremlins!

Guess I'm just old-fashioned, but I don't believe in "them". I'm firmly convinced that all these reports about gremlins botching the works are only the symptoms of a modern, aviation disease - gremlinitis.

When aviation personnel contract this disease, they begin dopping off and doing slipshod work - then when something goes wrong, they immediately start yelling, "The gremlins did it!" I'll bet a planter's punch against an ice cream soda (make mine strawberry) that if you backtrack this present case carefully you can put your finger right on the "gremlin" in the woodpile. Somebody failed to file or send a report properly, or maybe the station of destination had a lax system of logging flights.

This is a very dangerous disease because it is so contagious. If strong

3

purgatives are not administered in the initial stages, the entire squadron or ship will be infected in a short time. The best prophylaxis against the gremlinitis germ is to wear a bag of asafoetida around your neck, or carry a rabbit's foot or other charm in your pocket; and then work like hell to do your job thoroughly and correctly.

Other interest points in your letter: (a) You say, "Expert navigation enabled the pilot to arrive 26 minutes ahead of predicted ETA." Strikes me as being a right poor estimation on time of arrival, or maybe he allowed himself 26 minutes for the gremlins getting him lost and when this didn't happen, he got there early, (b) Maybe the "invaluable training" derived from this episode made it worthwhile, after all, and (c) Your expert diagnosis of where to locate your officers in an emergency was very enlightening and should be noted by other squadrons.

/s/ P. S. Pettibone.

The following summary of aircraft accidents which have occurred at NAS Fort Lauderdale were submitted by that station for publication, in the hope that it would cause other pilots to THINK:

Oct. 24, 1942 - Pilot ran out of gas on one tank on familiarization flight. Made forced landing in rough field before he could shift and pick up suction on full tank. Airplane required major overhaul.

Trouble Board Finding: 100% Pilot Error.

Oct. 25, 1942 - Pilot dipped wing in water and knocked off wing tip making torpedo run. "Altimeter read 125'", pilot stated, when this occurred. YOU CAN NOT DEPEND ON THE ALTIMETER WHEN CLOSE TO THE SURFACE.

I DIDN'T KNOW IT
WAS LOADED



A very lucky pilot survives this accident.

Oct. 20, 1942 - Pilot attempted to break all records for speed in a dive after altitude flight. He exceeded the restricted speed (315 kts. in light condition) and the wing disintegrated in the dive, resulting in fatal dive and spin into the ground. Pilot was instantly *killed*.

Result - one pilot who will never drop a "fish" or bomb on the Japs, and one plane completely demolished.

Trouble Board Finding: *100% Pilot Error.*

Nov. 9, 1942 - Pilot put head into cockpit to check fuel before night landing and flew into trees on edge of field. Plane caught on fire and was completely demolished. Pilot *luckily* escaped with first and second degree burns on head and arms.

Trouble Board Finding: *100% Pilot Error*

Nov. 10, 1942 - Pilot pulled "wheel handle" instead of "flap handle" after landing. Another plane out of commission for ten days.

Nov. 21, 1942 - Pilot attempted to land too close behind plane ahead, and was flying too close to stalling speed of plane. As a result, he struck the slipstream of plane ahead and "spun in" on the end of the runway. The airplane was completely demolished; pilot received minor cuts on face.

Trouble Board Finding: *100% Pilot Error.*

Nov. 23, 1942 - Pilot was number two of three plane section. On cross under to right echelon he got too close beneath number three and ahead. In attempting to get clear, pilot pushed over, thereby striking the underside of number three with his tail. The tail was chopped off by number three's propeller and plane crashed into sea. Pilot bailed out; rear man went in with plane. Neither plane or body recovered.

Trouble Board Finding: *100% Pilot Error. Pilot Dropped from Operational Training.*

I DIDN'T KNOW IT WAS LOADED



Nov. 25, 1942 - Pilot ran out of gas on one tank with *two full* tanks, while making touch-and-go landings. Fortunately for him, this occurred just after a landing. However, pilot nosed plane up by applying too much brake, resulting in one plane requiring a new engine and propeller.

Dec. 28, 1942 - Pilot raised flaps too soon after take off. He was approximately fifty feet in the air and probably had not over 80 kts. air-speed. Plane squashed and spun into ground and immediately caught on fire. Pilot was removed from wreckage in an unconscious condition and died two hours later. THIS PILOT MIGHT HAVE SAVED HIS LIFE HAD HE HAD HIS SHOULDER SAFETY BELT ATTACHED. Plane was complete loss.

Trouble Board Findings: *100% Pilot Error.*

Jan. 1 and 2, 1943 - Two more pilots tried to fly on an empty gas tank while they had two full ones. Result: one plane lost at sea, and one plane completely washed out due to forced landing.

THEY WON'T FLY WITHOUT GAS.

Trouble Board Finding: *100% Pilot Error.*

500,000 Airplane Models

More than half a million airplane models have been distributed to Navy and Army recognition classes, where they are of incalculable value in training pilots and gunners, and this number is being increased by thousands, each week, according to the Special Devices Section, Training Division. The distribution of these models is world-wide.

D I D Y O U K N O W ?

British Air Magazine Evaluates U.S. Combat Planes.

The British air weekly, *The Aeroplane*, inserts its own opinions, as editor's notes, in reprinting the text of OWI's report on specific combat planes built in the U.S. Frequent use of the word "magnificent" is interspersed with some criticisms not seen in the press in this country. The comments appear in the Nov. 13 issue of the magazine, which has just been received. Opinions are quoted below:

Curtiss P-40: What is also needed in the P-40 is more speed. Even the Merlin motor cannot make this design the equal in performance to other better streamlined fighters and an armament of six 0.5 machine-guns hardly seems adequate.

Bell P-39 (Airacobra): Like the P-40, the Airacobra suffers from the low supercharge of its Allison motor. The view forward is poor because of the steeply sloping windscreen. The tricycle nose wheel has given trouble on muddy airdromes. Cockpit size is limited. Good, low down.

North American P-51 (Mustang): The Mustang looks like the best American fighter yet produced. With the Allison, it has a top speed of 370 mph and is excellent low down. It was designed to a specification laid down by the British and so has much active experience built into it.

Lockheed P-38 (Lightning): Single-seaters aren't suitable for long-range escort work. Top speed 360 mph. Reputed to be rather a handful for one man to fly.

Republic P-47 (Thunderbolt): The great weight of the Thunderbolt -- around 14,000 lbs. -- makes it exceedingly heavy for a single-seat fighter.

Grumman F4F-4 (Wildcat): The wildcat -- termed the Martlet by the Royal Navy -- is an excellent machine and has done very well. Its top speed of

315 mph is good for a naval fighter but will be far exceeded by the magnificent American Vought-Sikorsky Corsair 366 mph fighter now coming into service.

Boeing B-17 (Flying Fortress): Excellent for the work done over oceans for which it was designed, the Fortress has done well in escorted raids at short range over France and should prove valuable. European weather sets a serious limit on its constant use in high-level daylight raids. This (in the O.W.I. report) American comparison between the Fortress and the Lancaster is hardly accurate. The Lancaster is faster, carries several times the bomb load and has a longer range than the Fortress. Both will be surpassed by the new Boeing B-29 and Consolidated B-32 bombers.

Consolidated B-24 (Liberator): The remarks on the Fortress apply also to the Liberator.

North American B-25 (Mitchell): A fine airplane, excelled only by the German Dornier Do 217, which is faster and carries a bigger load.

Martin B-26 (Marauder): Another excellent airplane but apparently deficient in wing area. This makes operation from any but the largest airdromes difficult with full load.

Douglas A-20 (Boston or Havoc): A first class machine which has given magnificent service over France and in the Middle East.

Douglas SBD (Dauntless): An excellent dive bomber which has done great work with the U.S. Navy. Now excelled by the Curtiss Helldiver monoplane.

Grumman TBF (Avenger): At the top of its class--the best in the world today.

Patrol and Miscellaneous: The Catalina is a mainstay of Coastal Command. The newer Consolidated Coronado



A Fairy Fulmar has "hooked" down the first Arrestor wire, and is just about to touch down on the flight deck.

ROYAL NAVY'S CARRIER FIGHTERS



Seafire, the Royal Navy's version of the famous Spitfire, operates from aircraft carriers. They are rumored to have a speed of over 400 mph, hitting a ceiling of more than 40,000 feet.



Ranging a Sea Hurricane on the flight deck of a British aircraft carrier. This plane is also catapulted from merchant ships to protect convoys.

is probably the best all-round patrol boat in the world at present.

Summary: In this brief survey the U.S.A. is shown to be deficient in fighter development and ahead of the world in Naval aircraft and transports. The present American heavy bombers have several important tactical drawbacks which out weigh their many good features when operating in European conditions. The new American bombers should lead the world and be capable of meeting and exceeding every possible call upon them. On the basis of this survey, British fighter production, the present production of British heavy bombers and the future production of American heavy bombers should give the United States unrivalled performance in every category.

Civil Air Patrol

The Navy is indebted to a group of civilian flyers who are making a valiant contribution in patrol and rescue work. When the full story of the Civil Air Patrol can be revealed, probably not until after the war, there will be a special roll of honor for America's "Flying Minute Men." Seven days a week, volunteers on coastal patrol are fighting a little-known war against Hitler's U-boats. And over inland areas, tens of thousands of other civilian pilots are guarding against sabotage, patrolling power and pipe lines, and doing a score of other important jobs that release Army and Navy flyers for combat duty.

This is no cozy home-guard detail. Coastal-patrol pilots fly 40 miles offshore, in single-engined land-planes. If an engine cuts out it means a crash-landing at sea. Five flyers have been lost on patrol missions, but against this figure are millions of miles flown in search of U-boats. Whether or not C.A.P. planes carry bombs and machine guns, Hitler's undersea crews would pay a great deal to know.

"Some U-boat crews have learned the secret of the Patrol's fight against subs," says Major Earle Johnson, national commander of the C.A.P., "but they won't tell, because they are at the bottom of the sea, in their iron tombs."

Pilots on these coastal beats are selected from patrol squadrons in 14 states. There are men who never before had flown any water wider than a creek. Now, in the hours they spend flying out of sight of land, these men could cross the Atlantic a dozen times. Only actual expenses are paid --there are no salaries in the Civil Air Patrol squadrons. Many of the pilots have given up good jobs; all of them provide their own uniforms and equipment. In personal sacrifice



--even to the point of giving their lives--this fighting home front is a striking example of democracy at war.

Coastal patrol squadrons are made up of the more experienced "Minute Men." Pilots must know navigation, radio, crash procedure, instrument flying, basic military operations. Hundreds of survivors from torpedoed vessels owe their quick rescue to Patrol pilots. One of these ships was sunk in such a heavy sea that the lifeboats were in danger of being swamped. Low visibility hid them from shore, but a C.A.P. flyer, skimming the waves at 200 feet, spotted them just as he was nearing the end of his run. After radioing for help, he circled the boats--in spite of an almost empty fuel tank--until Coast

Guard cutters' arrived to rescue the men. He was barely able to reach the nearest beach for a forced landing.

Civil Air Patrol duties mean long hours, hard work, often real sacrifice. Many members take time off from their regular jobs, besides putting in every spare minute. A ground man in an Eastern unit rides a bicycle 20 miles every night, rain, snow or clear, to put in four hours' work on engines--after a full daytime job. One woman, a grandmother, drives an airport bus for Patrol members.

The coastal patrol is only a part of C.A.P. war service. In a hundred ways, the Patrol is releasing Army, Navy, and Marine airmen and planes for urgent military duty. Just before the African campaign, several Army technicians were delayed in the mid-west by lack of transportation, while an Army bomber waited for them at Miami. Patrol pilots flew them to Florida in relays--a Pony Express on wings. Now, several courier routes have been established, with C.A.P. planes operating on regular schedules. Pilots cover thousands of miles daily, ferrying officers and key men.

C.A.P. pilots have made aerial surveys to see that no roof markings exist to guide enemy bombers. Others have spotted dozens of forest fires in time to check disastrous losses. The Patrol flies anti-sabotage guard around reservoirs, power plants, munitions factories, and other important points. Flying power and pipe lines, to spot breaks or leaks, and observing ice in the Great Lakes so that ore-boats can move at the earliest possible date--these are typical tasks the Civil Air Patrol has already taken over.

Along our coasts, and well inland, Patrol squadrons have become skilled in blocking airports against possible enemy use. Some C.A.P. units are training with parachutes, others with carrier pigeons, aerial pick-up of messages, camouflaging of planes and bases. In Russia, civilian flyers,

armed with machine-guns, light bombs, and hand grenades, have strafed Nazi columns and helped annihilate enemy paratroopers. Others have ferried replacements, food, and ammunition to guerilla fighters behind the German lines.

In each of these ways, and many more, the C.A.P. is ready to spring into action. But in the light of its present and continuous accomplishments, should such a test never come, the Patrol will have performed a tremendous war service.

Champagne Bath



"The cooties were biting, champagne was 17 cents a quart, so a bath in the bubbly stuff seemed like a pretty smart thing to do." And that was exactly what Lieut. O.V. August did in Casablanca, the Associated Press said.

The Navy lieutenant said he was taken prisoner after his plane was downed during landing operations. He was lodged for one night in an old horse stable where he caught a "beautiful case" of cooties. Upon his release he went to a Casablanca hotel, and unable to sleep, because of the cooties chewing on him ordered several bottles of champagne. He figured the alcohol would be a good disinfectant.

"I stood in the bathtub," he said, "And with one hand I poured it over me, and with the other, into me."

10,000 ft. RUN IN ON TARGET

5,000 ft.

4,500 OR
4,000 ft.

MANEUVERS TO CORRECT
LINE UP WITH TARGET

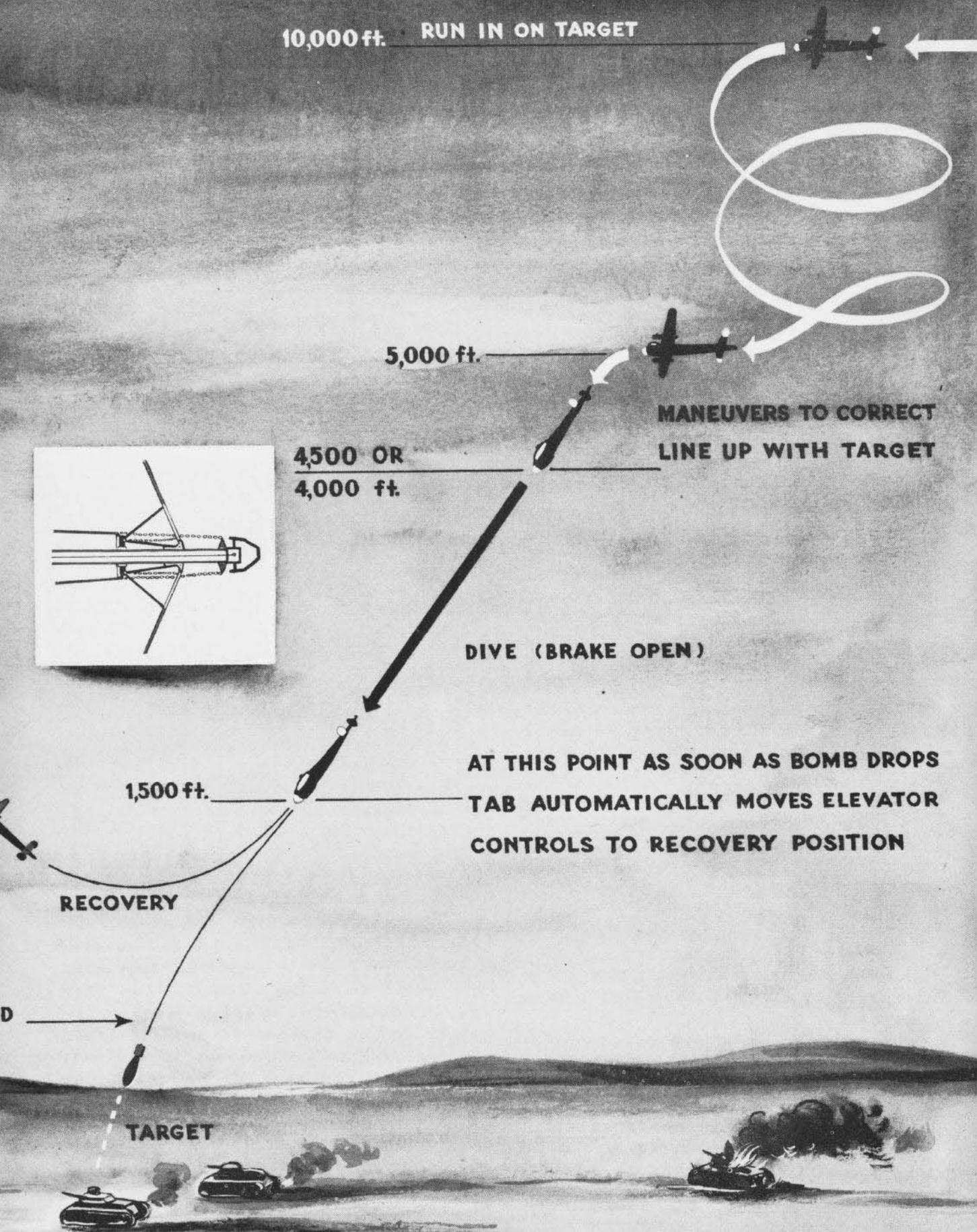
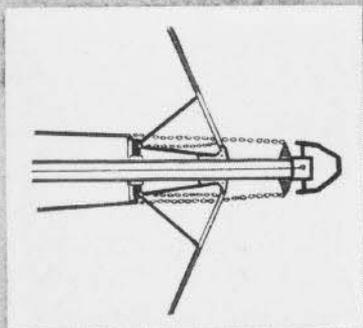
DIVE (BRAKE OPEN)

1,500 ft.

AT THIS POINT AS SOON AS BOMB DROPS
TAB AUTOMATICALLY MOVES ELEVATOR
CONTROLS TO RECOVERY POSITION

RECOVERY

TARGET





Robot Stuka

Borrowing from tactics originated and developed in this country, the Nazis have incorporated a number of clever devices into their Stukas. Their ideology seems to have pointed the way, for the human element is being eliminated as much as possible from their dive-bombing technique by the use of automatic bomb dropping and pull-out mechanism, according to *Air Progress*.

Approaching his target at about 10,000 feet, the pilot decides on the angle of dive and recovery altitude. He switches on the bomb-timing distributor which arms and releases the bomb at the proper pull-out altitude. The contacting altimeter is set to a determined recovery height; it works on the general principle of an electric alarm clock. When the altimeter is set to a pre-determined altitude, an electric contact closes at the pull-out height, causing the current to actuate the bomb-release and tab mechanisms. The elevator tabs are then trimmed for diving altitude, usually fifty degrees for automatic recovery, and the dive brakes are opened to limit the diving speed. On the Junkers 87 and 88 the brakes are on the underside of the wings in the form of slated plates which, in level flight, are flat against the wing surface. For diving attacks, they are turned through a ninety-degree angle to present a flat surface to the air stream. The twin-engined new Dornier 217E, however, has the dive brake fitted in the tail acting as a drogue, as shown above. Lowering the dive brakes automatically locks the elevator trimming tabs, making the aircraft nose heavy.

Maneuvering down to between 5,000 and 4,000 feet, the pilot readies for the dive. The airplane is pointed into the wind and the angle of his sight is adjusted to compensate for estimated wind force; a table relating this angle to wind speed is mounted

on the instrument board. The cockpit cowling of the dive bomber is marked with reference lines for dives of twenty, fifty and seventy degrees. Lined up against the horizon, these marks help the pilot's adjustment of the angle of dive.

When the set recovery altitude has been reached, the contacting altimeter's circuit closes, automatically starting the bomb distributor. The tab, working on a strong spring, trims the elevators to tail heavy condition to effect the dive recovery; at the same time, the bomb mechanism sends the missile plunging downward. The pilot then takes over the controls, closing the dive brakes, returning the tabs to normal position, levels out the bomber and attempts to get away.

Growth of RCAF

Members of the Royal Canadian Air Force are fighting in nearly every major battle area of the world, says Canada's War Information Board. The size of the RCAF has jumped from a pre-war 4000 to more than 150,000 today, with Canadian airmen over the high seas, at home, and abroad.

One of the big functions of the RCAF includes operation of the British Commonwealth Air Training Plan, which turns out air crews for the RAF, the Royal Australian Air Force, and the Royal New Zealand Air Force, as well as the RCAF. Every single day in Canada men under training fly more than 2,000,000 miles in this one-and-a-half billion dollar program.

Most of the RCAF personnel overseas is serving with RAF squadrons. There are 25 RCAF squadrons now serving all over the world with the RAF, working under Canadian command. An RCAF Catalina flying boat squadron is stationed in Ceylon. Canadian airmen are serving in such places as Iceland, Iraq, Russia, Madagascar, with the Fleet Air Arm, and on convoy protection.

The enrollment of 20,000 in Canada's Air Cadets will be expanded to 35,000 boys in the next few months.

Henderson Field Box Score

The highly strategic value of Henderson Field on Guadalcanal Island, captured last August by United States Marines, is shown in a compilation of Japanese losses made by Sergeant Edward J. Burman, a Marine Corps Combat Correspondent.

This is Burman's box-score on Japanese losses inflicted by Douglass Dauntless dive-bombers operating from Henderson Field between August 25, 1942 and January 1, 1943:

- Destroyers -- Two sunk, five possibly sunk, 20 damaged.
- Heavy cruisers -- One sunk, one possibly sunk, three damaged
- Battleships -- One KONGO class ship possibly sunk by four hits.
- Troop-carrying destroyers -- Two sunk.
- Cargo ships -- Eight sunk, one possibly sunk.
- Transports -- Six sunk, three left burning and possibly sunk.
- Zero fighters -- Eight shot down, 12 destroyed on the ground.

From December 12 to December 27, 1942, attack missions were carried out involving a total of 108 planes. With Grumman Wildcats and Army P38's and P39's providing fighter protection, the dive-bombers dropped 106 five-hundred-pound bombs and 212 hundred-pounders.

199,000 Women Building Planes

Some idea of America's war industry personnel requirements is revealed by authoritative estimates that the airframe, engine and propeller manufacturers are hiring 30,000 persons a month, of whom fully two thirds, or 20,000 are women. Of a total of 690,000 productive workers in these plants on Feb. 1, some 199,000 were women, believe it or not.

By the end of 1943 these same manufacturers probably will have 1,000,000 productive workers on their lists and Washington forecasts are that 400,000

to 450,000 of them (almost 50%) will be of the weaker sex.

Experts are saying that the 1943 valuation of aircraft produced will be around eleven billion dollars, against approximately five billion in 1942. This means 85,000 to 90,000 planes.

The AAF recently released industry figures, too: Present backlog, 20 billion dollars; productive floor space, 75 million square feet toward an ultimate 100 million. Present British output was estimated at 48,000 planes and Japanese production about 10,000 a year.

Human Bayonet Target Receives Medal

A native of the Solomon Islands who made a daring rescue of a U.S. naval aviator shot down in Japanese territory during aerial combat, has been awarded the Silver Star Medal for "conspicuous gallantry and intrepidity".

This one-time member of a savage tribe, called Vouza, is a six-footer who speaks pidgin English and is a sergeant-major in the British constabulary in the Solomons. Shortly after delivering the American airman into friendly hands, Vouza was sent out on a mission by the Marines to locate a Jap lookout station. He was captured by the Japanese who questioned him about the location of American forces.

Vouza refused to talk. His captors lashed him to a tree and jabbed him about the face, throat and chest with bayonets. When he lapsed into unconsciousness they left him for dead. Several hours later he came to, broke his bonds and crawled back to the Marines with valuable information about the Japs. The Army surgeon who treated him was amazed that any man could undergo such tortures and still live.

Washington, D.C. Negro taxi-driver: "Ah've nevah seen so many uniforms as are heah now, and so few soldiers."

FLEET AIRCRAFT

U.S. Atlantic Fleet Fleet Air Wing 11 Scouting Squadron 4-D10

After getting organized and then operating to the maximum on three fronts (advanced bases), this squadron finally has some time to relay bits of information and chat with all outfits who like to listen.

The squadron was commissioned on September 1, 1942, in a ceremony performed with the Commanding Officer of the Naval Air Station officiating. The officers and men aboard were mostly "green" hands with only a few old timers. All hands did double duty performing because less than half of the squadron complement was on board. All necessary material was ordered and as soon as it started to arrive months later, "Hedron" took over all the maintenance and material problems.

The advance bases have given the "green pilots" excellent opportunity to learn what to do when "on their own" and also lots of practice in cross country flying (mostly over water). Every one of the pilots has operated at these bases and each understands the varied problems from picking up a small group of islands off shore to following the coastline of the swamp and jungle country south.

Although there is a good deal of submarine activity, the restricted action of the OS type airplane makes the squadron still feel a bit on the "outside" of all the fun. The bigger planes in this area achieve the "productive" results.

The most successful plane for A/S is definitely a land-based and twin-engine craft as proven by the record of the British.

With all this "high morale producing" talk, all pilots have been eager for all sorts of training. The password is "Keep 'em Flying"! Hoping

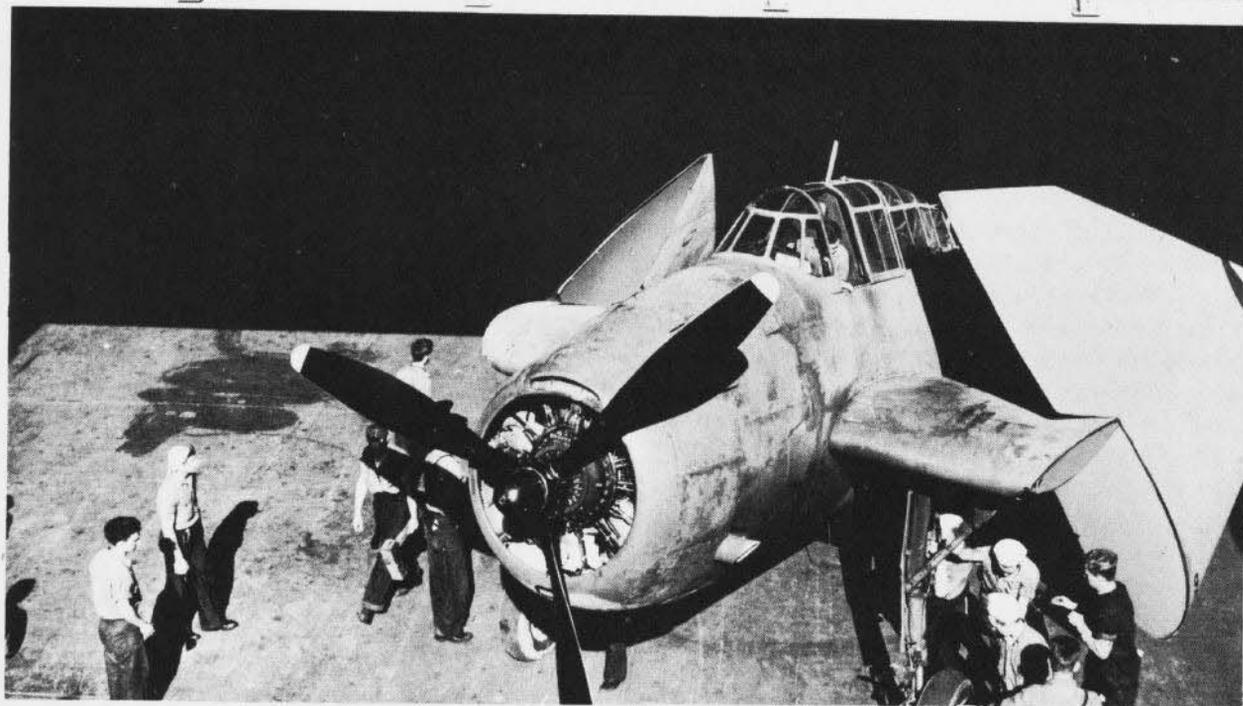
for the twin-engine training in the near future, the efforts at present are directed toward what will be expected. All pilots are being indoctrinated in all-night flights in the "big boats" to give them a taste of what they'll have to do. Hence the reason for the call for lots of instrument and night flying. A lecture by a radio expert also is being eagerly awaited.

The skipper, being an old time "torpedo man", is putting the boys through the torpedo attack tactics streamlined to the latest accounts from the fighting fronts.

Carrier Aircraft Service Unit 22 U. S. Atlantic Fleet

A healthy struggling embryo, CASU 22 has had occasion to test the effect that wheels up or down might have on compasses. This came about as the Naval Air Station (Quonset Point) was about to construct new compass roses. It was felt that they should be of a type necessary for quick and accurate calibration. No one seemed to know whether calibrating with wheels down would produce a deviation as a primary result of vertical soft iron, or whether no noticeable disturbance would be evident, hence planes TBF-1, SBD-4, and F4F-4 were flown and the wheels were extended and retracted in flight while on a constant heading. An initial deviation to the right was apparent on eastern hemisphere Headings, whereas an initial deviation to the left was apparent on western hemisphere headings. After a brief period of time the compass returned to the initial heading. On retraction of the wheels the initial deviation was the reverse of the above with the compass returning to its heading within 15 seconds. It has been assumed that calibration with the wheels down is entirely satisfactory.

BUREAU COMMENT: As the only variation found occurs 15 seconds before and



Stowing TBF's. The planes are being taken from flight deck to hangar deck.

after retraction and the reading returns to normal after that, there appears to be no difference when the figures for calibration are secured as long as it is not within that initial deviation time of 15 seconds. The swinging of compasses with wheels down has been the usual practice on those instrument squadrons using SNJ's. When the wheels are up the accuracy apparently has not been impaired noticeably to disrupt student training on Range and RDF work. To standardize, continuance of this practice is suggested.

Training Devices

Combat service has increased the interest in numerous training devices. Gunners returning from the battle area make a dive for the Dual Projector Trainer to improve their marksmanship. Before going into their first combat, the tendency of most gunners was to regard this device as a toy with which one could pass time pleasantly. But once they get into a shooting fight, they quickly realize the value of the synthetic aiming devices.

T R A I N I N G

Super Training Of Today Starts At Flight Preps

Time was when a naval aviator went directly and only to Pensacola and with six months of training was turned out a finished product ready for flying duty at sea. Today the story is different. It now takes 16 months to train a naval aviator. He is the best trained combatant the world has ever known.

Aspiring pilots get their first taste of Navy training in Flight Preparatory Schools, twenty of which went into operation in January on college campuses across the country. Now being fed into these prep schools are embryonic airmen who form the backlog of men enlisted as aviation cadets but who have not been called to active duty.

The peak load for the Flight Preparatory Schools will be built up to 12,000 in March--600 in each of the 20 schools. During the 12 weeks of instruction students are given a brief but thorough education in a variety of subjects, designed to equip them well for future aviation duties. For instance, they begin studying navigation. The course starts with a study of basic principles, progresses through simple mathematical procedures and finally covers a few complex problems. The study of navigation is continued through his entire schooling.

But this is only one of the many subjects the student covers. His other classes include physics, mathematics, physical geography, aerology, plane recognition, communications, operation of aircraft engines, principles of flying and physical training.

Students are classified as naval aviation cadets when they enter these schools and are under naval discipline. Their academic instruction is provided mainly by members of the college faculty. For some of the more highly specialized classes Navy personnel is used.

Completing this training, the students progress to the Civil Aeronautics Administration's War Training Service Schools (formerly known as CPT) where they have their first opportunity to put some of the ground school training to use. They receive approximately 50 hours of flight instruction during an eight weeks period, in addition to more classroom instruction.

Then, successively, they receive 12 weeks of training at Pre-Flight Schools--physical toughening up, military drills, and advanced academic instruction; primary flight instruction for another 12 weeks; intermediate flight training for 12 to 14 weeks; and approximately eight weeks of operational flight training in combat craft preparatory to joining the Fleet.

Pilots trained on this schedule will log between 300 and 400 hours of flying time--and become some of the toughest pilots the enemy ever will meet.

Synthetic Night Flight Training

A piano-wire staple devised as an installation for the green filter on a training plane windshield has furthered the synthetic night flight training in instrument flying. Corpus Christi N.A.S. perfected the staple.

The same station also reports a "200 percent improvement in instrument flight training since the Red-Green-Night-Training method superseded the practice of flying under the hood".

The R.G.N.T. system involves the use by the student of a pair of red lensed goggles, which permits him to see the instrument panel in the cockpit. The windshield is of green plastic, which filters the remaining vision passed by the red goggles, so the student is unable to see outside the cockpit. The instructor, who wears no red lenses, is able to see through the green filter, as well as to retain normal vision in the cockpit.

Try This Some Time

Not every Naval Aviation Cadet has the benefit of a police escort when enlisting in the service, but this was the experience of a trouble-dodging youngster who dashed into the Naval Aviation Cadet Selection Board in Chicago to be sworn in a few days ago, leaving behind him a trail of fire, a wrecked car and a burning gasoline station.

The youth's adventures started when he was about to be signed up and it was discovered he needed his father's signature on a document. He had to hurry home -- 175 miles away -- and back to meet the following day's deadline for enlisting. When he started back to Chicago there were no train connections available, so he started to drive. After a night of driving, when he was still fifty miles away from enlisting, his car slid on an icy curve, plowed into a gasoline station, knocked down three pumps and set the station on fire.



State police arrived and held the boy until they could locate the owners of the station. After getting in touch with the Selection Board, they became interested in the boy's plight, and interceded on his behalf with the gas company officials.

With the afternoon deadline fast approaching, it was finally decided that the smashup was entirely accidental, and no charges were preferred. The youth hopped into the police car which sped into town. He was sworn in as a happy -- but shaky -- cadet, with two policemen to witness his entry into the service.

Free Gunnery Instructors' Training Manual

A new edition of the Free Gunnery Instructors' Training Manual has just been issued by the Training Division of the Bureau. It is a revision of the manual compiled and used for the first four classes of Free Gunnery Instructors at Naval Air Station, Pensacola, Fla.

The new manual is profusely illustrated with simplified drawings and diagrams which graphically present problems encountered by air gunners. Also there are numerous actual photographs of training equipment and training scenes.

While the manual is simplified in form, it is a technical treatise and embraces all the newest knowledge of free gunnery acquired to date from battle conditions. It is divided into twenty-eight chapters, leading off with "Mathematics Essential to Free Gunnery," and closing with "Synthetic Training Devices," and includes all the essentials necessary for successful training of free gunners.

Sense Pamphlets

Three new pamphlets of the Training Literature Section of the Bureau of Aeronautics are now on the presses and will be ready for distribution on March 15. Seventy-five thousand copies of each pamphlet are being printed and a certain number will be available after regular distribution for training purposes. Direct your requests to BuAer, Training Division. The new titles include:

PARACHUTE SENSE: A general picture of when and how to go over the side,

what happens when you do, and why it happens; it will also give you the corrective procedures for problems arising during the jumping process.

DUNKING SENSE: What to do and how to do it when your plane is forced down over water; how to live -- and eat -- on a raft.

USING YOUR NAVY WINGS: A description of the main points of various types of Navy and Marine Corps flying to which Aviation Cadets may be assigned after completing flight training. If Cadets haven't thought out their own personal preferences this will help them round out their information and make their selection; it will also help them to understand the missions and activities, advantages and purposes of branches of Naval Aviation to which they may be assigned.

Iowa Pre-Flight School

Breaking gymnastics records at this Pre-Flight school seems to be a matter of time instead of endurance in some cases. Two tireless cadets are now engaged in a struggle for the possession of a record that has attracted much interest.

Douglas B. Gordon of Los Angeles has to his credit 800 sit-ups. (with feet unanchored and hands behind head) a new high here. A newcomer, Samuel P. Sturgis of Ann Arbor, Mich., put his rival to shame by doing exactly 1,000 in one "sitting", lasting an hour and a half!

Both cadets think they can better their records, but the length of their gym classes doesn't allow enough time to prove it. They have obtained special permission to miss their next classes to allow enough time to settle the issue.



AIR GUNNERS' TRAINING SYLLABUS

The Bureau has received requests from several sources for a standard and approved Naval Air Gunners' Training Syllabus. To insure standardization, all activities will, in so far as facilities permit, conform to the minimum requirements given herein.

No certificate of satisfactory course completion should be issued until men have demonstrated their knowledge and proficiency in these subjects. The Free Gunnery Instructors Training Manual, now being distributed by the Bureau, will serve as a guide and reference book on all matters contained therein.

I

PRIMARY GUNNERY

| | |
|-----------------------------|-------------|
| Straight Traps | 150 Rounds |
| Skeet (or a Variation of) | 100 Rounds* |
| Machine Gun Mounted Shotgun | 150 Rounds* |

* All shooting will be conducted with a ring (or electric training) sight, after student has completed 50 rounds of straight traps, or earlier at the discretion of the instructor, if he shows satisfactory familiarity with gun. It is not desirable, however, to have different type sights used by men in the same firing group.

II

BASIC THEORY

| | |
|------------------------|---------|
| Construction of Sights | 2 Hours |
| Types of Sights | 2 Hours |
| Sighting Theory | 1 Hour |
| Range Estimation | 2 Hours |
| Speed Estimation | 2 Hours |
| Apparent Speed | 2 Hours |
| Exterior Ballistics | 1 Hour |

III

GROUND SCHOOL PRACTICAL WORK

| | |
|---|----------|
| Machine Guns | |
| (Nomenclature,) .30 Cal.) | 10 Hours |
| (Stripping, Care) .50 Cal.) | 6 Hours |
| (and Cleaning.) | |
| Ammunition Belting, Calibration & Marking | 3 Hours |

| | |
|---|----------|
| Gun Installations | 6 Hours |
| Boresighting | 4 Hours |
| Oxygen | 1 Hour |
| Turrets-Types and Operations | 25 Hours |
| Recognition (Allied & Enemy Aircraft) minimum number of hours necessary to quickly identify 10 principal types, Army, Navy, British, German and Jap Aircraft. | |

IV

SYNTHETIC DEVICES

(To Follow Up the Appropriate Theory Subject)

| | |
|-------------------------|-----------|
| 3-A(2) Trainer (On Gun) | 10 Hours* |
| Range Estimation Device | 5 Hours |
| Speed Estimation Device | 5 Hours |

* Note: The film attacks supplied with this 3-A(2) trainer should be used to illustrate the problems faced by a gunner in Recognition, Range Estimation, and Speed Estimation, after those subjects have been covered on their own training device. Following this "Introduction", the 3-A(2) should be used in its conventional manner as a trainer to develop instinctive lead.

V

PRACTICAL WORK ON MACHINE GUN RANGES

| | |
|--|--------------|
| Malfunction-Range - (Troubleshooting) | 10 Hours |
| Pistol Range (Service or Subcaliber) | |
| 49 rds. | 2 Hours |
| .30 Caliber Battle-Range (Fixed and Moving Target As Available) | 1200 Rounds* |
| .50 Caliber Battle-Range (Fixed and Moving Targets as Available) | 200 Rounds* |

*Both hand hold and turret mounts should be required for battle-range firing.

VI

Familiarity with the subjects covered above shall be considered as minimum requirements. The order in which they are presented will vary with local conditions, but a sound understanding of the training problem will dictate a proper sequence. Preliminary indoctrination should precede any training, in order that the student's



The Navy's Lockheed medium bomber, built on some lines as Lockheed's Indian used successfully by the R.A.F. Navy designation is PBO-1.

mind shall be prepared for what is to follow. No instructor is doing his job if he does not insure that he is being thoroughly understood and that his pace is geared to the pace of the class.

Instruction films should be used whenever they have bearing on the subject being taught. However, they should be carefully placed in the course to completely fulfill their missions.

Synthetic Training Devices For Gunners

According to some observers, the novelty appeal of synthetic training devices has diverted attention from actual shooting with machine guns. No device is yet available that will reproduce the conditions met when a single, or twin machine gun, is fired from a hand-held or turret mount. Training is not complete without plenty of actual firing.

Many synthetic training devices have been developed during the past year and many more will be forthcoming. Due to the crying need for equipment of this nature in the hurriedly expanding Navy

training program, some devices have been manufactured and distributed before they could be thoroughly tested in service. All activities are invited to make comment or criticism of such equipment. Quick judgment should be avoided in condemning any device, as it has been found that certain units and schools attain very satisfactory results from some equipment that is a total loss at others.

The Gunnery Training Section of the Bureau is skeptical about the use of BB air machine guns except as a stimulant for turret manipulation practice. NAS, Alameda, carries out this idea by using a model target that revolves at variable speeds at which a battery of Moeller turrets, equipped with BB guns, are fired. A microphonic pick-up on the target is used to indicate hits but no scoring is recommended for this practice.

War Training Service

With a minimum of fanfare, the CAA's War Training Service is training men for naval aviation, both as future pilots and flight instructors. W.T.S.,

formerly known as C.P.T., now is training approximately 7,000 naval aviation cadets in elementary or secondary flight courses, and about 750 men as flight instructors.

The chief difficulty in utilizing the privately-owned airfields and planes has been lack of standardization. However, Buair and CAA are now coordinating the program. Texts issued by the Bureau, such as Flight Maneuver Sheets and the Patter book, have improved instruction procedure. From now on every man who learns to fly for the Navy will go through W.T.S.

Four courses for flight training are provided as follows:

1) The elementary course which is given to all aviation cadets after they have completed their work in Flight Preparatory Schools. It consists of a minimum of 240 hours of ground school instruction and 35 hours of dual and solo flying. Upon completion the top-ranking students go immediately to pre-flight schools.

2) The secondary course, which provides an additional 40 hours of flying for the primary student who needs more time before going to pre-flight.

3) Cross-country, which provides 35 to 40 hours of flight time, an adaptation of the airlines' co-pilot courses. This course is a part of C.P.T.'s old training program and may be discontinued except as part of the W.T.S. flight instructor's training.

4) The flight instructors' course, a concentrated 24-week course incorporating the secondary and cross-country training, as well as flight instruction.

The first three courses cover eight weeks each. In elementary training light planes are used, such as Taylorcrafts, Cubs, Aeroncas, and Luscombs. For secondary training, planes of about 200 h.p. are used, including Wacos, Fairchilds and Ryans. Each ship is carefully checked for airworthiness, and only certain types are used for acrobatic flight training. In certain phases of cross-country flying the

minimum requirements for equipment include flaps, controllable pitch or constant speed propellers, two-way radio and a complete instrument panel.

The student in elementary training is taught turns, climbs, circle shots, pylons, glides and emergency landing.

Secondary training consists of acrobatics, small field procedure and precision flying. The maneuvers are not greatly different from those in earlier W.T.S. training. The triangular method for precision landing is not used, having been superseded by the circular pattern with an "S" turn for simulated carrier landings.

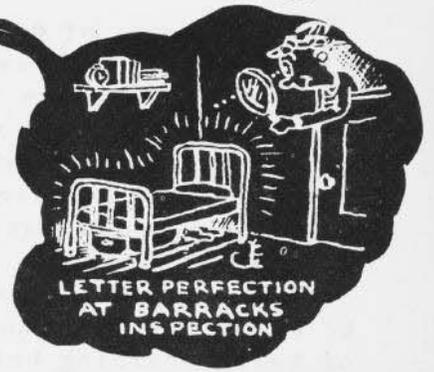
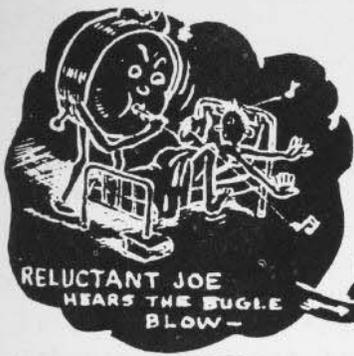
W.T.S. not only is helping make better flyers, but saving precious time. This training weeds out most of the men not qualified for flying. Statistics show that there were three times more "wash outs" among untrained students in military flight schools, than among C.P.T. graduates. While one-third of the "green" students were eliminated, only 11.8% of the men who had C.P.T. training were weeded out.

The six-month course for flight instructors will release about 1500 Navy flyers a year for combat duty. W.T.S. will shortly increase its enrollment in the Flight Instructors' School to 900. The present requirements for this course, which leads to an A-V(T) designation are 50 solo hours, or completion of the W.T.S. elementary training. The requirements soon will be changed to a minimum of 100 solo hours.

Chapel Hill Pre-Flight

A group of 120 officers who will become instructors in the various pre-flight schools, have just completed indoctrination at Chapel Hill (S.C.) Naval Pre-Flight School. Twenty of the graduates will be retained at Chapel Hill for assignment there.

In addition to physical conditioning, the one-month course included instruction in naval customs and traditions, military drill, and general training.





Training Films



Jam Handy Trainers

Proper use of the 3A-2 trainers will greatly increase the results attained. It appears that some activities consider this useful device a complete training vehicle in itself and turn the students loose on it with no planned pattern or logical sequence of steps.

It is recommended that this trainer be used to augment the several stages of basic training before the student is actually put on the gun to fire at the images of attacking planes. Classes that are undergoing training in *recognition*, *range estimation*, and *speed estimation*, should be given a brief period at the end of each class in which they can *observe* various attacks on the screens. For instance, upon completion of 45 minutes of recognition drill it would be desirable to have the students see an actual 3A-2 film attack in order to tie in their extremely artificial class room recognition training with the actual recognition problem that faces a gunner. The same for range and speed estimation. The training devices now used for these subjects are a far cry from the real thing. So are film attacks. but they are more realistic than anything else we have to offer in ground training at the present time. Following these steps, which consist of *observation* only, the student is better prepared for actual firing runs in the 3A-2 room and a normal procedure should be followed.

Why We Fight, Part II

"The Nazis Strike" is the second in the "Why We Fight" series, produced by Major Frank Capra, for the Army Signal Corps, with the cooperation of the Research Council of the Academy of Motion Picture Arts and Sciences.

Making use of newsreel shots and combat film from the Spanish War through the attack on Poland, the producer has turned out an effective and inspiring document through expert editing and convincing presentation.

"The Nazis Strike" MA 1719-b, is a stirring reminder of the Nazi methods of four years ago, and affords an excellent way to refresh our memories.

160 Cameramen, One Day

This is the most photographed war in history. Film is being shot on every front. Newsreels give the public glimpses of action. Secret and confidential footage is studied by military and naval experts, and new methods and strategy developed.

One day 160 Russian cameramen set out to record one day of war in Russia. Not all of them came back, but the film they shot has been put together in two reels of actual war pictures that show and tell something of Russia's battles against the Nazis. The camera's eye gets blurry sometimes when rifles and artillery and planes get in their licks, so actual combat photography doesn't always give us a close enough view of the violent destruction of our enemies. However, "One Day of War in Russia" does reveal the liquidation of a few Nazis close enough to the camera to make you feel pretty good about it all.

Some of the most reassuring mayhem is photographed in and around Russian tanks, and gives an indication of why things are going the way they are on the Eastern Front. Released through the March of Time, MC-2208, "One Day of War in Russia" is a good film to include on a morale program and may be ordered through Training Films.

Additional action pictures from the Russian front are combined with combat scenes of aircraft carrier operations to make up a one reel short that is also recommended as an optional subject for a morale program. It is MC-2205 "A Carrier Fights for Life and Russia Fights Back."

Approved Gunners Training Activities

The Bureau has recently drawn up a list of approved schools and units whose certificate of successful course completion will be acceptable in qualifying for the gunners sleeve badges which are expected to be announced at an early date. No criticism of those activities which are not listed is intended. The training of Naval Air Gunners must be standardized and courses must conform to this standard before they are approved. Attention is invited to the requirement that only men who have successfully completed the course, or who have passed an examination and practical test which calls for a degree of knowledge equivalent to that received in a complete course, shall be considered as fully qualified in the ground training requirements. The authorization for

wearing gunners sleeve badges should be jealously guarded to insure that it represents a real standard.

As an example of unbalanced training, a rated enlisted man recently questioned by a Bureau officer announced he had completed gunners training at one of our air stations. Questioning revealed that practically all of the time devoted to such training had been spent on the shotgun range, with the result that little else had been learned about the gunner's problem. The Bureau has always recognized the value of shotgun shooting in the basic stages but it must be understood that there is a great deal more to gunners training than breaking clay pigeons. The man questioned had only a hazy idea of how to estimate lead on an airplane target and very little knowledge concerning a gunner's real duties.



"Fodder for the Tail-Gunner"! Ordnance-men belt .30 caliber bullets, feed them into loader. Torpedo and dive-bomber pilots also fire the .30 machine guns.

SHORE STATIONS

Bermuda

This station has been watching the work of its communications department. Recognizing that much of its personnel is made up from reserves who are in the service only for the duration, that department has conducted a school in radio which is aimed at two goals: the greenest striker is to know as much about radio and aircraft communications as a first-class radioman; each man is to gain practical experience which will be of aid to him in civilian life. The first goal is being achieved through lectures and operating; the second goal through the establishment of a workshop. In the shop, men have learned to tear down and rebuild all kinds of sets. They have learned to trouble-shoot in privately owned sets; have built their own, and have learned how to install them and rig antennae. Almost the entire communications personnel clambered over the roof of the BOQ, installing radios when that building was placed into commission. The experience gained in the workshop has been invaluable to them and the slogan "Join the Navy and learn a trade" is taking on new meaning.

For many a moon, Naval Air Station Bermuda has been waiting the arrival of a promised band, but when it failed to materialize, the Station formed one of its own by culling it from talent already aboard. After many nights of practice, the orchestra, known locally as the Naval Aires, felt it was ready to go and its debut was to be at a smoker for the enlisted personnel. Then suddenly and unexpectedly the long-awaited band, 25 pieces strong, arrived. Now the Station has its choice of music and the cry is going up for a battle of music between the two.

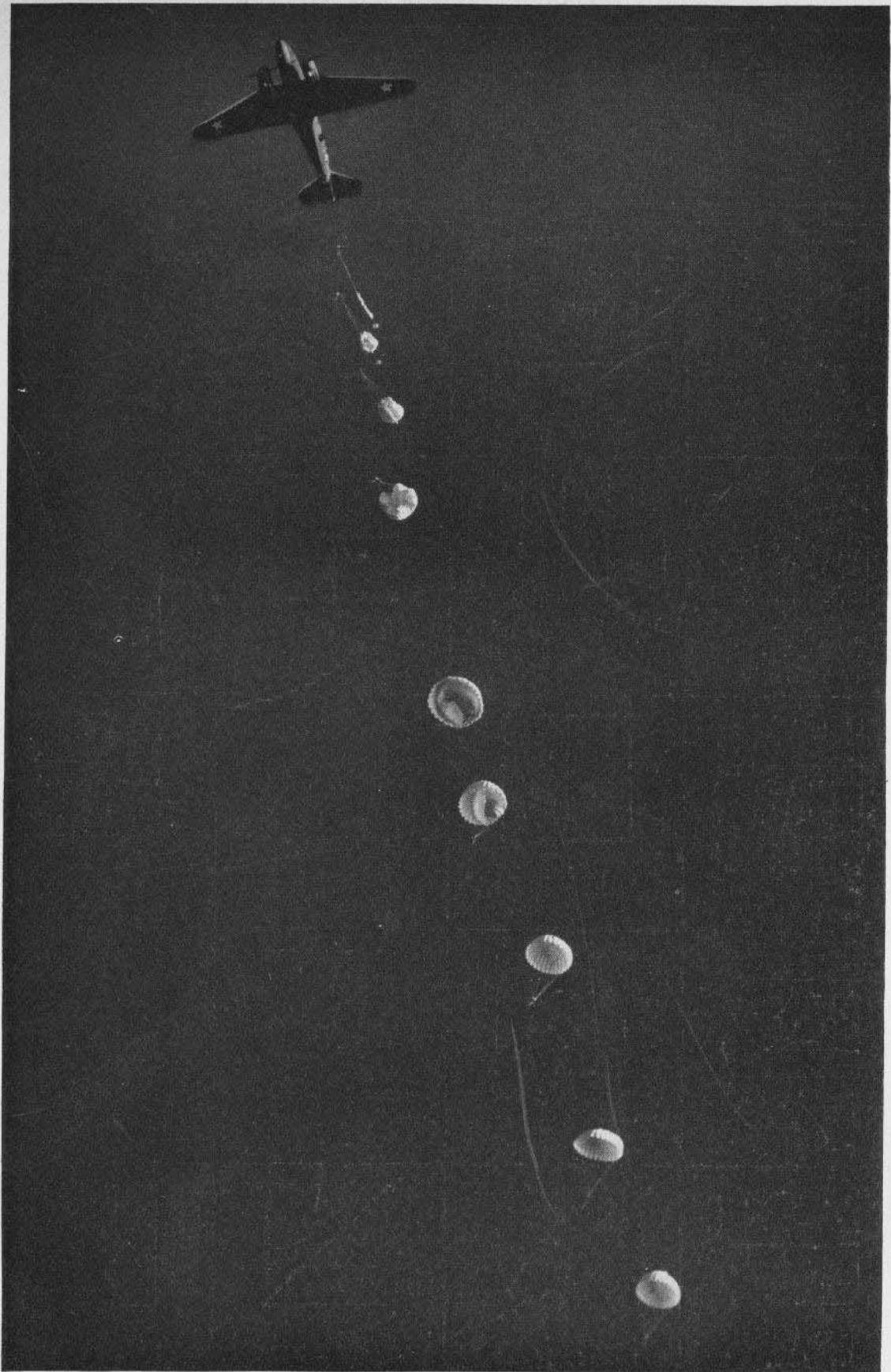
For the past month, a drive for the sale of war bonds and stamps has been conducted here. In that short time, the sum of \$84,000 has been pledged

by officers and men to be paid by allotments. Before the drive is over, Naval Air Station Bermuda may hit the \$100,000 mark, a sum that would be hard to match anywhere!

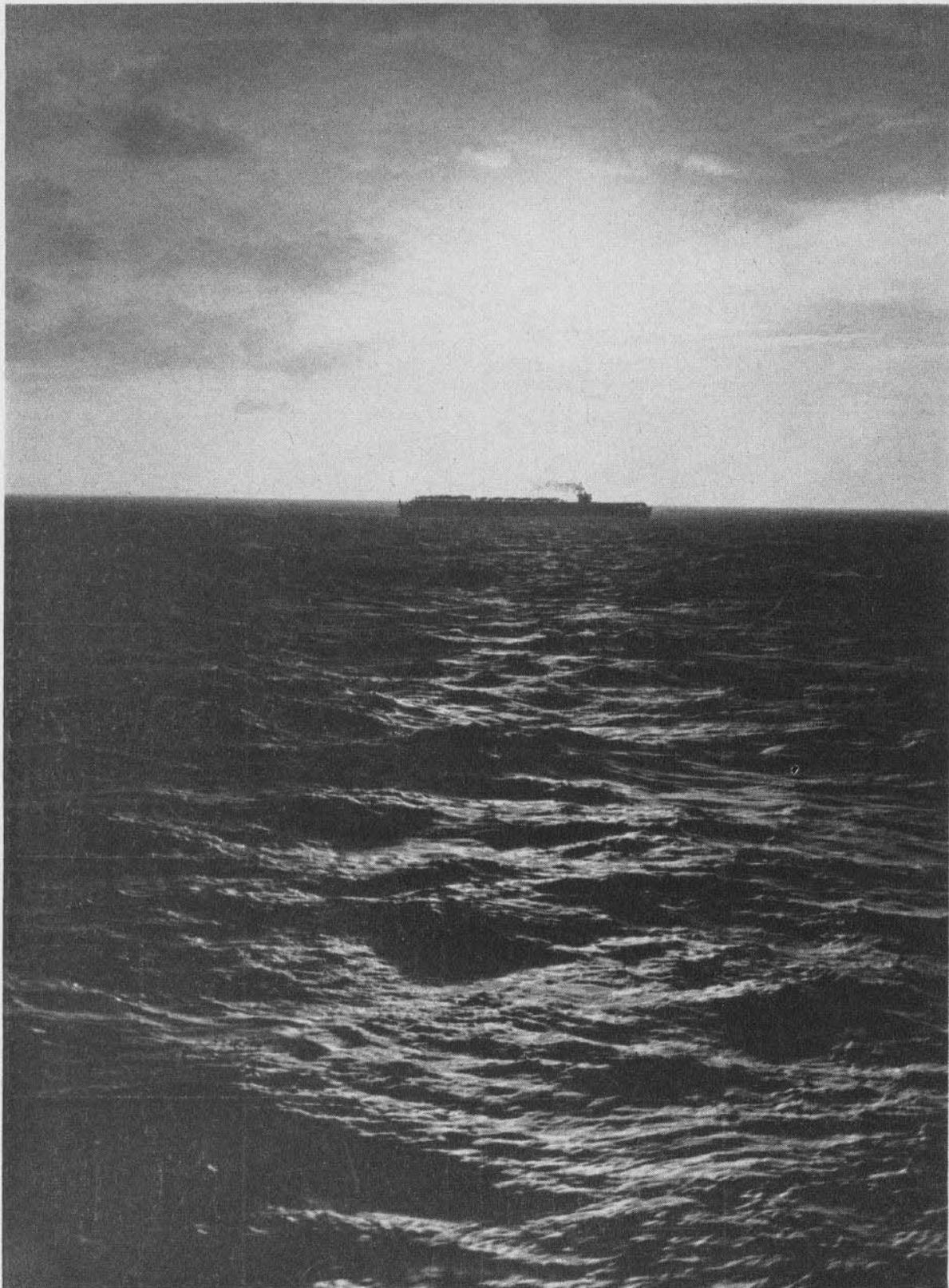
So successful has been our own drive for the sale of war bonds that this station lent the British a hand recently in the drive for the sale of British War Bonds. Bluejackets, Marines and Soldiers marched through the streets of Hamilton past the reviewing stand. These spectators who might have heard that American sailors did not excel at marching received a pleasant surprise at the exhibition given by the enlisted men from this station. The personnel showed the results of the two or three afternoons a week that are spent in drilling by officers and men alike. To complete the parade, a squadron of OS2U's swept overhead, flying in tight formation.

There have been other instances of the co-operation that exists between the British and American armed forces in Bermuda. This island is unique in that it is one of the few places in the world where the British and Americans bump into each other in their daily routines and have overlapping control. Normally it would not be surprising to find that feet have been stepped on or feelings irritated, no matter how well the two forces get along. But not so here. We have used the drydock at the British dock-yard. The British have made free-use of our moorings for PBSs. British planes have provided transportation for some of our personnel enroute to the states. We have made trucks available to the British when they had need of them. We have repaired their planes and straightened out their propellers in our A.&R. shop. They have let us use some of their harbor craft in salvage work.

It has been tit-for-tat and the lend-lease plan has been well carried out, here in Bermuda.



Paramarines at New River, N. C.



Ready for Action

Boston

A recent statistical investigation by the Cadet Advisory Officer to study the attrition rate of recent classes compared to earlier ones shows that among causes of failure, the percentage remains almost constant. In the period from which the statistics were compiled, half of the flights were Chapel Hill graduates and the other half were not. Generally speaking, any difference between the two groups or any marked trends have not been indicated. It does seem, however, to indicate that High School graduates with Pre Flight Training are on a par with the college men who made up the earlier group and entered flight training direct from civil life.

In the interest of the rationed oil conservation program we have completed the conversion of six boilers to coal, fed by stokers. By this, it is estimated that there will be an annual saving of 350,000 gallons of fuel oil.

St. Louis, Mo.

Ground School for cadets has accelerated its entire program under the new syllabus "D", which calls for compressing the course to eight weeks. In order to acquire as much flexibility as possible in the school and to be ready to meet any emergencies, each member of the Ground School Staff is qualifying himself for at least one additional subject.

At the Kansas City Conference held last August it was understood that each training station soon would receive revised texts and the courses together with visual aids and other synthetic devices designed to assist in instruction. To date these have not been received and it is hoped that they will be forthcoming.

BUREAU COMMENT: Lieut. Carmody has been assigned to the staff of the Primary Training Command and is determining the devices which the Command

desires to have used at each base. Devices will be sent when a request for them is received.

The NP-1 planes have again been pressed into service here, after being laid up because of lack of propellers. They are used for syllabus formation flying.

We have divided each flight wing into two groups with flights for Group 2 starting 45 minutes after Group 1. This has been found to give a marked increase in efficiency: (1) outlying fields have a more uniform number of planes instead of being crowded for 45 minutes and then idle for 45 minutes; (2) a line crew can operate with about half the number of men which facilitates messing, liberty, etc.; (3) drawing of parachutes and flight gear has been speeded up; (4) gassing time has been cut down so that 15 minutes is ample time for transfers between flights; (5) pylons and stunt areas are used more evenly all day, instead of being alternately crowded and idle; and (6) solo students have not been lost so frequently due to the fact that planes are nearly always in view.

Elizabeth City, N.C.

Because of dim-out and black-out regulations prevailing throughout this area, the Commandant of the Fifth Naval District has ordered that white hats be substituted for blue caps for all enlisted personnel ashore.

Primary reason is that the white hats are much more easily seen and possibility of accident is thereby reduced. In cases where personnel is going out of the district on leave, the blue cap may be worn.

I DIDN'T KNOW IT
WAS LOADED



Corpus Christi

This station recently received several sets of the new equipment for synthetic night flying and instrument training. While it has aided the training program a great deal, some improvements seem desirable.

Use a lighter color green for the sheets to cover the windshield, if possible, as it is now possible on dull days to fly into clouds which cannot be seen by the safety pilot who is not wearing goggles. A lighter green also would allow this equipment to be used on patrol flights with the safety pilot still having enough vision to spot ships and surfaced submarines.

Provide an even lighter colored goggle for simulated night flying. The present type, while suitable on bright days, permits no vision at all for the pilot under instruction on dark days.

BUREAU COMMENT. Special Devices is doing further research on red and green filters for night flying in day time. Lighter green filters are being prepared and two shades of red goggles are contemplated.

At the risk of repetition, this squadron wishes again to mention the usefulness of a large chart of operating areas painted on hangar decks, as a means of instructing pilots and students in the course-rules and the use of the various training areas. These charts are permanent and seem to arouse more interest among pilots than the usual course-rule plates hung on the wall.

Anacostia

Due to the shortage of gasoline and money, it is necessary to exert every effort to conserve both. The present average consumption for SNJ planes is about 37 gallons per hour. This is considered to be approximately 70 percent in excess of the amount required, especially considering that operations consist largely of point to point

cruising. A savings of 25,000 gallons of 91 octane fuel, or \$2,750 per month, is believed possible in operations of SNJ's at this station.

It is requested that the following suggestions for economical cruising of SNJ's be followed: (reference Bureau of Aeronautics Technical Note 14-40, Cruising Performance of Airplanes).

- (a) A cruising power combination of 24.8" hg and 1600 rpm's be used. This should give a cruising speed true of about 149.5 mph at 5,000 feet; 21.2 gallons per hour.
- (b) Where manual mixture control governs, caution should be taken to avoid too lean a mixture. Since the fuel air ratio indicators have been removed from most SNJ-3's and 4's, it is desirable to lean out the mixture until a smooth running of the engine without an increase of cylinder head temperature is obtained. Detonation and rough running should be avoided.

The following is a recommended cruising power schedule:

| Altitude | RPM | Man. Pressure | Speed MPH |
|----------|------|---------------|-----------|
| 1000 | 1600 | 27. " | 145 |
| 2000 | 1600 | 26.5" | 146 |
| 3000 | 1600 | 25.8" | 147 |
| 4000 | 1600 | 25.3" | 148 |
| 5000 | 1600 | 24.8" | 149.5 |
| 6000 | 1600 | 24.4" | 151 |
| 7000 | 1600 | 23.8" | 152.5 |

The above schedule is figured in a carburetor air mixture temperature of 0° to 3°C., 45% power, 21.2 gallons consumption cruising 180°C., Cylinder head temperature.

USMCAS, Eagle Mt. Lake, Texas

Marine Glider Group 71

Fleet Marine Force

Representatives from this Group recently had the opportunity of witnessing and participating in flight tests of a Bristol seaplane glider, the first animal of its kind. Subsequent production models will be equipped with landing gear to make them amphibious.

The glider was flown from a heavy sea by using a PBY5-A tug.

Flying gliders in tow under instrument condition has been conceded by many to be a near impossibility. Marine and naval officers who are conducting glider experiments fortunately did not know this, and have done it anyhow, with success. This fact greatly increases the potential scope of the of the glider as a weapon. A method of snatching a glider from the ground by a tow plane in flight has been used with success, but refinements of the system are still to be made.

Key West, Fla.

Considerable trouble was experienced with the original hangar door stops breaking loose and allowing the heavy

hangar doors to hit the back of the hangar, thereby cracking the concrete and denting the doors. A device incorporating six feet of eight inch "I" beam per door-bay and one Chevrolet front wheel coil spring has been designed by C.M.M. Edward M. Means and A.E. Hackbarth SF 3/c at this station. This door stop has been in use for two months and has proven very satisfactory. It has prevented further damage to the hangar and has been instrumental in causing the personnel to open the doors in the proper manner. A door that is opened faster than a normal walk will spring back ten or twelve feet and have to be reopened.

BUREAU COMMENT: The door stop described is believed to have some merit. Recommend that the description be forwarded to BuDocks for study.



"Eyes of the Fleet". Curtiss observation planes are readied for catapulting.



VER ISS DER LUFTWAFFE ?

Where's The Luftwaffe?

Here is an interesting item recently broadcast by News Commentator Duke Shoop. He said his information came from American military observers recently returned from the Russian front.

One of the big mysteries of the war is the whereabouts of the once powerful German air force. The Russians and our own military observers are inclined to the opinion that Hitler is not sending large numbers of planes against the enemy because he does not have them. But Hitler may possibly be holding a powerful air force in reserve for spring offensives. It is possible that Hitler realizes that he has lost the war and is saving every possible plane for the defense of his homeland.

Another possible reason is that Hitler is saving his air force for an all-out attempt to take the oil fields of the Caucasus in the spring. In line with the opinion now held by some military men that the size of the Luftwaffe

was exaggerated from the beginning is the testimony of captured German pilots. They have told Russian and British intelligence officials in recent weeks that Hitler failed to carry through with his aerial blitz of London in September 1940 because he did not have the necessary reserves of bombers and crews.

Pensacola

"It's done with mirrors" is more than a catch phrase when applied to the aerial mapping trainer in use at the Naval School of Photography. Actually, mirrors are used in the laboratory training unit where student photographers "fly" their first flight lines before actually going aloft with aerial mapping camera and view finder.

The student's initial mapping "hon" is made in an ingenious trainer which includes an airplane fuselage, a mapping camera, a view finder, and intervalometer, and the regular pilot-photographer communication system. And beneath the "mapping plane" is a long run of Florida landscape which slides by the view finder just as if the plane were following a flight line at regular mapping elevation.

And here's where the mirrors come into the picture -- mirrors and a movie projector showing film made on an actual mapping flight. As the student in the cockpit peers into his view finder, the instructor is able to show him how to make the corrections required by adjusting camera and view finder by "crabbing" the plane, and by correcting the course. Once the student has learned the technique he can, through his "Gosport" system, give flight directions to the "pilot"-instructor; and the instructor, by means of his controls, can handle the "plane" in relation to the moving terrain in just such a way as to simulate exactly the real flight conditions.

The mapping trainer, as a preliminary check-out, has proven invaluable. After a group lecture and a brief period of

individual instruction the student photographer can confidently go aloft and, in the air, master the technique of carrying out his duties on a mapping mission.

Los Alamitos

On January 19 flying was secured nearly all morning for a reason perhaps unknown on Midwest and Eastern Stations. Nearby citrus fruit grower burned smudge pots during the night to protect their crops from frost, and created a low-lying smoke screen that obscured the field and landmarks as effectively as the heaviest ground fog.

Two additional outlying fields have been completed, giving the station a total of five now in use.

Sufficient electrical transmission facilities have been completed to permit use of the course-indicating beacon on the tower. The use of this equipment has eliminated considerable confusion in the local flight pattern.

Glenview, Ill.

An auxiliary field to handle increased training will be established at Arlington Heights, Ill. Construction work has begun on the former outlying field, which is one of several used.

This station has been designated as a major parachute repair base, with authority to make all necessary repairs and replacements of parts on parachutes. This work includes replacing panels in canopies, installing shroud lines, replacing harnesses, etc. Full equipment and material for the operation of such a base is being installed in the modern parachute loft.

Believed to be of real interest are heater plate devices the engineering department developed for more efficient operation of the N3N planes. They were installed in an effort to obtain greater heat rise in the carburetor with the preheater control turned on to prevent formation of carburetor ice. It was

found that the addition of the heater plate to the collector ring nearly doubled the temperature rise obtained by use of a carburetor preheater. The plates are approximately 14 inches in diameter and are made of 18 gauge galvanized metal.

BUREAU COMMENT

The heater plate is assumed to be fitted to the nose of the engine to blank off the entrance of cold air between the collector and nose, thus increasing the heat inducted through the preheater air entrance. It appears similar to a nose plate devised by NAS, Minneapolis.

Banana River, Florida

On January 25th this station was visited by the Most Reverend Francis J. Spellman D. D., military delegate of the Apostolic Sea to the armed forces of the United States and Archbishop of the Roman Catholic Archdiocese of New York. Accompanying him on his inspection of the station was the Senior Catholic Chaplain of the Seventh Naval District, Commander Maurice J. Sheeby.

A Marine detachment arrived here recently and has taken over many of the posts formerly held by the Civilian Guard. Already many changes have been made for better security of the station.

Whidbey Island, Wash.

One of our operations officers, Ensign Donald M. Anderson, recently was awarded the Distinguished Flying Cross for his outstanding service as the captain of a patrol plane in the Aleutian Islands last June. The presentation was made on the seaplane parking apron at the Oak Harbor base. A parade of all hands followed.

The Naval Air Gunners Training Unit now is conducting a class on Sundays for officers attached to the station.

Naval Air Station, San Diego Installation Of Training Turrets

Two Martin 250 CH-2 hydraulic turrets were received for training purposes at the Free Machine Gun Ranges at Border Field. These turrets were in boxes and in all respects ready to install in aircraft.

In view of the ammunition available for training use it was necessary to modify these turrets to take the caliber .30 B.A.M.G. instead of the caliber .50 B.A.M.G.

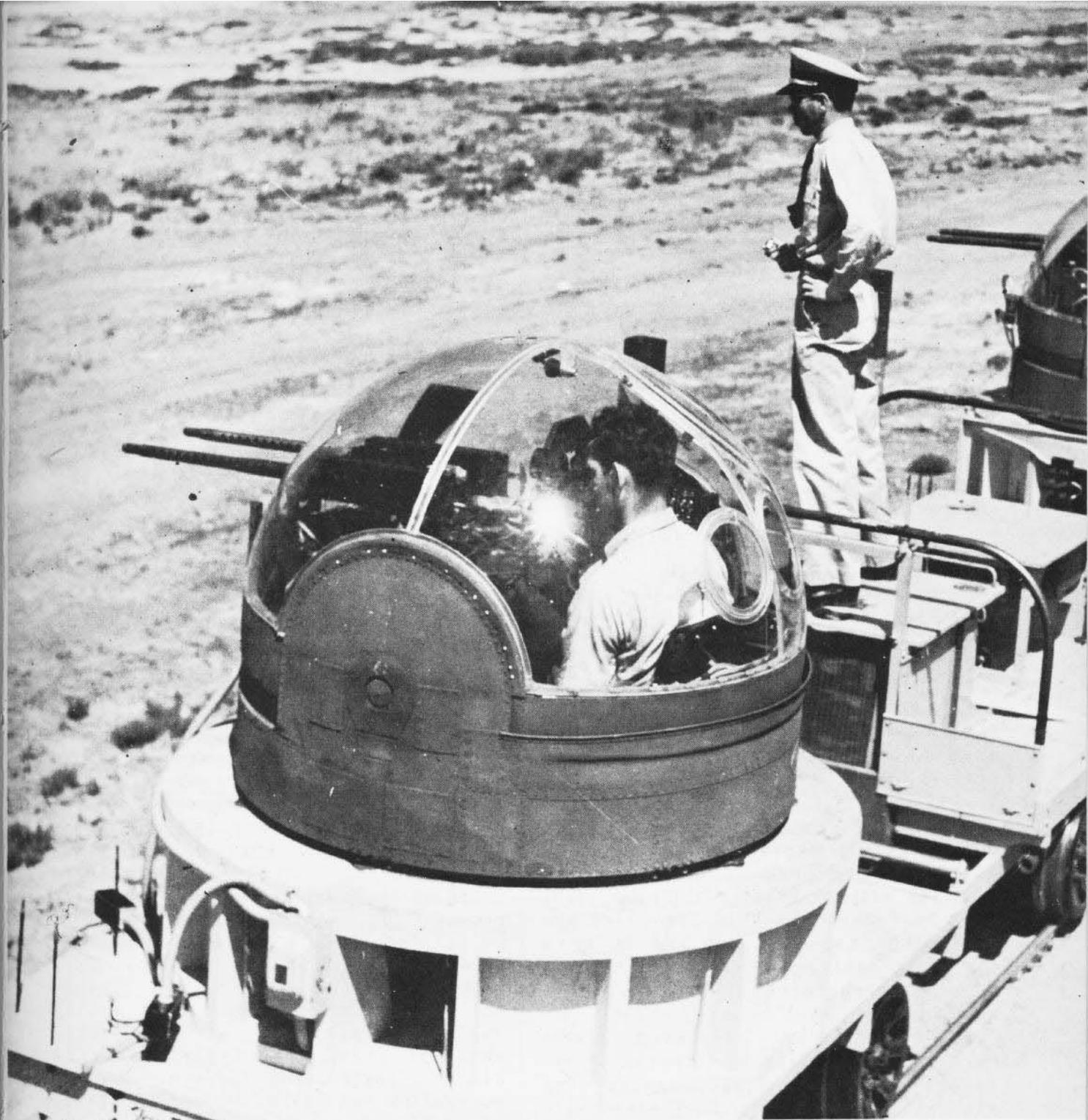
The general appearances may be noted from the photographs. First a wood mounting for the turret was constructed and securely bolted to a standard Fairmont trailer. The turret was then secured to this wood ring.

The camera bracket was removed and in its place a steel plate 1/8" x 16" attached. Holes in this plate were drilled to take the after mounting post assembly for the caliber .30 guns. Machined two sleeve type bushings to fit, one on each side of trunnion, between the trunnion block and the caliber .50 yoke. This yoke is part of the assembly for the caliber .50 guns. A 7/16" steel bolt of proper length to pass through the yoke, sleeve and trunnion block of both guns was used. This arrangement serves as a solid forward mount for both guns. Boresighting is accomplished by using the after mounting post. The caliber .50 ammunition boosters were removed and in their places the standard caliber .30 one hundred round capacity free gun magazines fitted.

Border Field is about twenty miles from the Naval Air Station and with very limited repair facilities on the spot. Installations, therefore, were in keeping with the locality. The electrical wiring connections were made to two 24 volt batteries, wired in series to furnish power. The power plant consists of a 26 volt D. C. motor generator with the reverse current cut

out wired to the batteries. The batteries take the initial load and then the motor generator carries it. It also charges the batteries. The generators have a maximum output of 45 amps. The turret requires 25 amps. on a steady load. The batteries used are 24 volts, 68 amps. on a 5 hour test. The batteries on their own will give about 6 hours of turret operation on the range without a re-charge. Experience shows that spare sets of these batteries are required if interruptions in firing are to be eliminated from run down batteries. Three leads from the common plug were run to the outside of the turret and connected to three switches. These three switches are connected to leads from bus line which in turn is controlled by another switch. Thus when the fourth switch is off, the turret cannot operate. Advantage is taken of this switch to give an important safety factor controlled by the turret instructor from the outside.

It is desirable to restrict the azimuth train of the turret on these ranges. To do this, azimuth stops of the turret were located at the points desired and two holes drilled in the track to match the holes in the stop. The stop was then mounted on the track and the safety angles checked. The next step was to limit the turret in elevation. This limiting of the elevation of the turret while not entirely desirable from a training standpoint was, however, necessary to allow greater freedom of movement of air and sea-borne traffic. The essential part of the elevation safety stop is the limiting switch mounted on the front of the turret and capable of up and down travel on a vertical track of 1" angle iron. The track is set at the desired degree of elevation and when the limiting switch reaches its maximum travel the electrical contacts in the main power line are opened. This feature in the interest of safety requires, whenever the contacts are opened, that the gunner use the manual pump in the turret to pump the turret down until



Martin Bow Turret Unit. The men inside the turret are over six feet tall. A Mark IX reflector sight is used.

the contacts are closed. He may then resume the electrical operation of the turret. The photograph gives a view of this installation. The limiting switch is mounted by means of the hoisting bolt on the face of the turret. Its track is secured by the replacement of

the roller bolts with longer bolts and a weather stripping screw with a longer screw. The wedge shaped patches on plexiglass shown in the photograph are heavy cardboard glued inside to protect the plexiglass from scratches when using caliber .30 magazines

Air Intermediate Training Command

Organization of the Naval Air Intermediate Training Command is rapidly being perfected to handle the prospective full load of flight and ground training. Standardization of ground and flight syllabi together with all processes of the actual operations connected therewith has received major consideration as a most important function of this training command. An Air Intermediate Training Standardization Board covering all phases of the activities of both Training Centers was organized shortly after the establishment of this Command and the third and most beneficial meeting was held at Pensacola on January 1, 1943.

Atlanta, Ga.

There is definitely "something new under the sun"-- or, literally speaking, "in the soup". In this instance, it's the mental approach to "flying the gauges" as expounded by the Instrument Flight Instructors' School in Atlanta, Ga.

Full panel instrument flying is no innovation to aviation, as the pilots on commercial airlines and some military pilots have been thoroughly familiar with the system for some time. They have been quick to recognize and put into practice any aid to this highly specialized science which might insure increased safety of personnel, passengers, and equipment.

The "needle, ball, airspeed" system of instrument flying as formerly taught to military pilots, is a system that might be said to be "out of step" with the advancements made in the construction and performance of service type aircraft. The theory now being taught and utilized with markedly successful results is to take advantage of any information contributed by each available instrument, the resultant being an analysis and co-ordination of the component parts. Simply stated, it means that the mental picture of the aircraft in relation to the earth is a

composite of all the indications presented by the full panel. Contrary to popular belief, this does not mean that the pilot in any way resembles a sparrow having lunch on a busy thoroughfare, or that his head has taken on some of the notions popularized by St. Vitus. With the proper amount of instruction and practice, the pilot can "get the picture" instantly without focusing his attention to any single indication.

Instrument flying is fundamentally the same as contact flying, the differentiating factor being that instead of using natural references a pilot has only instruments with which to achieve this end. A pilot must concentrate, however, on flying the airplane and not the instruments within it. To do this, the instrument panel should reflect a picture of the attitude of the plane rather than mere indications of when to operate certain controls to get desired instrument readings. This picture can be obtained more easily and accurately in instrument conditions by constantly checking the full panel in a systematic manner. Care should be exercised not to concentrate on any one particular instrument for any great length of time, as this merely invites the "gremlins" to conduct a few experiments of their own with the rest of the panel.

In teaching pilots to fly the full panel, it is found that those who have been accustomed to the "1-2-3- System" often experience difficulty in making themselves use the instruments with which they are unfamiliar. In this case the instrument receiving overconcentration can either be turned off or the face covered over with masking tape. For example, if a pilot constantly watches the turn indicator and allows the other instruments to go without checking them, mask off the face.

It then becomes necessary to keep the plane in the desired attitude by use of the instruments minus the turn indicator. This can be easily accomplished, since by using the gyro hori-

zon along with the other instruments, a more accurate turn can be made than with the turn indicator; similarly, the plane can be kept level to maintain a straight course. When the pilot has mastered control of the plane without this instrument, it can again be added to the panel. Any other instrument or combination of instruments can likewise be deleted either separately or together, and it will be found that the plane can be safely flown with a number of different combinations. This knowledge is extremely important, since in theaters of action where service aircraft are coming into daily contact with the enemy, hits which cause relatively little damage to our well-armed craft, may destroy some instrument necessary for the safe return to carrier or base. The pilot who has been well schooled in instrument interpretation and well taught to visualize attitude by use of all or any combination of indications, has an ace in the hole that can very conceivably

enable him to "stay in the game".

We have not mentioned the human factor, which, in the estimation of IFIS, is the crowning achievement of the "attitude theory". Pilot fatigue, as statistics will substantiate, has been a large contributing factor in a great percentage of the accident cases coming to the attention of the Bureau of Aeronautics. Formerly, an hour or two of "blind flying" sapped up the reserve energy of a pilot, leaving him in the worst possible physical and mental condition upon reaching his destination, just when he needed to be "on the ball" for his let-down procedure and instrument approach. The attitude system, as pioneered by the major airlines and adapted to military aviation by IFIS, can be said to enable a pilot to experience complete relaxation when he picks up his "mike" and reports:

"OVER THE STATION AT 2,000 FEET -- REQUEST CLEARANCE FOR A STANDARD INSTRUMENT APPROACH."



ST. PETER,
HERE I COME



Dilbert's military bearing wouldn't frighten even the Italians

Better Sight and Hearing

Changes in airplane design to aid hearing and vision of combat fliers were recommended by the Institute of Aeronautical Sciences at its recent meeting in New York. The recommendations were made largely as a result of a paper "Vision, Hearing and Aeronautical Design", which was read to the Institute by Commander Leon D. Carson, head of Medical Research Section of the Bureau of Aeronautics.

Things that impede the vision of the gunner, it was pointed out, include the distance from the gunner's sighting panel, which cuts his area of visibility from the needed 90 degrees down to 28 degrees, and the lattice-work metal supports in the windows which constantly interrupt his line of vision in following a moving target. Lighting of the instrument panel also came in for criticism:

"Inside the cockpit we usually observe a confusing multicentricity of instruments and lack of suitable grouping of essential flying instruments according to a well planned pattern for visual function is largely dependent upon maintenance of dark-adaptation of the eye, instrument panels in general are subject to the following serious faults:

"1. There is too large an illuminated area. Instruments which are referred to infrequently are constantly illuminated.

"2. The color of the transmitter or reflected light from these instruments is usually not of the spectral band least disturbing to night vision.

"3. Intensity as well as total area of illumination is considerably too high."

Airsickness of both crew and passengers is partly blamed by Commander Carson on mechanically impeded visibility. Increased engine power increases the noises to which the flier is

subjected, and this noise decreases efficiency. Besides being very unpleasant, it interferes with communications and in some cases, induces deafness. It was recommended that designers keep the noise factor in mind.

Spanish Acrostic

The man who makes up acrostics at Corpus Christi N.A.S. had a problem on his hands when the Latin American Naval Officers came to take the United States Navy primary and intermediate flight training. Trying to translate a perfectly good American acrostic into Spanish or Portuguese so it would sound like a word was a problem.

A "G" on the inspection sheet in English refers to a German plane. But the Spanish speaking cadets do not use the letter "G" to denote "German". The word for them is *Aleman*, and the acrostic maker couldn't substitute an "A" for a "G" and make it sound right.

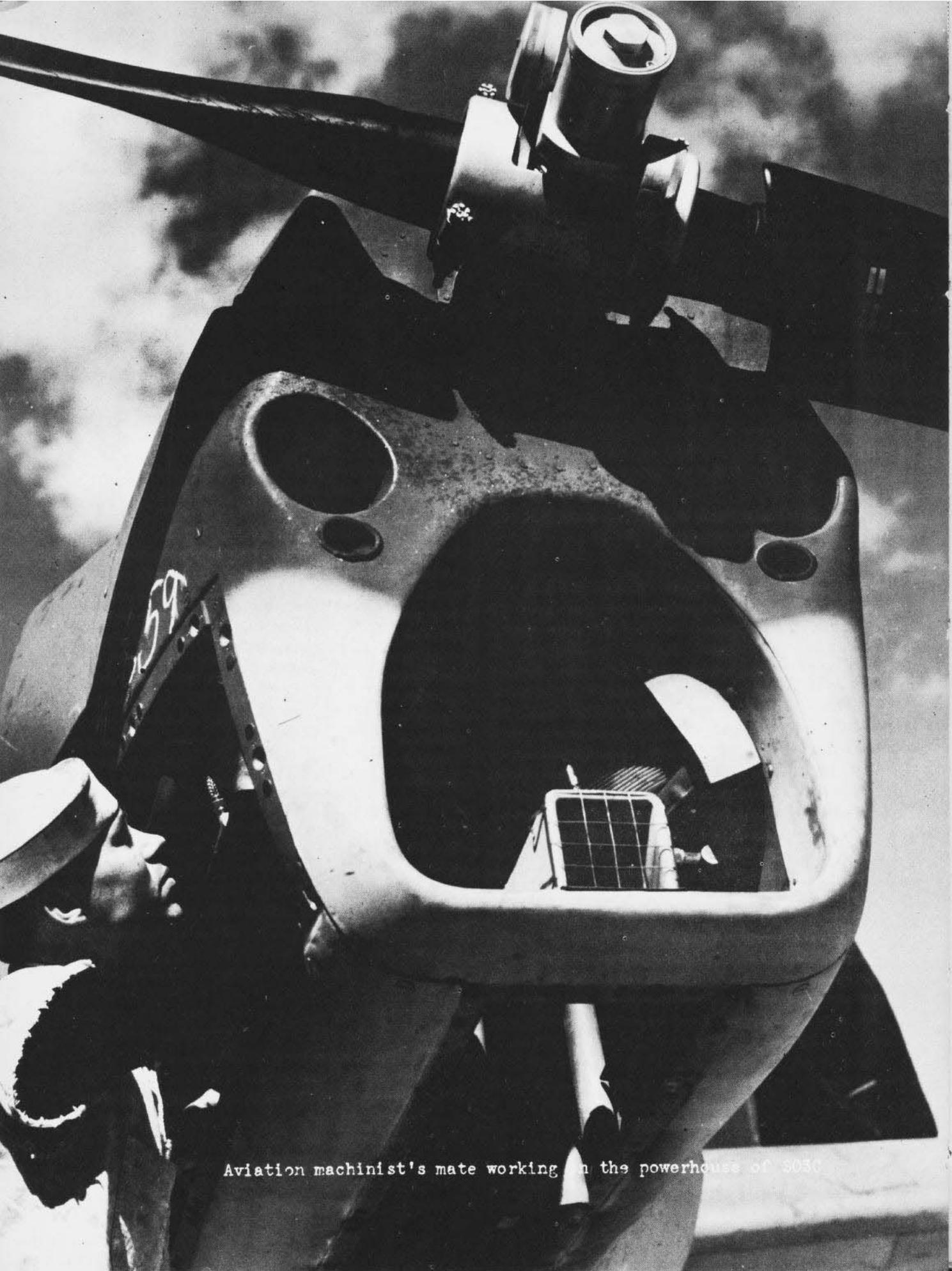
However, one word that worked fairly well was discovered and the acrostic editor hastened to inform NEWSLETTER. The word is "Wefto", which is the identification symbol for Wings, Engine, Fuselage, Tail, and Other peculiarities. Following is his chart:

| | | |
|------------------|---|------------------|
| <u>W</u> ings | - | <u>A</u> las |
| <u>E</u> ngine | - | <u>M</u> aquina |
| <u>F</u> uselage | - | <u>F</u> uselage |
| <u>T</u> ail | - | <u>C</u> ola |
| <u>O</u> ther | - | <u>O</u> tras |

He maintains that "Amfco" is as good an acrostic as "Wefto".

Parent Morale High

The following letter was received at Anacostia, D. C. by the parents of Aviation Cadet Griffith Rutherford Paul of Charleston, who was killed in the first fatal accident here in eighteen months. On January 20, while practicing pylon turns, Cadet Paul went into a spin apparently due to loss of flying speed and crashed. The sincere



Aviation machinist's mate working in the powerhouse of B-29

expression of patriotism shown in his parents' letter demonstrates their high morale, and is a tribute to all parents with sons and daughters in the service of their country.

Charleston, S. C.

Officers, Cadets and Enlisted Men
Naval Reserve Aviation Base
Anacostia

While we know that words are powerless to express to you the gratitude which Mrs. Paul and I feel for the comfort of your floral tribute at the time of the loss of our son, Fuzzy, we want you to know that we deeply appreciate both the flowers and your sending Aviation Cadet Ralph M. Jones as an escort.

Every expression that my son had ever made about your air base made us realize that he loved his school and was devoted to its service. Both he and we looked forward to his continuing his flying with the Navy straight on through to victory. We deeply regret that he could not have lived to realize this hope and expectation.

Aviation Cadet Ralph Jones performed his official duties here with such correctness and efficiency as to reflect credit on the service, and personally his deep sympathy, evidenced graciously during his stay in our home, have endeared you all to us. When he presented Our Country's Flag to Mrs. Paul and saluted her after taps were blown, it was the most affecting and touching moment of our lives and enshrined the Anacostia Air Base in our hearts.

We are sure that in the convictions of a just and righteous cause, and with the high courage of the finest traditions of the Navy, you will continue to carry on to Victory.

May God bless and keep you all.

Faithfully yours,
J. Robertson Paul,

Airplane Models From Latin America

South American high school students now are building airplane models to aid in identification of friendly and enemy aircraft. The work is being sponsored by office of Co-ordinator of Inter-American affairs, and the

models are made from plans developed by the Bureau of Aeronautics to guide United States High school students. Plans and instruction matter was translated into Spanish and Portuguese, and the printing of this matter was arranged by the Special Devices section.

The plans are for fifty types of aircraft, including friendly and enemy planes, and approximately 300,000 sets of such plans already have been delivered to American consulates and legations. Finished models, built to the standard scale of one inch to six feet, are turned over to the Ministry of Aviation of the country in which they are constructed. These models are delivered to the military forces for use in aircraft recognition training.

A.V.G. Hero Had Navy Training

Maj. David L. (Tex) Hill, an AVG "Flying Tiger" ace, who brought word to Washington recently of two new Japanese fighter plane in use, began his colorful flying career with the Navy. He said the new types---identified only as the 97-2 and the I-45---are only two among several which are reported coming into combat service.

Major Hill described the 97-2 as a single-engine, single-seat fighter with a speed of about 280 mph. or better under combat conditions at an altitude of between 13,000 and 18,000 feet. It has much better diving characteristics than the Zero, indicating sturdier construction. Some of these planes mount machine guns of varying calibers and others are armed with 20 mm. cannon. The plane resembles the German Me-109 in appearance.

The I-45 plane is similar in design to the Me-110. Its two engines are air cooled. These planes have been used since the start of the war on reconnaissance missions, but last summer they made their appearance as fighter craft. The plane is described as being "very fast" and possessing high altitude characteristics---35,000 feet and better. Major Hill said it is unlikely

the Japs have turbosuperchargers, but suggested the I-45 might be equipped with mechanical superchargers of the two stage blower type.

The 27-year old, campaign ribbon bedecked flyer was commissioned an ensign after graduating from Pensacola on Nov. 20, 1939. He served aboard the Saratoga, Ranger and Yorktown before he joined the "Flying Tigers" in June, 1941. He was commanding officer of a fighter squadron when he left China. His record shows he has participated in more than 100 aerial combats, has 16 confirmed victories and 20 "probables." He has both the United States and British Distinguished Flying Crosses and three Chinese decorations.

Japs Worrying About Naval Air Force

A recent radio broadcast from Tokyo intended for Japanese consumption and picked up in the United States indicates the Japs are worried about the strength of their naval aviation. The broadcaster said: "In order to drastically increase the fighting strength of the (Japanese) naval air force, the combined naval air force corps and the combined naval training air force corps were created effective Feb. 1. The Navy ministry announced the first commander of the corps will be Vice Adm. Michitaro Tokita, formerly commander of the 11th combined naval air force, chief-of-staff, and Capt. Asazo Fukuchi, former chief-of-staff of this same combined naval air force."



CLOSING DATES
for next issues of
News Letter

MAR. 5th for MAR. 15th issue
MAR. 20th for APR. 1st issue

The New Guinea Special

American bombing missions over the Japanese-held base of Lae, in New Guinea, are so regular that they are now known as *The Milk Run* (morning), *The Blue Plate Special* (noon), and *Dancer's Delight* (evening).



Campaign Medals Authorized

Campaign ribbons now are available to forces serving in three war theaters. Members of the naval and land forces, including the Women's Army Auxiliary Corps, who serve outside the continental limits of the United States are eligible for medals according to the region in which they serve. Although manufacture of the medals themselves has been postponed indefinitely to conserve metals needed in war production, the appropriate service ribbon which accompanies each medal will be issued to individuals after their arrival in a theater of operations under competent orders.

The service ribbons are 1-3/8 inches long by 1/2 inch wide. Each ribbon is designed to symbolize the area it represents. Land and naval

personnel who serve in the "American theater" outside the continental United States will be awarded a blue service ribbon with narrow red, white, and blue stripes in the center representing the colors of the United States, and a combination of narrow black and white stripes representing the colors of Germany, and narrow red and white stripes representing the colors of Japan, near each end.

The "European-African-Middle Eastern Theater" service ribbon is green, representing the green fields of Europe, with narrow stripes of United States colors in the center flanked by narrow strips of the Italian colors of green, white and red near the left end, and by narrow stripes of the German colors of black and white near the right end. The borders of the right and left ends of the ribbon are brown, representing the sands of the desert.

The service ribbon for the "Asiatic-Pacific Theater" campaign medal is orange, with narrow stripes of the United States colors in the center, flanked by narrow stripes of the Japanese colors of red and white near each end.

Mexico Completing Bases

The New York Times said recently that General Francisco L. Urquizo, under minister of national defense, has announced that twenty new air bases are being completed in Mexico. They will be equipped with lighting facilities, radio communications, air raid detectors and all-weather runways adequate for heavy bombers. Two squadrons of American bombers are expected to be delivered soon to the Mexican Air Force, bringing to ten the total of Mexico's air regiments.

Pensacola Flying Record

The Naval Air Training Center, Pensacola, has eclipsed all its own previous records for flying by establishing a new all-time high of 485,451.2 flying hours during the first six months of the 1943 fiscal year ending

December 31, 1942. This figure exceeds the flying time for the previous six months (415,398.8 hours) by 16.8% and the flying time for the corresponding period of 1941 (361,519.7 hours) by 34.3%.

Bombing Mission

The following was written on the African desert by Sgt. Hugh Brody, of the RAAF, while waiting to take off on a bombing assault on an Axis objective. Sgt. Brody did not return from his mission.

Almighty and All-Present Power,
Short is the prayer I make to Thee.
I do not ask in the battle hour
For any shield to cover me.

The vast unalterable way
From which the stars do not depart
May not be turned aside to stay
The bullet flying to my heart.

I ask no help to strike my foe.
I seek no petty victory here.
The enemy I hate
I know to Thee is also dear.

But this I pray
Be at my side
When death is drawing through the sky.
Almighty God who also died
Teach me the way that I should die.

Aluminum Output Is Up

Aluminum production in the United States during 1942 is reported to be greater than the entire output in Europe and eight times more than in Japan. Roy A. Hunt, president of the Aluminum Company of America, said one sheet mill alone is turning out monthly one and one-half times as much high strength alloy sheet as the entire nation used in a whole year before the war.

I DIDN'T KNOW IT
WAS LOADED





Last Will and Testament of ADOLF HITLER.

(Reprinted from Anacostia Naval Air Station News)

Dated Very soon

I, ADOLPH HITLER, being of unsound mind and misery and considering the possibility of a fatal accident known as assassination, declare this to be my last (you hope, you hope) will and testament.

TO RUSSIA, I leave the Russian Winter where my brave Aryan sailors froze their knots off, just when we expected to land Deep in the Heart of Moscow.

TO FRANCE, I leave all the beautiful Mademoiselles in occupied Paris. I NEVER was the one for girls. WHOOPS ! ! !

TO NORWAY, I leave my advice for any potential Quisling. To wit, "there's no Social Security for the wages of sin."

TO ITALY, I leave Japan, the land of the Rising SCUM, and Vice Versa. It's a question, who'll get the worst of it.

TO ENGLAND, I leave the original manuscript of MEIN KAMPF, which their R.A.F. spoiled. I had written a different finish, but their fliers got me in the end.

TO POLAND, I leave a 16x10 gold-framed photograph of myself to hang in their public schools to scare the hell out of any kid who might THINK along Nazi lines.

TO AMERICA, I leave Walter Winchell, who always said, "To HEIL with Hitler." I know he'll be very busy on my funeral day so he'd better not come--business before pleasure.

TO MUSSOLINI, I leave my Chaplin mustache, which he is to make into a toupe for his ivory dome.

TO WINSTON CHURCHILL, I leave a box of matches. I never yet saw his cigars lit. Besides, who'll need matches where I'm going?

TO FRANKLIN D. ROOSEVELT, I leave my apology for interrupting his fishing, but he got even.

TO COUNT CIANO, son-in-law of Mussolini, I leave the Victoria Cross for bringing down in ONE day, 41 bombers and 72 fighters - all ITALIAN.

TO GOEBELS AND GOERING, I leave 30 million marks (Two dollars).

TO GENERAL MAC ARTHUR, I leave money for my tombstone with this epitaph:

EENY MEENEY MINEY MO
HERE LIES HITLER BY THE TOE
UNDERNEATH HE SEEMS TO SAY
"MY MASTER WAS THE U.S.A."

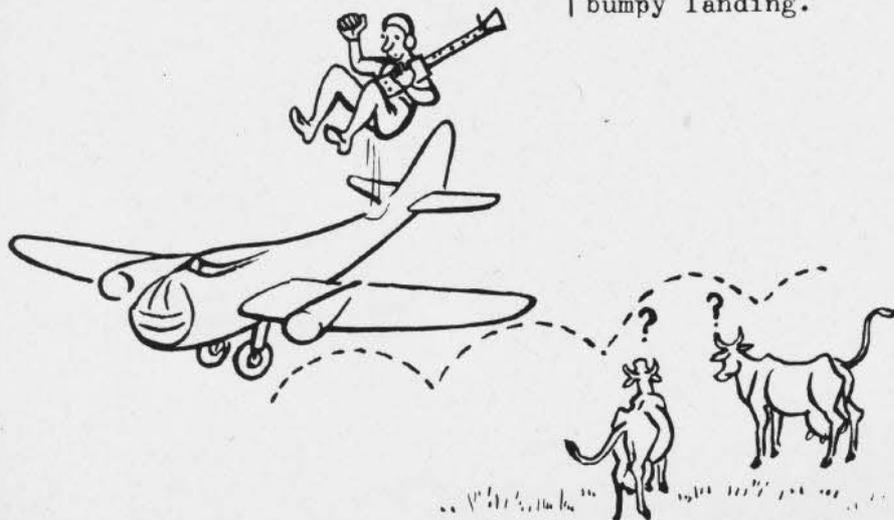
AND TO THE ENTIRE WORLD, I JUST LEAVE,
AND THEY WILL THANK GOD!! /s/ ADOLPH

Memorandum To Station Papers

Rear Admiral Elliott Buckmaster, Chief of Naval Air Primary Training, has issued a directive of instructions covering publication of station papers. After reviewing a number of such papers he finds that many are excellent but a certain number fail in their mission and purpose.

Point of chief concern is the practice, inside and outside the service, of portraying the enlisted man as a rather low character, either in cartoons, jokes or stories:

"Our large Navy has drawn heavily upon the civilian population for young men from fine American homes, schools and colleges, and they are only admitted to the service after passing rigid requirements, moral, physical and educational. They are busy serving in all parts of the world - on ship and ashore - as technical experts of a very high order. With the advent of the WAVES, WAACS and the SPARS in the nation's military personnel, there is all the more reason why the high standards of moral decency and good taste should be the hallmark of our station papers."



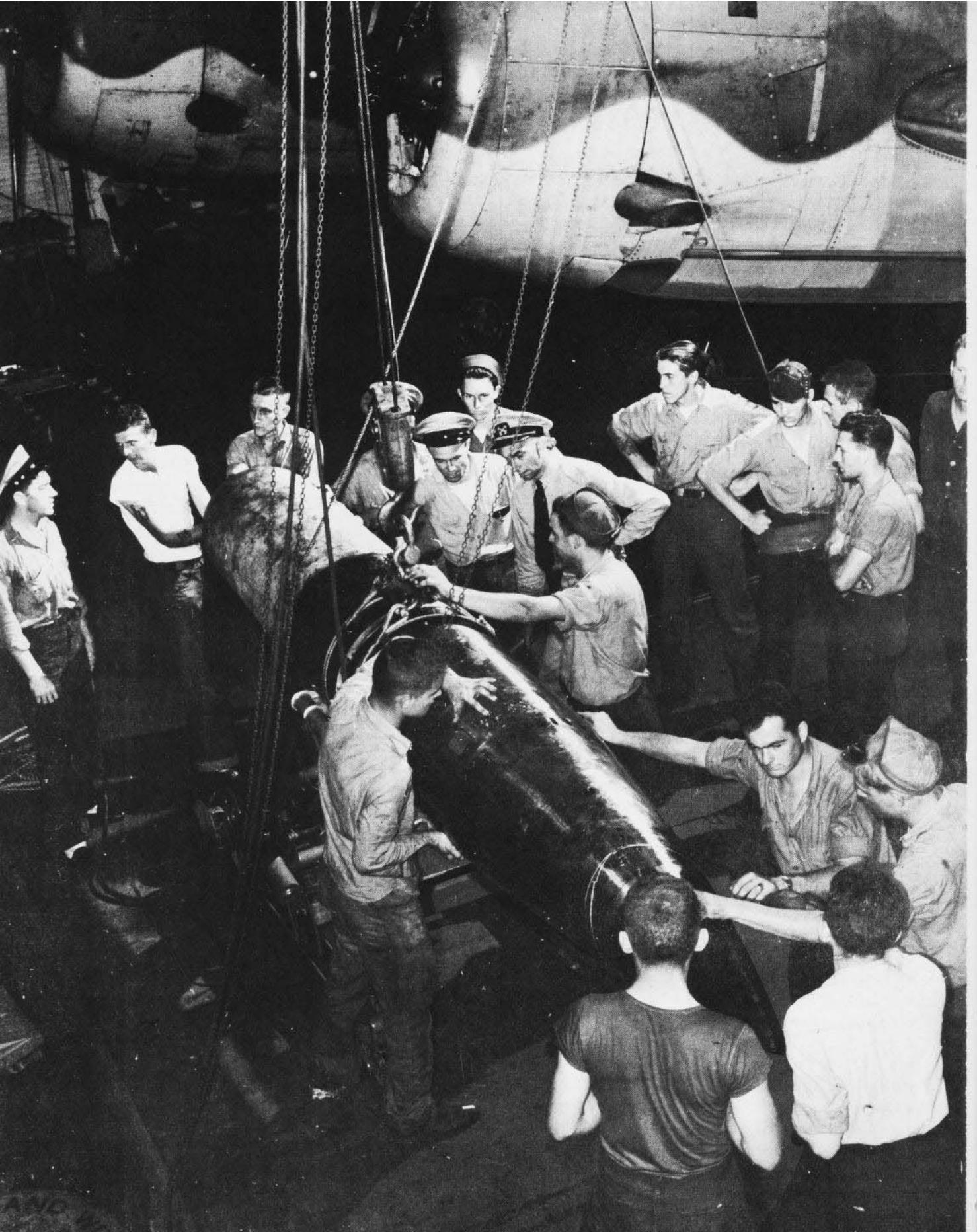
Tail Gunner's Tale

Of all the freak airplane landings, they still are reprinting the story of the rear gunner in a British Whitley Bomber, early in the war. This yarn, reported in the public press at the time, now has become a part of the official report of the RAF, and who are you to doubt an official report?

According to the story, a group of Whitleys were returning from a pamphlet-dropping mission over Dusseldorf, in bad weather and a temperature at 8000 feet of minus 57 degrees. Icing conditions became so bad that the formation broke up and began dropping in France.

The rear gunner on one of the bombers figured it was a mighty rough emergency field that his plane dropped into, but he shrugged his shoulders and wiggled forward from the tail. When he reached the cabin, he discovered the crew was gone. The plane had landed itself without a pilot. Later he learned that because of a fire, the pilot had ordered everybody to jump, and due to faulty inter-communication he had not heard the order.

Crew members who bailed out landed in a cow pasture, were chased by bulls, suffered sprained ankles and all sorts of minor injuries, while the tail gunner only suffered the indignity of a bumpy landing.



"Tinfish for Tojo". Ordnance men aboard a carrier crane a torpedo into position, prepare to fasten it to belly of a Grumman torpedo bomber.

TECHNICALLY SPEAKING

Astrograph Saves Time

The Astrograph is a navigational instrument designed to eliminate all those computations while in flight which are ordinarily required in reducing sextant observations to charted fixes or position lines. When it is available, no calculations or tables are required in flight and a fix can be obtained in about one minute after the sextant observations have been made. Its operation requires little knowledge of celestial navigation and its use can be explained in about one hour. Its precision comes well within that of the average observation.

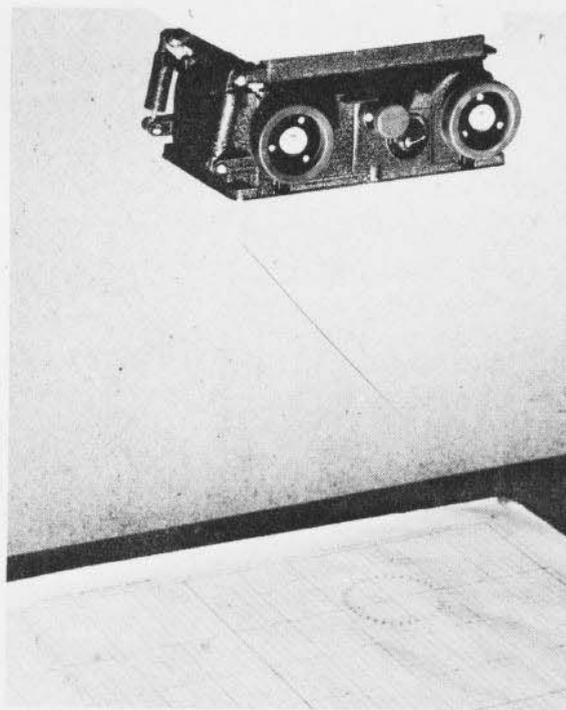
In operation the Astrograph is installed at a definite height above the chart table and projects a film record of the equal altitude curves of two pre-selected stars on to standard plotting charts of the region of operation. The charts are Mercator projections based on a scale of 1:1,000,000 at a latitude of 56° . A sextant observation of the altitude of either one of the two stars will, when the Astrograph is set for the date and time of the observation, permit the selection by inspection of a corresponding line of position on the chart. Proper adjustment for the G. C. T. of the observation is made by means of a time scale on the film which is lined up with an appropriate meridian on the plotting chart. The center of each set of the projected curves is coincident with the sub-stellar point of the star. The equal altitude curves are 1° apart with 10' graduations between to assist in estimating the location of the position lines. An observation of the altitude of the star will, after adjusting for the new time and allowing for the intervening displacements between observations, permit a second line of position--and thus a fix--to be located directly on the chart. The

"Q" correction to Polaris is also recorded on the film and will afford--for an observation of Polaris--a third line fix.

Films for the Astrograph now available number 7 in all and cover the following latitude bands:

| DEGREES OF LATITUDE | | F.S.S.C. NUMBER |
|----------------------|---------------|-----------------|
| 41 1/2 N to 23 | N | 88-F-800 |
| 55 | N to 32 1/2 N | 88-F-805 |
| 60 | N to 41 | 88-F-810 |
| 68 1/2 N to 54 1/2 N | N | 88-F-820 |
| 23 1/2 N to 8 | N | 88-F-870 |
| 7 1/2 S to 37 | S | 88-F-900 |
| 28 | S to 45 | 88-F-920 |

These films may be requisitioned. The Astrograph charts and graticule sheets are distributed by the Hydrographic Office and requests for them should be sent direct to that office.



Because of favorable service tests reports received from West Coast activities, 125 Astrographs, FSSC No. 88-A-650, have been procured and are being shipped to the Com-

mander Fleet Air West Coast for distribution at his discretion among VPB airplanes under his command. Provisions have already been made in the majority of VPB airplanes for the installation of these instruments.

Link Ejection Chutes

The initial gunnery tests conducted by the Aircraft Armament Unit, with the Model F4F-4 airplane revealed that numerous gun stoppages occurred due to improper functioning of the link ejection chutes. At that time, this bureau initiated procurement of a form fitting type of link chute for the mid and outboard guns which was developed and tested by the Aircraft Armament Unit. One thousand sets of these chutes (Bell Aircraft Part Nos. 03-042-814 R.H. and 03-042-911 L.H.) are now being delivered. Allocation is 600 to Aviation Supply Annex, Oakland, California, and 400 to Aviation Supply Annex, Norfolk, Virginia.

An F4F-4 service change will not be issued at this time for the installation of the above chutes due to lack of additional specific reports as to the malfunctioning of the original link chutes. Service units may draw sets of the form-fitting link chutes if desired.

Binocular Cases

The bureau has been supplying an "Ever-ready" or "Race track" type of binocular case with the 7 x 50 binoculars (F.S.S.C. No. 88-B-320) and with the 10 x 50 binoculars (F.S.S.C. No. 88-B-345). These cases are distinguished by a mid-section of accordion-like pleats which provide sufficient flexibility to enable the observer to adjust the binoculars while they are still within the case. When the cover of the case is removed, the bottom of the case is also released and the observer can then employ the binoculars with the case attached. The design necessitates two straps to keep the binoculars securely within the open case and, if the straps are not carefully fastened, the bin-

oculars may fall out. The existence of this hazard has been confirmed from time to time by various reports and the bureau has become increasingly skeptical of the serviceability of this type of case. Comments from the service on the desirability of abandoning this type of case and changing to the conventional type of case would be appreciated.

Mobile Navigation Trainer

A glorified milk-wagon, the Hagner Mobile Navigation Trainer, has been turned over to Naval Air Training Center at Corpus Christi by the inventor, F. H. Hagner. As delivered, the trainer had a navigation table, some seats, a celestial observer's dome, and two modified unusable Mark IV drift sights. The drift sights looked on the ground, and, of course, there was no drift.

Tests were made on the highways of South Texas, and a great number of changes were made. A drift mechanism was manufactured in the squadron work shops which would give the students artificial drift controlled by the Instructor. A mock instrument panel was installed, to be controlled by the Instructor. A stand for the astro-compass was placed under the celestial navigator's dome. A complete radio direction finder unit was installed, and a magnetic compass for the instructor. The student wears a gunner's safety belt, while taking celestial sights.

Although this trainer was called "Rube Goldberg's Folly" by all the disbelievers, it proved to be a very successful navigation trainer. All the problems of navigation can be duplicated in the trainer. Most of the skeptics are amazed to find that the trainer does not have to run sideways, and that the turns in the road do not matter. The problem of controlling the ground-speed to make it match the airspeed and wind given the student is a difficult one. The students use a chart made to a scale four times the actual distances on the

Spotted and secured to the flight deck, a TBF revs engines. This is daily routine on a carrier. Some day, some where, this plane must be ready for instant take-off.



road map.

They may report ground-speeds in the vicinity of 100 knots. The driver divides the ground-speed by four, and this is the speed he makes good by watching the speedometer on the trainer.

When the weather is bad the trainer is better than an airplane. The trainer can be navigated entirely by radio bearings, and dead reckoning. For the first two or three navigation problems, the students learn more in the trainer than they learn in the air. The principle reason for this

is that the trainer can be stopped to settle the arguments. Corpus Christi reports that the amount and variety of training that can be given in this trainer is considerable, providing practice in most phases of navigation with relatively small expense.

BUREAU COMMENT: Noted with interest. With respect to Hagner trainer, it is believed that the Bendix carts now in production will be as good or better than the Hagner trainer, and will avoid the use of critical automotive equipment, rubber and gasoline.

Reflector Sight Adapter

A shock-proof mount which will enable the use of a Mark 9 illuminated reflector sight on Browning Machine guns is now in production and is being distributed by the Special Devices Section, Training Division.

The adapter permits replacement of light bulbs without dismantling the sight or removing it from the gun. Each unit is provided with a new housing that will be easily interchangeable with the present bulb housing. One side of the metal housing has been cut to permit the removal of the light bulb. This opening is closed by a rotating door.

The official designation of the new adapter is: Device 3-A-5 (c). The

designation of the equipment it replaces is Device 3-A-5(a). All future models of the Mark 9 training sight will be equipped with the shock-proof mounting.

In requisitioning these mounts, all activities using the Mark 9 SD-1 illuminated reflector training sights are requested to inform Training Division, Special Devices as to the number of Mark 9 sights in use and the number of adapters required.

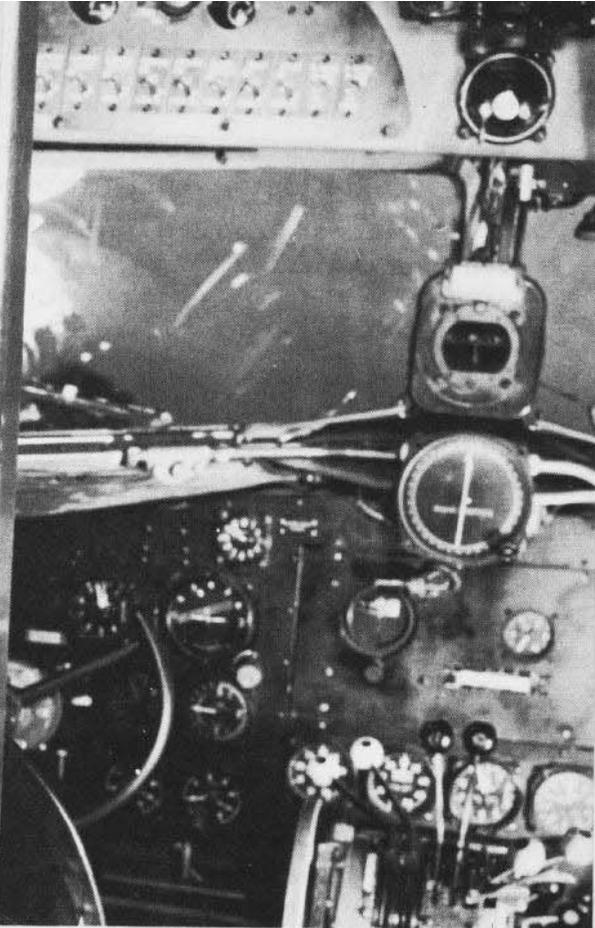
New Sight Installation

The Mk.9 sight has been installed in the turret of the Model TBF-1 airplane on a fixed bracket which is contractor installed. Current issues of Model TBF-1 airplanes are equipped with this

Instructions on Turret Manipulation.

Note air Gun and Mark IX Sight.





Pistol Pyrotechnic Stowage

Air Transport Squadron VR-1 detachment at NAS, Miami, Fla., sent this picture to the Bureau, illustrating a method of stowing the pistol pyrotechnic AN-M8 and signals in an R4D airplane. The manufacturer of this plane now is making provisions for the installation of this signal device in newer types of planes. All of the equipment is fastened to the bulkhead behind the pilot's cabin.

sight. Some concern was felt for the turret gunner during catapulting but tests run at the Naval Aircraft Factory with two different gunners occupying the turret proved that the installation is safe for the personnel providing the following precautions are heeded:

(a) The turret is trained aft.

(b) The hinged armor plate is placed in the up position and the normal knees-up combat position is assumed.

(c) Both arms are folded across the legs between the knees and hips, and the forehead is rested against the arms.

(d) The body is moved slightly to the gunner's right (portside of turret) in order to clear the sight.

(e) If the legs are not stiffened for the launching the gunner moves aft in the seat and, although the movement is not violent, it may be reduced by stiffening the legs.

Sight Mounting

The Aircraft Free Gunnery Training Unit at the Naval Air Station, Kaneohe Bay, T. H. has developed a method of mounting the Mark 9 illuminated sight in the Martin Model 250 CE-3A gun turrets to replace the Army Type N-3A or N-6 sights normally delivered with these

turrets. This type of turret is at present installed in some PB4Y-1 airplanes and is in use at various Free Gunnery Training Centers. Activities desiring information concerning this method of mounting the Mark 9 sight should request this information directly from the Naval Air Station, Kaneohe Bay, or the Naval Air Station, Pearl Harbor.

How To Prevent Air Speed Indicator Difficulties

As a result of reports from operators, it was found that air-speed indicator troubles were frequently caused by moisture accumulations in the pitot static lines.

More attention should be given to draining the pitot static lines through use of the drain tees provided for the purpose.

In dry weather these lines should be drained every 20 hours or possibly at greater intervals if experience justifies such extension. However, in high altitude flying, and during operation in damp air, rain, or other icy conditions, the lines should be drained more frequently since moisture accumulations would, of course, be more prevalent at such times.

How To Prevent Damage To Recessed Tread

It has been reported that recessed head screws used to attach various cover plates and stress plates are so badly burred that in many cases they must be drilled out to remove the plates. This is highly undesirable, because of the difficulty involved in obtaining replacement screws and the wasted time spent in drilling. Maintenance personnel must use greater care in tightening these screws to prevent such waste.

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Sign on a truck: "This truck stops for all R.R. crossings, redheads and brunettes--and will back up one-half a mile for a blonde."

New Radar Bulletin

A PB5-5 recently crashed while proceeding in a fog during the interval that its radar was secured for the purpose of transmitting a report. Attention of all PB5-5 and PB5-5A operating units is directed to PB5-5 service changes Nos. 69 and 71, and PB5-5A service change No. 67. These changes permit simultaneous use of both radio and radar equipment. Attention also is directed to the latest issue of the Airborne Radar Maintenance Bulletin concerning filters for the complete suppression of interference between radar and communications equipment in this type airplane.

TO PREVENT DETERIORATION OF TIRES

Service experience has shown that greases, oil, etc, have a very damaging effect on tires.

When personnel apply grease and oil to the various parts of the landing gear, care should be taken to prevent spilling or dripping such material on the tires.

When airplanes stand on the field, greases and oils generally collect on the tires as a result of drippings from the engine section, landing gear, etc. This coating should be cleaned off immediately with Stoddard Solvent Federal Specification PS-661a or some other noninjurious solvent.

Airship Pelorus Compass Available

A number of observer-type pelorus compasses, F.S.S.C. No. 88-P-320, are being procured for use in Naval airships. These instruments will be available for all ZP squadrons on the basis of one per airship plus one spare per squadron of six ships or less and two spares for each squadron of more than six ships. A small quantity of similar instruments has been previously distributed to some airship squadrons. Squadrons not so equipped should requisition them. Deliveries are expected in March 1943.



As seen, "mech" to the uninitiated, a large, curved, dark object is being worked on by two men in a dark, textured environment. The object is being held up by a man in the foreground, while another man is visible in the background, looking up at the object. The scene is set against a bright, textured background, possibly a sky or a wall.

AIR WARFARE DIARY

Jan. 29- During the early afternoon a force of MARAUDERS attacked enemy positions on Kolombangara Island, 190 nautical miles northwest of Guadalcanal airfield. Later, they attacked enemy-held positions at Munda on New Georgia Island. Jap planes bombed U. S. positions on Guadalcanal Island and had one plane shot down for their trouble.

During the evening a force of our cruisers and destroyers, which was covering transport movements and operating 70 miles to the south of Guadalcanal, was attacked by enemy torpedo planes. The U. S. S. CHICAGO was hit by torpedoes and severely damaged. The damaged cruiser was taken in tow and later turned over to a tug for towing.

Jan. 30- In the afternoon the CHICAGO again was attacked by 13 enemy torpedo planes and as a result of this attack was sunk. U. S. aircraft shot down twelve of the thirteen planes, but not in time to ward off the attack on the CHICAGO. Personnel casualties were not large and the next of kin of those killed, wounded and missing, have been notified.

MARAUDERS carried out two attacks on enemy positions and installations at Munda. Fires were started as the results of hits.

Jan. 31- A force of U. S. bombers and fighters attacked an enemy formation of one destroyer, one corvette and one large cargo vessel in the Vella Gulf. The three enemy vessels were left dead in the water, burning and listing.

Two Jap float-type ZEROS bombed our positions in the Western Aleutians but no damage was suffered.

A force of our bombers, torpedo planes and fighters attacked an enemy formation of four destroyers in the northern Solomons area. Two of the destroyers were believed

sunk and a third was left burning.

U. S. aircraft were attacked by ten ZEROS, two of which were shot down. Two of our planes were lost in the attack.

Feb. 1- Our surface units and shore positions in the Western Aleutians again were attacked by Jap planes. No damage resulted.

In the South Pacific area a force of our dive bombers, with AVENGER and WILDCAT escort, attacked enemy-held positions at Munda. Two dive bombers failed to return.

Three direct hits were scored by a force of FLYING FORTRESSES with fighter escort, when they bombed a large Jap cargo ship off Shortland Island.

A second wave of FORTRESSES, which had been dispatched to attack shipping in the Buin-Shortland area, was attacked by 20 enemy ZEROS. Three of our planes are missing and a fourth returned badly damaged.

During the afternoon a force of U. S. torpedo planes, dive bombers, and fighters attacked an enemy formation of 20 destroyers about 200 miles northwest of Guadalcanal. One destroyer was sunk and another was badly damaged. An enemy destroyer later was observed burning. In this attack seven ZEROS were shot down and five others probably were destroyed. Four of our torpedo planes, one bomber and one fighter were lost. In a second attack, DAUNTLESS bombers, escorted by WILDCATS and WARHAWKS, attacked eighteen enemy destroyers which were covered by 25 ZEROS. Two hits were scored on one destroyer and one hit on another. Ten ZEROS were shot down and two others were probably destroyed. Three of our fighters and one dive bomber were lost.

Feb. 2- During the nights of Feb. 1st, 2nd, 3rd, and 4th, Jap planes, in groups of from one to four, bombed U. S. positions on Guadalcanal.

A U. S. fighter strafed enemy barges about four miles southeast of Cape Esperance. During the

evening, a force of DAUNTLESS and AVENGERS attacked Munda causing explosions and starting several fires.

Feb. 3- Jap positions at Munda took a shelling from morning and evening raids by U. S. planes.

A force of DAUNTLESSES with fighter escort, bombed enemy positions on Kolombangara Island.

Feb. 4- A FLYING FORTRESS on a search mission was attacked by three ZEROS. One ZERO was shot down and the damaged FORTRESS returned to its base.

In the North Pacific a U. S. plane destroyed a Jap plane during a reconnaissance mission.

During the afternoon, five enemy float-type planes bombed U. S. positions in the western Aleutians. No damage was suffered.

Feb. 5- During the night of Feb. 4th and 5th, LIBERATORS and MITCHELLS, with fighter escort, bombed Jap positions at Kiska. Three of the five float-type ZEROS which intercepted were shot down. All U.S. planes returned.

Feb. 6- During the morning, small groups of U. S. planes bombed enemy positions on Kolombangara Island.

During the evening, DAUNTLESSES with WILDCAT escort bombed Munda. All U. S. planes returned.

Feb. 8- In the South Pacific U. S. air



"Hurry home, Honey", reads an AOM aboard a carrier. Those depth charges, lethal to Axis submarines, will make the voyage safer.

forces bombed Japanese positions at Munda.

In the North Pacific, LIBERATORS and MITCHELLS dropped bombs on the enemy camp area at Kiska and on installations at North Head. Seven float-type ZEROS were observed on the water but no attempt to intercept was made. All our planes returned.

- Feb. 9- AIRACOBRA fighters strafed and sank an enemy barge off Hooper Bay in the northern Russell Islands. A number of floating drums of fuel oil were destroyed in the same vicinity.

During the evening a force of MARAUDERS with AIRACOBRA and LIGHTNING escort, bombed Jap positions on Kolombangara Island. Results were not reported.

DAUNTLESSES, with LIGHTNING and WILDCAT escort, attacked Jap positions at Munda. A large fire was started.

- Feb. 10- During the morning, U. S. heavy and medium bombers with fighter escort, bombed Jap positions at Kiska. Many hits on enemy installations were observed. A single enemy-type plane attacked our surface units in the western Aleutians. No damage was suffered.

During the night a CATALINA attacked enemy positions at Munda.

A reconnaissance plane from Guadalcanal shot down a twin engine Jap bomber over Choiseul Island, 35 miles north of the New Georgia Group in the central Solomons.

- Feb. 11- Enemy positions at Munda and Kolombangara were attacked by our aircraft. Bomb hits started fires in the target areas and one enemy plane was shot down.

- Feb. 12- U. S. planes carried out three bombing attacks at Munda. A gun position was destroyed and fires

were started.

- Feb. 13- U. S. planes attacked Jap shore positions and shipping in the Shortland Island area of the Solomons. The attack was opposed by 45 ZEROS and heavy anti-aircraft fire. Eight ZEROS were shot down and an enemy cargo ship suffered a direct bomb hit. Four of our planes were shot down and two were destroyed by enemy anti-aircraft fire.

In the North Pacific, LIBERATORS and MITCHELLS, with LIGHTNING escort, made a night attack on Jap positions at Kiska. Hits were scored in the target area and three of the five ZEROS which intercepted were shot down. An enemy reconnaissance plane was shot down in the Western Aleutians.

- Feb. 14- During the morning, DAUNTLESS and AVENGERS with AIRACOBRA and WILDCAT escort, attacked Munda. A large fire was started. All our planes returned. Later a force of AIRACOBRA and WILDCATS strafed enemy positions at Munda.

At noon, a number of LIBERATORS with CORSAIR and LIGHTNING escort, attacked and scored three bomb hits on a large Jap cargo ship near Buin. About 25 or 30 enemy planes intercepted the attack and 11 were shot down. Two of our bombers and six fighters failed to return.

- Feb. 15- During the evening, three of our planes were dispatched to attack Jap positions in the Shortland Island area. One of the planes dropped bombs on enemy positions on Ballale Island and one failed to return.

During the evening, a LIBERATOR, with escort, attacked the Jap airfield at Kahili on the southeast coast of Bougainville Island. One of the escorting planes failed to return.



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In the North Pacific, LIBERATORS and MITCHELLS, with LIGHTNING escort, made a night attack on Jap positions at Kiska. Hits were scored in the target area and three of the five ZEROS which intercepted were shot down. An enemy reconnaissance plane was shot down in the Western Aleutians.

Feb. 14- During the morning, DAUNTLESS and AVENGERS with AIRACOBRA and WILDCAT escort, attacked Munda. A large fire was started. All our planes returned. Later a force of AIRACOBRAS and WILDCATS strafed enemy positions at Munda.

At noon, a number of LIBERATORS with CORSAIR and LIGHTNING escort, attacked and scored three bomb hits on a large Jap cargo ship near Buin. About 25 or 30 enemy planes intercepted the attack and 11 were shot down. Two of our bombers and six fighters failed to return.

Feb. 15- During the evening, three of our planes were dispatched to attack Jap positions in the Shortland Island area. One of the planes dropped bombs on enemy positions on Ballale Island and one failed to return.

During the evening, a LIBERATOR, with escort, attacked the Jap airfield at Kahili on the southeast coast of Bougainville Island. One of the escorting planes failed to return.

