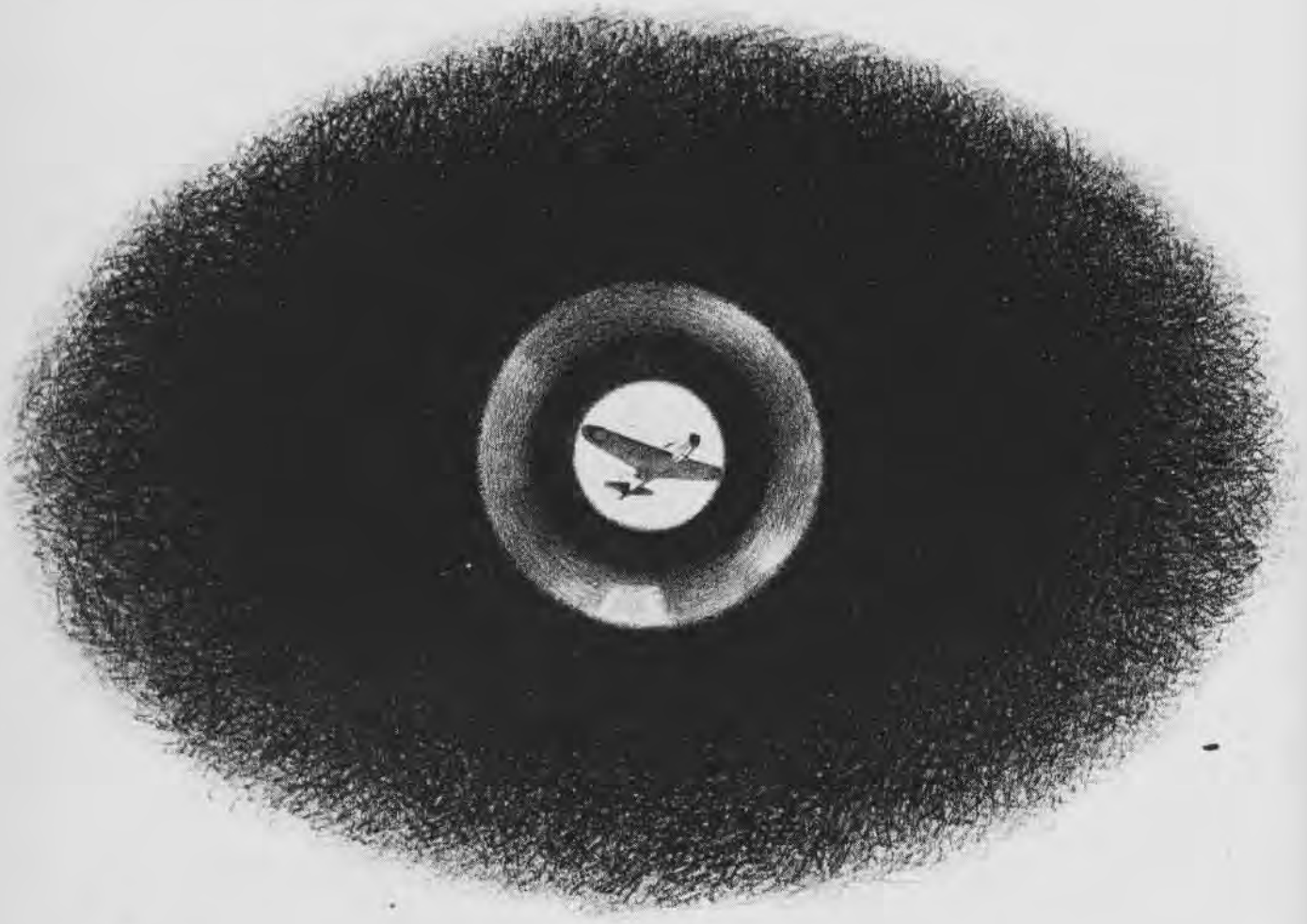
NAVAL AVIATION NEWS

Landplane Ditching
Target: Jap Craft
Uncle Kim Tussie

Feb. 15, 1945
RESTRICTED

SHARE THIS COPY

A Burst from the Blinker



ONE of our *Avengers*, battlescarred after getting its licks at the enemy, was making its way home. Battered by antiaircraft fire, its turret gun out of commission, the torpedo plane was in no shape for another scrap.

As the craft struggled to its carrier, a *Zeke* came in from above, angling for the kill. Carlyle K. Cutter, ARM1/c, watched grimly as he fingered the trigger of his useless machine gun. Then, in desperation, he grabbed the hand blinker (about six inches in diameter) and flashed it at the onrushing Jap.

The Jap pilot saw the brilliant spurts of light and must have thought the U. S. Navy plane was firing at him with a large caliber gun, for he peeled off and disappeared.

Cutter slackened his grip on the signal light and breathed for the first time in many seconds. All was clear, and the *Avenger* continued uneventfully on its way, thanks to the quick action of its aircrewman.

AIRCREWMEN HAVE WHAT IT TAKES

No. 18 of a series

P.I. and GUNNERY

TARGET: JAP CRAFT

THERE is great variety of types of Japanese small craft commonly seen in waters and harbors now under attack by Navy aircraft. Because of their small size, these craft usually are attacked by strafing, and the pilot must decide which of the many he sees are the most worthy targets. Photo Interpreters provide valuable assistance to the pilot in pointing out shipping and small craft that have been damaged or sunk by previous attacks, so that fire will not be wasted on these targets. Interpreters also supply the pilot up-to-date reports and information on types of enemy craft that can be expected to be found in the area of operation. From there on it is a question of familiarization and recognition. Toward this end, the Division of Naval Intelligence has prepared a manual on *Far Eastern Small Craft* (supplement No. 2 to 208 J), which will be distributed to the Fleet in the near future. This manual will present detailed statistics on Jap small craft types.

SINCE the early days of war in the Southwest Pacific the Japanese have depended increasingly on small vessels and barges for inter-island transportation of personnel and supplies and for lighter work in harbors. Since they can operate in shallow, reef-infested waters, barge convoys hug the shore, where they can be camouflaged easily during the day to resemble the tropical shoreline. These barges are the most common in the group of minor combatant craft including landing craft and barges, sub-chasers, motor torpedo boats and river gunboats, which take first place in strafing.

LIBERATOR STRAFES JAP IN MARSHALLS AT MASTHEAD HEIGHT. UNMANNED GUN PLATFORMS INDICATE THE JAPS WERE SURPRISED

FREE GUNNERS STRAFE FOE, INCREASING LEAD

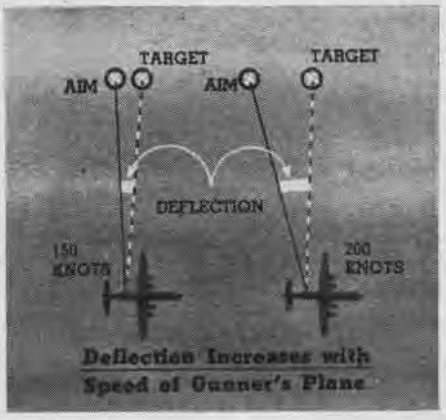
MOST FREE gunnery training in the past has been defensive—aimed to protect Navy planes from fighter attacks. Emphasis now is being placed on free gun strafing, since combat reports indicate the Pacific offensive is giving aircrewmen many chances to sink enemy small craft or destroy grounded planes.

Navy patrol bombers on anti-submarine and shipping search frequently use their free guns offensively against surfaced submarines and enemy surface craft. In attacking such craft, strafing during or before the bombing run often has resulted in reducing or even silencing the antiaircraft fire, making possible more effective bombing, with less danger of damage to the plane.

In strafing attacks, the deflections depend, as in regular position firing against attacking fighters, on the speed of the bomber and the angle-off of the target. Amount of deflection is about 10 percent greater. Most typical strafing targets are of comparatively low speed and can be regarded as stationary targets when making calculations.

Because the Jap installation or ship usually is large, the gunner should open fire in strafing at a somewhat longer range than is usual against most fighter attacks. Three thousand feet is generally considered a proper opening range. Gunners may allow slightly for gravity drop, since .50 cal. guns usually are boresighted for 1200 feet.

The most important gun position in strafing is the bow turret. If the firing plane is in level flight, the point of aim (toward the bomber's tail) will be at a point between the gunner and the target, *i.e.* short of the target. At any given range, the angle-off, and therefore the deflection, will vary according to altitude of the plane, deflection being greater the higher the altitude of the gunner's aircraft.



Deflection Increases with Speed of Gunner's Plane

As the plane approaches the target, the deflection will increase to a maximum of approximately 3½ rads for 200 knots and 2½ rads for 150 knots, when the guns reach the limit of depression of about 70°. Change in deflection is slow at first, increasing rapidly toward the end of the run.

AFTER the plane passes over the target, the tail turret guns can be brought to bear on an angle-off of 40 to 50°. Opening deflection should be about 2½ raids for 200-knot speed, or 2 rads for 150 knots. Lead will decrease rapidly at first and then more slowly as the plane draws away from the target. Point of aim will appear to the tail gunner to be above, or beyond, the target.

In making a bombing run on a submarine or surface craft, the approach, instead of being in level flight, may be in a dive sufficiently steep so that the bow guns, to be brought to bear on the target, must be elevated with respect to the axis of the plane, instead of being depressed. The motion of the firing plane tends to cause bullets to be short of the target so the gunner aims above, or beyond, the target.

BOW GUNNER MAY AIM BEYOND SHIP IN DIVE

Bow turret gunners aim beyond their targets if their plane is in a steep diving attack, but gradually decrease this until they apparently are firing short of the enemy as the plane levels off. At one point in the dive he will be firing point blank. Since the bow gunner has no good reference points to assist him in judging the flight attitude of the plane or his angle-off, good results require the pilot's cooperation in keeping him informed.

In a diving approach, the top turret may be able to fire. In situations where these guns can bear, the angle of the dive will be such that the point of aim is either point blank or above the target. While the top turret of a PB4Y often is used for forward strafing in combat, it is not practical to use it in training because of the discomfort and damage in the cockpit caused by muzzle blast. One or both of the waist gunners may have a short chance to fire on a bombing run as the plane passes over the target. The angle-off usually will be high, requiring a deflection of 2 to 3½ rads.

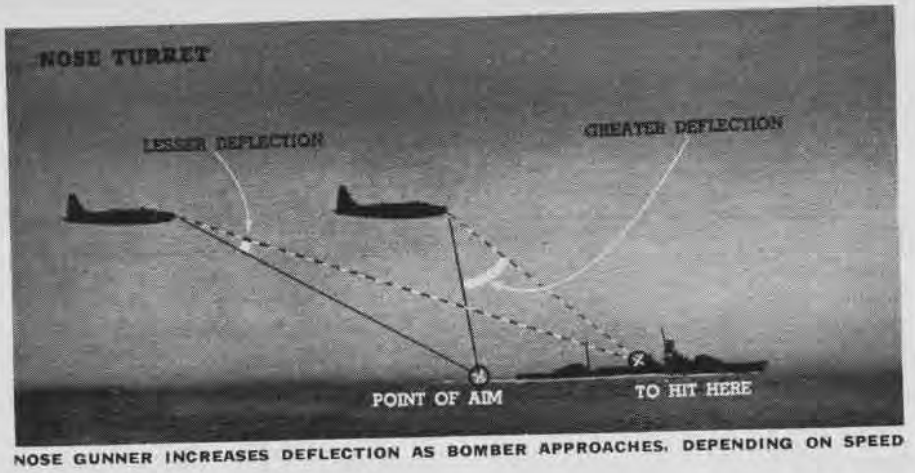
Strafing attacks may be made while the plane is banking in a curved course around the target. The gunner uses the same principles as in position firing.

The opening deflection for the bow turret in a diving approach will depend upon the angle of the dive and the altitude of the plane when it reaches the opening range of 3,000 feet. In a 20° dive at 1,000 feet altitude, the opening shot will be point blank, as the line of flight will be directly toward the target. At lower altitudes or in steeper dives, the point of aim will be above, or beyond, the target.

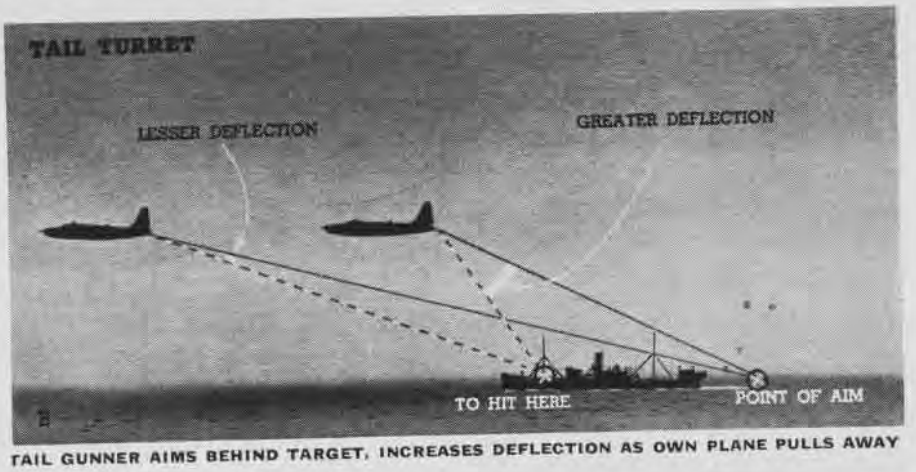
Against land targets, tracers will prove an effective sighting aid, since in strafing, unlike air-to-air firing, the path of bullets at the range of the target can be observed accurately. The best way, however, is to figure the deflections correctly and get hits with the first burst, rather than depend on tracers, as the time lapse may give the enemy a chance to shoot down the plane.

HOW'S YOUR RECOGNITION?

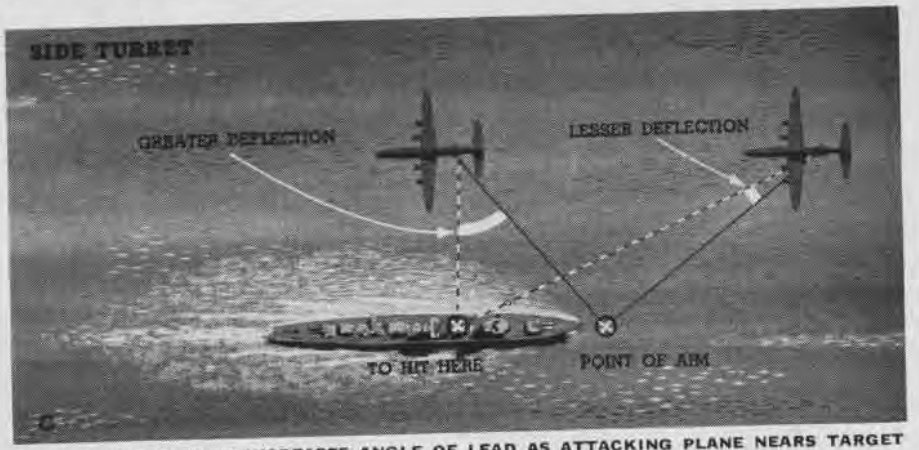
What kind of Jap ships are used to illustrate deflections in the four NANEWS charts on this page? After you have tried to identify them, double check yourself with these answers: Top chart, *Yubari* class light cruiser; second chart, *Batavia Maru*, standard medium cargo ship; third chart, *Sendai* class light cruiser; last, *Shigure* class destroyer.



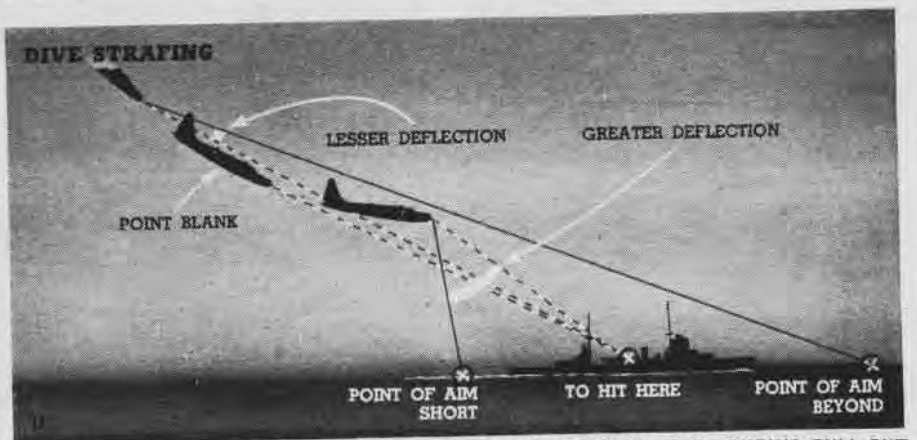
NOSE GUNNER INCREASES DEFLECTION AS BOMBER APPROACHES, DEPENDING ON SPEED



TAIL GUNNER AIMS BEHIND TARGET, INCREASES DEFLECTION AS OWN PLANE PULLS AWAY

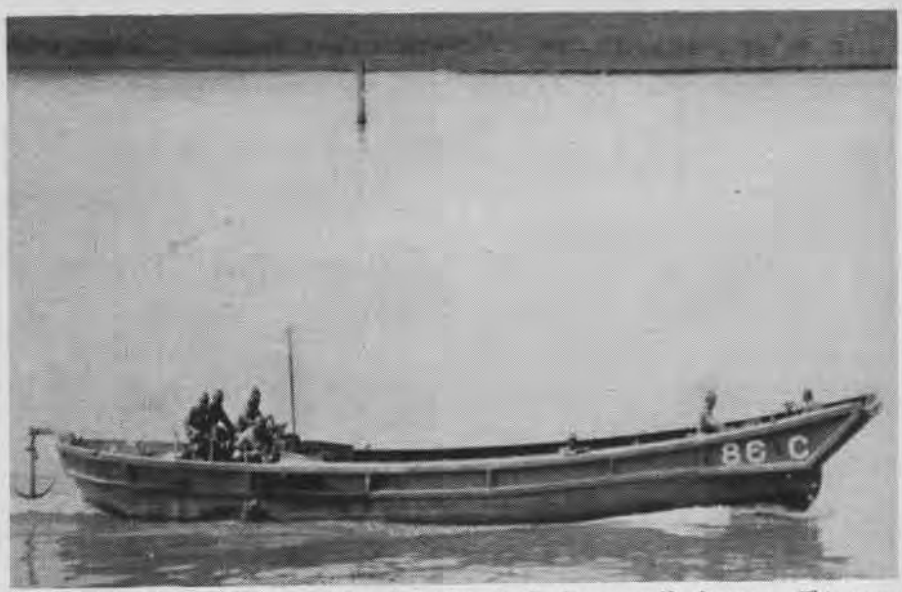


SIDE TURRET GUNNER INCREASES ANGLE OF LEAD AS ATTACKING PLANE NEARS TARGET



IF ATTACKER IS DIVING, GUNNER SHOOTS OVER TARGET, THEN SHORT DURING PULL-OUT

Navy reconnaissance photo of destruction at Saipan shows Type A craft near pier



Captured Jap photo of Type A (Army) landing craft shows profile features. This commonest of enemy landing craft is easy to recognize by square bow and rounded stern

BARGE CONVOYS GIVE GUNNER GOOD TARGETS

JAPANESE military landing craft have been spotlighted by the current campaign in the Philippine Islands. Barge convoys now are no longer temporary expedients but an integral part of the Jap Fleet and transport service. Since their lines of communication have been shortened greatly by the Allied push toward Japan, the enemy can rely more and more on landing craft and barges for inter-island and coastal runs, hiding during the day, landing at night, protected as much as possible by land-based air coverage. Travel usually commences about 1700, continuing until 0200 or 0400, depending on the length of run. During the day, the barges are camouflaged with brush, or hidden under overhanging trees. Types often seen follow.

Type A This large barge, called the "Daihatsu," is the type most frequently observed by photo interpreters in the south and southwest Pacific areas. An adaptation of the Japanese "flap-ramp" fishing boat, this craft is easy to recognize because of its square prow and rounded stern. Sometimes it has a shield protecting the control position. The Navy version of this craft is equipped with a deckhouse which suits it for long-range work and protects the crew and their gear. The open (Army) type carries 15 tons or 90 men at 8 knots. U.S. PT's cut them up.

Low oblique taken during attack on Rabaul shows types A and H tied up together. Type H craft is identified here by its square stern. Canopy on H also often appears on A

Type B, or "Shohatsu," is used by the initial covering party in landing operations or in barge traffic to transport supplies

Wooden, collapsible boat has two sections joined by plywood partition. Japs use it crossing rivers and debarking troops and supplies

Type B This is a very common type small landing barge called the "Shohatsu." Formerly used by the Japanese in landing operations, it is now largely used to transport men and supplies over short distances. Its capacity on a short trip is 30-40 men, or 10 fully equipped men on a longer trip. It can carry 3.6 tons of cargo. With reserve fuel, these barges can cover a distance of 90 miles without refueling, and on coastwise hauls are said to average 40-60 miles daily for 5-6 days. Fighters have reported successful strafing attacks when fire was concentrated on the power-plant.

Type C These so-called landing craft are actually small gunboats, but they sometimes are used to land troops, having a capacity of about 50 men with a crew of 5 or more. Their main use, however, is for reconnaissance, patrol duty and support of landings. It is reported that this craft, equipped with a high-powered diesel engine, can cruise at 15 knots. Armament includes 3 automatic weapons.

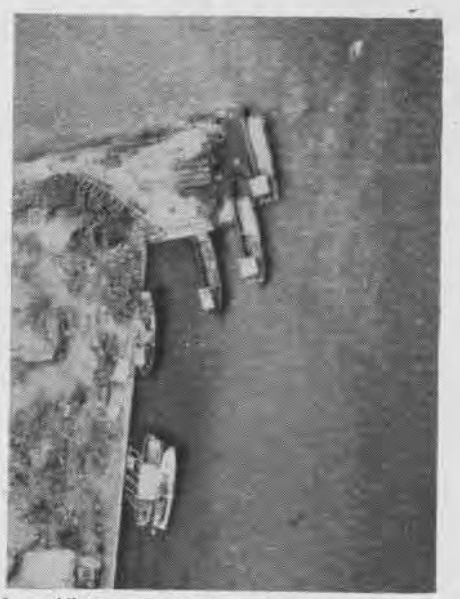
Type D One of the important functions of barges is unloading ships in harbors and off beaches, and it is in this work that type D is principally used. Two of the barges often are lashed together to make a Lighter with a common deck for transporting large machines or equipment. Also this barge is often seen in tow behind type A barges.

Type H This landing craft is a relatively new type which is being seen in increasing numbers in reconnaissance photos. Its functions are the same as type A, from which it developed. Its square bow and stern make it easy to recognize, as does the deckhouse it often carries aft. Capable of transporting 10-15 tons of material or up to 100 men, the craft is extensively used in inter-island transportation.

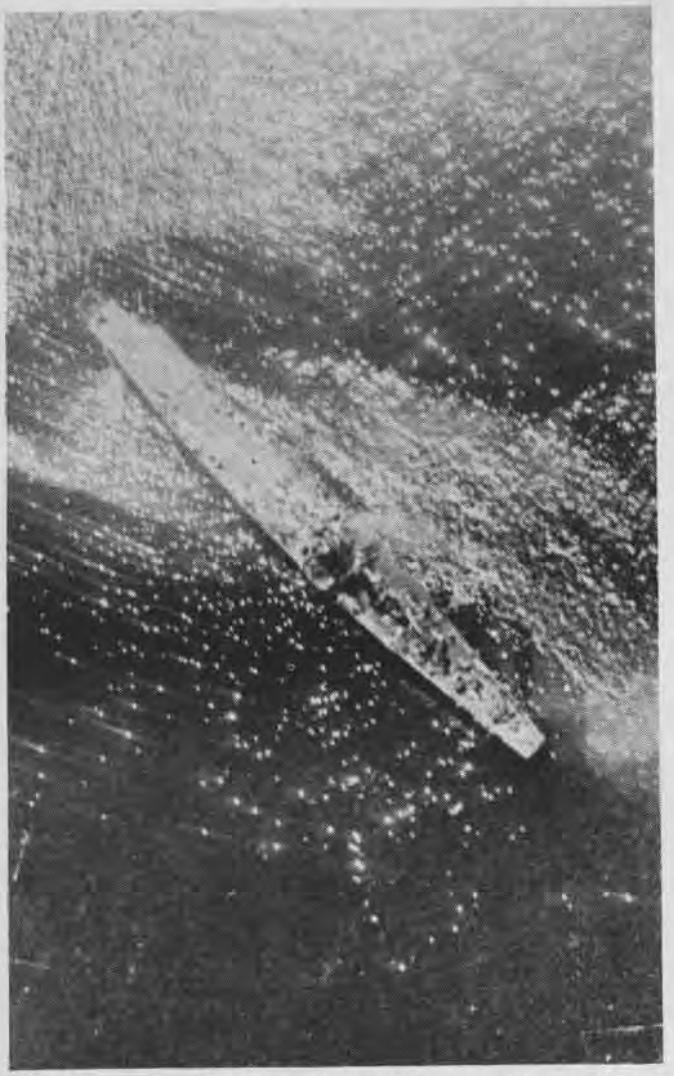
Collapsible Type This collapsible boat is made in two sections, joined by a plywood partition, with a load capacity of 20 men. Sometimes it carries an outboard motor. Often used for river crossings and to debark troops and supplies, it is seen in reconnaissance photos in a variety of forms. Having no engine, and being rather fragile in construction, the Japs have had considerable trouble with these boats, especially upon rough seas.

These armed speedboats, Type C, have been used in patrol and anti-PT boat operations

Type D craft are usually used in conjunction with A to increase carrying capacity



Low oblique at Truk shows four type H craft with canopies and square bows and sterns



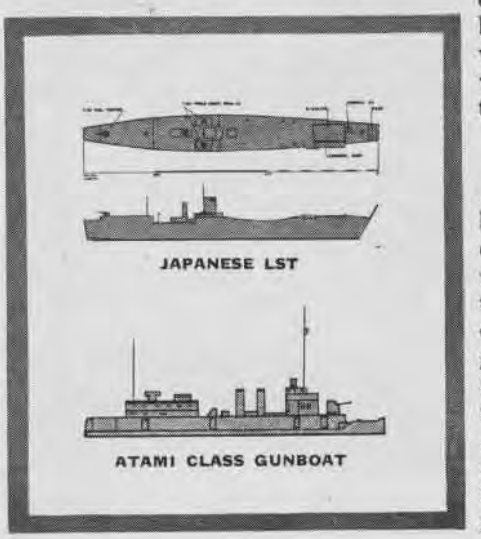
Japanese LST, capable of carrying tanks, ammunition, and personnel. This ship appeared in reconnaissance photos recently

Atami Class River Gunboat is marked by two funnels on high, tiered deckhouse. Main use is coastal and inland sea patrol and escort

TENDER TARGETS HAVE BARGES BELOW DECKS

ANY TYPE surface ship is capable of carrying military landing craft in proportionate number to the sizes of both the ship and MLC carried. Specially designated tenders carry large numbers of barges below decks, launching them through stern and side ports constructed for the purpose. Barges also are transported as deck cargo aboard warships or merchant vessels, and are hoisted overside by means of derricks. Reconnaissance subs also may carry one or two MLC's bolted to the deck.

The Japanese LST (*above*) resembles our LST in general characteristics and probably in function, though there is not much similarity from the recognition viewpoint. This new type Jap ship was observed for the first time by photo interpreters in sorties taken at Palau and the Bonin Islands. Designated by the Japs as an "auxiliary transport," the ship has an overall length of 264 feet and beam of 32 feet. It carries vehicles, tanks, troops and cargo, with an elevator forward for moving equipment from upper deck to tank deck. A personnel ramp is located abreast the elevator on the starboard side of the LST.



Pilots should have no trouble spotting this ship in oblique view, but it should be remembered that the foredeck silhouette may vary considerably, depending on the type of deck cargo carried. The high vertical view reveals the extremely rounded, long, slender outline with square bow and stern. The bow and stern may be confused when viewed from a high vertical position with the ship dead in the water. In this case it may resemble a CM or AM.

APPEARANCE of Japanese river gunboats is very distinctive, marked by two funnels stepped on high, tiered deckhouse, so it is not easy to confuse them with other types of craft. Though these vessels were designed for government patrol in China and can navigate the upper Yangtze except during the summer, they also are used for coastal and inland sea patrol and escort. Armament of these river gunboats varies, but normally consists of 3″ mounts fore and aft, with auxiliary machine guns. Type shown here is PR-6, ATAMI.

JAPS PUT 15 TYPES OF MTB'S IN ACTION

THE JAPS have in operation about 15 different classes of motor torpedo boats, believed similar in appearance and performance, and in general inferior to U.S. boats in speed, firepower and performance. It is difficult to obtain details of these enemy PT's from most aerial photographs.

The Japanese have concentrated a good deal of effort on a new type wooden, special-duty submarine chaser developed for patrol and escort duty to augment a depleted destroyer list. The ships are small, made of wood, and lightly armed. It is believed these subchasers are being built in considerable numbers and can be rolled off the ways after three months of construction. Overall length of the SCS-1 class is 97 feet and beam is 19 feet. Maximum speed is 10 knots. Armament includes 2-25 mm. AA in single mounts, one forward of the bridge and one atop the bridge.

The vessel is equipped with a suspended-type hydrophone, a simple echo ranging device, and wireless transmitter and receiver. There is no evidence of radar equipment. It is fairly easy to recognize because of its square superstructure, square stern and single slightly raked stack located amidship and closely abaft the superstructure.

ACTION SHOT OF TORPEDO BOAT, PT-101, SHOWS APPEARANCE OF THIS VARIED GROUP

"SPECIAL DUTY SUBCHASER" SCS IS USED BY JAPS FOR ESCORT AND ANTI-SUB DUTY

THIS JAP SUBMARINE CHASER PC-13 CARRIES TWO DEPTH CHARGE PROJECTORS AND TWO RACKS AFT. ITS FULL SPEED IS 20 KNOTS

GRAMPAW PETTIBONE

"After The Horse Is Stolen"

It's an old story. The pilot forgets to switch to the tower frequency on approaching the field. He makes a good approach and then inadvertently retracts his wheels instead of lowering his flaps. The tower is unable to warn him and so a belly landing is made.

Commenting on one accident of this type, an investigating board said, "The importance of the use of the check-off list prior to landing has been impressed upon this pilot. A blindfold cockpit checkout has made him completely familiar with the position of the wheel and flap levers."

Grampaw Pettibone says:

How much better it would have been if this pilot had been given the blindfold checkout BEFORE the accident!

And what about other similar accidents? Must a pilot crash before he is given this checkout?

Night Emergencies

After approximately fifteen minutes of flight at 2,000 feet, while on a night cross-country hop, the engine of an F6F began cutting out The pilot decided to attempt a return to base. Four miles from the field the engine failed completely. So much altitude had been lost by this time that a successful jump was not possible. In an attempted water landing on a nearby river, the plane struck some trees, crashed and burned. The pilot was killed.

The immediate superior in command issued a safety bulletin on the accident saying, "In all probability, the life of this pilot could have been saved had he resorted to his parachute. The desire to save his plane is both understandable and laudable, but in a forced landing at night the saving of the plane should be the pilot's last consideration."

Comment—**The pilot's initial decision to attempt a return to base while he was still at safe altitude is not criticized. His fatal mistake lay in not jumping before he had lost so much altitude that a successful jump was not possible.**

Forced landings at night are extremely hazardous. When there is a choice, they should not be attempted on land unless exceptional circumstances exist, such as non-availability of parachutes in certain transports or a combination of unusual visibility and known favorable terrain conditions.

Likewise, it is considered much safer to jump than to attempt to make a forced night landing at sea in a small landplane

where all emergency equipment is carried in the pararaft. In large airplanes, however, the danger of such a landing usually will be offset by the advantages to be gained from retaining contact with the emergency equipment carried in the plane and from keeping personnel together for mutual assistance.

Science and Skill Versus Ignorance and Superstition

Grampaw Pettibone says:

There seems to be an attitude of false pride in some outfits which prevents any serious consideration being given to the safety of their flying personnel. As near as I can figure out, this stems from the mistaken idea that any talk or training along these lines indicates that accidents are expected to happen and is, therefore, bad for morale.

Let's get reasonable. Aircraft accidents not only can happen, but in the present stage of development, we know that many of them are bound to happen. Not to face this fact squarely and do everything we can to prevent accidents and to lessen the damage of those that do occur, just isn't intelligent. It reminds me of an ostrich with his head in the sand.

We've come a long way in aviation, but it hasn't been through hiding from the facts. Our advancement has been achieved through the untiring efforts of a bunch of two-fisted guys who were quick to recognize deficiencies, but who would never accept them as final. They stuck with it until the defects were either whipped or counteracted by operating procedures or safety equipment. For example, not very many years ago aviators didn't even know you could bring an airplane out of a spin. Whenever a plane spun, they just "scratched" it—and usually the pilot too. Those were the days before the parachute had been developed, so you couldn't even save yourself by bailing out.

A lot has been learned about flying technique since then and much safety equipment has been developed. More of both are in the mill. Neither technique nor equipment is worth a damn, however, unless personnel are properly indoctrinated. That's what this blast is all about: trying to get aviators to know their stuff.

The know-how isn't hard. But it *does* require definite time and effort. It takes constant attention to keep equipment in condition and it takes study and drills to insure that flight personnel know all about using it. Wherever possible, actual handling of equipment beats a lecture all hollow. Don't slough those drills! It's too late to hold ditching drill when you are faced with a forced landing. Pilots are much more apt to do the right thing in an emergency if they have previously visualized such a situation—been *pre*pared through mental drills.

Don't Just Sit There

While making his first landing approach in a *Corsair*, a pilot became a bit apprehensive of his technique and failed to keep track of the plane landing ahead of him. He landed exceedingly long and ran into another *Corsair* which, for some unknown reason, had stopped on the runway. The pilot of this latter plane was killed.

The tower, noting the possibility of collision, had called the approaching plane, but the communication did not get through.

The overtaking pilot was clearly to blame for this crash.

Grampaw Pettibone says:

True, but don't let yourself be killed just because you have the right of way!

The pilot of the stalled plane easily could have saved his own life. He couldn't do it by sitting in his plane with his back to oncoming traffic, however. He should have gotten out of his cockpit immediately so that he could be free to maneuver. Had he done so, he even might have been able to flag the other plane and prevent any crash, saving his life and two planes.

Constant vigilance against attacks by sea or air is the price of success in battle; pilots flying with the Fleet have to time their operations with split-second precision

Hit And Run

While taxiing at the end of a ferry flight, a pilot hit a sea wall when his sea anchor failed to engage. Although the plane was so badly damaged that it had to be surveyed, the pilot obtained transportation for his home base almost immediately after the accident. His hasty departure, before he was interviewed by the Commanding Officer of the station where the accident occurred, interfered with a prompt and thorough investigation of reasons for the crash.

▸ ***Comment*—Paragraph 25(d) of Aviation Circular Letter 73-44 states that ferry pilots are to notify the "controlling activity"—and in this case, the station where the accident happened—when accidents occur and to stay in charge of the aircraft, maintaining adequate guard, until released by proper authority.**

Wake Up and Live

People are still being killed by propellers!

Four persons, including one pilot, were killed by propellers in a recent three-week period. The following are typical examples of such accidents.

Case 1. The starboard wheel-chock man aboard a carrier removed the chock from his plane preparatory to take-off. In attempting to get clear of the tail of his own plane, he forgot about the airplane next astern and walked directly into the propeller.

Case 2. A mechanic was struck by a propeller while walking diagonally across a taxiway, with his back to an oncoming plane. He was walking with his head down, studying a piece of equipment and was evidently so preoccupied that he neglected to *look* before crossing the taxiway. He was continuously in the pilot's blind spot and did not hear the warning shouts of other mechs.

Case 3. A pilot removed the right and left wheel chocks while his copilot warmed up the engines of their PBJ. This officer apparently attempted to go between the fuselage and the propeller to reach the nose-wheel chock. He walked face forward into the propeller.

Case 4. A plane captain was acting as signalman to guide the pilot of his airplane from the line onto the taxiway. During this maneuver, he backed directly into the propeller of another plane which, with its wings folded, was stopped on the taxiway waiting for the signal to proceed.

Grampaw Pettibone says:

Many propeller accidents occur in a manner so ridiculous as to appear impossible—but they continue to happen. As a matter of fact, some of the first airplane accidents on record were those in which people walked into propellers.

And they will continue to happen just as long as flight personnel continue to dope off. Elaborate precautions in handling aircraft on the ground plus continued warnings, will help, but all this will not keep certain people from tangling with propellers. Total prevention will occur only when everyone concerned is constantly aware of this danger.

So kick yourself in the mind occasionally to remain alert. In other words, stay awake and live!

A PROPELLER IS AS DANGEROUS AS A GUN!

GRAMPAW'S SAFETY QUIZ

All aviators should know the answers to these questions. In the air, the penalty for not knowing may prove fatal. If you miss an answer on the ground, penalize yourself by looking up the reference.

1. **On coming in to land, what signals does the pilot give to the co-pilot to lower the wheels?**
2. **Is it correct to depend solely on the gyro horizon when flying on instruments?**
3. **If, while taxiing, you receive a series of red flashes from a directed traffic control light, what should you do?**
4. **In a parachute jump at sea, should you leave your parachute sling just before landing in the water?**
5. **When is the application of brake of greatest value in preventing a groundloop or swerve?**

Answers on Page 40

ALL PROPELLERS PACK A LETHAL WALLOP

Power-On Versus Power-Off

A PBM crashed during a power-off, stall landing. Two crew members were killed and three seriously injured. Gross weight of the plane was 54,000 lbs.

After an investigation of the accident the commanding officer said: "Although airplanes of this type are seldom landed in such a heavy condition, it is felt that all pilots should be cautioned on the danger involved in attempting power-off, stall landings in this type aircraft with a gross weight in excess of 48,000 pounds. All pilots of this squadron have been so informed previously and are now having this very definitely impressed upon them."

▸ ***Comment*—The heavier the gross weight, the faster must be the landing speed due to the increased stalling speed. Also, with power off, stalling speed is greater. Specifically in this case, with a gross weight of 54,000 pounds, this plane's power-off stalling speed with flaps down was 72.9 knots and only 64.5 knots with power on. In view of this, the logic of making a power-on, stall landing as against a power-off, stall landing clearly can be seen.**

Practice What You Preach

As the flight leader of eight planes approached the field after a night familiarization, he instructed all pilots to check that their wheels were down.

Then—the flight leader landed with his own wheels up.

Fatal Failures

A TBM pilot made a full-stall, emergency landing when his power failed during a carrier take-off. The plane remained afloat approximately one minute and the pilot and his two crewmen were seen to get clear of the plane. All three appeared to be swimming when last seen from the carrier, but when the planeguard destroyer reached the spot, only the pilot remained afloat.

The squadron commander pointed out certain failures on the part of the flight crew which proved fatal in this case:

a. Failure of the gunner to leave plane by turret and climb on port wing to help pilot remove raft from its compartment.

b. Failure of the radioman to throw at least one of his two pararafts through the bombardier's door before abandoning the plane.

c. Failure of the pilot to take his pararaft with him when it became apparent that he could not remove four-man raft.

He further stated, "Any one of these four rafts in the water would have supported the crew until help arrived. The loss of life in this accident is the result of the personnel concerned failing to follow the abandon-plane procedure in which they were exhaustively instructed and had frequent practice."

DID YOU KNOW?

Britain Assembles Two Fleets

Admiral Fraser Heads Pacific Force

Great Britain is assembling two fleets in the Pacific and Indian oceans to join with the United States in the war against Japan. Under command of Admiral Sir Bruce Fraser in his 35,000-ton battleship-flagship, the *Howe*, the Pacific fleet will include battleships, carriers, cruisers, destroyers and other small warships, as well as Australian cruisers, destroyers and mine-sweepers.

The British Pacific fleet will be based on Australia in the beginning and operate under the command of Admiral Nimitz in the central Pacific area, or under General MacArthur for operations in the southwest Pacific. The East Indies Fleet will be under Admiral Sir Arthur J. Power.

BRITAIN'S FRASER REINFORCES U.S. FLEET

Corpus Fields Set Safety Mark

Cabaniss, Chase Have Fewest Accidents

NATB, CORPUS CHRISTI—Squadrons flying off CABANISS and CHASE Fields, auxiliary air stations of Corpus Christi, put those stations ahead of all NATB operational units at Corpus Christi for safe performance of flight duty.

Records of the NATB Safety Board show both CHASE and CABANISS to have outstanding records for safe performance, as well as a much smaller percentage of minor accidents.

Analysis of safety records shows that fatal accidents at NATB CORPUS CHRISTI were less than half as frequent in the first eleven months of 1944 than in the same period of 1943. The computation is made on the basis of man-miles flown, and is an accurate comparison.

Some squadrons have operated more than a year without loss of life, the records show. One squadron, in a year's time, flew the equivalent of 20,000,000 miles without losing a man.

Photography Trick Makes Sense

Falcon Tangles With Mavis at Midway

VM 221—The first (of many) enemy aircraft shot down by the Falcon Squadron was a four-engined patrol bomber, *Mavis*, which tried to snoop out Midway activities in March, 1942.

The Intelligence Officer of the squadron, delving into back records to prepare the squadron history, unearthed a photograph which appears to be that engagement. Of course, the sceptic might suspect that the *Mavis* was a model and the bird, the relatively tame, mouse-eating, squadron mascot (Falco sparverius).

FALCON DEMONSTRATES DEATH GRIP TO MAVIS

Squadron Sends News to Friends

Relieves Men from Note-Writing Task

Torpedo Squadron Nine has instituted a system of sending mimeographed squadron letters to families and friends of the outfit's personnel. Included in each issue is a Who's Who section with items about the men.

Number three of the series urged wives and sweethearts to send current snapshots for use in the pin-up galleries and assured civilians their missing gum, kleenex and cigarettes are turning up in the squadron's canteen.

British End Aerial Training in U. S.

American Schools Turn Out 2,600 Men

NATB, PENSACOLA—Training activities of the Royal Air Force and the Royal Navy, which began here 24 July 1941, have been brought to an end.

The two British services started sending men to PENSACOLA for training as a result of an offer by the U.S. Navy to train flying boat pilots for the RAF Coastal Command and a number of pilots for the Royal Navy's carrier-borne Fleet Air Arm. The offer was made when Britain was hard-pressed.

Apart from the first classes, RAF students received their primary training at GROSSE ILE, MICH., or ST. LOUIS, MO., and their intermediate and final training at PENSACOLA. After graduation here they proceeded to British operational training units in Canada and elsewhere, and from there to operational squadrons.

In all, over 1,800 PENSACOLA-trained RAF pilots are now serving with RAF squadrons all over the world, while more than 800 Royal Navy pilots received their wings here. The first Royal Navy student to graduate received his wings on Christmas Day, 1941.

THOUSANDS OF BRITISH TRAIN IN THE U. S.

PBY's Pilot Doubles For Surgeon

Pliers Remove Bullet From a Filipino

No one ever accused one Navy *Catalina* pilot of being a surgeon but he doubled for one not long ago. The operation was not only a success but the patient lived.

Setting for the unusual incident was in the Philippines during the early part of the campaign.

A Filipino guerrilla had been knocked over by a Jap bullet and the bullet lodged in his back. No surgical aid was available so the Navy officer rose to the occasion.

The operation was performed during the height of a Jap attack on that small village, which is situated on Samar Island. The officer had no surgical instruments and his only light came from two flashlights. He gave the wounded man morphine from his own first aid kit and a cigaret.

Sterilizing his "instruments" with the flame of a cigaret lighter and with sulpha powder, the "surgeon" set to work. He opened the wound with a scout knife and while two Filipinos held the wound apart with bent safety-pins, the officer probed with a pair of long-nosed pliers, removing the bullet.

BEST ANSWERS

Ocean Waves

Pick the best choice to complete the statements, then see ans. on p. 40.

1. **As compared with the stalling speed of a patrol plane in calm air, the maximum velocity attained by ocean swells is approximately—**
   - ☐ *a*–one-eighth as great
   - ☐ *b*–one-fourth as great
   - ☐ *c*–one-half as great
   - ☐ *d*–the same

2. **Except in the Antarctic Ocean, the maximum height (from crest to trough) ordinarily attained by waves in gales is approximately—**
   - ☐ *a*–100 ft.
   - ☐ *b*–60 ft.
   - ☐ *c*–35 ft.
   - ☐ *d*–18 ft.

3. **Whitecaps occur whenever—**
   - ☐ *a*–a tidal current is running against the wind
   - ☐ *b*–the velocity of the wind exceeds 8 miles per hour
   - ☐ *c*–the angle between front and back of the waves becomes less than 120°
   - ☐ *d*–the height of the waves exceeds 8 ft. in deep water (6 ft. in 20 fathoms of water or 4 ft. in less than 10 fathoms of water)

4. **With regard to the relation between ocean swells and surface winds, it is true that the swells—**
   - ☐ *a*–never travel as fast as the wind
   - ☐ *b*–may equal, but not exceed, the velocity of the wind
   - ☐ *c*–always decrease in speed as the wind dies down, changing direction to keep traveling approximately downwind
   - ☐ *d*–may retain constant speed and course even though the wind shifts to a new direction as it dies down

5. **As rollers or swells from the ocean come near shore, they—**
   - ☐ *a*–become farther apart
   - ☐ *b*–increase in speed
   - ☐ *c*–retain approximately the same speed
   - ☐ *d*–decrease in speed

6. **Oil sprayed on waves—**
   - ☐ *a*–has no effect on them
   - ☐ *b*–reduces height of wave peaks
   - ☐ *c*–reduces their rate of travel, but not their height
   - ☐ *d*–causes them to break

7. **A typical ocean wave 10 feet in height would probably have a length (trough to trough) of—**
   - ☐ *a*–15 to 20 ft.
   - ☐ *b*–50 to 80 ft.
   - ☐ *c*–150 to 250 ft.
   - ☐ *d*–500 to 1,000 ft.

Ranger Celebrates Its Anniversary

Veteran Carrier Has 50,000th Landing

Grand old lady of the United States aircraft carriers is the U.S.S. *Ranger* which recently celebrated her golden anniversary in a manner of speaking. Which is by way of saying that when a Navy fighter set wheels down on her broad decks that day it was her 50,000th aircraft landing. The *Ranger* was the first United States ship built from the keel up, as a carrier.

She was commissioned at Newport News, June 4, 1934 as fourth aircraft carrier of the fleet.

In her 10 years with the fleet, the *Ranger* has witnessed the Navy's air arm grow from a few hundred war planes to the mighty striking force which is now turning back the Japs' march through the Pacific. Since Pearl Harbor, the *Ranger* has seen convoy duty in the Atlantic and was present during the African invasion. She steamed out for the Pacific the middle of 1944.

Celebrating her 50,000th landing, the ship's company held special ceremonies and the ship's baker turned out a 32-inch gingerbread model of the *Ranger* which was served with appropriate ceremony in the wardroom.

Hair Trim Follows A Sea Rescue

Pilot Sneaks Across Equator by Air

Something new in procedure for rescuing a downed Navy pilot at sea was introduced aboard an American destroyer not long ago. The *Wildcat* pilot was hardly out of the drink when his rescuers shaved his head and gave him the old woodshed treatment. The offense: flying across the equator without permission of Neptunus Rex.

At the time the *Wildcat* took off from its carrier the ship was still on the other side of the equator, but by the time engine trouble forced the pilot down at sea he was across the line.

The skipper of an American destroyer watched the plane go down and through his binoculars saw the pilot crawl out. A small boat was sent to the scene immediately, and the bedraggled pilot was hauled out of the drink.

Coming aboard the destroyer he was notified by the officer of the deck that he had just committed a crime by invading the sacred realm of Neptunus Rex without passports. He was officially charged with concealing the fact that he was a pollywog and of being a "landlubber, beachcomber, guardo rat, parlor dunigan and asphalt Arab."

Balm for the shorn pilot's spirit came a few days later when he rejoined his carrier and initiated the loathsome pollywogs of his own squadron.

Hot News Supplied by Intelligence

Maps and Lights Attract The Attention

MCAS SANTA BARBARA—One of the squadron intelligence departments has solved the problem of how to keep enlisted men posted on current events and the status of the war. Large posters bearing war maps and news items describing the daily progress of the war on all fronts are posted on the outside walls of the Intelligence office.

To afford no excuse for pilots failing to see the intelligence literature, the same department has provided a rack in the ready room with the latest copies of the more interesting publications. Placards are placed on the rack specifying security regulations. A theatrical ruse is used to attract the visitors' eye by the use of a powerful spotlight focused on the rack and a blackboard display.

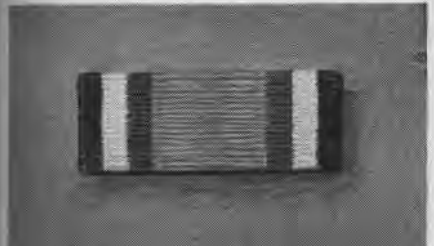
"SCRATCH ONE PIE" *was message received from winning pie pilot in contest aboard* U.S.S Chenango. *Defeated pilots stand by as winner poses with valuable trophy. Men ate with hands tied behind their backs. After beating up the pie with a strafing run, the winner circled and dove for the deck. He followed up with a torpedo run, pressing home his attack without regard for the safety of his whiskers or the hair on his chest*

GRAMPAW PETTIBONE *has the rapt attention of a future flyer ambitious to learn from the old gentleman. Grampaw's jaunty figure is the handiwork of the ship's carpenter at Waldron Field,* NATB, CORPUS

Navy Grants New Unit Ribbons

Non-fighting Outfits Can Win Award

By approval of the President there has been established a unit citation junior to the Presidential Unit Citation. It will be known as the Navy Unit Citation and will be awarded by the



NEW NAVY UNIT CITATION IS COLORFUL

Secretary of the Navy to any ship, aircraft, detachment or other unit of the naval service which has, since 6 December 1941, distinguished itself by outstanding heroism in action with the enemy but not sufficiently to justify award of the Presidential citation.

It also may be awarded any similar unit that has distinguished itself by extremely meritorious service not involving combat but in support of military operations and such as to make the unit outstanding compared to similar units giving similar service. To justify this commendation, the unit must have performed service as a unit of a character comparable to that which would merit award of a Silver Star medal or a Legion of Merit to a person.

The ribbon will consist of colored strips from outside edges as follows: royal blue, Spanish yellow, cardinal red, with myrtle green in the center.

FLIGHT SAFETY

Alcohol or Carbon Monoxide?

THE FOLLOWING *case history is presented to give pilots, flight surgeons and members of the Safety Boards additional information on the insidious effects of carbon monoxide intoxication.*

AT 1400, 11 October 1944, Lt. —, A-V(T), arrived at San Diego after ferrying a TBM-3 from Trenton, N. J.

The story of the flight is that he had flown from Trenton to Spartanburg, S. C., in three hours and five minutes, at an average altitude of 8,000 feet, average airspeed 165 knots indicated, mixture on auto-rich while climbing, auto-lean cruising, small ventilator in windshield on suction, and hatch closed except on landing. Subsequent legs, with stops at Jackson, Miss., Fort Worth, El Paso, Midland, Tex., and Coolidge, Ariz., were flown under the same conditions.

At each stop, the patient states that he felt "rocky," "below par," and that he'd "flown enough for a whole day." He did not have a headache, but also denies that he has "ever had a headache in his whole life." His follow pilot states that his actions were "peculiar" and he thought the patient was crazy or drunk throughout the trip.

After take-off from Coolidge, Ariz., an altitude of 12,000 feet was maintained for the final leg over the mountains. On this leg, he lost his follow pilot, and made no attempts to regain contact with him, and on landing did not contact the tower radio, but landed in the middle of a traffic pattern, taxied up to the line and staggered away.

This conduct caused unfavorable comment among the operations officers, and the patient was brought before the department head, who sent him under guard to the Dispensary for examination for alcoholic intoxication.

Physical examinations carried out by two flight surgeons, independently, revealed that his face was flushed; speech was thick and slurred; appearance unkempt; gait shuffling and unsteady; coordination poor; and there was in addition a faint odor of alcohol on his breath—the probable result of a "few beers" taken the night before. He denied having taken any alcoholic beverage during the day. Blood was drawn for the Bogen's test, which was confidently expected to be highly alcoholic. ▶*One of the examiners, however, noted a cherry-red character to the facial flush, and constricted pupils, and on this nebulous evidence carried out a qualitative test for carbon monoxide on the blood. This test was positive, revealing a carbon monoxide saturation of roughly 25 percent!*

The blood Bogen's test was meanwhile reported zero (0.0) mgms. pct.

The patient was exonerated of the charge of alcoholism and hospitalized. A complete blood count revealed a red cell count of 3.8 M., and a hemoglobin of 72 percent (12.2 gms.) as the significant findings. The urine was dark and smoky in color and was positive for blood pigment. Treatment was instituted. No oxygen was given.

Three hours after admission, the patient was more alert and felt better.

The following morning, the blood carboxyhemo-globin was in the neighborhood of 10 percent. The patient's personality was normal, although he was somewhat confused about events of the preceding day.

A check of the plane revealed a loose bracket on the exhaust collecting ring, which had allowed the ring to vibrate loose; this in turn allowed escape of engine exhaust directly from the cylinders into the engine compartment, and thence, through fitting openings in the firewall, directly into the cockpit.

SUMMARY AND CONCLUSIONS:

1. A case of carbon monoxide poisoning occurring in flight is presented.

2. The carbon monoxide hemoglobin saturation of 25 percent was caused by escape of engine exhaust from the exhaust collecting system into the cockpit, and was probably facilitated by the altitudes flown.

3. The simulation of carbon monoxide poisoning to alcoholic intoxication is re-emphasized.

4. Flight surgeons should bear in mind the possibility of acute or chronic carbon monoxide intoxication in naval pilots who may be mistakenly suspected of alcoholism.

Advance Bases

LET NANEWS HEAR FROM YOU!

PB4Y SERVES AS AN OUTDOOR CLASSROOM WHERE AOO'S LEARN TO INSTALL AND REARM GUNS, OPERATE AND MAINTAIN ORDNANCE

JACKSONVILLE AOO'S SCHOOL

REFRESHER courses now are available at Aviation Ordnance Officer's school, NATTC JACKSONVILLE, to qualified Navy and Marine officers on operational duty. Courses are prepared on a basis of actual war experience to provide practical information on use and maintenance of aviation ordnance equipment. The refresher courses run from four to eight weeks. The basic AOO training course is 16 weeks.

Approximately 150 officers enter the school each month. Careful consideration is given to the background and prospective duty assignments of experienced officers assigned to the school for specialized refresher courses.

For every hour of lecture, students spend two hours actually handling aviation ordnance equipment and job assignment work. This is followed by six days of constant field work. Highly trained instructors supervise as students perform jobs they will later direct as aviation ordnance officers. Operational-type planes and latest aviation ordnance equipment are available at all times for students to work with.

Five major departments at the school include aircraft munitions, guns, aircraft ordnance systems, administration and conditioning and rearming. Bombs, fuzes, rockets, mines, torpedoes, smoke and chemical warfare, are studied in detail. Special attention is given ammunition handling and stowage. Guns, gun mounts, sights, turrets and releasing systems all receive detailed study at the AOO school.

An important phase of the training course deals with administrative procedure. Officers learn proper methods of procuring BUAER and BUORD supplies and study other administrative duties that frequently fall to aviation ordnance officers assigned to fleet or shore based activities for duty.

Officer instructor shows students how to install a twin .50 caliber BAM gun in the Douglas gun package. Tank-shaped gun package is fixed externally to give aircraft more firepower

Aviation ordnance officers training for advanced base duty, learn practical methods of handling and stowing ammunition. All facilities are available for trainees to work out problems in detail

STUDENT OFFICERS LEARN TECHNIQUE OF INSTALLING A MK. 8 SIGHT. STUDY OF SIGHTS AND MOUNTS RECEIVES DETAILED ATTENTION

Aviation ordnance officers arm a fighter with rockets. Officers practice with operational type equipment to augment the lessons learned in classrooms. Mk 5 launcher is pictured

Practical instruction in bomb loading procedure is one phase of the student aviation ordnance officer's training. Familiarity with bomb hoists and loading procedure is essential

Classrooms are fully equipped for detailed study of various types of turrets. All classroom lectures are augmented by hours of operational and maintenance work on gear in planes

Construction and testing of racks is studied in detail in well equipped classrooms. Later these students will test their knowledge of rack maintenance and assembly on planes

LANDPLANE DITCHING

SPRAY ALMOST CONCEALS PLANE AS TBF PLOWS INTO SEA. SECONDS LATER, PILOT, CREWMEN WERE BREAKING OUT SURVIVAL GEAR

IN NORMAL or forced landings on airfields the landplane pilot has a smooth, prepared surface upon which to land. The pilot of a seaplane has to adjust his landing technique to the varying conditions of the water upon which his plane is specially designed to alight. As the sea surface becomes broken, wind, waves, and swell conditions have to be taken into consideration in determining the direction of approach and the technique of putting the plane on the water. This choice may be complicated by the fact that the waves and swell are running in different directions. As the sea increases, the problem of landing a seaplane becomes more difficult until such time that the size of seas makes a landing dangerous.

In realizing that seaplanes sometimes are seriously damaged in spite of being designed for water landings, the extent of the problems associated with ditching a landplane in similar conditions can be appreciated. This is further complicated by the fact that a landplane pilot is not normally trained in water landings; his first ditching, therefore, may be his first experience of water landing which makes it a much more difficult task to execute successfully.

The dangers are further increased by the fact that the landplane is not designed for water landings, although some attempt is made to lessen its unfavorable hydrodynamic characteristics. It is indeed remarkable that so many crews do survive ditching and are rescued, in spite of the fact that the aircraft may lack power or be damaged. Successful ditching may be expected only when aircrewmen have understanding of the complete situation.

It seems important, therefore, to consider the conditions which face the ditching pilot before we study design features which materially affect ditching procedures. Sea conditions must be clearly understood.

Waves Swell

Waves are an undulating movement of the surface moving in the same direction as the wind (except close inshore or in fast running estuaries). The actual mass of water in a wave does not move in a horizontal direction, except for tidal movement and breaking crests, while the surface particles circulate in an elliptical form. As the wind force increases, the waves become larger until the top of the wave approaches the vertical and breaks. The wind, depth of water, and area affect the distance between waves and their shape. If a tidal stream is running against the wave movement, the seas become shorter and steep.

The roughness of the sea is an indication of the strength of the wind, provided it has been blowing at the same velocity in the same direction for some time. Furthermore, the "roughness" is also an indication of the size of waves.

The wind will be stronger than the appearance of the sea suggests if it is freshening, blowing off a nearby shore, or with tide or swell. Waves are flattened in heavy rain.

Breaking waves may be due to shallow water and in such circumstances must not be used as a wind force calculator by the airman.

A swell is an undulating movement of the surface. It is caused by past or distant wind disturbances. Swells do not necessarily move with the wind and have no breaking crest except where a shallow bottom builds up a vertical face which will break. If the wind is blowing across the swell, a cross sea is created with the downwind moving waves running on the swell. The depth of water, wave conditions on the swell, and tidal stream are some of the factors which influence the swell size, besides wind force.

Mental Condition

The mental condition imposed upon the pilot should be taken into consideration. Often he has been flying some hours before he is faced with the task of ditching and his aircraft is usually not under full control; his crew may be wounded or passengers of low physical standard; or it may be, and probably is, his first ditching. Such conditions require the highest qualities of skill in handling the aircraft and instructing the crew who depend very largely upon him for their continued existence. Add darkness and a rough sea to such conditions and all will agree that the pilot is indeed tried to the limit. Yet it has been done successfully—quite often.

WIND AND SEA PREDICTION TABLE

BEAUFORT SCALE	WIND VELOCITY (KNOTS)	SURFACE CONDITIONS AS SEEN FROM THE AIR	SURFACE CONDITIONS AS SEEN FROM THE SEA SURFACE	PROBABLE WAVE HEIGHT (FEET)	NAVY DESCRIPTION OF SEA
		(adapted from "Aleutian Sense" Training Division, Bureau of Aeronautics, U. S. Navy.)	(From U. S. Navy Deck Log Book, (revised 1 Jan. 1944)		
0	Less than 1	Smooth, slick sea	Sea like a mirror	0	CALM
1	1-3	Small ripples with calm areas	Ripples-no foam crests	½	SMOOTH (less than 1 ft.)
2	4-6	Ripples everywhere, or well defined waves which are smooth and do not break	Small waves; crests have a glassy appearance and do not break	1	SLIGHT (1-3 feet)
3	7-10	Occasional whitecaps	Large wavelets; crests begin to break; scattered whitecaps	2½	
4	11-16	Pronounced waves-frequent whitecaps; slight to clearly defined wind streaks whose lengths may be equal to about 10 wave lengths	Pronounced waves becoming longer; frequent whitecaps	5	MODERATE (3-5 feet)
5	17-21	Long, well defined wind streaks with waves and streaks coming from same direction	Medium waves, taking a more pronounced long form; many whitecaps, some spray	10	VERY ROUGH (8-12 feet)
6	22-27	Large seas with waves forming on them; wind picks up and carries occasional wave crest	Large waves begin to form; extensive whitecaps everywhere; some spray	15	HIGH (12-20 feet)
7	28-33	Heavy seas; pronounced streaks; wind picks up and carries most wave crests; breaking rolling waves are forming	High, heavy waves. Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind	20	
Over 7	More than 33	Continual rolling waves; well defined waves form on some or all of the heavy seas; wind carries along all wave crests for a distance equal to at least one-half wave length; scud or foam	Very high waves, of greater length; edges of crests break into spindrift and spray may affect visibility; well marked or dense streaks of foam along the direction of the wind		VERY HIGH (20-40 feet) MOUNTAINS (40 feet and over)

Note: When streaks are long and straight, the wind is steady in force and direction for that locality. When streaks are curved, be alert for a change in wind direction. When a distinct line appears on the surface, as is caused by a rip tide, be alert for a reversal of wind direction.

TYPICAL wind and sea conditions photographed from low altitude. 1. Flat calm with slight swell. Altitude estimation difficult. 2. Waves 3-5 feet running with swell. Note beginning of wind streaks. 3. Well-developed streaks mean waves 12-20 ft, 22-27 knot wind.

SUCCESSFUL DITCHING REQUIRES BOTH COOL JUDGMENT AND SKILL

Handling The Plane

RESTRICTED visibility obviously has a direct bearing upon the pilot's judgment. The varying conditions of the water's surface, including reflections from sky conditions, and the absence of land make judgment of height and estimation of the wave and swell movement difficult. Flat calm and muddy water conditions also make accurate judgment difficult.

FROM the foregoing remarks and because of the normal landplane's unfavorable hydrodynamic characteristics, the pilot must so handle the aircraft that he "lets it down gently" and do all in his power not to fly straight into a swell or wave face. *(See illustration 1.)*

The following prime factors must therefore be met:

1. Low forward speed.
2. Low rate of descent consistent with safe handling.
3. Good control at the best nose up attitude of impact.
4. The best compromise in choice of approach direction in relation to the waves and/or swell and wind.

Use of Flaps

THE FLAPS should be lowered in order to reduce both the forward and vertical speeds at which the aircraft can approach. A medium setting is recommended. In general, if the flaps are lowered beyond the medium setting comparatively little reduction in forward speed is permissible while the rate of descent is increased and the aircraft approaches in a more nose-down attitude. If the nose is low at such a moment the impact will be violent. On the other hand, it will require more height and keen judgment to flatten out from such an attitude.

There are exceptions to this statement. Most Navy carrier-based fighters have comparatively large flaps which enable the pilot to make a relatively slow approach. This advantage is so great in this particular type of aircraft that full flap is advocated. The second exception is the B-24 *Liberator*. Here the flaps are so small relatively that almost no reduction in forward speed is obtained when the flaps are lowered to the medium setting. Full flap is recommended with this type of aircraft. Evidence indicates that the water impact on flaps causes no appreciable diving tendency except for dive brakes and very strong flaps.

Approach

WHEN approaching without power, a greater than normal approach speed should be used. This excess speed has a twofold advantage.

1. It insures good control and some margin of speed after flattening out to allow the pilot to study the seas in order to choose the best point of impact in relation to surface conditions.
2. It aids the pilot not to commit the error of stalling in from too great a height.

If one engine of a two-engine aircraft is available, a little power should be used to flatten the approach; however, the engine should not be used to such an extent that the aircraft cannot be turned against it right down to the stall with a margin of rudder movement available. On no account should the engine be opened up during the final stage of ditching. The power that can be used will depend on the characteristics of the type of aircraft and on some types it may be inadvisable to use the engine at all.

If two engines are available on one side of a four-engine aircraft, the inner engine only should be used. Use of both engines generally makes control of the aircraft too difficult for successful ditching.

If the inner port and outer starboard engines of a four-engine aircraft are available, it will be possible to use considerable power, adjusting the throttle so that little rudder is needed; this case approximates that in the paragraph below.

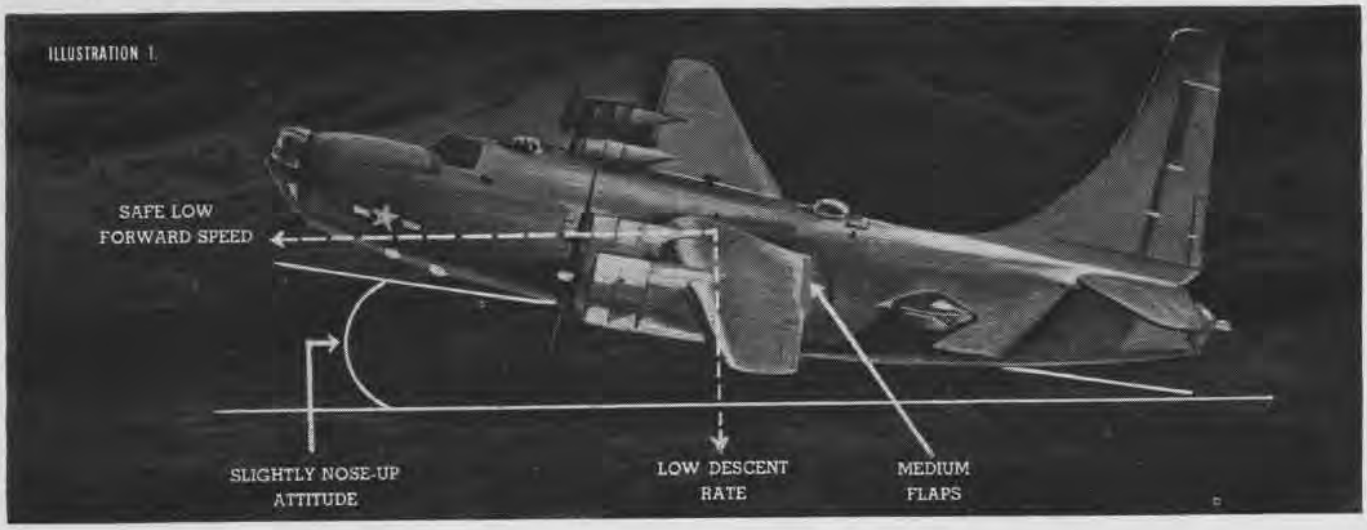
If power is available symmetrically, it should be used with two engines out of four, in order to secure the flattest possible approach patch and the slowest possible landing speed.

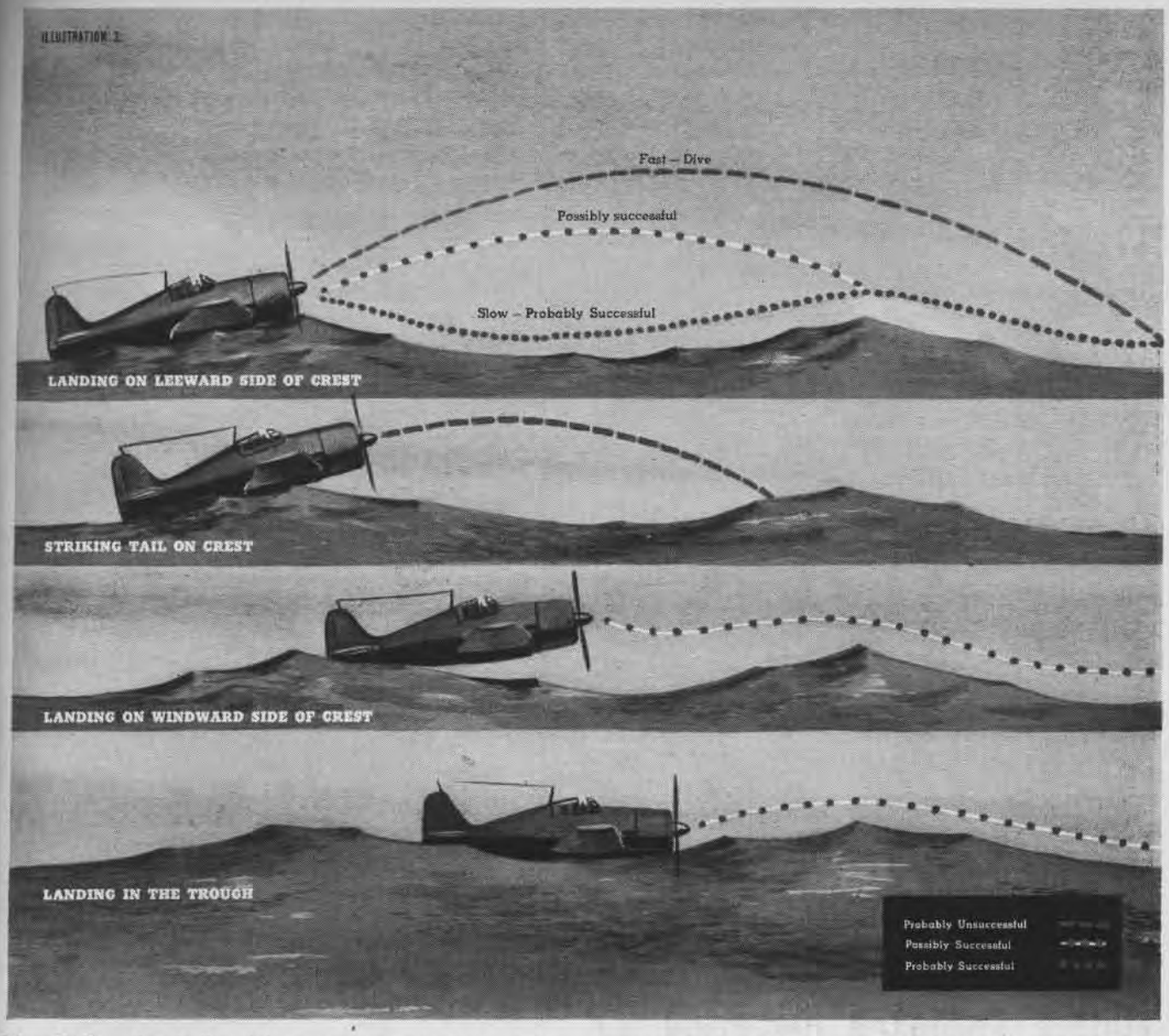
The use of power in ditching is so important that when it is certain that the coast cannot be reached, the pilot should if possible ditch before fuel is quite exhausted.

If symmetrical power is not available, a slightly higher than normal glide approach speed should be used. This, as mentioned previously, will insure good control and some margin of speed after flattening out to allow the pilot to choose the best point of impact in relation to surface conditions.

Apart from choosing the correct point of impact, the pilot should endeavor to hold off until all reserve speed above the stall is lost so that the impact occurs at the three-point wheel landing attitude or the slow landing (nose wheel off the ground) attitude for tricycles.

When ditching by moonlight, if the direction of approach is not fixed by surface conditions, it is advantageous to ditch in a direction that places the moon about 30° on the port bow, giving the pilot the benefit of good visibility.

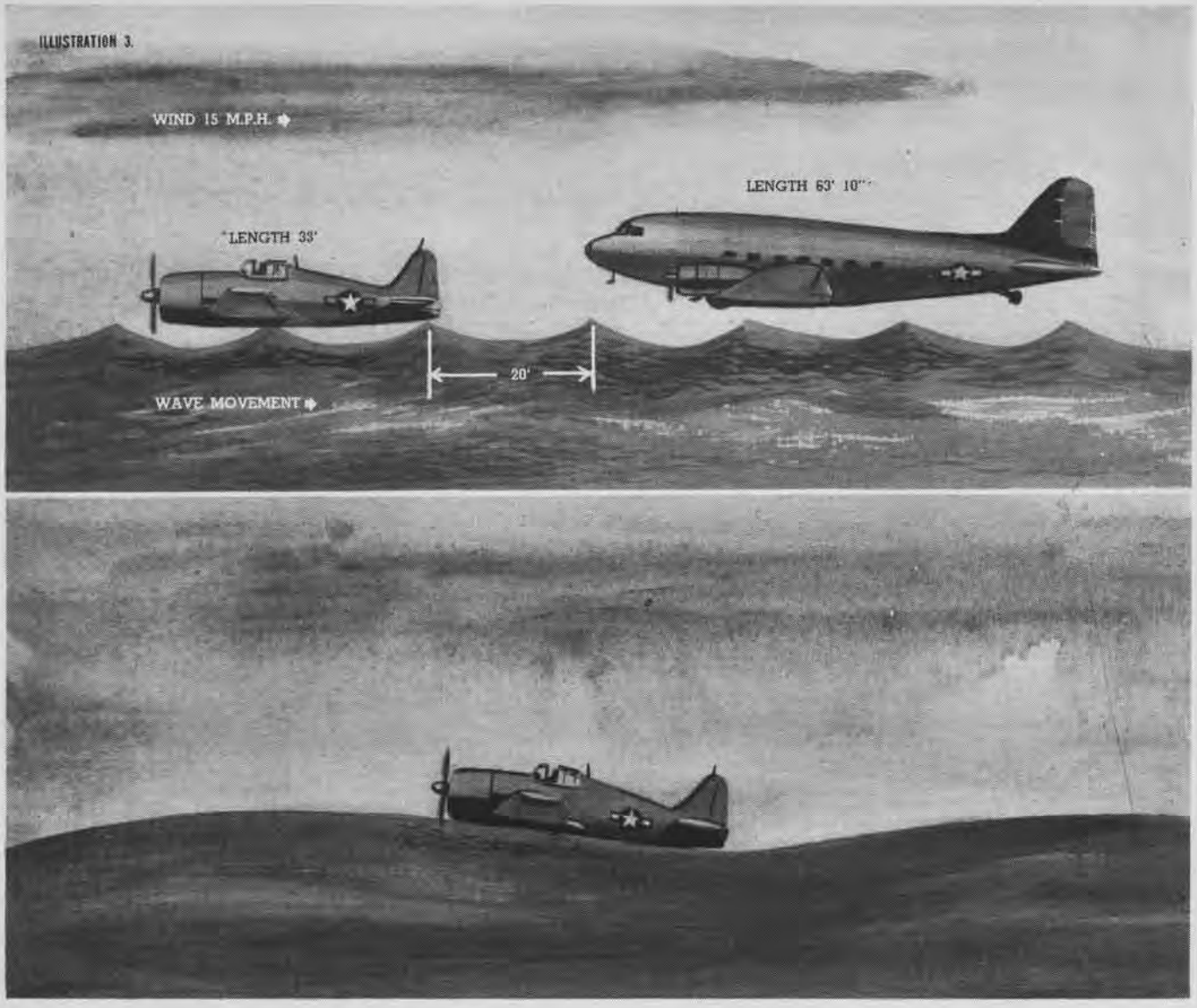




These drawings of a *Hellcat* fighter going into the drink clearly illustrate the problems and possibilities of into-wind ditching in the open sea. Ditching calls for accurate judgment if the pilot is to make contact with the water at the lowest possible speed, in the proper slightly nose-up attitude and at the best point in relation to the waves. The pilot should maintain good control and a margin of speed after flattening out in order to choose the best point of impact. The nose should be held up as long as possible. Wheels should be up and flaps should be down. Hatch should be locked open and shoulder straps tightened.

"WILDCAT" PILOT DOES EXPERT JOB OF DITCHING IN CHOPPY SEAS

PLANE NOSES UP ON WAVE CREST. PILOT CLIMBS FROM COCKPIT



CHOOSE APPROACH DIRECTION BY OBSERVATION OF WIND AND SEA

Choice of Direction

In choosing the direction of approach the height and distance apart of waves and swell in relation to the aircraft size is all important. If a pilot ever has the opportunity of going at 35 knots in a high-speed launch, he will be amply impressed by the might of the sea and the damage it can inflict even on a boat. It should also be noted that the surface craft is traveling only at half the aircraft's lowest possible impact speed.

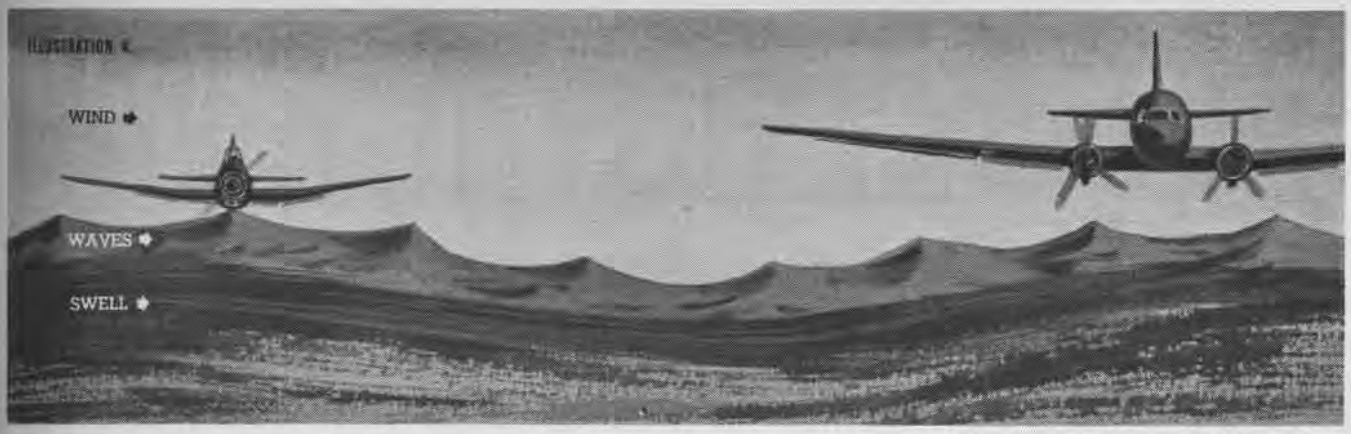
As previously stated, judgment of sea conditions from the air is not easy. It always looks more calm than it really is. Furthermore, it is always difficult to judge just how the waves are running in relation to swell. But the pilot, if he knows the wind speed and direction, can have forewarning of the wave conditions. It should be understood that swell conditions may complicate this rule.

A cut-and-dried ditching technique has not yet been instilled into all pilots. The best advice for the landplane pilot is to become familiar with the sea by flying low over the surface to watch wave and swell movements. From such study, the pilot should make his own choice.

Illustration *2*, adapted from an original report by D. C. MacPhail and J. C. Ross of the Royal Aircraft Establishment, shows clearly the possibilities of into-wind ditching. Upon studying this diagram it will be appreciated that the execution of such a ditching calls for accurate judgment.

In illustration 3, the R4D would fare far better than the F6F *Hellcat* when ditching into wind because the distance between crests for the R4D is three wave crests within its own length, whereas the *Hellcat* only covers one and one-half waves. Consequently the fighter is far more likely to dive. In such circumstances, the F6F *Hellcat* should be ditched crosswind and the R4D would ditch better that way also, although it may survive ditching into the wind in waves of the size illustrated.

In illustration *3*, a single-seated fighter is shown about to ditch into the wind near the top of an unruffled ocean swell which is running into the wind. This is obviously the best course. But, if this swell were running with a wind which caused waves of dangerous dimensions *(see illustration 4)*, ditching crosswind would appear the best course, unless the wind is so strong that the ground speed can be greatly reduced. In the case of the R4D the distance between swell tops is not sufficiently great to allow safe into-wind ditching and therefore is shown ditching crosswind along the swell and waves the same as the *Hellcat*.



DITCHING CROSS WIND OR INTO WIND POSES HEAVY PROBLEMS

Where waves *and* swell are present the pilot must choose whichever course appears to be the less formidable. If he is able, he may choose a direction of approach which is a compromise to both waves and swell, thus reducing the landing impact.

It will be seen from the Wind and Sea Prediction Table that in a wind of 11 to 16 knots the wave height is five feet. Such seas would present a hazard to a fighter but less so to a heavy bomber. Any seas greater than five-foot waves present a serious hazard to all landplanes which attempt to ditch across them.

However, there are advantages that accompany high winds. As the wind increases, the distance between wave crests lengthens, thus allowing the pilot greater opportunity for selecting a more favorable spot on the wave for the initial contact. Also an increase of wind permits a decrease in ground speed when landing into the wind.

It is necessary to point out that in a *high* wind condition, whatever the distance between wave crests or whatever their size, an into-the-wind ditching is preferable because the impact speed is greatly reduced by reason of the high wind. Naturally, where an aircraft's stalling speed is low, into-wind ditching will be more frequently preferable owing to the even lower ground speed obtainable.

In other words, if the pilot commits himself to ditching into wind (into the waves) he commits himself to two grave disadvantages. In the first place, he may fly straight into a wave face, or secondly, the tail may bounce on a crest causing the nose to be thrown violently downward.

Landing Crosswind

WHEN it is decided to ditch crosswind (along the waves) adopt the following technique:

1. Obtain the lowest rate of descent and forward speed made possible by use of flap and power if available.
2. Maintain the most advantageous nose-up attitude of impact made possible by medium of flap and power.
3. Compensate drift by heading.
4. Endeavor to land on the downwind side of the swell top or wave crest. (*See illustration* 5.)
5. In multi-engined aircraft that side of the aircraft which has maximum power available should be the upwind side, if this does not involve a turn near the water.

Landing Into Wind

WHEN it is decided to ditch into the wind (into waves) adopt the following technique:

1. Obtain the lowest possible rate of descent. This is important because the relative rate of descent may be increased due to the impact occurring on a rising crest.
2. Obtain the lowest possible forward speed. This is important because the nose may strike a wave face. If the speed is low the impact will be less severe. Also, at high speed, if tail strikes a crest, pitching will be more violent.
3. Maintain the most advantageous nose-up attitude, thereby avoiding as far as possible the nose striking a wave face.
4. Endeavor to touch down just before a rising wave face.
5. Endeavor to hold the nose up until all speed is lost.

NOTE: The text of this article was taken from the *Landplane Ditching Staff Instruction Manual* prepared by the Air Sea Rescue Agency Committee to Study Ditching Procedures. It is reprinted from *Air Sea Rescue Bulletin* No. 4.

Is your distribution

HORIZONTAL or VERTICAL?

IF it's **HORIZONTAL** NANEWS doesn't get beyond a few select hoarders. Keep distribution **VERTICAL** so that safety, survival and technical data published will reach every mech who maintains or overhauls Navy combat planes, keeps 'em fit for fightin'. Don't let distribution log jams strangle circulation of the magazine in barracks, A&R shops and wherever enlisted men have a chance to read it twice a month!

DISTRIBUTION OFFICERS, this is your baby, so let's know if you're receiving the right amount of copies to take care of your reader demands.

It's out...get it around

UNCLE KIM TUSSIE

Mr. Pilot Don't Be A Bogey Man Turn On Your IFF

WHEN Cousin Boliver's boy Bush Tussie got back here on leave from a-flyin with th' Navy, he told us a lot o' stuff ye wouldn't believe, like a-shootin at somethin' miles off ye couldn't see and a-hittin it too. And he told about somethin that'd fly an airplane without anybody in hit. But one o' the dad-durndest things I ever heard tell of was that Eye-eff-eff he talked about, some sort of a signal that could tell a friend from a foe. I just don't understand how a body can set up thar in th' sky and sail like a turkey buzzard and turn on this thing-a-my-jig that tells 'em if the man a-flying six to ten miles away in another plane's a friend 'r enemy. Wisht we had one around here. When a man's got a signal smart enough to tell a Van Horn from a Tussie, he's got somethin. But Bush told us, when he left over thar, even with this wonderful Eye-eff-eff, he was still a-shootin down our friends. I told Bush no matter how nice ye had things fixed up, the nature o' man was purty much th' same wherever ye find 'em. The night Elmo was shot we had a signal too, one o' the purtiest signals a body ever seen, but hit didn't make no nevermind. Elmo fergot to turn 'er on.

OUR SIGNAL was in Still Holler. Our crick got the name o' Still Holler because the revenooers raided it so many times, only to find places where stills 'd been. We had everything worked out pretty well 'r we thought we had. The holler is long and deep and hit's hard fer anybody to come down at the head o' the holler 'r over the cliffs along the sides. Thar's a road along the ridge at the head o' the holler, and we put Nando and Possum Tussie on the ridge-road to guard and to call us on the grapevine telephone if they saw any stranger a-lurkin around. Pert and Sebie Tussie guarded the path down the pint on one side, while Sparkie and Did Tussie guarded th' path on the other side. All were young Tussies and right handy with thar guns and quick to get a call to us on th' grapevine telephone. The only part left unguarded was the mouth o' the holler, th' way we went to our still, and hit was here we had to do our signalin'. Three blinks of a flashlight, and we knowed they's our men.

In the middle o' the holler we had our still under a big rock cliff that stuck out from the side o' a bluff makin a good roof to pertect us from th' weather and th' spyin eyes o' evil men. If any man was lucky enough to get past our guards, he'd haf to look down from th' cliffs to find our still, and the roof hid the fire o' our furnace. Hit was as good a place as I've ever seen to distill th' fragrant juice from the corn.

WE HAD to have a good place. Ye'd know that if ye ever made the honorable herbs. We had to watch out fer th' Sheriff and his men; we had allus to be on the lookout fer the revenooers, and we had to look out fer th' Van Horns. They sent thar men to spy on us and to turn us in to the Law, since we made better herbs than they did and we's about to ruin thar business. And because we had to pertect ourselves from enemies on all sides, that's why we had to have guards and signals and a lot o' rules we didn't like. We didn't talk but we whispered while we older Tussies distilled the herbs and th' younger Tussies guarded and toted supplies to th' still and carried away milk cans filled with herbs. They carried 'em to another cliff 'r buried 'em when we expected a raid until we could get the milk truck to 'em.

But th' night I'll allus remember was th' night when we was to make the ninety gallon run fer th' thirsty coal miners o' West Virginia. That was the night when Zeke, Tom, Elmo, and Rank Tussie, who's a-totin to and from th' still, didn't signal us, and we thought

th' Van Horns were a-tryin' to slip through to shoot and slug hit out with us, chop up our still, and carry off our herbs.

UNCLE Seymore with th' eyes of an eagle and with a cool trigger finger watched fer a signal when he heard footsteps on the leaves and the crackin' o' the brush. He watched fer a flashlight pinted toward th' still to come on and go off three times. But thar wasn't no signal.

"Enemies," Uncle Seymore whispered to us. "Must be Van Horns."

Cousin Tracey, Cousin Fred, Uncle Millard, and Uncle Hargis grabbed thar Winchesters, while Cousin Boliver and I scrambled fer our rifles and we lined up beside Uncle Seymore, so still we couldn't hear one another a-gettin his breath. Then we heard th' footsteps a-comin closer and we laid down a line o' fire that looked like a flash o' lightnin in the night. And then we heard th' screams o' somebody half-killed.

I was the first to 'em. Hit was pitiful to see our own blood kin a-kickin' thar in the brush. "Fergot to turn on th' flashlight, Uncle Kim," Elmo moaned.

But hit was too late fer talkin now, fer we'd riddled with bullets and killed Zeke, Tom, and Rank; and Elmo died in less than two months from white swellin in his legs. That's why I say hit don't make no nevermind what wonderful contraptions ye rig up fer flyers if they's as fergetful as Elmo. Ye'd be a-doin a lot o' work fer nothin.

I say a signal ain't no good if ye don't turn hit on.

WINTER HOOD ON PRIMARY TRAINER ELIMINATES NOISE ENABLING BETTER INTER-COMMUNICATION BETWEEN INSTRUCTOR AND TRAINEE

INSTRUCTOR VOICE STUDY

YELLOW PERILS have been rigged with wire recorders at NAS New Orleans to improve training procedure of primary flight instructors. Previously used only in cabin-type planes, wire-recorders have been adapted to open cockpit planes by use of winter plastic enclosures.

Recording apparatus microphones are attached to mouthpieces of the regular inter-com system. Conversation between instructor and student are magnetically recorded on wire.

Recordings made aloft are studied by student and instructor. Explanations and practice lectures by students in training are evaluated for clarity, accuracy and completeness. Student instructors can discover and correct technical errors in explanation of maneuvers and improve conciseness of presentation.

USE PLASTIC TUBE

Wire - recordings were installed after a survey made by the station psychologist disclosed that actual instructional hops were the major weakness.

Accidents occurred, the survey disclosed, because students could not understand directions and information given by instructors. A series of tests disclosed that many instructors' voices were indistinct.

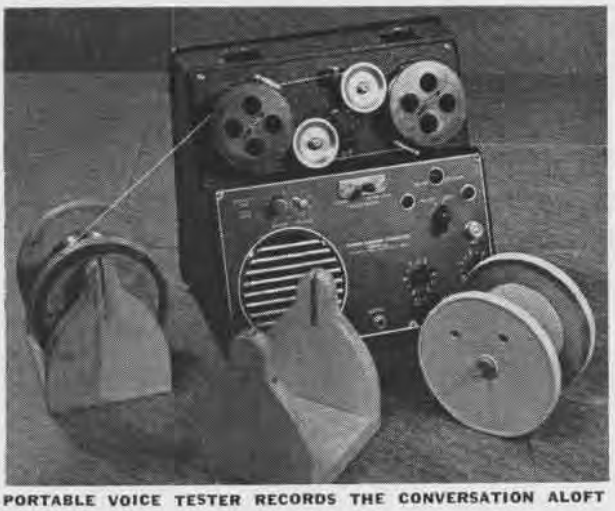
Testing and training improved hearing acuity and speech clarity. Laboratory voice tests served to eliminate men with sub-standard speech. Instructors under training read standard testing material over a gosport helmet-type loudspeaker.

After gosport speaking tests, students make recordings on magnetic tapes. Airplane noises are mixed synthetically with a controlled volume of speech to produce the exact sound that comes over a gosport.

Recordings played back enable students to evaluate their own voice quality and provide staff instructors a method of comparing men.

After testing, training and indoctrination into proper use of equipment, 91 percent of the standard testing material was audible over the microphone. With primary patter 99 percent audibility was reached.

INSTRUCTOR UNDER TRAINING TESTS VOICE BY USING GOSPORT



PORTABLE VOICE TESTER RECORDS THE CONVERSATION ALOFT

SQUADRON NOTES

Pilots Faked Attack. Pilots of VC-10 had no time to load torpedoes or bombs into their planes when a Jap task force attacked their small carrier off Samar not long ago. Without hesitation they launched an attack on the Japs boring through the ring of ack-ack time after time in dummy bombing and torpedo runs and strafing the Nip decks fore and aft. By this means they were able to divert enemy attention in at least part from their own carrier. The composite squadron which recently returned to the States on leave shot down 19 Jap planes in five months.

Marine Fighters Return. Members of the first Marine single-engined squadron to operate as night fighters in the Central Pacific have returned here after winning a place of distinction as pioneers in a new phase of Leatherneck aviation.

The shadow-stalking fliers (Leathernecks who roamed the heavens with ease in the blackest of skies) hit the jackpot when 12 Jap bombers closed in on Engebi. When there were no interception duties, pilots reversed their roles and served as hecklers over enemy bivouac areas by bombing and strafing.

During its activities in the Pacific, the squadron lost only one of its pilots in action and suffered only one serious operational accident in more than 4000 hours of combat flying.

Flew 2,000 Sorties. Composite Squadron 5 recently returned to this country from a highly successful tour of duty in the Pacific war theater during which it flew 2,000 combat sorties. In one day off Samar in the Philippines, VC-5's fighter and torpedo planes sank two Japanese heavy cruisers, damaging another, damaged two enemy battleships and damaged several Jap destroyers. The squadron destroyed 16 airborne enemy planes and probably destroyed 13 others. VC-5 played a stellar role in helping turn back powerful Japanese forces in the second Philippines battle.

Japs Played Host. A Navy *Catalina* "Black Cat" spent one night on the water of a Jap-held island lagoon in the Pacific, not long ago, and escaped without a scratch. Returning from a routine patrol mission, the pilot found all approaches to his base closed in by extremely bad weather. Night was falling, fuel was running low and the ocean was far too rough for a landing. Through a slim window in the clouds ahead of him, the pilot spotted the Jap-held lagoon, promptly blacked out his lights and brought the *Catalina* safely down. Lights on the Jap seaplane ramp flashed on but the Navy crew did not accept the invitation to come ashore. They maintained watch through the night but aside from clanking noises ashore nothing happened. The Japs were unable to see the black flying boat quietly floating in their lagoon. When the first streak of dawn showed, the *Catalina* pilot went into action. He roared directly over the enemy-held island reaching his home base without further incident.

He Settled a Score. Two *Hellcats* were running interference for the Army's invasion of the Philippines when a Jap fighter knocked one of them down. The enemy attacker, a *Tony*, made a split-S and streaked away for the Luzon airfield with the other *Hellcat* in close pursuit. The Navy pilot overtook the Jap, followed him down to 500 feet and shot him into the ground. Then for good measure the same pilot knocked down four more enemy planes the same day. He was a member of Air Group 14 which has chalked up an imposing score of enemy aircraft, accounting for 32 in one day.

Nailed 660 Jap Planes. A highly destructive outfit from the Jap viewpoint was Air Group 15 during its recent tour of duty in the Pacific. The group's pilots destroyed 660 Nip planes, 312 of them in aerial combat and the rest on the ground, and was credited with 388 more which were probably destroyed or damaged. Enemy shipping, too, took a beating from this carrier group. During the tour of duty the group sank 174,300 tons of Jap merchant vessels and 77,200 tons of warships. In addition, it damaged 38,500 tons of merchant shipping and 217,450 tons of warships. In a single action, Fighting Fifteen's pilots shot down the record number of 67½ Jap planes in one day.

Played Cat and Mouse. By playing a game of cat and mouse with a small Japanese flotilla he had surprised at anchor in Toli Toli Bay, the pilot of a Navy *Catalina* was able to sink a *Katori*-class cruiser. He first observed the Japs while he was on a routine night patrol over the Celebes Sea, but decided against attacking because there was a full moon and he believed the Japs would be alerted. Instead, the PBY pilot veered away as though he had not seen the four vessels at anchor. Flying in an arc of approximately 50 miles, he swung back toward the bay approaching it from behind a hill overlooking the Jap anchorage. Coming suddenly around the hill, the *Catalina* was within a few hundred yards of the Japs before they opened fire. The Navy pilot went through their barrage untouched and dropped his full bomb load while passing over the cruiser from bow to stern. The bombs hit amidships and the Jap cruiser burst into flames with a heavy detonation. The cruiser was scored as sunk.

Averaged 215 Hours. Navy Composite Squadron Three returned to the United States from the Pacific with an average of 215 combat hours to every man in the squadron. This squadron climaxed its tour of duty by routing a Jap battleship force in the Second Battle of the Philippines. Although enemy planes were encountered only twice, the squadron shot down 17 of them, 12 of which were accounted for in a single action. In one two-day period the squadron sank 16,000 tons of shipping.

Home From the Aleutians. Patrol Bombing Squadron 135, a part of the famed "Empire Express" recently returned from the Aleutians with the record of having lost not one plane during its months of duty. VPB-135 began operation from Aleutian bases against Jap installations on Paramushiru along the night operational pattern of its predecessors. But during its tour the squadron inaugurated daylight raids against both Paramushiru and Shimushu with outstanding success. Although several Japs were shot down, VPB had no casualties. The *Ventura* was too fast for the Japs.

U. S. S. Princeton Costly For Japs. Although the *U.S.S. Princeton* now rests honorably on the bottom of the briny, full details of her sinking now available indicate the medium-sized carrier was no bargain for the Japs. Pilots of Fighting 27, just 20 of them, had shot down 36 Jap planes off Luzon the morning of the sinking and had routed the remaining Japanese who had attacked their carrier, the *Princeton*. Fighting 27 was low on ammunition and returned to its flat-top. Ten *Hellcats* had landed safely and the pilots were hurrying to the ready room to report their kills when a lone Jap dive-bomber sneaked out of a cloud, scored a hit on the *Princeton's* flight deck and set her on fire.

He Saved 20 Men. At least 20 men are alive today because of a nervy pilot in a flimsy little float plane who saw their fleet oiler explode spreading flames over the water in every direction. He set his plane down while men in the water swam frantically to stay ahead of the burning oil. Time after time the pilot taxied his little plane up to the edge of the flames, tossed a light line with float attached to men in the water and towed all who could hold on, well away to safety. While he was darting in and snatching the swimmers from death, men in boats from other ships were equally busy. As a result, despite the terrific heat and subsequent explosions nearly 80 percent of the ship's company were saved.

TOKYO TALKS

To The United States

Tokyo residents have found a way to overcome their match shortage by salvaging the unburned powder contained in incendiary bombs dropped by American B-29 *Superfortresses* on the Japanese capital. Chemicals within the thin sheet iron cylinder are still useful as substitutes for ordinary matches provided the bombs are extinguished soon enough.

To Japan

Faced with a shortage of telephone equipment throughout Japan, the government has decided to preempt for public use convenient telephones of private subscribers in order that "the making of emergency telephone calls will be guaranteed." Under the new measure, a total of 3,500 private telephones would be placed at the disposal of the Japanese public after January 1 for use between the hours of 8 a.m. and 6 p.m. on payment of the prescribed tolls.

To China

The Japanese-controlled Nanking radio in China broadcast the following advice in connection with air raids:

For your air raid shelter in the city you must consider the buildings near by. When they collapse, your shelter should be strong enough to give you protection. It is easy to catch cold while you are in the shelter or trenches. You should carry blankets and thermos flasks containing hot water with you.

To China

Japanese women have tucked their flowing kimonos into "mompei," a trouser-like garment roughly resembling a baggy type of American slacks, and most Japanese men have abandoned their soft felt hats for "fighting caps." The long-sleeved kimono, which was formerly regarded as an "unexplainably beautiful" and graceful costume for women, is no longer found practical.

To the Pacific

Domei said recently that a "superior grade" of high-octane aviation gasoline was being produced "in large quantities" from the roots of Japanese pine trees, and asserted that tests had shown the synthetic to be "qualitatively equal to, if not superior to, high-octane gasoline obtained from petroleum."

Quoting from what it said was "an official disclosure," Domei said the new synthetic gasoline was being obtained from "a simple patented process, and already is being mass-produced."

To Occupied Asia

Eleven-year-old boys in the fifth grade in Sannomaru National School in Mito, Japan, are studying semaphore signaling in preparation for naval training, Domei reported. The students have "reached the stage where they can clearly signal the words 'Forward! Rising Sun over the Pacific,' from a distance of several hundred meters, as well as receive and record 100 words in three minutes."

To Japan

The Association of Reservists in Hyogo prefecture on Honshu, the largest of the home islands, sought to "achieve security of foodstuffs in decisive wartime" by stocking a small uninhabited island near the coast with rabbits. Eight rabbits were released on the island in April, 1943; today there are more than 1,000 rabbits. Members of the association plan to sponsor a rabbit hunt on the island. Rabbit meat will be eaten, hides go to the military.

SHOW ME THE WAY TO GO HOME

Radius of Action

Mid-Lat. 23° S, Mid-Long. 179° E. CV: 0400 position, Lat. 22° 24' S, Long. 178° 58' W on cus 226°, speed 28 k.

Point X-Ray: Lat. 22° 11' S, Long. 179° 54' E.

Forecast wind at flight altitude from 285°, force 32 k. Mean variation 16° E. TAS 145 k.

Orders: Leave carrier to rendezvous over Point X-Ray at 0515. Then scout out on cus 255° to a maximum distance, returning to carrier at 0800. Carrier is scheduled to change to cus 162°, speed 26 k at 0608.

1. At what time do you leave carrier to rendezvous at Point X-Ray? ____

2. What is MH to Point X-Ray? ____

You depart Point X-Ray at 0517 on cus 255°.

3. What is MH out? ____

4. Time to turn? ____

5. GPT **Lat.** ____ **Long.** ____

6. MH in? ____

At 0721 an enemy submarine is sighted bearing 303° relative, distant 7 miles.

7. What is enemy position? **Lat.** ____ **Long.** ____

(Answers on page 40)

PUBLICATIONS

Reprint Combines All Previous Bulletins

To those discouraged by the job of keeping up with the ever-higher pile of Aircraft Service Changes and Bulletins, this should come as welcome news. A start has been made toward consolidating these single copy publications into one printed volume, one type of airplane at a time. Exhibit Number One: *Aircraft Service Changes and Aircraft Bulletins for Model* F6F (Cumulative Edition), a neat reprint of all such changes and bulletins issued (and not cancelled) up to 15 October 1944. This book hit the mails early this month as NavAer 01-85FB-533. Watch for it.

With This Volume You Can Clear Files

Check the contents of this publication against the subject material now in your files and substitute it for all you find. Destroy those F6F Aircraft Service Changes and Bulletins included in the cumulative edition and don't forget those cancelled numbers you should have discarded long ago—as listed on the frontispiece of this edition. The Addendum on the outside back cover lists changes and bulletins issued, as well as those cancelled, from 15 October 1944 to 10 January 1945. Use this volume and you'll have an authentic file in less space, if you keep it up to date by adding new changes as they are issued. To take care of these new issues, a supplement to this edition will be coming when enough new changes and bulletins have been issued to make it worthwhile.

Use a Post Card to Express Your Opinion

This is strictly a test run—what do you think of the idea? All copies of the first distribution contain a post card which asks for your opinion. Please use the space provided on the card, sign and mail. There's a card for every user of this book, all the way down the line. If you have need for extra copies of this cumulative edition the address is Navy Department, BuAer, Publications Branch, as shown on NavAer form 140, which again we say, please use. If you adopt this procedure delivery of copies will be facilitated.

New ACL Cumulative Edition Also Out

Last year about this time appeared Aviation Circular Letter No. 0-44, a reprint of all Aviation Circular Letters then in effect. This publication now has been replaced by Aviation Circular Letter No. 0-45. It contains everything No. 0-44 did, except the subsequent cancellations, plus all ACL's issued during 1944. This cumulative edition supersedes all single copy ACL's prior to 1 January 1945, as well as No. 0-44, but the safest way to destroy the right ones is to check against this new volume's table of contents. Be sure you don't destroy the ACL's published after 1 January 1945 because you'll have to keep those around until No. 46 appears. No word about that one yet, but you should receive your copies of No. 0-45 this month.

25 YEARS AGO THIS MONTH

Naval Aviation in February 1920

February 2—Joint Army and Navy Board on Aeronautics has approved a new overall aircraft policy for use during wartime operations. Both Navy and War Departments will provide and man their own aircraft, and each will perform specific duties relegated to that branch. Navy aircraft will conduct operations from mobile floating bases or from naval air stations on shore. They also will protect coastal communications or operations against enemy establishments on shore, whether in cooperation with other naval forces or not.

February 5—The Radio Section has requested 200 radio compass coils for installation on all large type flying boats, seaplanes and dirigibles. The coils will be distributed to various air stations and the Atlantic and Pacific Fleets for use in conjunction with the new type SE-1605B amplifier. Navigation of planes, operating at great distances from their bases, will thus be facilitated.

February 7—Arrangements have been made with the Army for exchange of six DH-4B planes for six DH-4 planes now at the Naval Aircraft Factory. The planes, which incorporate all latest improvements, are needed by the Marine Corps.

February 15—Secretary Daniels asked Congress to prohibit export of helium and to impose five years' imprisonment and $5,000 fine for violation of the export ban. "The demand for helium abroad is insistent," he said, "and great enough to consume the available supply in this country in a short time."

CAPT. T. T. CRAVEN

February 15—Construction of two giant seaplanes, twice the size of the transatlantic NC-4 and larger than any in the world, is planned by the Navy, according to a statement made February 7 to the House Naval Committee by Captain T. T. Craven, Director of Naval Aviation. He asked for a $636,000 appropriation to complete this work, and proposed a naval aviation program costing $12,890,000 for 1921.

Besides the two large planes, Captain Craven recommended four new NC planes, 150 smaller ones, one large rigid airship costing $2,700,000, three smaller non-rigid airships, 38 kite balloons and six free balloons.

February 16—Owing to dire need for aircraft tenders, the Naval Air Service is trying to secure several of the "B" type cargo ships now under construction at Hog Island.

February 17—According to reports from the Naval Aircraft Factory, the NC-3 Flying Boat will be completed within two weeks. The plane, however, will not be ready for service for an additional two weeks, because of ice conditions in the river and the uncompleted runway.

February 17—Two 3-inch antiaircraft batteries of four guns each are being shipped to NAS PENSACOLA for mounting on Santa Rosa Island, to be used by naval aviators in spotting gun fire from the air.

February 26—The C-6, first dirigible ever to be assembled on the Pacific Coast, will make its maiden flight over San Diego the beginning of next month. Two veterans of the World War are scheduled to pilot the great ship which will be launched from NAS NORTH ISLAND. If this venture proves successful, the Navy plans to have a fleet of such airships based at North Island to carry on reconnaissance and training duty with vessels of the Pacific fleet.

February 27—The Secretary of the Navy has authorized sale of NAS AKRON to the Goodrich Tire & Rubber Company. Instructions have been issued to all Bureaus to expedite removal of government-owned property and personnel.

February 28—United States Naval Academy plans to include studies related to aviation in the regular curriculum. Although actual flying instruction is not contemplated, many naval officers advocate a post-graduate course in aviation.

February 28—Bureau of Steam Engineering is considering purchase of a few propellers made of micarta, developed by the Westinghouse Engineering Company, for experimental work with the DH-4 machines. Although the Navy has found they give excellent results for durability in experimental flying at McCook Field, cost of manufacturing is so high that only DH-4 machines have been equipped with the blades.

Navy men and officers gather to witness inflation of the C-6. Lieuts. Miller and Norris are scheduled to pilot the dirigible

Four DH-4Bs, recently acquired from the Army, are parked on the NAS ANACOSTIA runway awaiting inspection by Marine Corps pilots

The Hangman Speaks

THIS ARTICLE *reprinted from the British Air Ministry* Weekly Intelligence Summary, *consists of excerpts from a speech given by Heinrich Himmler at a conference of commanding officers of the Wehrmacht on Oct. 14, 1943. The speech was published by the Supreme Command in a booklet "For official use only." Since Himmler gave this speech, his powers have been greatly expanded and security problems aggravated.*

卐 GENTLEMEN:

I may use the chance of being able to speak to you to deal shortly and comprehensively with a number of questions which are not immediately connected with each other.

One question which very frequently occupies the minds of all of you who are out at the front is: "What is the security position of the interior of the Reich?"

You will have read that a German who made defeatists remarks was sentenced to death and that the sentence has already been carried out. You see it is not our wish to sentence as many people as possible to death. It is sad enough when a human life which might be used advantageously for the nation and for the German homeland has to end in this manner in wartime.

Despite all the difficulties which undoubtedly exist, I regard the security position in the Reich on the whole as absolutely firm and calm. I have no reason whatsoever to doubt that we are masters of the situation in every respect.

Another proof of the striking power of the executive and of the security position in the Reich from the police point of view is provided by the following fact. We have succeeded in recapturing 90 to 95 percent of the escaped prisoners, as a rule within a week. I know of only one case in which Communist agents, who had been dropped by the Soviets from an aircraft, found refuge with a Communist family.

Himmler Indicts Churches, Democracies

I tell you quite frankly that I had all the male members of this family shot. I even had it announced in the newspaper in a suitable form.

I will now tell you the main reasons why we have so many enemies in this war throughout Europe and all over the world. In the first place I name the Jews.

In the second place I name Freemasonry. The Freemasons were an organization of Jews which ensnared stupid Aryan blockheads by means of their apparently harmless doings. The same applies to the democracies, the same applies to plutocracy. They all hate us. Then already they hated Germany and they still hate her today. In addition I may well mention the Churches dabbling in politics. One sector, the Protestant Church, is in England the established church. The other sector, Catholicism, has its own far-reaching dreams of power. Wherever we go in the world, every Jew, every Freemason, every Communist is our natural enemy.

To go on to another point I have agreed that all cases in which a man of non-Germanic blood gets the Iron Cross are to be submitted to me for investigation. If the family is really in order, or more or less in order, I shall be generous in my judgment—then the 500 or 1000 holders of the Iron Cross will become full citizens. But our aim will not be achieved if we make this too cheap on occasion and if, just because we are in a hurry now, we go on accepting human beings into the fold of the German people and into the German Reich of whom we shall discover in a few years' time that we have no use for them. For one must be very careful in all questions concerning blood.

German Blood Is All Important

For this reason, I, or rather we, the police are very severe in our penalties for members of a foreign people who enter into relations with German girls and women. In bad cases the man will be hanged on the spot. This may strike you as very severe. But I believe that we owe this severity to ourselves and to our people. If too many such alien drops of blood were to penetrate into our national body, the greatest asset we possess, namely, our blood, would be debased.

IN THE EAST there are the many foreign nationalities which are not racially related to us, that is, the whole of Slav humanity. Individually the Slavs are amazingly useful.

Obviously in such a mixture of peoples there will always be some racially good types. Therefore, I think that it is our duty to take their children with us, to remove them from their environment, if necessary by robbing or stealing them. That may seem strange to our European minds and many people will say: "How can you be so cruel as to take a child away from its mother?" To them I would say: "How can you be so cruel as to leave on the other side a brilliant future enemy who will later on kill your son and your grandson?" Either we win over any good blood that we can use for ourselves and give it a place in our people or, gentlemen—you may call this cruel, but nature is cruel—we destroy this blood. But we cannot answer for it to our sons and ancestors if we leave this blood on the other side, thus letting our enemies gain able leaders and able commanders.

Will Stand Ground And Hit Back

I believe we must be terribly hard against ourselves. We soldiers do not live just for ourselves, but in our hands rests the fate of our nation like dice. We throw for the fate of Germany. It is this that we are fighting, for we become professional soldiers as the result of an inner call and vocation. The war, even if it should last for a long time, must never find us tired, for war—though it may be hard and unwelcome to hundreds of thousands—must be for us professional soldiers the great time of the fulfillment of our life as men.

I can only repeat again and again: "We must not consider the individual or ourselves but only the nation. Only if the corps of leaders of Adolf Hitler's coming German Reich are as believing as a German who has faith in the future of his Reich, only then, gentlemen, shall we be worthy of having lived in the age of Adolf Hitler."

ONE THING we must know: Only if we remain loyal to the oath which we have given to our supreme war lord, can and will we win the victory which we are destined to win. One day one of our enemies will be down and one day the others will see that there is no sense in going on. The only thing that matters is to stand our ground and hit back.

For us the end of this war will mean an open road to the east, the fetching home of 30 million human beings of our blood, so that still during our lifetime we shall be a people of 120 million German souls. That means that we shall be the sole power in Europe.

PIX QUIZ WHAT DO YOU KNOW ABOUT COURSE CHARTING?

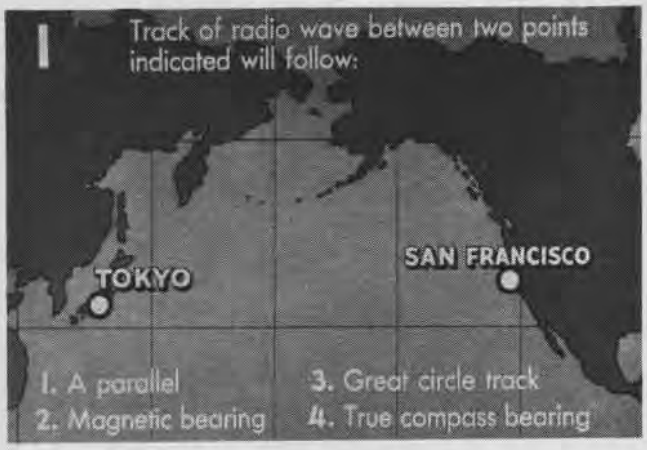
IF CHRISTOPHER Columbus had known as much about charting a course as navigators do today, he probably would have completed his epochal voyage in much shorter time. Guesswork is taboo in modern navigation, as pilots know. Answers on p. 40.

QUESTIONS FROM BUAER SPECIAL DEVICES VISUAL QUIZZER FILM NO. 57, CHART YOUR COURSE

Write your answers here

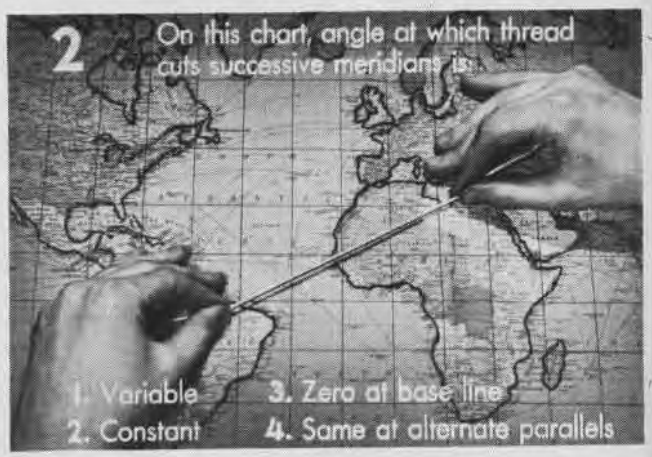
1. ..... 4. .....
2. ..... 5. .....
3. ..... 6. .....

1 Track of radio wave between two points indicated will follow:



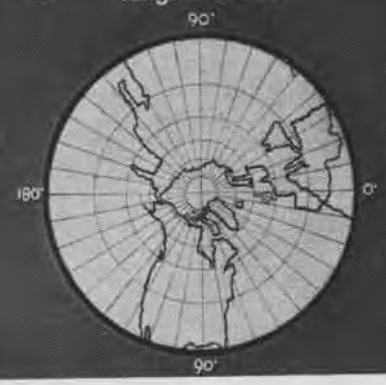
1. A parallel
2. Magnetic bearing
3. Great circle track
4. True compass bearing

2 On this chart, angle at which thread cuts successive meridians is:



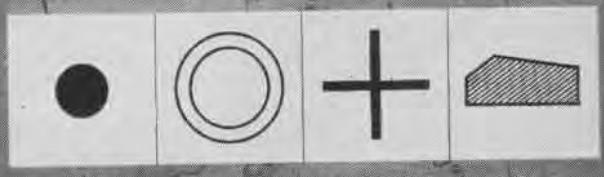
1. Variable
2. Constant
3. Zero at base line
4. Same at alternate parallels

3 This gnomonic projection is constructed tangent to the:



1. Equator
2. North Pole
3. Zero meridian
4. Parallel of 30° N

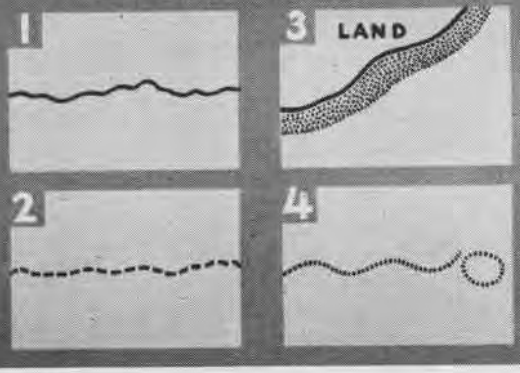
4 Identify air navigational chart symbol for AIRSPACE RESERVATION:



5 On what kind of chart would you find distortion of this type?

1. Conic
2. Mercator
3. Orthographic
4. Lambert conformal

6 Identify hydrographic chart symbol for SURVEYED SHORE LINES:



TECHNICALLY SPEAKING

Mae West Carries Hand Signals

Installation of the containers for the distress smoke hand signal, Mk I, Model 0, is covered in a technical note which will be announced in the publication column of an early issue of NANEWS.

The note states that the rubberized fabric containers will be installed locally by squadrons and stations. Change of specifications to incorporate the containers in life vests scheduled for future production is contemplated if recommendations from the fleet warrant such a modification. Comments from fleet units are invited.

The modification to the standard life vest was initiated at the NAVAL AUXILIARY AIR STATION, MAYPORT, FLORIDA, by a crash boat commanding officer. He said that such an idea had been in his mind for some months, but he actually started work on the installation as a result of reading the survival report of a downed pilot. In the report, the pilot urged that an arrangement be devised for carrying signalling equipment on

HAND SIGNALS FASTEN TO LIFE JACKET

the life vest so that downed aviation personnel would have such items as smoke signals available for use.

Within a month from the time he began work on the containers, the life vests of pilots and crews for two squadrons had been equipped with the containers shown here. Favorable comment from other Florida-based squadrons led BUAER to prepare a technical note describing its installation on the life vest.

Classroom Visual Aid Projector

No longer need the instructor turn his back to his students to use a blackboard if he employs the Visual Aid Projector (1-BC) developed by BUAER's Special Devices Division.

Transparencies of charts, drawings, photographic slides and even circular

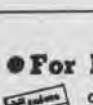
NEW TRAINER PROJECTS IMAGE ON SCREEN

slide rules and silhouettes of small solid objects, such as plane and ship models, may be projected clearly for study. The projected image may be explained further by the instructor by pointing, writing or marking with a grease pencil on the transparent plastic plate.

All materials to be projected are placed on a circle 7½ in. in diameter. With the screen 12 feet away, the projected field is 6 ft. in diameter. The room may have normal illumination except directly above the screen. Certain standard accessories, such as clear plastic plates and an automatic grease pencil, are furnished with the device.

Special navigation accessories, all transparencies, available on request through Special Devices, are: position plotting sheet, celestial navigation problem form-log, celestial navigation form-body, celestial navigation problem form-polaris, fictitious land areas, miniature of VP-OS universal plotting sheet, miniature of MK III A plotting board, enlargement of MK III computer, miniature of aircraft navigational plotter, miniature of rude star identifier, relative bearing dial, Vernier reader and time zone demonstrator.

● For More Information



on the subject of maintenance, readers should consult *NavAer Maintenance*, new restricted magazine published monthly by BuAer and distributed to personnel of the naval air organization in maintenance.

Holder Helps in Binocular Use

In response to service requests, a device has been developed by the Naval Air Material Center to support binoculars for use in extended searches, when steady scanning over a period of time is involved. The support is designed to be used in a sitting or standing position and may be adjusted to the height of the individual observer.

The advantages of a support over hand holding are:

a. Binoculars may be held with greater steadiness
b. Less difficulty is experienced from erratic motion of the aircraft
c. Muscular fatigue is eliminated

However, because the holder is unwieldy in cramped quarters, it is recommended only for use in circumstances when its advantages are obvious—such as patrols during which binoculars are used over extended periods of time and particularly in large airplane.

BINOCULAR IDEA AIDS ON LONG PATROLS

In view of the limited quantities required by the service, and of ease of manufacture locally, procurement and stocking has not been considered warranted. Any activity desiring to build this holder may get details from BuAer.

87th & ANTHONY

Mobile Jacks Made From Obsolete Parts

Discarded shock struts and wheels from surveyed aircraft have been put to valuable use in the Hydraulic School for advanced training for aviation mechanics in hydraulics, propellers, carburetors, instruments and engines.

For proper instruction of landing gear, tail wheel and arresting hook operation

DISCARDED STRUTS AID HYDRAULIC STUDY

and maintenance, in the hydraulics course, hydraulic jacks formerly were employed in lifting the plane off the deck. This practice involved loss of time in setting up jacks and necessitated having numerous jacks on hand when instruction was given on more than one plane at a time. To overcome these difficulties, permanent jacks, designed from obsolete struts and wheels, were put to use with satisfactory results.

Mobile Jack Solves Movement Problem

This type of jack made the plane mobile, permitting its use either in hangar or outside. Planes on standard jacks create a problem in case of fire, while with mobile jacks they can quickly be moved to safe areas.

The number of standard types of jacks required is reduced to a minimum and stowage space is saved. Hazards that may occur to equipment or personnel when the plane is jacked up by standard jacks are eliminated.

Planes using this type jack can be used in checking out pilots on hydraulic gear. The hydraulic department at this instructional base is incorporating the mobile type jack on SB2C, F6F, F4U, and TBF planes. The jack can be used on most aircraft for instructional purposes with any students.

Repellent Aids Vision of Pilot

A water repellent for airplane windshields which is effective in the most driving rains has been developed by BuAer in collaboration with the Naval Research Laboratory. The new repellent does away with the usual coursing rivulets and blinding film.

A protective coating of the repellent is applied to a windshield and will last for a week. After this period it is easily removed and replaced. On such a treated surface the rain does not spread as a continuous film but is dispersed as minute droplets which are carried away so rapidly in the wind stream that they do not interfere with vision to any degree.

Although the coating is durable to an outstanding degree it may be expected to fail in a week under normal conditions. Exposure to dust, grease, oil spray or salt water will hasten breakdown of the film.

Necessary materials and equipment come packed in a self-contained pocket-sized unit complete with illustrations and instructions. The repellent can be applied in temperatures as low as 35°.

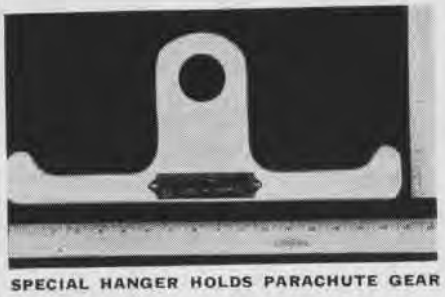
The repellent will become available soon through channels of ASO.

Hanger Holds Chute and Life Gear

NAS Norfolk—A machinist's mate has devised a hanger for stowing parachute harnesses and life jackets on board plane or in hangar storerooms. Due to design of the hanger, it is impossible for harness and jacket to slip off, which usually occurs when an ordinary clothes hanger is used.

The patrol plane overhaul shop has 40 hangers of this design and has found them satisfactory.

[Designed by Ervin L. Smith, AMMIC]



SPECIAL HANGER HOLDS PARACHUTE GEAR

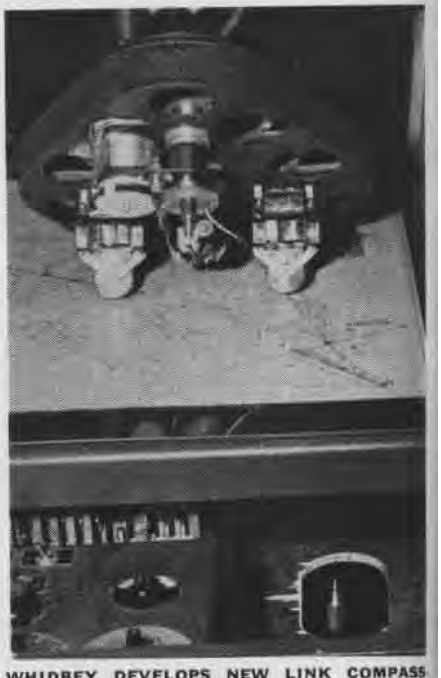
Device Makes Compass Automatic

NAS Whidbey Island—A device to convert the Link Trainer automatic radio compass from manual to automatic control has been developed by the Low Approach Group and put into practical operation in four trainers at this station.

With the conversion device a Link operator is needed only for changing frequencies. More than one station can be worked without confusion. Radio compass simulation is more realistic than when manually operated. Use of the knob box is obviated.

The conversion consists of attaching the present knob-controlled teletorque to the Link crab and controlling it through two gears with a lever arm kept automatically pointed toward the transmitter station by weighted line originating at the station. Diagrams showing the installation are available upon request.

The Low Approach Group also has installed a radio altimeter in four trainers to be controlled by the operator. Because of the limited use of radio altimeter for Link work and the relative complexity of installation of the control mechanism, a detailed description of the device is not presented here. Drawings and technical data are available upon request from NAS Whidbey Island.



WHIDBEY DEVELOPS NEW LINK COMPASS

[Designed by Lt. F. O. Irisch]

BuAer Directives Get Priority

When conflicts occur between AN and NavAer publications and BuAer directives of various types, the latter type of order takes precedence, according to a recent aviation circular letter, No. 2-45.

The *Naval Aeronautics Publications Index* and its supplements list AN and NavAer publications and Army T.O.'s. All publications therein contain approved bureau operation and maintenance procedure and must be followed in operating and maintaining all equipment for which they are applicable.

In cases where portions of such publications conflict with or are superseded by BuAer Bulletins, Changes, Technical Notes, Technical Orders or other BuAer directives, the latter apply.

INTEGRATED AERONAUTIC PROGRAM

Striking Affects Plane Purchases

Many of the factors which fit together to comprise the Integrated Aeronautic Program recommended by the Radford Board are merely the means to an end. That end is supplying only new planes to the Fleet and retiring a plane after a stated number of months to non-combat duty ashore. One of the factors that must be considered to get an overall picture of the Integrated Program, is striking of aircraft. This process consists of reporting to DCNO by serial number on form NAVAER 1872 and 1873-A that a plane is damaged or worn-out to such an extent that it can no longer be classed as a "useful" airplane within the meaning of the ceiling which limits the number of planes the Navy can own at a given time.

Striking Procedure Has Been Outlined

Somewhat more attention might center on striking older aircraft within the continental limits than striking in the war theaters for the reason that the Integrated Aeronautic Program gives operational theaters new planes and returns those not lost by attrition to the States before they have even approached obsolescence or a worn-out condition.

Procedure for striking naval aircraft within the continental limits is outlined in Aviation Circular Letter 112-44. This divides planes to be stricken in the States into three separate categories.

Class I —Planes reported for strike because they are DAMAGED beyond economical repair. This is the only class in which the activity takes the immediate initiative in disposal of a plane. It can begin salvage and scrapping as soon as the strike report is submitted.

Class II —OVER-AGE planes reported for strike under CNO directives and UNSERVICEABLE planes that cannot be repaired economically.

Class III Takes In The Excess Planes

Class III —Planes defined as "EXCESS" by CNO directives. When reported for strike, all planes in Class No. 2 and Class No. 3 will be retained by the activity awaiting action by BUAER for their disposition. During the interval these planes will not be used but will be marked for special storage and will be segregated as non-operational on the monthly inventory.

Ceilings governing the number of planes the Navy should own apply only to "useful" planes. This term is defined by Act of Congress to mean all planes at sea and ashore which the Navy owns, except models which have been declared obsolete or which have been classed as experimental. Any other Navy-owned plane which has not been reported for strike remains charged against the total that the Navy is permitted to own under its ceiling. No matter how badly it is damaged in a crash or how completely worn out such a crate may be, it still will be charged against the limit unless reported for strike.

In addition to the fact that striking clears the way for replacement of non-useful planes, it also makes possible cannibalization. This too serves a useful purpose under the Radford Board's Integrated Program. It permits the Navy to reclaim useful and needed parts for the repair of other planes.

The first act establishing the number of planes the Navy could own was passed by Congress in 1926. This established a minimum figure of "not less than 1,000." The next act mentioning a specific figure came in 1938. It raised the number of planes to "not less than 3,000." Such was the strength of Naval Aviation in the spring of 1940, when France fell. That month, as the naval expansion program got under way, authorized strength of the flying Navy jumped in a period of only five weeks from a figure of "not less than 3,000 planes" to a new minimum of "not less than 15,000 planes."

Definite Ceilings Date Back To 1940

A Congressional Act July 19, 1940, specifically gave SECNAV authority, with Presidential approval, to plan for additional procurement and in effect to establish a ceiling commensurate with the requirements of expanding naval warfare. Since 1940, naval aviation has had ceilings established by SECNAV and approved by the JOINT CHIEFS of STAFF and the COMMANDER in CHIEF.

Damaged airplanes and obsolete models such as this, remain charged against the Navy's ceiling until strike reports have been sent in

This F7F is one type of plane that should be classed as useful for ceiling purposes. It embodies many late military advantages

Jet Take-Off Rescues Mariner

FAIRWAY 14—A PBM-5 en route to San Diego developed a loose engine cowling near El Paso and made a forced landing in the first body of water that was spotted—Ascarte Park Lake, just large enough to land a *Mariner* but too small for a take-off, even with the plane stripped.

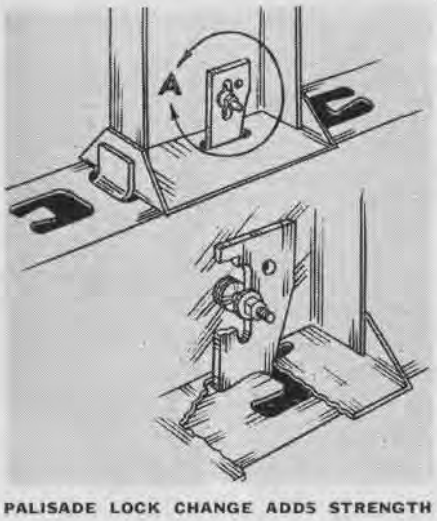
It was found there was a maximum run of 2,800 feet in the longest direction of the lake. A few months ago this would have necessitated months-long disassembly of the PBM, but with jet take-off now available it meant just eight hours work for three men and an experienced Jato pilot.

JET TAKE-OFF UNITS FASTEN TO MARINER

Jet units were fastened to both sides of the fuselage as illustrated. After about 2,000 feet run, with 41,500 pounds gross weight, the PBM climbed off the lake with ease.

Lock for Flight Deck Palisades

U.S.S. MAKASSAR STRAIT—A locking device modification developed aboard this ship has eliminated difficulty previously encountered with palisades. The original locking device, although very simple, did not hold because of the flat angle between bearing surfaces of the locking plate and tie-down fittings.



PALISADE LOCK CHANGE ADDS STRENGTH

The sketch illustrates the modification used aboard this CVE that enables the palisades to be locked securely with no more effort or time than with the old locks. The slot in the lock plate permits it to be raised enough to be rotated clear of the tie-down fittings and still keep it from getting adrift. Hole in the upper right corner facilitates unlocking by use of the palisades wrench, modified by a lug to fit on plate.

▶ ***BuAer Comment*—This modification is applicable to CVE 55—104 only as the bolt type lock is used for palisades installed in most of the other carriers.**

Stand Stops Plane Nosing Over

NAS PENSACOLA—Under pressure of operating conditions in overhaul shops, it frequently becomes necessary to work under adverse conditions. A mechanic here has devised a stand for changing monocoque to keep planes from nosing over, when no hoist is available. Work load on crane facilities is lightened.

It is used in conjunction with a jack stand or hydraulic jack. The device eliminates aircraft nosing over while repair operations are under way, being a stand which straddles the prop hub to insure positive grip in case of movement of the aircraft.

STAND HOLDS PLANE NOSE DURING REPAIRS

Of simple welded construction, the stand consists of a 2½" black pipe to which is welded two 1¼" black pipes with suitable yokes mounted to their upper ends. These yokes are padded with felt to protect finished surfaces of the propeller. Insertion of the stand on the hydraulic jack is simply a matter of dropping it in the jack cylinder and locking with a suitable pin. To remove, pressure on the jack is relieved and inserted pins removed, then the stand lifted out. For use with the hydraulic jack, an adapter bushing is put on.

[DEVELOPED BY WALTER L. GRISSETT]

LIBERATOR TURBO-BY-PASS

Photographic squadron tests a change to reduce excessive cylinder head and oil temperature in PB4Y-1 type aircraft

TO OVERCOME excessively high cylinder head and oil temperatures in PB4Y-1 aircraft, VD-5 has devised a turbo-supercharger by-pass and an air scoop for a heat exchanger.

When this squadron received its planes, pilots expressed concern because cylinder head and oil temperatures climbed to 270° and 110° respectively. At cruising power settings, temperatures remained at excessively high levels.

Because VD-5 does much high altitude work, short engine life accompanied by premature engine failures was anticipated. An analysis showed that carburetor intake was of unusually high temperature because of turbo-supercharger heating of the intake air.

On take-off, trails of black smoke indicated an excess of gasoline to some cylinders. Several planes experienced engine failure shortly after take-off due to detonation. Observations proved that at high power settings the turbo-supercharger boosted air to the carburetor in a way that caused uneven fuel distribution to cylinders.

The turbo-by-pass arrangement designed by VD-5 uses a duct run from turbo air intake to the carburetor air intake. A "flapper" valve, hinged to work inward, is placed in the duct. When throttles are advanced the ram air, by means of the duct, goes directly to carburetor. When turbo-supercharger is cut in; air pressure that builds up in back of "flapper" valve, closes it and air is directed along the normal channel to engine.

A turbo-by-pass allows a cooler running engine, and eliminates run-ups to take-off power when turbos are being set on the ground. Better volumetric efficiency and no back pressure on the exhaust pipe develops more power.

Take-offs are made with turbo-selector switch on zero. Normal take-off power is obtained with throttles alone. Enough manifold pressure for climbing power is available with throttles alone up to 9000 ft. were turbo-superchargers have to be cut in to maintain climbing power. Engine cylinder head temperatures that formerly went up to 270°C. in a climb now run 210°-230°C.

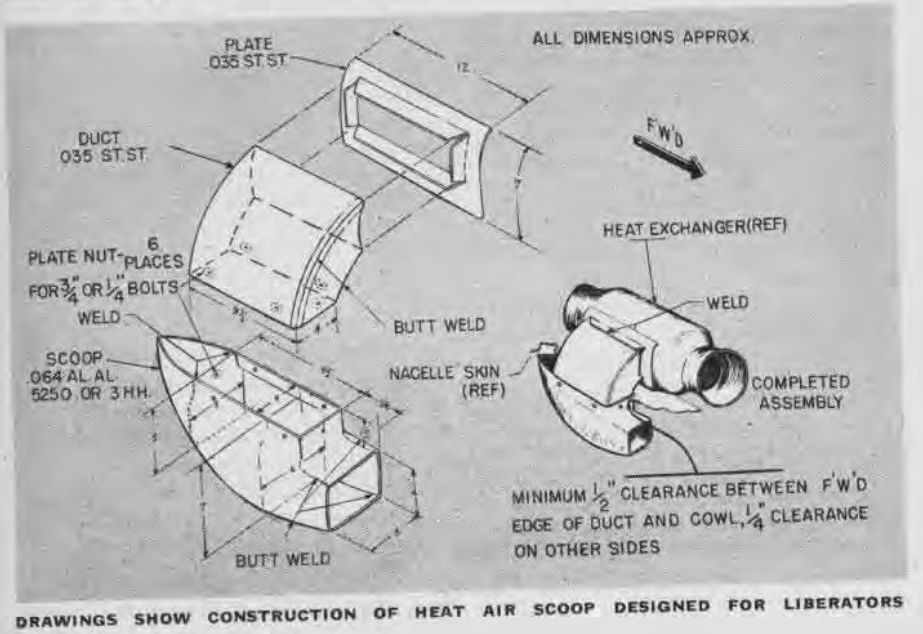
High oil temperature conditions are remedied by diverting air, formerly directed to de-icing heater, to the oil cooler. Volume of air going through the oil cooler is increased one-third.

An air scoop mounted together with accompanying ducting alongside engine cowling supplies air to de-icing heater. Oil temperatures were reduced from 110°C. to between 65°C. and 75°C.

BUAER authorized a trial installation of a turbo-by-pass system in one PB4Y-1 at NAS SAN DIEGO. Their A&R department made the installation and proposed a local change. BUAER requested this change and the best scoop change be incorporated at modification centers. A change or bulletin based on the SAN DIEGO local change will be issued.

NEW TURBO-BY-PASS DUCT IS INSTALLED

OLD HEATER DUCT CLOSED IN NEW DESIGN



DRAWINGS SHOW CONSTRUCTION OF HEAT AIR SCOOP DESIGNED FOR LIBERATORS

FLAPPER VALVE HINGES OPERATE INWARD

AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

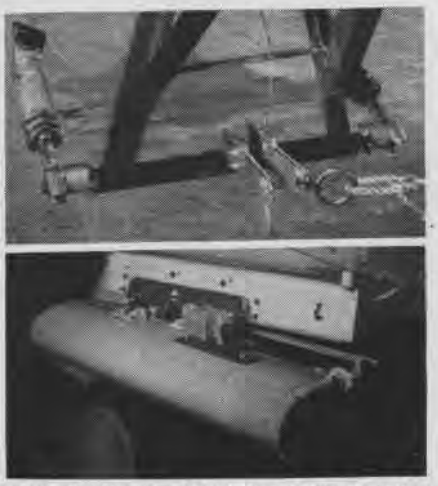
Towing Rig Permits Carrying 2 Sleeves

VB35 has devised a tow sleeve rig for SBD-5 airplanes which permits two targets to be carried simultaneously and cuts the installation time approximately twenty minutes by using Mk 17 release solenoids on Mk 1 Mod 2 tow cans.

The tow rig, built from 1½" angle iron, is suspended from the fuselage bomb rack. Attached to the cross piece on the other end are two Mk 4 target releases, reinforced by ¼" iron. Mk 1 Mod 2 tow cans, suspended from Mk 50 type wing racks, are equipped with Mk 17 release solenoids connected to a K-2 intervalometer. To operate, the intervalometer is set on "select" and the station distributor is set on the impulse that will control the wing rack the tow can is attached to. Then the sleeve is streamed when the "pickle" is pressed.

In operation, the displacement gear acts as a steadying fork in connection with the rig. More than half the stress is placed on the Mk 51 type rack when the sleeve is streamed. Release of the 900 feet of tow line and the sleeve is effected by pulling specially devised release handles in the cockpit connected to the Mk 1 release.

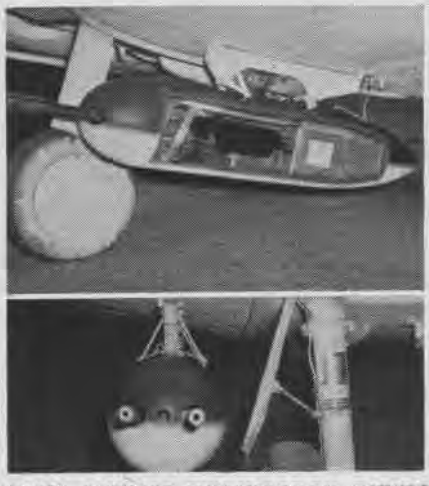
In case of emergency these two release cables in the cockpit can be cut by the pilot, then by pulling the salvo release on the Mk 4 bomb release handle, the rig will be dropped from the fuselage rack. This squadron has found a 110-knot air speed best when towing and easy for pilot to maintain. This tow sleeve rig will not be furnished by BuOrd; however, the above information regarding its use is offered for activities having this type aircraft.



TOW SLEEVE RIG (TOP) AND TOW RELEASE

Gun Containers Give Added Firepower

The .50 cal. twin gun container, Mk 2 Mod 0 (Douglas) is a compact, completely self-contained unit mounting two .50 cal. machine guns with provision for a maximum of 340 rounds of ammunition a gun. The two guns, spaced 7½ inches apart, mounted in recoil adapters, are located in the forward position of the package. A 285-round ammunition box is mounted directly behind each gun and 55 additional rounds a gun may be carried in the flexible feed chutes. Cases and links are ejected through the bottom of the package and an ammunition booster is provided to insure positive feed.



.50-CAL. PACKAGE GUN HOLDS 345 ROUNDS

Weighing 450 pounds when fully loaded, this BuOrd gun container is designed basically to be suspended from a standard AN Mk 51 Mod 7 bomb rack utilizing the bomb sway braces without modification. It is also equipped with a hoisting lug similar to the hoisting lugs on standard Navy bombs, and even when loaded can be handled easily by using the Mk 7 bomb hoist. Since the package is a self-contained unit, it may be mounted on any bomb rack with 14" lug spacing that is sufficiently strong to accommodate the installation and it may be jettisoned, if necessary, by actuating the bomb release control.

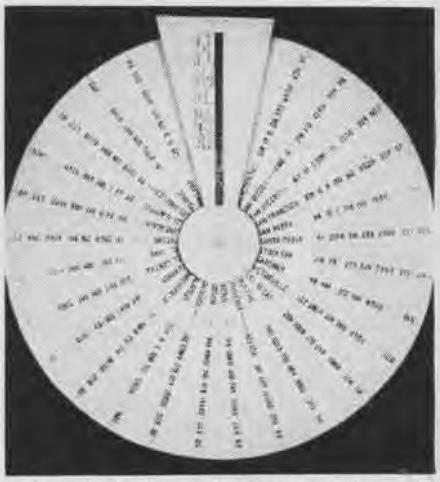
This gun container operates from a 24-volt power supply, the two firing solenoids and two booster motors operating simultaneously. The only additions required to the electrical system of an airplane to accommodate it are two connections to an electrical receptacle on the wing skin. The plugs are automatically disconnected if packages are jettisoned. The ammunition booster motor is rated a minimum of 3600 seconds operation, equivalent to 50,000 rounds of ammunition fired, before any servicing should be necessary.

Pilots Use Improvised Computor

MCAS SANTA BARBARA—Intelligence department of one of the squadrons has perfected an improvised air distance indicator.

Based on the same principle as the Mk VIII computor, it consists of a disc turning on an axis in the center and a stationary arm laid over the disc protruding from the center, in which a slot is cut so that the face of the disc appears.

Santa Barbara is represented by the center of the disc and the names of important fields in this vicinity are indicated on the disc as spokes radiating from the center. When the wheel is turned so that the name of a given airfield appears in the slot, there also appears the direct distance of that field from Santa Barbara, elevation, tower frequency and magnetic heading of the field, minimum altitude to be flown on course, range frequency and identification. Smaller copies, of a size convenient to use of pilots, have been made by the photographic department.



AIR DISTANCE INDICATOR HELPS PILOTS

▶ *CNO Comment*—**The air distance indicator is an ingenious arrangement designed to give essential information to pilots as an aid in flight planning. This or similar arrangements are useful in the operation's office where pilots are filing clearance forms from that particular field to a destination listed on the indicator. It is of no use in a plane or in flight once departure has been made from that field, as it would be just another useless gadget.**

● For More Information

on the subject of maintenance, readers should consult *NavAer Maintenance*, new restricted magazine published monthly by BuAer and distributed to personnel of the naval air organization in maintenance.

(Succeeds List dated 19 December 1944)

LATEST BULLETINS ENGINE, AUXILIARY POWER PLANT, ACCESSORY, PROPELLER 20 January 1945

ENGINE	BULLETIN	DATE	SUBJECT	EXPLANATION
PRATT & WHITNEY				
R-985	167	Rev. #1 1-9-45	*Exhaust Valve Guides and Bosses—Reworking of*	Describes cutting back exhaust valve guides and bosses to eliminate burning
	185	1-2-45	*Test after Overhaul of R-985, AN-5 and A N-7 engines on a Conventional Test Stand*	Temporary changes in engines to permit run-in on a test stand with cylinders in a vertical plane
R-1340	187	Rev. #1 1-9-45	*Exhaust Valve Guides and Bosses—Reworking of*	Describes cutting back exhaust valve guides and bosses to eliminate burning
	197	Rev. #1 12-28-44	*Rocker Arm Shafts and Bearings*	Standardization of rocker arm shafts, P&W R-985 and R-1340
R-1830	294	Rev. #1 1-9-45	*Exhaust Valve Guides and Bosses—Reworking of*	Describes cutting back exhaust valve guides and bosses to eliminate burning
	347	Rev. #2 1-2-45	*Cylinder Installation*	To insure proper assembly of cylinders to engine.
	382	12-22-44	*Blower Case Liner—Rework of*	To forestall oil leakage into blower
	3877	12-28-44	*Rear Oil Scavenge Pipe—Replacement of*	To prevent rear oil scavenge pipe from falling out of position when plug and screen are removed from rear case
	388	11-29-44	*Carburetor, Chandler-Evans Model 1900-CPB-3, Valve Setting on Flow Bench*	To insure uniform idle valve positioning during flow bench test, and, to eliminate major adjustments in field after installation
	389	Being issued	*Piston Pin Plugs*	Change from steel piston pin plugs to duraluminum
	391	Being issued	*Oil Seal—Rear Oil Pump*	For installation of new oil seal P&W Part No. 92939 that minimizes possibility of scoring pump shaft
	392	12-11-44	*Counterweight Bolts—Flash Tin Plating of*	To facilitate assembly and disassembly of counterweight bolts.
	393	12-22-44	*Drive Shaft—Accessory Main—Starter Interference with*	Temporary instructions to prevent starter jaw failures
	394	12-21-44	*Strainer, Carburetor Load Compensator, Ceco 1900 CPB Series Carburetors—Removal of*	To eliminate possibility of fuel mixture being leaned by clogged strainer
R-2000	87 (Supp. No. 1)	11-13-44	*Reduction Drive Pinions—Fitting of*	Additional engines affected by bulletin
	89	12-22-44	*Blower Case Liner—Rework of*	To forestall oil leakage into blower
	90	12-19-44	*Crankshaft Center Bearing Retaining Shoes*	Fix for crankshaft center bearing retaining shoes in which bolt and cap screw holes do not line up
	91 (Rev #1)	12-9-44	*Silver Plated Knuckle Pins—Use of*	On various types of knuckle pins
	92	Being issued	*Oil Seal—Rear Oil Pump*	For installation of a new oil seal; P&W Part No. 71972
	93	12-11-44	*Counterweight Bolts—Flash Tin Plating of*	To facilitate assembly and disassembly of counterweight bolts
R-2800	87 (Supp. #2)	1-9-45	*Exhaust Valve Guides and Bosses—Reworking of*	Describes cutting back exhaust valve guides and bosses to eliminate burning
	155 (Supp. #1)	1-3-45	*Supercharger Fuel Drain Valves*	To prevent installation of single stage drain valves in two stage engines by reworking inner end of drain valve recess and drain valve insert in applicable two stage engines
	158	Being issued	*Supercharger Pressure Regulator Pad Hole*	Plugging subject hole to prevent oil leakage
	162	12-28-44	*Valve Tappets, Guides, Rollers and Pins*	To increase replacement clearance
	163	1-10-45	*Generator Drive Vent and Drain Holes*	Instructions for plugging to prevent oil vapor leaking behind generator seal
	164	Being issued	*Propeller Shaft—Modification of*	To prevent oil leakage from reduction gear pinion shafts transverse oil passages
	171	12-13-44	*Engine Stand Adapter and Knife Ring—Reworking of*	Modifying adapter and ring to accommodate additional engine models
	172	12-15-44	*Magneto Mounting Pad Inserts—Modification of*	Incorporation of longer inserts in magneto mounting pad to distribute hold-down load
	173	12-11-44	*Main Impeller Intermediate Spring Drive Gear Assembly*	Measuring compression of Bellvill spring Corrects instructions contained in Overhaul Manuals NavAer 02-10GR-3
R-2800	174	12-13-44	*Fuel Transfer Pipe—Replacement of*	New type pipe eliminates possibility of interference with derichment valve unit in engines incorporating water injection systems
	175	12-28-44	*Timing Marks—Front and Rear Support Plate*	For changing timing marks on front and rear support plates of applicable engines
	176	12-11-44	*Counterweight Bolts—Flash Tin Plating of*	To facilitate assembly and disassembly of counterweight bolts
	177	12-19-44	*Intercylinder Oil Drain Hose—Replacement of*	Installation of intercylinder oil drain hose with greater resistance to cracking
	178	1-2-45	*Oil Return Duct Oil Seals—Replacement of*	Installation of oil return duct oil seals of larger volume to reduce oil leakage
	179	12-29-44	*Torque Indicator Booster Pump Relief Valve*	For changing torque indicator boost pump relief valve spring
	180	Being issued	*Jets—Main Blower Priming*	Replacement practice in regard to jet.
	181	Being issued	*Gun Synchronizer Drives—Removal of*	On deletion of subject drives in engines of current manufacture
	182	1-2-45	*Diffuser—Improved with Grooves*	For application and incorporation of improved type diffusers with grooves
WRIGHT				
R-985	None			
R-1820	370	9-7-44	*Installation of Oil Tank Vent Sump Cam Assemblies with Wright R-975, R-1820 and R-2600 Engines*	Drainage cam to collect all excess slushing compound, thus preventing damage to magnetos and plastic film envelope
	374	12-9-44	*Cylinder Hold-Down Capscrews—Information on*	For installation of rolled thread capscrews, WAC Part No. 2045D39, 2045D51, 2045D52 and ground thread capscrews in R-1820 and R-2600 Wright series engines
	376	12-26-44	*Crankshafts—Use of Improved Design*	To identify engines having new crankshaft machining and balancing assembly. New assembly has increased strength and rigidity and permits lifting of the 2700 RPM restriction
	377	12-30-44	*Breaker Bar Spring on SF9LD and SF9LD-1, -2, -3, Aircraft Magnetos—Replacement of*	To replace broken, or weak, breaker bar spring. To see that breaker spring is shined and lined up
	378	12-28-44	*Driver Spool—Distributor Rotor, Edison Magneto Part No. B-2092—Replacement of*	For replacement of defective distributor rotor drivers on Edison-Splitdorf SF9LD and SF9LD-1, -2, -3 aircraft magnetos
R-2600	151	12-12-44	*Clutch, Supercharger—Rework to Improve Operations*	To improve clutch operation
	152	12-26-44	*Supercharger Housing—Rear, Oil Leakage at the Hydro Oil Feed Dowel Location*	To eliminate leakage at hydro oil feed dowel locations in supercharger rear housing
	153	11-25-44	*Priming Bracket, WAC Part No. 130151—Installation of*	For installing strengthener bracket on primer line, to eliminate breakage caused by excessive vibration
	154	12-9-44	*Cylinder Hold-Down Capscrews—Information on*	For installation of rolled thread capscrews and ground thread capscrews in R-1820 and R-2600 Wright series engine

[Continued on Page 38]

PHOTOGRAPHY

Speed Graphic Combat Camera is Sturdy

The Speed Graphic type 4" x 5" "Combat Cameras" (STOCK NO. 18-C-235) are now available for issue in the photographic supply points. The camera is a light weight, compact model which is easier to handle in combat work, and which should stand up to rougher service than the conventional Speed Graphic. It supplements, rather than replaces, the latter.

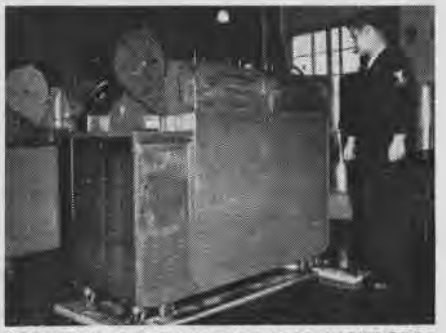
Supply Points Stock Keystone F-8 Film

Film now in the Photographic Supply Points under Stocks Nos. 18-F-31526-150, 18-F-31547, 18-F-31422 and 18-F-31421-10 is on 2¾" spools which will not fit the F-8 Keystone.

All future procurement of film under the above numbers will be spooled on 2¾" diameter spools which will fit all 5" x 7" and 7" x 7" cameras. In the meantime a considerable amount of film under Stock No. 18-F-31526-100 (no longer listed) is available in the Supply Points and should be requisitioned for the F-8 keystones.

CV's To Get Gun Camera Film Developer

A K-3A Houston developing machine for 16 mm. film is being procured for CV's and certain air stations doing a large volume of gun camera work. Delivery of machines started the latter part of 1944 and a specially trained crew will aid in installing and training personnel in operation of the machines. Prepared chemicals for use in processing 16 mm. film are now in the procurement stage. The packaged



CARRIERS, STATIONS GET K-3A DEVELOPER

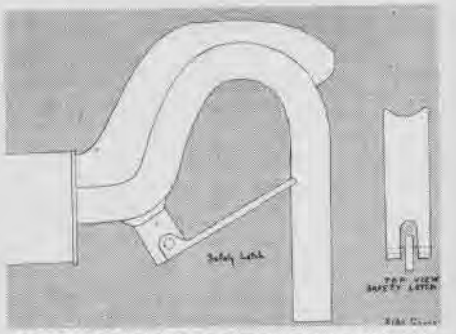
chemicals will be convenient for use in all processing machines, or rack and tank methods.

▶ The number of photographic supply points has been expanded to meet service requirements. Suggestions for improvement in the photographic supply service may be made to the officers-in-charge or direct to BUAER.

▶ BUAER is carefully making provisions for camera installations in all prototype airplanes. The installations in planes now in service are also being standardized. Information on the subject will soon be out.

Lock Holds Tow Bar on Aircraft

NAS SAN DIEGO—Universal towing bars too frequently become disengaged from the plane being towed, damaging the aircraft and sometimes injuring the towing vehicle driver. A supply department employe devised a safety latch for aircraft tow bars, mounted on the hook end.



SAFETY LATCH HOLDS HOOK WHILE TOWING

When it is desired to engage the bar, the hook end, bearing the latch, simply is dropped over the ring on the wheel and the latch retains the ring in place. While the latch permits easy passage of the keeper, it is obvious that the bar and ring cannot become disengaged unless the latch is lifted manually to clear the throat of the hook when the towing job is finished.

[DEVISED BY R. B. COWAN]

(Succeeds List dated 19 December 1944)

LATEST BULLETINS ENGINE, AUXILIARY POWER PLANT, ACCESSORY, PROPELLER 20 January 1945

(Continued from page 37)

ENGINE	BULLETIN	DATE	SUBJECT	EXPLANATION
			GENERAL ENGINE	
	8 (Supp #1)	1-5-45	*Reclamation of Worn or Broken Engine Parts*	For reclamation of warped clutch cones
			PROPELLERS—HAMILTON STANDARD	
	26	12-30-44	*Hamilton Standard Service Bulletins—Approval of*	To approve Hamilton Standard Service Bulletin No. 93
			AUXILIARY POWER PLANT	
		1-4-45	*Muffler and Exhaust System—Inspection and Replacement of*	To prevent exhaust system from becoming clogged causing excessive back pressure and eventual engine failure
			POWER PLANT ACCESSORIES	
	71	12-30-44	*Fuel System Accessories, F-8*	Winterization of Aero Supply Fuel strainers and proper torque to be applied to wing nut
	73	11-29-44	*Starters, b-15* *Motor Housing Band Assembly, Part No. 1475, on Jack & Heintz Starters, Models J H-3, -4E, -4F, -5E, -5F—Modification of*	To replace old band assemblies, Part Nos. 1475 and 2116, with new Part Nos. 1475-1 and 2116-1
	74	11-17-44	*Hydraulic Pumps, h-10*	AN-VV-O-446 oil should be used in all test stands for run-in and calibration of pumps
	76	12-11-44	*Miscellaneous Accessories, j-13* *Water Injection Systems—Disconnection of or Removal of Equipment*	Regarding blocking or removal of water injection equipment when conditions warrant
	77	12-9-44	*Starters, b-16* *Breeze Type 1-BR Cartridge Starters—Design Changes in*	Breeze Type 1-BR cartridge starters used on Model FM-2 airplanes
	78	12-30-44	*Starters, b-17* *Eclipse starters—Locking Device from the Clutch Adjusting Nut—Removal of*	Elimination of unnecessary parts, by removal of locking device from clutch adjusting nut
	79	12-30-44	*Starters, b-18* *Jack & Heintz Starters, Flexible Shaft Drive Gearing Assembly, Part No. 1245—Modification of*	Recent change incorporated in Jack & Heintz starters
	80	12-30-44	*Starters, b-19* *Main Motor Bolts in Jack & Heintz JH3F Starters Change of*	To eliminate bolt failures
	1	1-4-45	*Hydraulic Pumps, h-11*	Regarding maintenance and overhaul of subject pumps
	2	1-4-45	*Fuel System Accessories, j-9*	Incorporation of bleed holes in all Kenyon check relief valves

Alameda Develops Voice Trainer

The Ground School at NAS ALAMEDA has developed an electronic Voice Procedure Trainer to train pilots and aircrewmen in aircraft radio and intercommunication voice procedure.

Standard operational equipment and devices developed by BUAER's Special Devices Division are used. There are 24 stalls for students and space for two instructors. Each student is equipped with headphone and microphone, which lead into a standard RL-7 pilot's control box or RL-24B crewman's station box, each powered by a DS-12 radio dynamotor. Students are paired off with the men opposite them, and they may talk independently of other pairs or any or all pairs may be connected on one circuit. The class as a whole may be addressed or individual instruction given.

Each pair may practice voice procedure from a conversation printed on a card. The instructor then monitors each conversation without being detected. He may record bits of conversation and play it back on the Mirrophone, Device 13-A-2. All students then are connected on one circuit and instructions given for one station to call another. Recognition films may be shown and stations asked to identify

TWENTY-FOUR CAN USE ALAMEDA TRAINER

and report. The Frequency Noise Generator, Device 15-M-5, is turned on to simulate plane noise, and a short wave receiver adds radio interference. All this is recorded on a CGS Reiber recorder and played back to the class.

Occasionally planes calling the operations tower are picked up on the short wave receiver, and the student is instructed to fake an answer. This is recorded and played back so the student may compare his voice procedure with a plane operating in the area.

Equipment used in this trainer includes: one CGS Reiber recorder, one frequency noise generator, one echophone radio, one mirrophone, 12 DS-12 radio dynamotors, 12 RL-7 pilot's control boxes, 12 RL-24B crewman's station boxes, one Maxson 24V generator, 24 aircraft microphones, 24 aircraft radio headsets, one record player (Device 8-E-3), set of communication records.

SCREEN NEWS

Seagoing Stinger. On a certain well known day in modern history, the admirals of the Honorable Japanese Imperial Navy poked a long jab into a Pacific hornet's nest and with that one stroke brought down on their heads the biggest storm of stingers that ever set out to paralyze and pulverize an invader. Carrying the deadly stings to Tokyo, the U. S. Navy's flattops have covered a lot of water and created a great tradition in naval aviation.

In tribute to the carrier, the motion picture *Fighting Lady*, now showing all over the world, is one of the finest, fightingest pictures made in this war. It is 58 minutes short, from the viewpoint of gripping interest, and magnificently filmed in color.

Whether blasting island fortresses, or knocking Japs out of the sky, or exploding ammunition ships, or smashing airfields, or ripping the Jap fleet to pieces, the fighting lady is always in the thick of the action, with one impelling aim—to sink the Rising Sun. Back of the strikes seen through the cold eyes of gun cameras is the spirit of teamwork and hard-muscled morale that deliver the full weight of the carrier's strength into battle.

In spite of a limited supply of prints, every effort is being made to give widest

MOVIE TELLS STORY OF NAVAL AVIATION

possible distribution to the color prints available. The film is being released to commercial theaters, circuited to ships through the regular fleet motion picture exchange service, and booked at shore station theaters by District Welfare and Recreation Officers. Showing of the film in 16 mm. size may be arranged by contacting the nearest aviation film library (*see list of libraries below*).

On Your Mark 18.

MN-3388a *Gunsight Mark 18—Operation—Mock Up Turret* Restricted, 18 min.

CONTENT: Describes all parts and illustrates the function of each. Demonstrates complete operation.

MN-3388b *Gunsight Mark 18—Operation—Gunner's Check* Restricted, 18 min.

CONTENT: Explains step by step the procedures of the Gunner's Check before operation. Covers in detail mechanical checks and numerous checks of the pips.

Radar Rescues. Life-saving at sea has progressed to such an extent that rafts are equipped with just about everything but electric shavers and plug-in refrigerators. Now they carry radar reflectors so they can be "seen" if not heard in the scopes of searching parties. This recent addition to the Lost-but-Found Department of Naval Aviation is described in:

MN-4995 *Airborne Life Raft—Radar Reflectors* Restricted, 11 min.

CONTENT: Explains how the reflector returns rays by triple reflection. Describes the two sizes of raft radar reflectors—the small size stowed in the seat pack and the large gear installed directly on the bigger multi-place rafts. Demonstrates methods of setting up the reflectors, including modifications that must be made in rafts not equipped for erecting the gear.

Calling Comdr. Kildare. Modern surgical techniques contributing to the high incidence of recovery from wounds in this war are skilfully color-filmed in the technical training movie for field hospital personnel:

MN-3726d *Medicine in Action—Release No. 4—Soft Tissue Wounds* Restricted, 10 min.

DEMONSTRATED: Removal of shell fragments from four typical battle wounds: upper thigh, scapula, leg and arm. Recommended treatments explained in detail.

Out Static. Unwelcome as a third person on a party line, static has been a continuous candidate for elimination. The part played by frequency modulation in controlling radio interference is outlined in:

MA-4975 *Basic Principles of Frequency Modulation* Restricted, 30 min.

The film compares transmission and reception by amplitude modulation and frequency modulation, demonstrating advantages of FM in overcoming static.

Confidential Films Shipped:

MN-1933f *Simulated Combat Missions—Attack on Koepang* Confidential, 25 min.

MN-2736 *AN/APS-3 Radar Interpretation* Confidential, 15 min.

MN-4383 *Airborne Forward Firing Rockets—Tiny Tim* Confidential, 25 min.

MN-1511r *Care of the Sick and Injured by Hospital Corpsmen—The N. P. Patient* Confidential, 27 min.

Where to Get 'Em: The above films are being distributed to Aviation Film Libraries at:

ComAirPac
NAB Navy #140
NAB Navy #939
Navy #3233
ASD Navy #3205
Hedrons 4, 7, 10, 12, 16 Det., 17
FAW 15
NAOTC Jacksonville
NATB Pensacola
NATB Corpus Christi
NATEC Lakehurst
MCAS Cherry Point
MarFairWestCoast
MCAS Navy #61
7th MAW
NAS Seattle
" Alameda
" San Diego
" Norfolk
" Patuxent
" New York
" Quonset
" Atlanta
" Moffett
" Navy #115
TAI, Navy #116
NAS Navy #117
" Navy #720

LETTERS

SIRS:

On page 23 of the 15 January 1945 issue of NAVAL AVIATION NEWS there appears an interesting article, "Truck Spoils a Record," highlighting the operations of VB-108. In writing this letter it is not my purpose to detract from the splendid record of the squadron in question. However, I should be derelict in my duty if I did not draw your attention to one misstatement which appears and ask, in justice to the personnel of VB-104—living and dead—that a correction be made. I refer to the claim that, "VB-108 also was first PB4Y outfit to initiate bombing from tree-top and masthead height."

VB-104 preceded VB-108 into the combat area by some months, arriving in the Solomons in August 1943. For pioneering in this type of attack, thereby changing the passive, defensive search into a daring and powerful offensive, the former squadron was awarded the Presidential Unit Citation.

HARRY E. SEARS
Ex-Commander VB-104 *Commander, USN*

SIRS:

I am interested in an article appearing in the 1 January 1945 issue of NAVAL AVIATION NEWS regarding issuance of civil pilots' licenses by the CAA to military pilots while still on active duty. I would like to know how to obtain a pilot's certificate and would appreciate more information.

VB-98 ENSIGN
NAAS, LOS ALAMITOS

¶ An applicant who within the preceding twelve calendar months has served on solo flying status for 6 consecutive months can get a civil pilot's certificate if he passes a written exam on Parts 20 and 60 of Civil Air Regulations. He must submit to the CAA reliable documentary evidence showing he is a member of the armed forces or honorably discharged or on inactive status, that he is or was a rated military pilot and his total solo flying time. This was provided in Civil Air Regulations Amendment 20-5, dated 25 Nov. 1944.

SIRS:

I am writing this letter in the hope of obtaining some information on the PV-1 *Ventura*. Has the Navy at any time used the Wright R-1820 engine on the PV-1? Has the Navy ever used any other engine on the PV-1 than the Pratt & Whitney R-2800 engine?

I have never seen a *Ventura* with any other engine than an R-2800. Some of my shipmates agree and others claim that the Navy has used the Wright R-1820. There has been quite a dispute amongst us and I would like to end it by obtaining this information.

E. J. MILOS, AMM1c

¶ BuAer reports the PV-1 always has had the Pratt and Whitney R-2800 engine. Some Lockheed planes like *Hudson* and *Lodestar* have had Wright.

SIRS:

Lt. Cdr. William S. Francis, USN, is believed to be the first Navy doctor to wear both the wings of a Flight Surgeon and the dolphins of a Submarine Surgeon. He was the first Submarine Surgeon, having been appointed as the nucleus of a Board of Examiners to qualify other doctors for that designation. He recently completed a course in flight surgery at the Naval School of Aviation Medicine here.

NAS PENSACOLA PRO

Thoughts on Leave

WHO would not spill his blood for jutted stones,
For lonesome waters, coves, and windy skies,
For rugged earth and beauty his heart owns,
Would be a strengthless mortal to despise.
If he has known and loved each friendly tree,
Each little stream and friendly blade of grass
And breathed clean wind as sweet as liberty,
Has seen the seasons come and watched them pass . . .
And if his brain has known the songs of birds
Of rainbow water, blowing wind and leaf,
And his plow spoken with dirt-mellow words,
The morning of his lifetime is not brief.
For all of this of which he is a part,
He'll fight as he has never fought before;
He'll give his best for land that holds his heart,
Heart with his earth embedded in its core.

JESSE STUART

CONTENTS

ANSWERS TO QUIZZES

● NAVIGATION PROBLEM (p. 26)

1. 0446
2. 282°
3. 245°
4. 0648
5. Lat. 22° 57′ S Long. 176° 48′ E
6. 089°
7. Lat. 23° 18′ S Long. 178° 35′ E

(Tolerances of 2 or 3 miles or 2 or 3 degrees from ans. are considered correct)

● BEST ANSWERS (p. 12)

1.d 2.c 3.c 4.d 5.d 6.b 7.c

● PIX QUIZ (p. 30)

1.3 2.2 3.2 4.4 5.2 6.1

Films available from BuAer, Special Devices, for showing in Visual Quizzer, Device 5-X. Standard slide film version may be obtained from Training Films, BuAer.

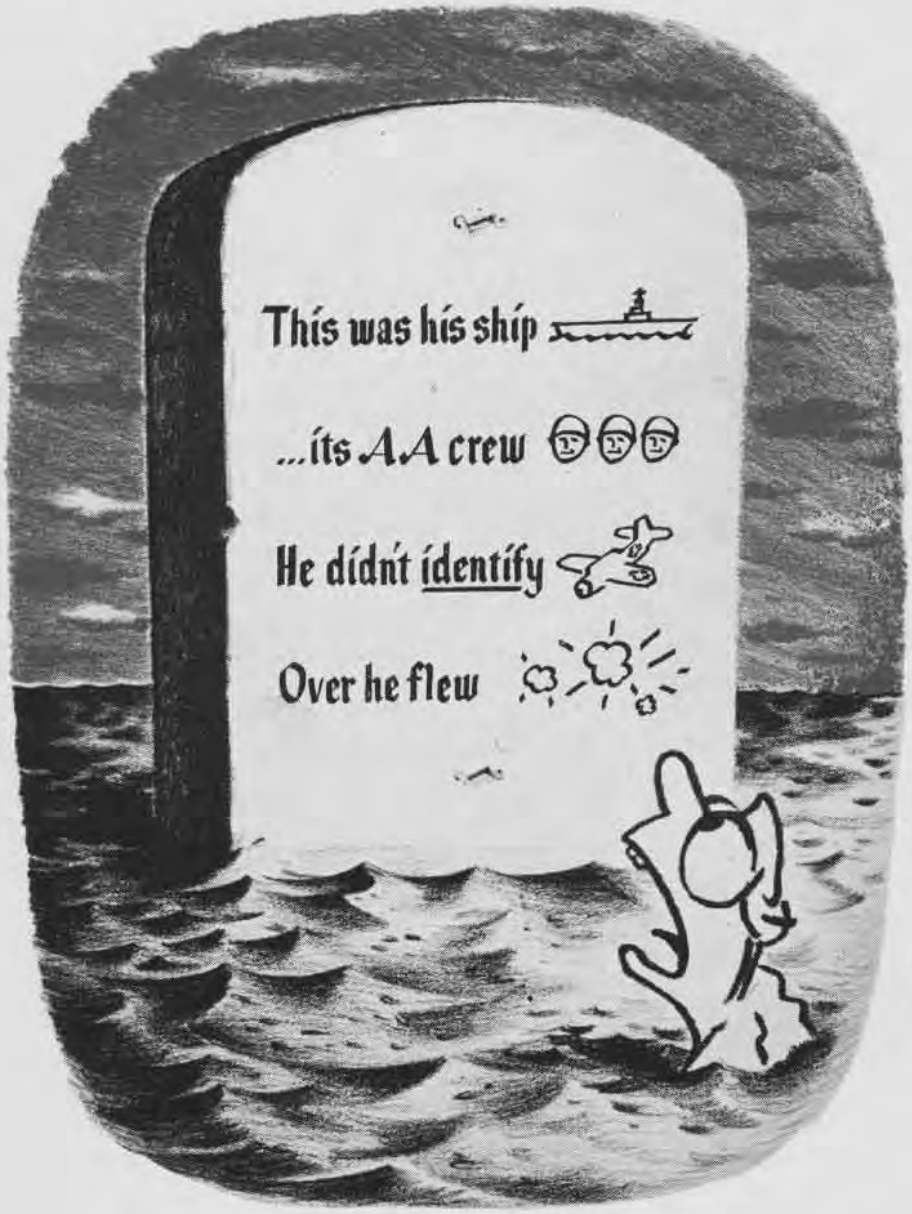
● GRAMPAW'S QUIZ (p. 10)

1. By voice, "down wheels" and also gives the "thumbs down" signal with fist clenched. Ref. Aviation Circular Letter # 95-44
2. Definitely not. Ref: *Instrument Flight*, part or, Chap. I.
3. Taxi back to the hangar line. Ref: Par. 1.2201 of Army, Navy, CAA, *Standard Airport Traffic Control Procedures.*
4. No. Not until your feet touch the water. Ref: Page 23 of *Parachute Sense.*
5. Upon first indication of a groundloop or swerve. Tendency is to delay too long in using brake. Ref: T.N. #49-42.

NAVAL AVIATION NEWS

Published twice monthly by Chief of Naval Operations and Bureau of Aeronautics to disseminate safety, survival and technical information to the aeronautical organization. CONTRIBUTIONS INVITED. Air mail should be used where practicable to insure speediest delivery of material submitted for publication, addressed as follows: Chief of Naval Operations, Naval Aviation News, Navy Department, Washington 25, D. C.

Epitaph to a Tussie



Read Uncle Kim Tussie *on page 23*

Moral: **Identify when approaching friendly ships**

NAVY BOMBS HIT THE PHILIPPINES

Thundering out a prelude for the march back to Manila, guns of the United States Navy, carrier-based aircraft and army air forces united in such a devastating barrage that the landing of troops upon Lingayen was assisted greatly and casualties were low. Unwilling to face the combined power of the Fleet's heavy guns and its planes, the enemy withdrew into the interior. At top, burning Jap ships lie low in water. At left Navy bombs bracket enemy.