NAVAL AVIATION NEWS

Japanese Airfields
Advanced Air Bases
CVE Ship's Company

June 1, 1945

RESTRICTED

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ALL HELL BROKE LOOSE

Aircrewmen were abruptly roused from their sleep. It was still dark. They rolled off their triple-decker bunks and hit the deck. Everyone was quiet—tense. This was the morning to smash Truk.

Avengers roared down the flight deck and the squadron formed for the strike. In the TBF's tunnel, Morton F. Miller glanced down and saw his carrier fade in the distance. He felt weak in the middle . . . then reassured himself with, "I'm not the only one." John Reilly checked his guns more times than necessary. He remembered the 2000 pound bomb in the *Avenger's* belly—a comforting thought. The TBF dipped for the sea.

All Hell broke loose. Every Jap AA battery on the island opened up. Reilly glanced out the port side. Ack-ack covered the sky. The next thing he knew he was thrown against the fuselage as the *Avenger* lurched violently. They had been hit somewhere in the tail.

As they pulled out of the run, the 2000 pounder fell earthward. Reilly gripped his guns and let 'em go. Thick black clouds of smoke spiraled up from the Jap airfield. *Zekes, Bettys, Ruths,* and *Jakes* were scattered and flaming. Miller recorded this evidence with his gun-camera. The target had been hit.

Aircrewmen have what it takes

No. 25 of a series

JAP AIRFIELDS

PHOTOGRAPHIC INTELLIGENCE

SMASHES at Jap air power in Kyushu and the islands around Okinawa again bring enemy airfields to front-rank consideration by photo intelligence. Japan has been operating hundreds of airfields in the Pacific and Far East for many months, with the apparent intention of shifting air strength rapidly to critical areas as the need arose. These airfields are of varying sizes, ranging from airdromes capable of accommodating heavy bombers to small emergency fighter landing grounds. On them the enemy depends for air protection of his stolen empire, but one by one they are being wrested away as U.S. forces drive toward Tokyo.

Photographs show that the Japs now are pushing airfield construction in their inner defensive zone. On by-passed islands, determined Japanese persistently patch bombed runways some of which now look like extensive areas of billiard chald with hundreds of cue holes scraped into them. Fields near Japan's vital shipping lanes have been used increasingly to provide protective air cover for threatened convoys. Enemy industrial centers, particularly Tokyo, are surrounded by protecting airfields, and seaplane bases are located at key points along the coast. Airfields still are vital defenses of Hirohito's besieged domain, and Navy airmen, long used to attacking strips in the jungle, on atolls, or on bare volcanic rock, now turn to smashing more developed airdromes on Japanese home islands.

SIMULATED WINDING ROADS CROSS CAMOUFLAGED JAP AIRSTRIP NEAR HONG KONG. NOTE REVETMENTS CUT INTO HILLSIDE AT LEFT

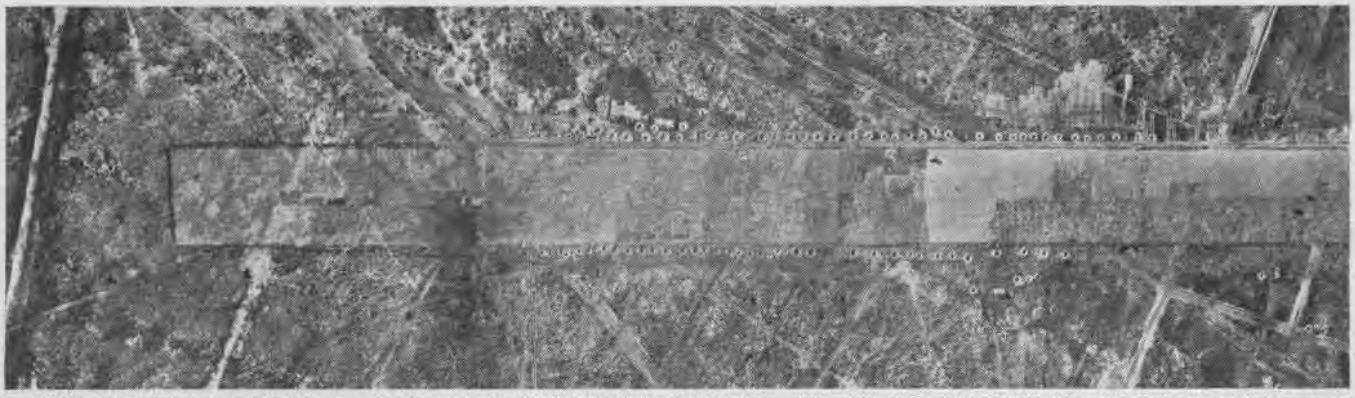
FIELD LOCATIONS

THE JAPS have captured or constructed fields in China, Burma, the East Indies, Manchuria, French Indo-China and on numerous islands. Over 250 fields of varying types were operated by the enemy in the Philippines before the U.S. invasion. Some of the far-flung strips are situated so as to afford protection for special factors in war production, such as shipping or oil refineries. Others are located near defended beaches, where they are integrated with the general plan for coast defense.

A majority of the fields photographed to date in the Japanese home islands are in central and southern Honshu and in Kyushu. In Honshu they are concentrated to a considerable degree around industrial areas. Aircraft plants often have adjacent airfields which are used for testing planes. Many fields in the home islands are located near the coast, often close to river mouths, and usually not far from rail and highway connections.

Normal Jap airfield defenses consist of machine guns, automatic AA and a few heavy AA. Radar-controlled searchlights also have been spotted in recent photographs. Trench systems and a variety of other obstacles have been employed on strategic Pacific islands.

British carrier planes now are cooperating with U.S. forces to knock out Jap airfields. In attacks on the Sakishima group, which is about 150 miles southwest of Okinawa, they alternated with American fliers in island strikes.



RUNWAY IN FRENCH INDO CHINA IS BORDERED BY MANY MACHINE GUN PITS. NO JAPANESE AIRCRAFT ARE VISIBLE IN PHOTOGRAPH

MOST JAP CONSTRUCTION EQUIPMENT IS ANTIQUATED AND SLOW

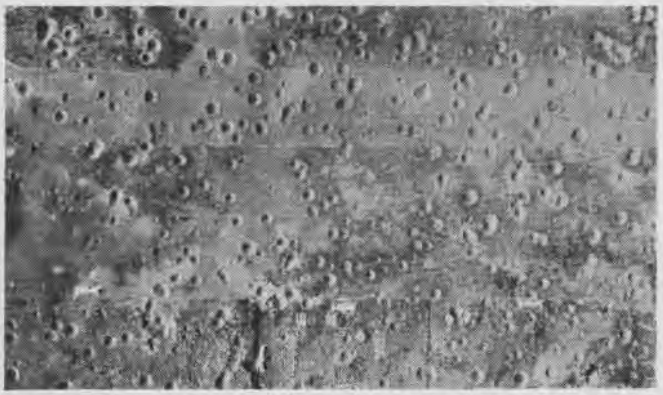
LANDING AREAS

SEVERAL different types of landing areas are constructed by the Japanese. Concrete frequently is used to surface all-weather runways. Asphalt, bitumen mixed with coral sand, crushed rock and earth, and sod also are utilized, depending on importance of the field and materials available. Turn-arounds usually are constructed at both ends of landing strips, which are oriented to take advantage of the direction of prevailing winds. Runways vary in length from 3000 ft. to more than 6000 ft.

On small Pacific islands the type of airfield which the Japs construct varies according to shape and size of the particular land mass. Long, narrow islands usually have only one strip. Circular islands normally have two criss-crossed strips, and on crescent-shaped islands a triangle of three strips often is laid out.

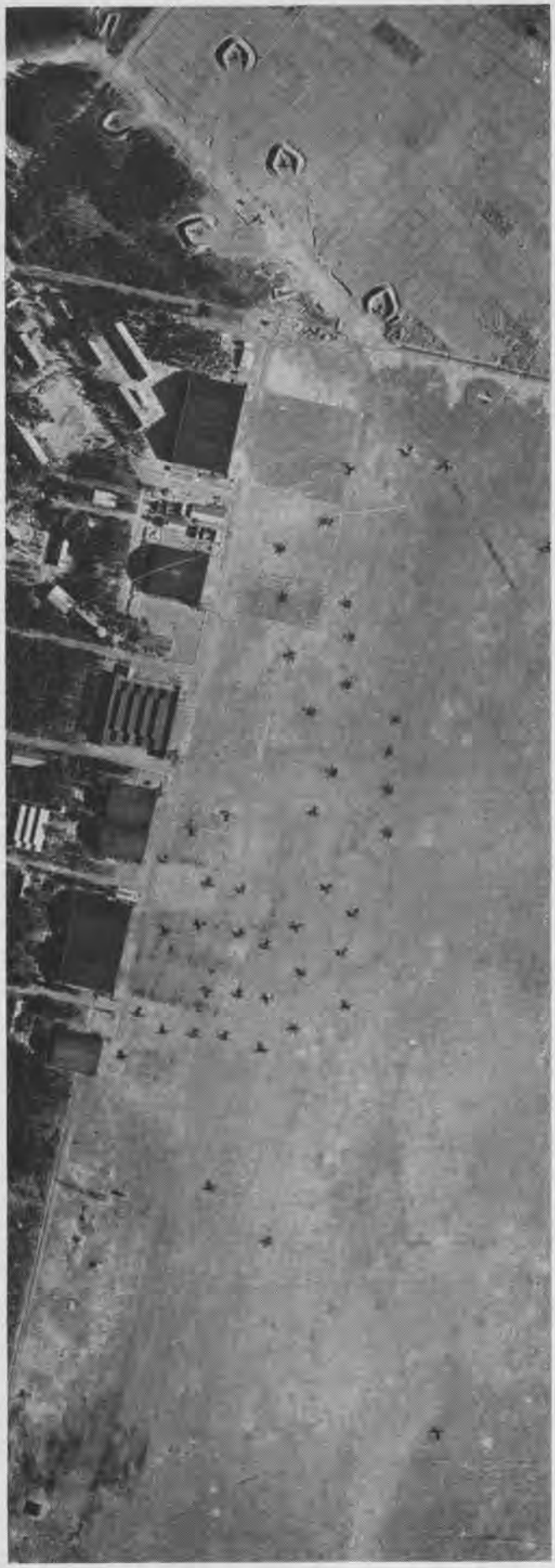
Large, irregularly-shaped landing areas appear in aerial photos of the home islands. Some strips are in process of construction. Camouflage of runways takes interesting forms, one trick being to have false roads winding across the strip. Two-dimensional dummy planes occasionally are laid out on landing grounds, and false corner markers are built to confuse Allied fliers.

Captured enemy construction machinery is on the whole much smaller than and inferior to American earth-moving equipment, making airfield building a slower process for the Japs. Despite this, they created a far-flung airfield system.



ENEMY FIELD ON PAGAN ISLAND APPEARS WELL BOMBED OUT

JAPS PUSH CONSTRUCTION ON KONOIKE AIRFIELD NEAR TOKYO



PLANES CAST SHARP SHADOWS ON KIRYU FIELD NORTH OF TOKYO

THESE JAP TRUCKS HAVE CARRIED THEIR LAST GAS ON PELELIU

FACILITIES

IN ADDITION to standard Jap airfield facilities such as hangars, control tower, shops, warehouses, barracks, administration building, and fuel and ammunition storage, airdromes near the heart of the empire often have special equipment. Firing butts, used for testing guns, are seen frequently. Engine test cells and wind tunnels also occur. At one field a practice bombing range is noted. Three target circles are visible, and there also are two white circles containing dummy aircraft. Four observation towers probably are used to watch results on the bombing range. A target-towing track is present at another airfield. It has a small dummy plane mounted on the narrow-gauge track, which runs for some distance to an adjoining field.

Although the Japs would seem to have an increasing need for underground hangars, such installations are difficult to detect on aerial photographs. So-called "hangarettes," consisting of wood or light bamboo frames, covered with openwork matting, are observed in certain areas. Jap wind "T's" appear plainly in pictures of some fields, as do bone piles of wrecked or damaged planes. Stores of repair parts occasionally are conspicuous from the air. In their wartime expansion the Japs sometimes employ unusual areas for storage. The infield of one former race track, for example, is used as a salvage yard and also contains planes.

Radio towers and RDF installations are observed at a good many fields, and open circular cisterns in shop and barracks areas are discernible clearly from the air. Some Jap fields have visible power plants. Highways and rail facilities connect with many fields on Honshu, simplifying communication and transportation. Camouflage is used on buildings as well as runways, but pictures show that U.S. bombs are smashing enemy installations despite deceptive paint.

B-29'S BOMB AIRCRAFT PLANT AND ADJACENT LANDING GROUND

Hamamatsu field includes most typical airfield structures. Thirteen large hangars are connected by taxiways to service aprons. Three revetted ammunition storage buildings are located above hangars, and at left of ammo storage is bone pile of damaged planes and what probably is salvaged parts storage area. Long, narrow buildings at left of hangars are shops and warehouses, and round cisterns can be seen beside some of them. Enemy landing "T" is visible in front of large hangars. Hamamatsu airfield has another set of hangars and service buildings on opposite side of landing area. At time of photography most planes were on field and not in revetments. Planes in the picture are identified as follows: 12 *Sally*, 4 *Peggy*, 5 *Helen*, 1 *Topsy*, 17 *Lily*, 2 *Nick*, 1 camouflaged twin engine aircraft, 2 *Ida*, and 3 unidentified single engine planes. Dummy B-29 built by Japs appears at lower left

BLAST SHELTERS FORMED BY PARALLEL WALLS GUARD AIRCRAFT

SEVERAL SMALL PLANES OFTEN ARE PLACED IN SAME REVETMENT

DISPERSAL

MOST JAP airfields have adequate dispersal arrangements. Revetments are built in many shapes, including T, H, C, U, square, and diamond forms. Concrete-covered revetments at major airdromes appear to be the enemy's strongest type of plane protection. Blast shelters, formed by parallel walls about 50 ft. apart, are being seen more frequently. Frame-covered revetments appear near many fields, but these serve mainly for purposes of concealment.

Taxiway loops, with several hardstands or revetments leading off them, often are constructed by the Japs. Where the landing area is very large, revetments may be omitted entirely and planes scattered widely over the landing ground and in surrounding woods and fields. Revetments occasionally are seen in the middle of clumps of trees and among houses. Big Jap revetments sometimes hold several fighters or trainers. In some areas, small railway cars are pushed in front of revetments to act as blast walls during attacks.

Battered airfields in the Philippines that were overrun by American troops showed a lack of organization and many improvised facilities indicating that the Japs were not able to prepare their airfields before the U.S. attack. In spite of all Jap schemes for dispersal and protection, Allied airmen are destroying numerous enemy aircraft on the ground. Carrier planes, B-29's and Army *Mustangs* are blasting Jap aircraft on the home islands, and fields in almost all other parts of the empire are being subjected to oft-repeated bombing and strafing attacks. Photographs show burning and wrecked planes on landing areas, increasing piles of destroyed plane parts and fewer and fewer operational planes.

ENEMY AIRPLANES

NEW TYPES of Jap aircraft are being seen and, by comparison of several photographic sorties over different fields, the new types can be classified as to length, span, etc. Enemy gliders can be picked out quickly by photo interpreters because of their distinctive appearance on the ground. When fields are located adjacent to aircraft assembly plants, it usually is assumed that the type or types of plane which are most numerous on the landing area are those currently being produced at the factory. Camouflage, while making it difficult to identify plane types, often fails to hide the presence of aircraft. The Japanese construct two- and three-dimensional dummy planes and they sometimes park unserviceable planes in places where they will make conspicuous and tempting targets. Many hangars have been destroyed or left burning in recent U.S. attacks, presumably with loss of planes inside. Numerous Jap aircraft in revetments and on landing areas also have been ruined.

Supplying information on enemy planes is one of the principal tasks of photographic intelligence, and for this purpose photo interpreters constantly are at work on pictures of Jap airfields. They count planes, look for new types, note variations in previously recognized types, watch for dummies, and check buildings and facilities. Dimensions of planes on the ground can be determined accurately from good vertical pictures, if plane altitude and camera focal length are known. Damaged, burning and wrecked aircraft can be picked out. Since the beginning of the Pacific war, photos of enemy airfields have played an important role, and in recent months this part has expanded into coverage of numerous widely scattered major and minor fields on which the Japanese rely for defense of their hard pressed empire.

SINCE START OF PACIFIC WAR PHOTOGRAPHIC INTELLIGENCE OF JAPANESE AIRFIELDS HAS BEEN VALUABLE TO ALLIED OPERATIONS

GRAMPAW PETTIBONE

Know Your Emergency Equipment

The engine of an F6F-5 froze at 6000 feet. After letting down to 1000 feet, the pilot decided he could make the field. He put the wheel lever in the DOWN position, noting that the wheels started down. As his hydraulic pressure was zero, he put the hydraulic selector on FLAPS and pumped the flaps down. He made an excellent approach, but since his wheels were in TRAIL position, he made a belly landing.

The local Safety Board commented as follows on this accident: "This pilot did a swell job in bringing his plane back on a dead engine. However, it should be pointed out that, if time and circumstances permitted, damage to the plane could have been eliminated entirely had the pilot made use of the auxiliary air supply in his 'dump bottles' to lower and lock the landing gear."

PB4Y Hatch Blows Open

Reports indicate that the emergency hatch on PB4Y airplanes, located in the top of the fuselage immediately aft of the pilot's compartment rear bulkhead, sometimes blows open in flight. In one

case the navigator was knocked unconscious when this hatch blew open and struck him.

It is considered that although wear may be a contributing factor, these hatches usually come open because they were not locked securely before take-off, or because personnel hang onto the release handle while talking with the pilot or copilot. It is believed that the hatch will remain closed during flight if care is taken to secure it properly before take-off, and if personnel refrain from using handle as a hand-hold.

PV Ditching

The following is quoted from an action summary submitted by a patrol bomber squadron:

There has been a lot written about PV ditching. We have had three ditchings in which no one was more than scratched.

The *first* was a single-engine ditching, nine minutes after take-off. Here full power on one engine, full flap and full stalling was the method used. Power was cut as soon as the tail touched. The plane sank in from eight to twelve seconds.

The *second* was a dusk landing because of lack of gasoline. Again full flap, full low pitch with 20" manifold pressure and full stalling were used. The plane sank in about twenty-five seconds.

The *third* was a dead-stick, no-flap water landing. Again the plane was stalled. No injuries resulted.

In each of these cases the plane split on the center line just abaft the bomb-bay step. Emergency equipment was obtainable in all cases except the single engine ditching. Here the crew was in the water for about two hours with only life jackets, dye markers and one .38 revolver with tracer ammunition. They were picked up by a PBM. It is thought that the plane sank so rapidly because of the gross weight and full gas tanks.

The escape hatch failed to work on the single-engine ditching. Three men left through the cockpit side windows with no trouble. It should be pointed out that checking the escape hatch does not insure that it will work the next time. It is doctrine to block open the main access door with a back pad or ladder. Emergency equipment was checked each sixty hours.

This squadron believes that the PV is an easy plane to ditch without danger of personnel injury or fatality.

▸ *Comment*—It is of interest to note the general change in attitude that has occurred as regards ditching the PV. It got away to a rather poor start and soon had a bad ditching reputation. This has all been changed, however, and the plane now has an excellent ditching record—and reputation. This is due, not to the plane being any easier to ditch but mainly to flight crews having been thoroughly indoctrinated and instructed in proper ditching procedure.

Don't relax! Detailed procedure for ditching the PV is contained in Flight Safety Bulletin 11-44.

Excessive Tab Causes Failure

Recovering from a rocket firing run with the aid of elevator tab, an F4U pilot noticed a slight buffeting, but apparently paid little attention to it. He then executed another run. Buffeting increased and during the recovery, the elevator completely failed. According to the pilot, the engine pulled the plane out of the dive. With full military power, he managed to maintain flight at a critically low altitude. By making flat, rudder turns and by using flaps for increased lift, he managed to avoid hills in his flight path until he came to a valley which give him 500 feet above the terrain, at which time he made a safe jump.

Grampaw Pettibone says:

This pilot coolly handled a tough emergency. Had he become the least bit panicky at such low altitude, death probably would have resulted.

However, the pilot created his own emergency! Excessive or jerky use of the tab undoubtedly caused the elevator failure. Par. 4 of Technical Note No. 72-44 says: "The use of elevator tabs as a means of primary control in pull-outs from high speed dives is not recommended except in emergencies such as may arise under compressibility conditions. When tab is used to lighten stick forces in pull-outs, caution should be exercised to insure continuous and smooth control of the resulting accelerations."

ABOARD SHIP the pilot learns to depend on the hand signals given him by the deck crew. These trained men are responsible for getting the equipment moved speedily, safely, so other planes may land on carrier's flight deck.

Costly Delay

Material damage due to accidental retraction of landing gear instead of flaps in JRB-5NB aircraft after landing, is estimated to have cost the Navy over $40,000 in March alone. JRB-5NB Aircraft Service Change No. 25 apparently had not been completed on any of the planes involved.

Attention is invited to the fact that this change, dated 20 January, affected the "safey of flight" and was directed to be accomplished "as soon as practicable, compatible with the immediate military situation." Due to the considerable loss of money and flying time being experienced by this type accident, it would appear that further delay in accomplishing this change is unjustified, particularly since it requires only eight man-hours of work per plane, using material available in local stock.

Help Yourself

Too many aircraft accident reports are received in which material troubles are reported merely as "landing gear failure," "hydraulic system failure," "seat failure," "power plant failure," "radio failure," "life jacket failed to inflate," etc. This sort of reporting is of little value to the personnel charged with design and manufacture of aircraft and formulation of maintenance procedures. To be able to initiate corrective action, they must know the exact part that failed, how it failed, why it failed—and all other pertinent information involved.

Attention is invited to ARTICLE 27-302 in the new BuAer Manual which requires that "Material failures which result in aircraft accidents, shall be reported *both* by RUDM and AAR." These reports are the main source of information from operating units. A particular accident in one squadron may not indicate an important problem, but receipt of a number of similar reports from other units frequently will disclose significant deficiencies in operating techniques or material.

When incomplete or inaccurate reports are received, corrective action is delayed; thus accidents continue, with unnecessary waste of material and loss of life.

But Not the Kitchen Sink!

THIS EPIC *comes from the South Pacific. It concerns the heroic efforts of a* Catalina *pilot and his crew to stay in the air against terrific odds.*

The squadron was moving to a new base and the plane was heavily loaded, including the entire personal belongings of every one aboard.

A little beyond the half-way mark, things began to happen when one of the engines conked out. The pilot and flight engineer tried everything twice, but nothing helped. The bomber began to lose altitude fast.

Previous ditching indoctrination now paid off—flak suits, guns, ammunition and all loose weights were quickly jettisoned. The plane was still dropping, however, so the pilot told the men to heave out all personal baggage. "What about your leather hand bag?", the plane captain asked. With a start, the pilot realized he had aboard his two prized cameras and some other expensive equipment. That little bag represented close to $900 of his hard-to-save earnings. A quick look at the altitmeter, however, convinced him of the fleeting worth of all earthly goods.

"Dump it!" he yelled back.

The mad flight went on, but they still weren't doing too well. The men unbolted and unscrewed all the excess parts in the plane and dropped them overboard. Then they took off their shoes and tossed them out. When, at last, they came in sight of their destination, the pilot ordered the life raft equipment jettisoned. This did the trick. The plane held its altitude and they staggered in for the landing.

The bomber was no more than an empty shell when it stopped rolling and the men had nothing to their names but what they were wearing. They felt very lucky to be there at all, however,—until they hopped out of the plane.

When the pilot climbed out, he found the crew standing around in their stocking feet and treating him to a barrage of dirty looks. He couldn't figure it out—theoretically, they should be thinking pretty well of him. Then he looked at the plane. There, nestling under the wings, were *two 1000-pound bombs he had forgotten all about.*

Abandoning the 'Chute

On a routine ferry flight between Central Pacific bases, an SB2C pilot entered a severe storm at approximately 2,000 feet, went immediately on instruments, and started climbing. At 6,000 feet, the plane entered a right spin, which the pilot was unable to control. Both he and the mechanic successfully abandoned the aircraft.

The pilot was last seen by the mech making a normal descent; in fact the aviator shouted to his passenger as they floated down. After landing in the water the mechanic saw the pilot's parachute and seat-type life raft, but the pilot was not in sight. The enlisted man was picked up the next day; the pilot could not be found.

The air group commander reported that the probable cause for the pilot's disappearance was either *1.* his falling out of the 'chute after unbuckling it in preparation for a water landing or *2.* his misjudging the altitude and leaving the parachute too early.

▶ *Comment*—**Both the dangers listed above must be avoided during parachute jumps.**

If time permits, it is desirable to unbuckle the 'chute harness during descent. Before doing so, however, be sure to *sit well back in the sling.* Also *do not remove your arms from the shoulder straps.* After your 'chute is unbuckled, reach up and *hold on to the risers* until contact.

Experience has shown that there is considerable danger of misjudging the height above water during descent. For this reason, *do not slip out of your 'chute* until contact with the water is made. The danger of leaving the 'chute too high far outweighs the possibility that the parachute canopy will fall on top of you.

Review "Parachute Sense"!

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. **When is it necessary to file an arrival message?**
2. **Do regulations make the wearing of shoulder harness mandatory?**
3. **What is the proper procedure for fitting a life vest?**
4. **After fitting your life vest and checking for rips, what three other checks should you always make?**
5. **During flight, how can you determine whether your artificial horizon is functioning and indicating correctly?**

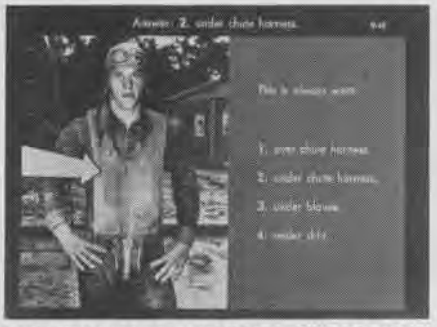
Answers on Page 48.

DID YOU KNOW?

Film Rater Tests Water Skills

200 Questions Available for Teaching

Two hundred questions on water survival, swimming, life saving and kindred topics are covered in *Water Skills*, a new film now available for use in the



NEW FILM RATER QUIZZES ON WATER SKILL

Automatic Film Rater, DEVICE 5-NN. The film was produced by BUAER Special Devices Division, assisted by the coordinator of naval aviation swimming, Aviation Training Division.

Believed to be one of the few of its kind, the film includes questions on modern desalting equipment, emergency flotation techniques, handling rubber rafts, smoke grenades, life jackets, swimming in burning oil and through explosions. Persons using the device have four choices in answering each question. Both speed and accuracy in selecting answers determine score.

Marines Capture Jap Transport

Enemy Booty Is the First of Its Kind

American forces invading the Philippines have captured a Japanese military transport plane of the Douglas DC-2 type, first of its kind to be seized intact from the Japs during the war.

The dark-green twin-engined aircraft, complete with booby trap, was found inside a road 500 yards from the Zamboanga airstrip (now Moret Field) by ground units of First Marine Air Wing dive-bomber and fighter squadrons which occupied the strip within 24 hours of the initial landing.

Although one engine had been removed by the Japs, the plane was undamaged except for a few small holes caused by strafing U. S. airplanes. Bombings and American naval gunfire, which had destroyed several other nearby Jap planes on the ground, had not touched the DC-2 which stood alone in tall grass near a jungle of coconut trees.

Wary of a trick or ambush, Marines removed the camouflage netting and palm tree branches covering the plane and made a cautious inspection. A thorough search of the interior revealed only one booby trap rigged up in the pilot's seat. The men rendered it harmless without damage to plane or injury.

JAPANESE PLANE CONTAINED BOOBY TRAP

Luxuriously furnished, the airplane probably was used to carry high-ranking Japanese officers. U. S. authorities have decided to put the plane back in the air, minus its red "Rising Suns".

Japs Bring Out A New Fighter

George May Be Best Plane Of That Type

A new type of Japanese fighter, designated *George* by the Technical Air Intelligence Center, has appeared off the west coast of Formosa, and in the Philippines.

The plane is a mid-wing, single-seat fighter of the short-range interceptor type. It is the most heavily armed Jap fighter yet encountered and has a fast rate of climb. *George* also has armor behind the pilot and self-sealing tanks. It is a Navy plane.

The first *George* was brought down by the commanding officer of a Navy fighter squadron based aboard an Essex-class carrier. Encountering the strange enemy craft, the Navy pilot gave chase at low altitude. After a chase of more than 50 miles, the Navy pilot scored a hit with his .50 caliber guns from long range, and the Jap went into a dive, crashed and burned.

Coronados Take On Dumbo Duty

PB2Y-5H Has A 25-Stretcher Capacity

By adding jet-assisted take-off and more powerful engines, *Coronado* PB2Y-3 flying boats have been converted into hospital and rescue planes capable of carrying 25 stretchers. The modified *Coronados* have been designated PB2Y-5H, and already are going down the ramp at San Diego ready for sea duty.

FIVE STUDENTS *now may be trained at once in the Link Celestial Navigation Class Trainer (1-A-7), developed by BuAer's Special Devices Division. A modified version of the original Celestial Navigation Trainer, it consists of celestial dome, five student stations, observer's platform, and instructor's station where an automatic recorder traces the path of the "flight" on which one or more of the students are navigating by the stars.*

BEST ANSWERS

Small Arms Safety

PICK THE BEST *choice to complete the statements below, then check your answers on page 48.*

1. You frequently hear of an *old* shotgun barrel bursting and injuring the person firing the gun. The most likely cause is—

- ☐ *a*–firing too often
- ☐ *b*–poor workmanship
- ☐ *c*–use of black powder
- ☐ *d*–wrong kind of powder

2. Only one of the following is *not* a safety law generally in effect—

- ☐ *a*–only three shells can be carried in a shotgun when hunting migratory birds
- ☐ *b*–the gun must be broken down during transportation
- ☐ *c*–the gun must be carried by the stock instead of by the barrel
- ☐ *d*–a federal highway is illegal hunting ground

3. If shells are purchased in large quantities and kept for long periods of time, they may become defective. Best storage place is a—

- ☐ *a*–cool damp place
- ☐ *b*–dry hot place
- ☐ *c*–warm damp place
- ☐ *d*–cool dry place

4. A gun subjected to much usage may have all of the following defects. The most dangerous is—

- ☐ *a*–rust spots in the barrel
- ☐ *b*–a cracked stock
- ☐ *c*–a "hair" trigger
- ☐ *d*–a worn firing pin

5. You have pressed the trigger and your gun fails to fire. Your safest procedure is to—

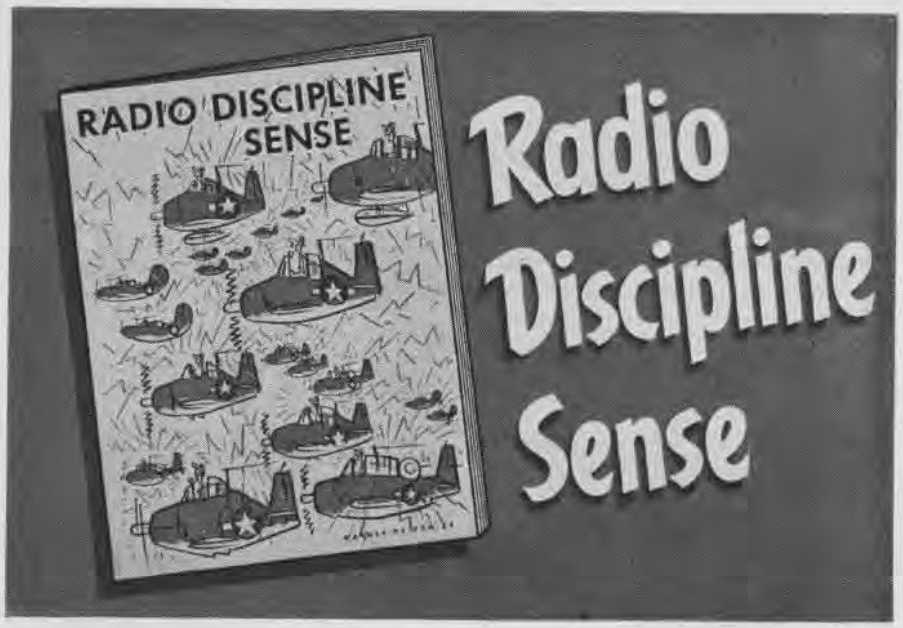
- ☐ *a*–take out the shell at once
- ☐ *b*–Wait 5 minutes, take out shell
- ☐ *c*–break open your gun and check the shell position
- ☐ *d*–put in a longer firing pin

6. All shotguns of a large gauge have a kick that may be dangerous. Effect can be lessened by—

- ☐ *a*–holding gun tightly against shoulder
- ☐ *b*–resting the barrel on a fixed object
- ☐ *c*–pointing the gun upward
- ☐ *d*–leaning against a fixed object while firing

7. While hunting, a gun is accidentally dropped in a snow bank. Some snow remains in the muzzle. You are safe if you—

- ☐ *a*–shake the gun before firing
- ☐ *b*–look in the muzzle before shooting
- ☐ *c*–go ahead and shoot
- ☐ *d*–take out the cartridge and dislodge the snow



KNOCK OFF THE CACKLING AND CROWING

IN ITS foreword the new pamphlet entitled: *Radio Discipline Sense,* says: "Your radio may have been manufactured in Oshkosh, Wisconsin, but it can be the best weapon the opposition has. So many of our own broadcasters are giving away information to the enemy, the FBI should quit hunting transmitters in Mata Hari's bustle and concentrate on the TBF.

"That innocent-seeming radio can be a double-edged weapon. Properly employed it may mean the difference between messing up the Japs and messing up ourselves. The reports from the Fleet stress danger to our side of pilots who pay no attention to the rules for using it. At this stage of the war, everybody should know that the most insignificant violation of radio discipline can, *1.* endanger our own forces by letting the enemy know our strength, location and intentions; *2.* fail to give our side necessary information; *3.* foul up the carefully laid plans; *4.* interfere with our rescue operations; *5.* waste time.

"If you don't talk and listen with the concentration you'd put into a phone conversation with a fluff from Peoria, you might as well throw that radio over the side and take in washing."

Intelligent use of your radio all depends on very simple things such as knowing enough to turn the right knobs at the right time, speaking so you can be understood, speaking up when you have something to say and keeping shut when you haven't, and following procedure.

Pilots who know how and when to talk are pearls of great price. If you follow the rules you will be the Fleet's favorite pilot.

USE THIS FORM TO ORDER PAMPHLETS

Regular distribution is in process. Coupon should be used for those whose copies may have gone astray.

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SUBJECT: Pamphlets—Request for.

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V-Mail Speeds Up Ship Repair

Kalinin Bay Back In Fray in Six Weeks

V-mail helped get the U.S.S. *Kalinin Bay* back into action in a record time of six weeks after the CVE had taken 25 shell hits during the Battle of Leyte Gulf.

The *Kalinin Bay* was to be repaired at Terminal Island, but blueprints of the ship were not available there and considerable delay would result if blueprint reproductions of the thousands of details of the carrier's plans had to be made.

All plans of the ship were photographed on microfilm, filling four small reels. These were flown to the shipyard, where photographs of battle damage to the ship also were received by air in advance of her arrival. Advance manufacture of damaged portions of the structure therefore was possible. Microfilming cost $21, as compared to the $1,500 blueprints would have cost. Reels occupied a cubic foot, while blueprints would have filled a space 6′ x 18′.

Navy Rewards Civilian Ideas

Cash Prizes Go to Beneficial Program

The Navy estimates it will save $1,300,000 annually from use of recently-adopted beneficial suggestions submitted by civilian employees of its shore establishments.

Board of Awards to Civil Employees released names of some of the bigger money-winners in the program. Largest amount went to Ronald R. Beineman, head of Navy fuze inspection at a Grand Rapids plant. He received $1,500 for an invention that cut three cents off the cost of producing each fuze, of which the Navy uses millions.

George F. P. Reich, BREMERTON NAVY YARD employee, received $1,000 for his suggestion to improve installation of confidential electronic equipment. Three employees at NAS CORPUS CHRISTI—Albert L. Bonifay, Barnery E. Jerkins and William L. Mitchell—split $600 for designing a carry-all hay rake used to cut grass on landing fields. Their device cut six days' work to two-and-a-half days and reduced number of men required from 40 to 15.

Hundreds of awards are made yearly by local beneficial suggestion committees and the best of these ideas are sent to Washington for higher awards.

FLIGHT SAFETY

Flight Safety Needs Good Men

AVIATION safety programs have a definite goal that can be measured in the number of lives saved and planes kept flyable. Statistics can be cited to establish that where vigorous aviation safety programs have progressed in conjunction with aviation safety boards—ordered set up by Aviation Circular Letter 50-44—frequency of avoidable aircraft accidents has been reduced materially.

As one major command put it, "The value and necessity of such programs is indisputable."

Responsible commanders of squadrons or higher echelons should consider a number of points in addition to the ones previously outlined. *For example*, the following were considered important by one high fleet command:

a. Assigning officers to aviation safety duties who are best qualified and, above all, *most* interested in this kind of work

b. Using general or special service aviation non-flying officers, such as those classified as (A) or S (A), as well as naval aviators, for flight safety duties

c. Retaining at least one or two key officers on aviation safety boards with primary duties as members thereon in order that they may become well versed in the scientific approach to investigating aviation accidents

d. Permitting flight safety and aviation safety board officers to call in and utilize the services of anyone in investigation of accidents who is qualified and experienced, to assist in determining causes and preventing repetitions

e. Presenting all aspects of the safety programs in the most interesting manner possible and not bogging it down needlessly with statistical studies that may be of little interest to the individual pilot

SAFETY programs will differ from locality to locality. Climatic factors in New England, for instance, will not parallel those of the Gulf Coast air stations. Differences will exist as to operating conditions, terrain, types of planes used, types of operations as well as weather. Therefore, it is imperative that each commander initiate his own program tailored to fit local conditions as well as the more general aviation safety requirements.

Considerable material is required on each serious aircraft accident under existing directives. The aviation safety boards and flight safety officers should utilize data available in aircraft accident reports, administrative reports, records of courts in inquiry and boards of investigations, and should assist in preparation and forwarding of such reports.

With the intention of coordinating aviation safety activities throughout AIR FORCE, ATLANTIC FLEET, the commander of that aeronautical organization has appointed to his staff an aviation safety officer with the following duties:

1. Supervision of organization and functioning of aviation safety boards of subordinate commands

2. Indoctrination of squadron flight safety officers

3. Coordination of safety and survival activities of officers of subordinate commands assigned to duties which are in whole or in part directly concerned with aviation safety, *i.e.*, safety board members, squadron flight safety officers, aviation equipment officers, physical training officers and flight surgeons

4. Coordination of aviation safety activities of subordinate commands with those of other commands located within the geographical areas of Fleet air detachments

5. Analyzing, classifying and maintaining statistics on all reports of accidents, defects in equipment, deficiencies in facilities or other matters affecting safe operation of aircraft

6. Reviewing and studying aircraft accidents and operational deficiencies, deducing and recommending corrective measures to liaison officers in the divisions of this command

7. Conducting, with the aid of flight safety officers of subordinate commands, a general aviation safety education program within AIR FORCE, ATLANTIC FLEET, using all mediums available

8. Investigation of aircraft accidents or defective procedure whenever the aircraft accident or aviation safety boards in the subordinate commands fail to extend the required information

9. Consultation with such experts, technicians, boards or organizations, civilian or military, whose experience or ability can contribute to reduction of aircraft accidents

10. Receiving, collecting and disseminating information on any phase of aviation safety or survival

11. Originating such recommendations that will improve equipment and operating procedure of units of AIR FORCE, ATLANTIC FLEET when such measures will tend to promote aviation safety

12. Liaison with the Flight Safety Council of the Navy Department and the Flight Safety and Air/Sea Rescue Section established by DCNO(AIR), on all matters of safety in aviation and air/sea rescue.

TESTS SHOW NYLON IS MORE FLAME RESISTANT THAN COTTON. FLASH RESISTANCE DEPENDS ON WEIGHT AND POROSITY OF CLOTH

FLAMEPROOF NYLON

NMRI EXPERTS EXPERIMENT TO LEARN THE REAL FACTS

A REPORT, spreading in the fleet, that nylon being used in much Navy gear is highly inflammable, has led to a series of new experiments at the Naval Medical Research Institute. These served as a re-check of exhaustive tests which were conducted by the Navy long before nylon was adopted for use. All tests show that nylon does not burn as well as cotton fabrics.

Both actual flight gear and test strips of nylon and of cotton fabrics were exposed to open flame. Cotton, such as the five and a half ounce Byrd cloth used in summer flying suits, ignites at 430° while nylon has a melting point of 482°. Cotton strips from a Navy skivvy shirt and a Byrd cloth suit were exposed to fire. Both burst into flames at once. The burner was withdrawn and flames persisted until the cotton fabrics were destroyed.

Nylon strips from a flak suit, a summer weight flying suit and an anti-g suit, were also exposed to flame at the same time. The nylon did not burst into flame, but instead, melted away. When the burner was withdrawn the fire vanished leaving a hole in the nylon fabric. Blobs of fuzed material clung to the edge of the hole.

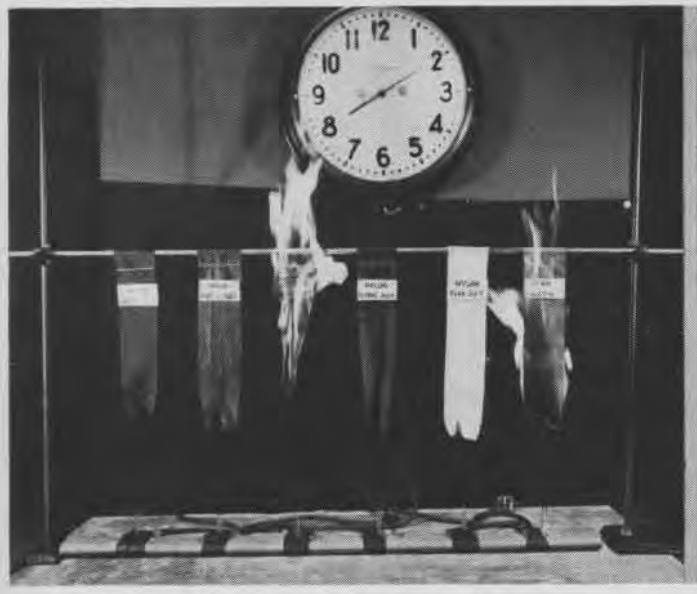
To fix the time element involved in the experiments, a large clock with a second hand was suspended above the test rack. Types of fabric were labeled (*see cut above*). The second hand was set at zero and flame was applied (*see opposite page*). In slightly over five seconds, burners were withdrawn from the materials. Nylon stopped burning almost as soon as the flame was withdrawn, and long before 10 seconds had been reached. Cotton fabrics continued to burn, and were destroyed within 30 seconds.

As to flash burn, tests showed heavy material that is closely woven is more resistant to flash than a light porous material. Except for its inflammability, the type of fabric used is relatively unimportant, tests reveal.

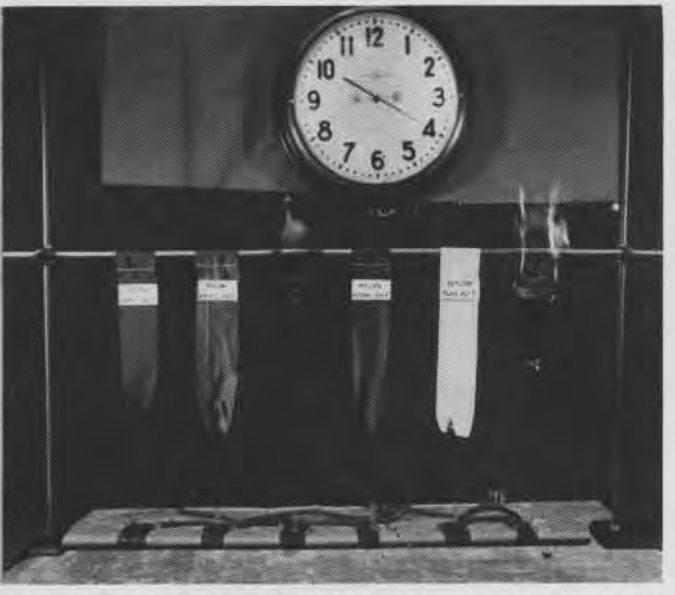
GIVEN the same weight, weave, thread count and porosity, then cotton linen, silk or nylon show little difference in flash resistance. But the immediate after-effects of a flash would be a different story. More inflammable material such as cotton might continue burning longer than would nylon.

AT ZERO SECONDS, BURNERS ARE MOVED UNDER THE TEST STRIPS

SHORTLY AFTER FIVE SECONDS ELAPSE, FLAMES ARE WITHDRAWN



AT 10 SECONDS, NYLON IS ALREADY OUT. COTTON BURNS BRISKLY



AT 20 SECONDS, MOST OF THE BYRD CLOTH ALSO IS DESTROYED

FIVE SECONDS LATER, SKIVVY SHIRT STRIP IS ONLY A MEMORY

AT 30 SECONDS, GOOD-BY TO COTTON. FLAMEPROOF NYLON REMAINS

TOKYO TALKS

—To Italy

The bestial execution of Il Duce Mussolini will leave a stain on Italy's history. It is stated that his corpse was exposed to the curious gaze of the public and all conceivable insults were heaped upon it. Such news is almost incredible to us. Such brutality is unimaginable in our minds. Not only because Premier Mussolini led the country which was once our ally, but from the standpoint of world civilization we desire to deny the existence of such human depravity.

—To The Empire

In a period of less than five weeks, the enemy has suffered the mortal blow of having lost 13 aircraft carriers sunk and 19 battleships sunk or damaged in the fighting around Okinawa waters. So far as carriers are concerned, the enemy has only three in the process of being built. Perhaps he may avail himself of French battleships or antiquated ones from Latin American countries. It is possible to employ converted cruisers or auxiliary carriers, but the battleships are irreplaceable.

—To Japan

The struggle for a new order in Europe has been wrested from the hands of Germany, because of the failure to obtain aid and support from the rest of the European people. Japan, however, is fortunate in having the all-out cooperation of the peoples of East Asia.

—To Japan

More than two weeks have passed since the opening of the San Francisco conference; weeks which have slipped by without any apparent progress made as far as the actual business before the conference is concerned. The public plenary sessions have consisted mainly of one rather dry address after another. There were indications that after the first few days of endless speeches many of the delegates were getting a trifle bored. The majority of the time has been devoted to squabblings as to who is to become chairman of this committee and that one, and sharp debate over what country should be invited to San Francisco.

—To France

There is something inspiringly heroic, mingled with the ineffably tragic, in the spectacle of Marshal Philippe Pétain voluntarily returning to France to face trial on charges of treason against his country which he served so faithfully and so long. Marshal Pétain is no traitor. He is a patriot of patriots, as his whole life career attests. In the dark days of 1940, when neither politicians nor generals proved capable of preventing the complete collapse of France, the aged marshal came out of a well-earned retirement to assume one rush burden of picking up the shattered remnants of his country so as to put it back on the road to recuperation and renovation. Now that the fortunes of France have changed, petty, self-seeking politicians who have climbed to the seats of power are accusing the old marshal of having betrayed his country. It is a most preposterous charge, for the marshal saved and preserved his country, not betrayed it.

—To Great Britain

In one sense, the European war broke out as a result of Chamberlain's failure to carry through the decisions reached at the Munich conference. Britain, to no small extent, has been responsible for World War II. Those diehards of Britain's Conservative Party should be rounded up first before the Nazi leaders are called to account as war criminals.

—To Japan

Flag-waving by Japanese troops is frowned upon for safety reasons. Some troops received serious injuries when oncoming trains hit them unexpectedly while they were leaning out of windows and waving the national flag in response to people sending them off. Again, others lost their eyes by having them pierced by poles of flags waved by students. Examples have occurred where 20 to 30 people were killed when men, in response to send-offs and welcomings, threw name cards and caramels, and the people, in trying to retrieve them, went on to the tracks and were hit by trains running both ways. Men have shaken hands from train windows with women who came to see them off. They did not release their hands even after the train started to move. This results in loss of military dignity and invites the public's disrespect.

—To The United States

Bomb craters made in the Japanese industrial city of Nagoya during air-raids by B-29 *Superfortresses* are being transformed into fish ponds. Children in the neighborhood of these bomb-crater ponds will study the fish as an object lesson in natural history.

—To The United States

American *Superfortress* raids are lifting a heavy burden from the minds of Japanese whose homes they destroy. According to Dr. Hiroshi Shimomura, president of the Nippon Board of Information, ten people out of ten with whom he has come in contact have expressed the view that they felt light-hearted and that a heavy burden has been taken off their minds, because prior to their misfortune they had had to worry about their property and belongings.

No fire, however fierce or devastating, could destroy Tokyo. Furthermore the reborn capital will be started without delay on the very day of the victorious end of the war, which is sure to come.

—To China

There will come a time when Chungking and Japan will once again collaborate with each other. When engaged in hostilities, a nation must fight on with her total strength, but it is through fighting that one nation comes to truly understand the country which opposes her.

—To Japan

The enemy has issued a statement that Admiral Nimitz visited the Okinawa front in order to mislead world opinion to the stability of the war situation. This is a vain gesture to pacify the loud clamor for more reinforcements and supplies from American front-line forces.

—To The Enemy

The situation in Europe does not require enemy propaganda to impress upon us the necessity of preparing ourselves for the worst. Inasmuch as the War of Greater East Asia is to Japan a war of self-defense, it goes without saying that Japan's policy of prosecuting this war will not be affected, no matter what developments may take place in Europe.

Germany's capitulation does not surprise us in any way. Events in the past have clearly and unmistakably shown what the future would bring. The two wars were not planned together, however, and the war in Greater East Asia will be a war in itself even after the war in Europe terminates.

SHOW ME THE WAY TO GO HOME

Sector Search

You depart your carrier, Lat. 18° 24′ N, Long. 140° 16′ E, at 1210 to patrol a relative sector from 300° to 330°, returning to the carrier after four hours. The carrier is on cus 232°, speed 22 k. You have a TAS of 130 k, wind is from 140°, force 25 k. Var 0°.

1. What is your MH out? ____
2. What is your cus out? ____
3. What is your TTT at end of 1st leg? ____
4. What is your position of turn at end of 1st leg? ____
5. What is your SRM on 2nd leg? ____
6. What is your MH on 2nd leg? ____
7. What is your TTT at end of 2nd leg? ____
8. What is your MH on 3rd leg? ____
9. What is your position of interception of carrier? ____

(Answers on page 48)

Naval Aviation Advanced Bases

ACORN • CASU • AROU • ABATU

FIGHTING a war that requires heavy aerial activity over long reaches of the Pacific automatically gave the Navy the job of creating well-equipped island air bases that could be set up quickly and operate efficiently.

Air strips had to be cut out of dense jungle and finished with whatever material was available—crushed coral or pierced steel plank. Operations towers, repair shops, fueling and rearming facilities had to be provided, as well as barracks and living needs of the hundreds of men who run the air base.

Squadrons come in by air and leave carrying little or no equipment. Air bases have to repair the planes and keep them in action. To handle the job, the Navy created numerous units to handle specific phases of the job—ACORNS, CASU'S, PATSU'S, AROU'S, ARGUSES and others. Thumbnail definitions of each of these units follow:

ACORN —Unit of personnel and equipment trained to build and operate an air base. Seabees do the construction work.

CASU —Combat Aircraft Service Unit, that repairs fighters, bombers and other aircraft, keeps them in action. A CASU is mainly personnel.

AROU —Aviation Repair and Overhaul Unit, large unit resembling an A&R shop, equipped to do major overhaul and repair work on planes.

ABATU —Advanced Base Aviation Training Unit, organization at NAS ST. LOUIS, which trains men who go into the above-named units.

The Navy also has other alphabet-type organizations which had or still have a part in the advanced air bases picture. PATSU's were formed to service patrol-type aircraft, but many are absorbed by CASU's. Units called ARGUSES, which handle radio and radar on island bases, also have been merged with existing units. GROPAC's are harbor activities, handling small boats, port operations, boat crews and piloting. LIONS and CUBS, now not so prominent, were units to service and maintain large advanced naval bases, as ACORNS handle air bases.

NAVAL AVIATION ADVANCED BASES OFTEN ARE HEWN OUT OF CORAL ISLANDS, OFTEN CHEWED TO BITS IN ERADICATING THE JAPANESE

ACORN

WHEN the Navy plans to take an advanced position and establish an airfield, it puts in an order for an ACORN and a COMBAT AIRCRAFT SERVICE UNIT. Each is prepared to handle the number and type of aircraft Navy estimates will use field.

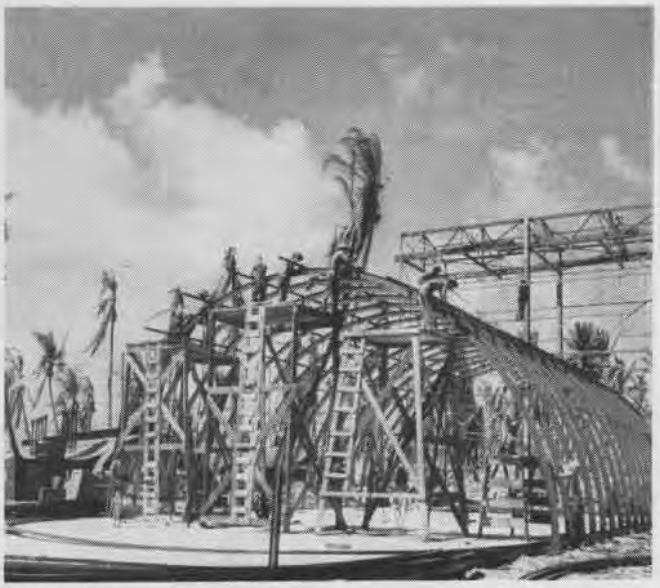
The work of ACORNS and CASU's in building island air bases is far less publicized than the fighting units that capture the islands. Those two units go in right behind the shock troops, share their hardships and dangers and try to make a livable place out of what usually is war-torn coral islands or jungle. Between the various aviation units helping to make these air bases compact fighting units is a thin line—mostly on paper and organization charts.

CASU personnel service and repair the planes. Seabees attached to the ACORN build the airstrip, all buildings and installations and keep them up. The ACORN even furnishes the tools the CASU uses on the planes. The CASU has to be a mobile unit that can be shifted from place to place.

Each ACORN is so equipped that, when coupled with a CASU, it can service, rearm and perform minor repairs and routine upkeep for planes of a carrier group or patrol plane squadron. The standard ACORN complement, including Seabees, is 67 officers and 1590 men, but this varies.

An ACORN is a commissioned unit and stays on to maintain and operate the airstrip. Its battalion of Seabees may move on to another area or return to the continent for reforming. In their place a CONSTRUCTION BATTALION MAINTENANCE UNIT (CBMU), smaller than the original Seabee unit, moves in. The ACORN stays on to operate the airfield.

ACORNS BUILD AND OPERATE SUCH TOWERS AT SEAPLANE BASE



SEABEES PUT UP PARACHUTE LOFT AT AIR BASE ON ENIWETOK

ACORN TRAINS ITS MEN IN EXTINGUISHING FIRES AT HUENEME

ACORN MEN PRACTICE BEACH LANDING IN LST AT POINT MUGU

AIR OPERATIONS at the new base come under supervisory control of the ACORN, just as continental-based air stations are under a commanding officer and his staff. Combat missions naturally are directed by Fleet commands, but routine operations on the base are looked after by the ACORN. The CASU is under the ACORN, as is the defense battalion of Marines or Army personnel that comes in with the ACORN to furnish antiaircraft and ground defenses. ACORNS and CASU's receive gunnery training and occasionally have to fight Japs not driven from an area.

Port Hueneme, before the war a little-known California coastal port used by produce shippers, is the home of ACORNS. The base consists of three units—an advanced base depot, Camp Rousseau where unattached Seabee units stay, and Camp Bedilion, where headquarters of ACORN Assembly and Training Detachment is located. A few miles below Hueneme at Point Mugu, the AATD has another camp.

Normal training-time for ACORN personnel before shipping out is six weeks, but this is shortened at times because of strategic considerations. The job of the training detachment is to show ACORN and Seabee personnel how to make rapid landings from LST's, to train Seabees how to make landing strips, and to assist ACORN officers in procuring material.

The detachment also gives ACORN and Seabee personnel fundamenals of seamanship, small arms and AA weapons, communications, health, and familiarizes them with the tools with which they will work. Since Hueneme is the last place they see before they land somewhere in the Pacific, their training includes survival information and Jap combat tactics. Men reach Hueneme with a background of training in their various ratings, so the work given them there is of an advance nature, involving as much actual operations of tools and equipment of the ACORN as possible.

Practice Landings Pave Way to Invasions

NUMEROUS landings are made in LST's and other landing craft to give men experience in the job they will meet when they go ashore behind combat troops on some Pacific island. ACORNS use their various types of barges, pontoons, boats, shovels, bulldozers and other equipment as much as possible before loading them for the overseas jump. The kind of gear they take along depends largely on the size and type of airfield they will set up when they land. Packing and stowing this gear and unloading it are practiced to insure speed.

LOADING, UNLOADING GEAR IS DONE UNDER VARIED CONDITIONS

UNDER SMOKE SCREEN, ACORN MEN GET TOUCH OF BEACH WAR

CASU

THE COMBAT AIRCRAFT SERVICE UNIT, until recently known as Carrier Aircraft Service Unit, is a wartime development, providing an extremely mobile organization to keep land-based Navy planes repaired.

They work hand-in-hand with an ACORN. The ACORN's Seabee battalion constructs the air strip and base facilities. After the island air base is completed, the Seabees move on but the ACORN stays to operate the field. A smaller unit of Seabees, called a CBMU (maintenance unit), comes in to take over repair and construction work. Squadrons fly in with planes and the CASU keeps the planes operating.

There are two types of CASU's today, those based in forward areas west of Hawaii being given the designation CASU(F). Because it is a highly mobile unit, the CASU is not burdened with equipment. This belongs to the ACORN. The CASU remains in commission as a separate entity while the ACORN may be decommissioned and absorbed into an air base after it has been completed.

It is the function of a CASU to service, rearm and make minor repairs on land planes or seaplanes, large or small. It maintains facilities and equipment in its charge, including personnel facilities. The CASU also may furnish berthing, messing and service to personnel of air units, both flight and ground personnel.

Formerly, the Navy had units called Patrol Aircraft Service Units (PATSU), trained to handle only big multi-engined aircraft. These, however, no longer are being formed under that name and their duties are falling to a CASU(F) with special components. These new tasks require CASU's to have personnel trained to maintain large planes as well as fighters.

Hueneme Trains Men for Battle Action

At Port Hueneme, where many CASU's are formed, they receive a four-phase training program. The first stage is military and technical courses; *then*, servicing of battle-experienced aircraft at Mugu field; *third*, squadron-servicing at a naval auxiliary air station nearby; and *last*, assembly and loading of equipment at Port Hueneme in cooperation with the companion ACORN. Much emphasis is laid on experience in loading and stowing equipment in LST's and other ships, looking toward the day when the CASU and ACORN will land on some far-off island and start operating.

Most CASU's in the Navy are based overseas, although there are a number of larger ones on the continent at San Diego, Alameda, Seattle, Quonset and Norfolk. From these, smaller units of men to maintain combat-type aircraft aboard carriers are formed to make up COMBAT AIRCRAFT SERVICE DETACHMENTS (CASD's), which are ship-based.

The standard CASU complement is 17 officers and 516 men, about a third the size of a standard ACORN. Both, however, vary widely according to the size of the job they will have at their island base.

To facilitate setting up an air station that will be able to meet the Navy's needs, an ACORN is put together somewhat like ordering from a mail order catalog. Various components, each self-contained units of equipment and personnel, are assembled according to the various jobs the air station will have to perform. If it is to handle fighter-type aircraft, it will be given certain components. If multi-engined planes are to land there also, different components are "ordered."

Because it is a self-contained unit, a CASU has a complete inner organization of its own, consisting of an engineering division, operations division, ordnance, radio and radar, camp, supply, personnel and medical.

Engineering division looks after aircraft repairs—the main function of a CASU. *Operations* handles all matters concerning operation of planes attached to or visiting the CASU. *Ordnance* handles rearming and guns. *Radio and radar* division repairs electronics gear. *Camp* division usually merges with the ACORN in maintaining and policing grounds and buildings of the air base.

CASU Looks After Its Own Men

Supply division looks after supplies and disbursing. *Personnel* is assigned the job of handling officers and men of the CASU, including physical education and recreation.

CASU personnel are specialists in some branch of aviation maintenance, but their general naval education is not neglected while they are being trained at Port Hueneme. Men not already trained in such subjects get indoctrination in naval customs, sanitation and seamanship. Other training given men includes infantry training, physical conditioning, chemical warfare, combat tactics, antiaircraft firing, carbine and pistol use and bombs.

Technical courses include the whole field of instruction in use of equipment for servicing planes and maintaining facilities assigned to the CASU. In the second phase of training they repair Fleet feed-back aircraft at Mugu field. Some of these can be used again for training in the States. While CASU men are receiving such training, control tower and aerology personnel of the ACORN also train there. In the third stage, the ACORN and CASU operate jointly at outlying fields such as Ventura airport, 29 Palms, Thermal or San Nicolas.

CASU MAINTAINS PLANES ON ISLAND AIRSTRIP, USING TOOLS AND EQUIPMENT BROUGHT IN BY ACORN ON WHICH THEY ARE BASED

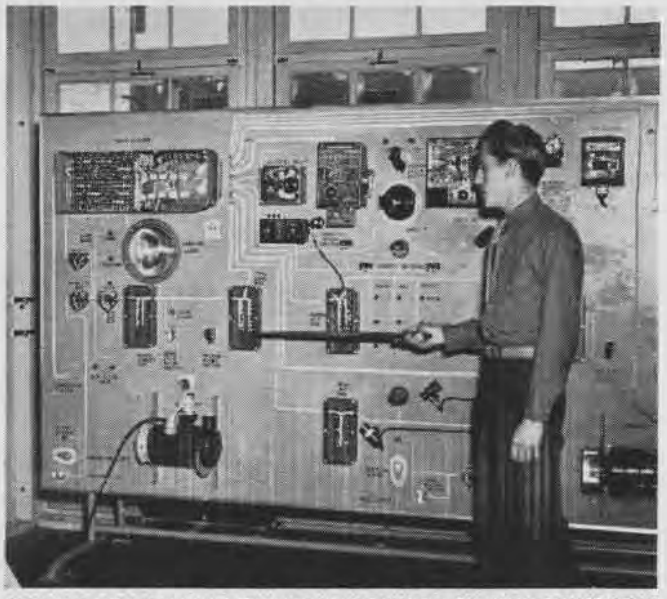
Seabees attached to ACORN on Eniwetok set up Quonset huts to house men at the base. Advanced areas lack palatial quarters

Rearming of planes on island air base is job for CASU ordnanceman. This 5" AR rocket carries plenty of punch for the Japs

MEDICAL CARE OF MEN IS ANOTHER TASK CASU HAS TO HANDLE

CASU'S FURNISH MESS FOR SQUADRONS BASED ON THEIR STRIP

ABATU MECHANIC WELDS COWLING FOR PRACTICAL EXPERIENCE



MOBILE TRAINER UNIT GIVES LATEST WORD ON SB2C GENERATOR

ABATU

THOUSANDS of skilled technicians maintaining Navy planes at advanced air bases are graduates of practical work training given them by ADVANCED BASE AVIATION TRAINING UNIT (ABATU), formerly at Norfolk, but now at NAS ST. LOUIS.

At this "postgraduate" school, men from Class A technical training schools, boot camp or the Fleet specialize in various fields of maintaining fighter, bomber or patrol planes. Rather than work on training models or mockups, the men do actual repair work on war-weary planes or other aircraft that must fly after they have finished. One instructor works side-by-side with each three or four students and also keeps close tab on their work to see that they do it right.

In addition to this type of work, ABATU performs many special jobs for Bureau of Aeronautics or various air stations. Its students do everything from making special bolts to resurfacing wings or overhauling an entire plane that has crashed. This saves the Navy money it would cost if the jobs had to be done by civilian help and trains students better.

Rather than operate various classes to instruct its students, ABATU puts them to work in the hangars and A&R-type activities where they learn on the spot, under close supervision of their instructors. After three months with ABATU, the class of 355 men that enters each month is sent out to such air base or carrier units as ACORNS, CASU'S, AROU'S, CASD'S, and various Fleet commands. Planes from as many as 33 commands have been received during a quarter for repair work by the students. As high as 356 aircraft have been overhauled, repaired, checked or modified by ABATU in a quarter.

Unit Affords Men Wide Training

ABATU sends individuals and detachments to aircraft factories, A&R's and outlying fields to assist in production, maintenance and modification. British, French and other United Nations maintenance personnel have been trained in lend-lease plane types by ABATU.

Another activity of ABATU is the NAVAL AVIATION MOBILE TRAINING DETACHMENT which has more than 148 mobile trainers staffed by an officer and 10 to 14 men. They use mockups, cutaways, films, charts and other means to get across the latest word on ordnance, new planes, munitions, and fire and rescue in all forward areas of the present war.

METALSMITHS AT ABATU, ST. LOUIS, REPAIR FLAPS AND AILERONS

ABATU HAS 148 OF THESE BIG MOBILE TRAINERS ALL OVER GLOBE

AROU'S HAVE TO BE ABLE TO GIVE COMPLETE PLANE OVERHAUL

AROU

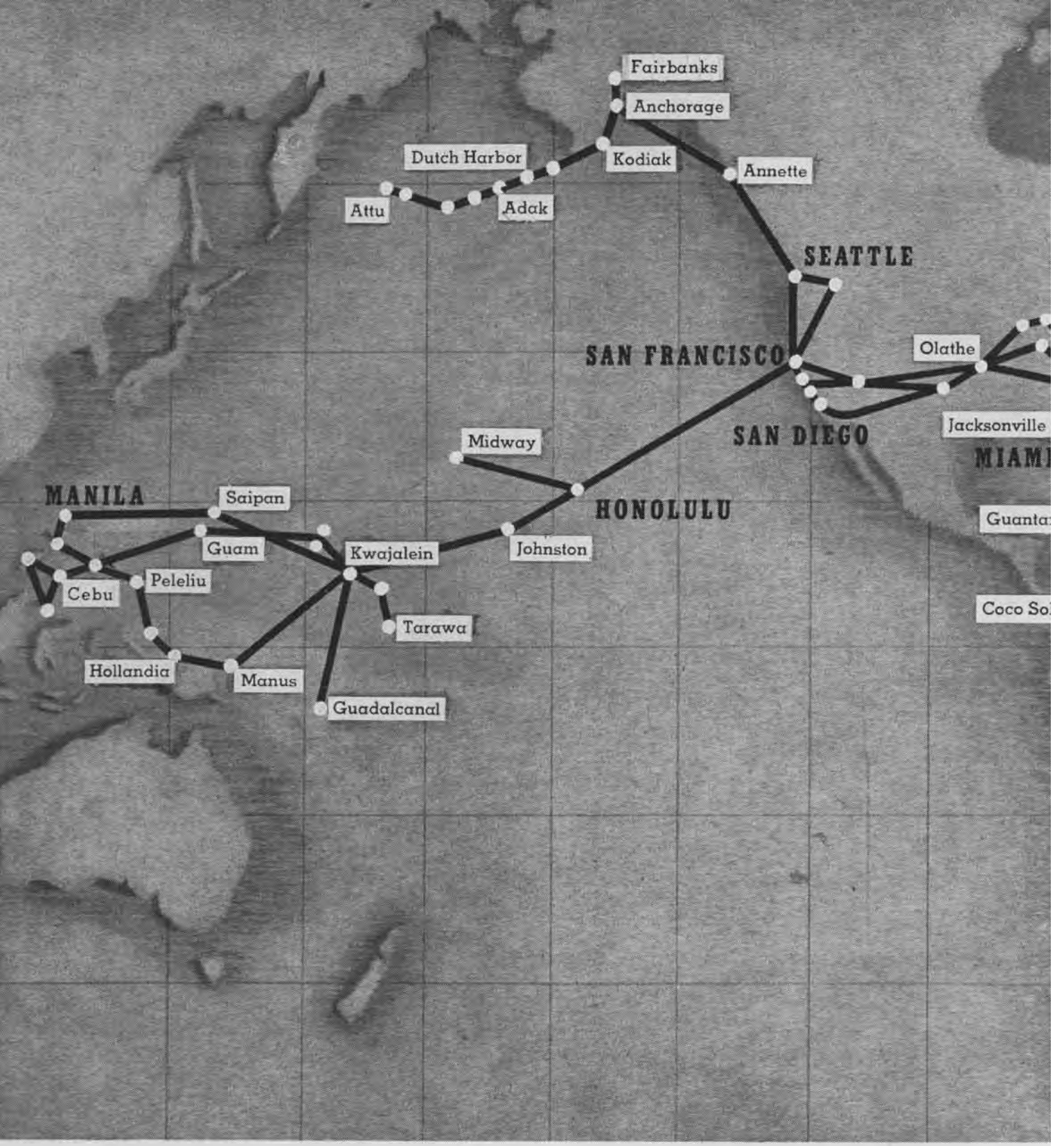
IF A FIGHTER plane aboard a carrier has engine trouble, the CASD on the ship fixes it, if possible. On an island air base, the CASU attached there would make necessary repairs. But if the plane needs an overhaul or some major repairs, the job is one for the Navy's large AVIATION REPAIR AND OVERHAUL UNITS. (AROU)

These are nothing more than Assembly & Repair shops set down on some large island. Their exact locations are military secrets. An AROU is a self-contained unit which the Navy ships to an island, fully equipped and qualified to repair, modify and test aircraft, engines and accessories.

Its capacity is 100 engines a month, although some larger AROU's with 1800 officers and men can handle twice that. Just as other maintenance units go out with their own tools, AROU's carry complete supplies, machinery and facilities. AROU men are trained by the Advanced Base Aviation Training Unit, which "farms" them out in continental A&R shops for practical experience. After this they join the AROU at its staging spot, where they again work in A&R shops till shipped out. An example of this is at NAS SAN DIEGO where AROU men work shoulder-to-shoulder with civilians at that station.

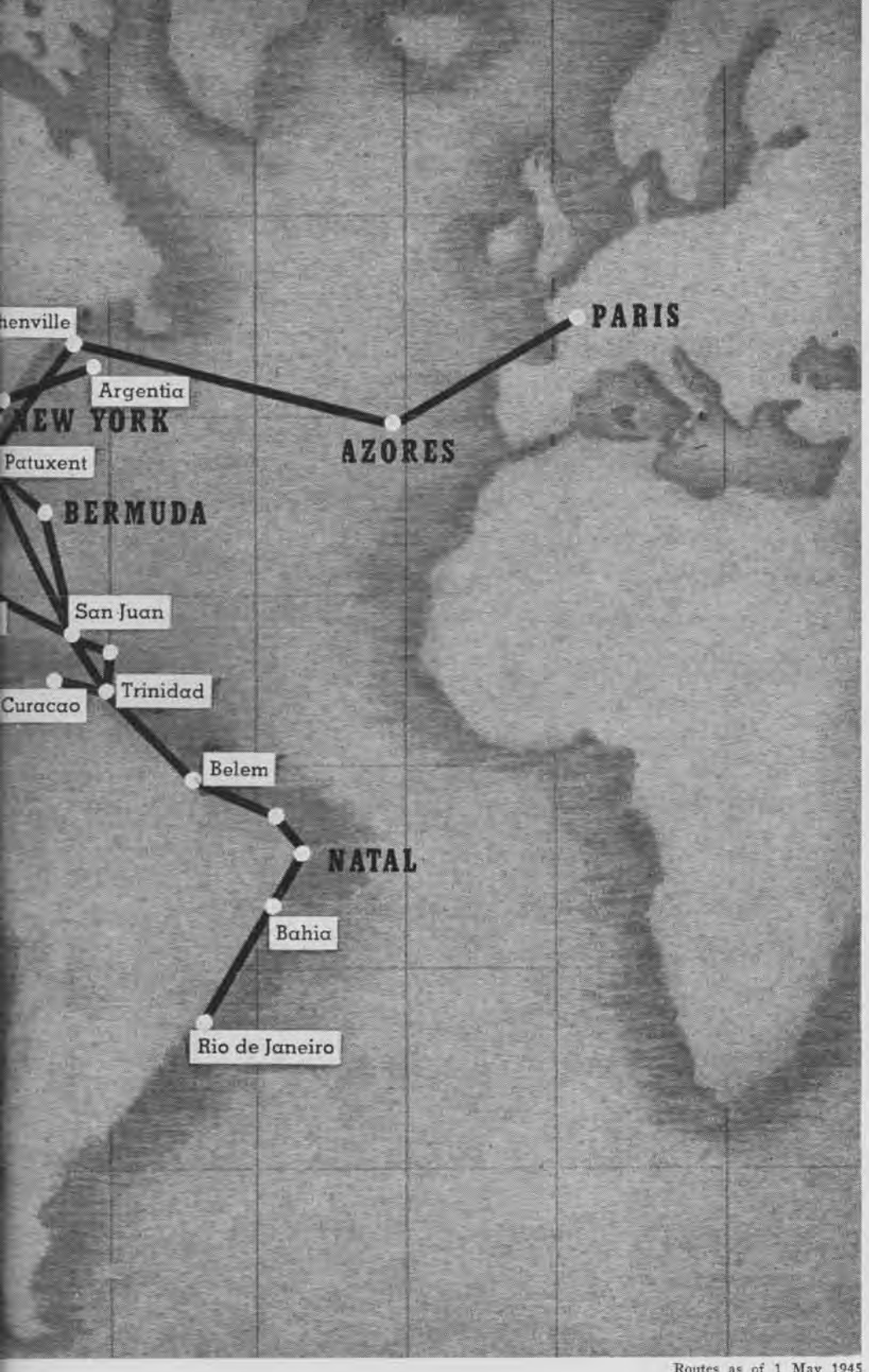
CHIEFS KEEP CHECK ON AROU WORKERS CLEANING CYLINDERS

AROU MEN ATTACHED TO SAN DIEGO A&R OPERATE DRILL IN SHOP



NAVAL AIR TRANSPORT SERVICE

TO ACQUAINT military personnel more fully with the facilities of Naval Air Transport Service, NAVAL AVIATION NEWS presents information on these pages regarding routes travelled, points served and eligibility required. In cases where personnel do not have priorities, prospective passengers may obtain complete information and make reservations for NATS flights from the Air Transport Officer at the nearest naval air station or base served by NATS. The ATO will forward the request promptly to the appropriate space control office for determination of priority eligibility.



Routes as of 1 May 1945

ALL PERSONS eligible to travel by NATS, except those on official leave, must have a priority before making reservations. Military personnel on official leave or furlough from a duty station outside the continental limits of the United States, or on emergency leave, should have included in their leave papers or orders evidence to this effect. Other military personnel on official leave or furlough need only possess their official leave papers. To obtain a priority for travel by NATS on the basis of travel orders, personnel must have orders *directing* (not merely authorizing) travel by means including government or commercial air. Then, priority classification as certified will be written in the orders. Otherwise, a priority must be obtained.

New NATS insignesymbolizes Navy's trans-ocean air service

POINTS SERVED
ATLANTIC WING

SQUADRON ONE

Bermuda	New York
Sydney	Philadelphia
Boston	Washington
Quonset Pt.	Patuxent
Argentia	Norfolk
Stephenville	Cherry Point
Azores	Charleston
Paris	Jacksonville
	Miami

SQUADRON THREE

New York	St. Louis
Philadelphia	Olathe
Patuxent	Amarillo
Harrisburg	Winslow
Washington	Phoenix
Cleveland	Bakersfield
Columbus	San Diego
Detroit	Los Angeles
Chicago	Oakland

SQUADRON SIX

Miami	Coco Solo

SQUADRON SEVEN

Miami	Zandery
Guantanamo	Amapa
Pt. au Prince	Belem
C. Trujillo	Sao-Luiz
San Juan	Fortaleza
Antigua	Recife
St. Lucia	Maceio
Port of Spain	Natal
Aruba	Bahia
Curacao	Caravellas
Trinidad	Santa Cruz
	Rio de Janeiro

SQUADRON EIGHT

Patuxent	San Juan
	Bermuda

PACIFIC WING

San Francisco	Anchorage
Red Bluff	Fairbanks
Klamath Falls	Kodiak
Portland	Cold Bay
Astoria	Dutch Harbor
Bremerton	Adak
Seattle	Tanaga
Farragut	Amchitka
Annette	Shemya
	Attu

San Francisco	Manus
Corona	Eniwetok
Los Angeles	Engebi
Oceanside	Saipan
San Diego	Guam
Honolulu	Samar
Midway	Mindoro
Johnston	Manila
Tarawa	Puerto Princesa
Majuro	Cebu
Roi	Zamboanga
Guadalcanal	Peleliu
Kwajalein	Biak
Ebeye	Hollandia

SHORE STATIONS

▶NAS HONOLULU—The station War Bond promotion officer thought he'd hit a jackpot recently when a Yeoman 2/c walked in and plunked down enough cash for $975 worth of bonds. The yeoman, who works in VR-12 Personnel, has a simple formula for accumulating enough money to make such purchases. "You just let your pay stay on the books until it builds up," he says. "Of course, you go without some things—but I figure the money will do me more good later than it will now."

▶NATTC NORMAN—There's no one quite so optimistic as a gardener-farmer in Oklahoma. NATTC has its optimists, some of whom may be seen any afternoon digging in their hopeful victory gardens.

The gardens have been laid out on the station so that naval personnel may enjoy the back-to-earth urge and at the same time help out with the food shortage. Public Works Department has secured tools for working the plots.

▶NAS HONOLULU—An AMM2c, of landplanes, was so in the habit of departing for duty in the morning that one day he hurriedly dressed, shaved, ate his breakfast, sweated out the bus line, dashed up to muster just on time—to discover, too late, it was his day off.

▶MCAD MIRAMAR—A pilot from overseas recalls diving into a blockhouse to escape heavy bombing. After two hours, the door was blown off its hinges by a near miss. The Marine then discovered the blockhouse was filled with cases of TNT.

▶NAS JACKSONVILLE—Definite proof recently was received that a pint of blood donated by a bluejacket on this station helped save the life of a Marine who stormed the beach at Iwo Jima.

The Marine noticed the bluejacket's name on the bottle as the doctor was pumping the whole blood into his veins just eight days after it was given, after a Jap machine gun bullet had ripped into his left leg, fracturing the bone. The Marine took the card and put it into his pocket, and brought it back to the States in hopes that someday he might meet the bluejacket and thank him personally.

▶NAS DAYTONA BEACH—A Lt. (jg) has suggested an unusual post-war project—an indoctrination camp to ease the strain of sailors returning to private life. Among the facilities of the camp will be a special salute-preventer. The man's hand will be fastened to his belt with a stout cord. It is believed that after he sprains his arm a few times trying to salute he will gradually slip out of the habit. Another wrinkle in this system will be an alarm clock that plays reveille in low, sweet tones—to serve as a transition to the loving voice of his wife calling him to toast and coffee in the breakfast nook. The lieutenant has not yet worked out a method of preparing enlisted men who have become accustomed to sleeping in barracks to the lonesome business of going to bed in a quiet room by themselves.

▶NAS HONOLULU—During the next rainy season it is expected that floats will be installed on the R5D's and other miscellaneous aircraft so that the take-off from the mat may be made without use of a periscope. Recently, under similar circumstances, an R5D pilot coming in for a landing swears by the Bible he saw a PB2Y-3 taking off on runway "B".

▶NAS HONOLULU—A carpenter's mate stationed here didn't pace the floor and chew cigars outside a maternity ward, but he had a reasonable facsimile of the traditional ordeal for prospective papas.

The carpenter's mate sweated it out waiting for a transpacific telephone call. When it came through, his mother—excited over becoming a grandmother—announced from Alhambra, Calif.: "It's a boy!" Then she started giving papa other eye-witness details.

"He has flaming red hair!"

"Just like his dad!" papa said proudly.

"He yells like an air raid siren!"

"Just like his mamma!" says papa.

"And he weighs seven pounds and eleven ounces!"

"Seven come eleven—my lucky number," interpolated papa.

▶NAS OTTUMWA—This station celebrated its second birthday [March 13] by smashing all previous records for hours flown in a single day. More than 1500 student training hops totaling 1971 hours and 188 instructor training flights totaling 234 hours were flown, which mounted to the all-time high of 1716 hops and 2205 hours in the air.

▶NAS HUTCHINSON—In preparation for the Kansas hurricane and violent thunderstorm season, the aerological and operations officers are contacting volunteer weather observers of this area who make up the station's violent-storm warning network. Volunteer observers are spotted over an area with a radius of approximately 100 miles. They are taught to recognize violent storms, particularly tornadic conditions, and to report immediately by telephone the nature of the storm, extent, and direction it is moving. The network is tied in with Army air base warning systems and weather bureau offices.

▶NAS BRUNSWICK—Last fall a trout stream that flows through a wooded area of this station was liberally stocked with fish, so this spring Izaak Waltons aboard looked forward to an angler's paradise. The dream was much better than the reality, however, as fish taken from the stream so far have been few and far between. Some advance the theory that the water is yet too high for good fishing while others say the fish have shoved off for parts unknown.

▶NAS HONOLULU—A toothache hauled a SK1c out of his sack recently. He turned up at sick bay to find there were no dentists around. So he selected a pair of forceps and jerked the tusk himself.

▶MCAS MOJAVE—A Marine on this station still retains a bit of caution when it comes to newfangled devices such as speedy jeeps, automobiles and trucks. He will ride in them, but is extremely wary when it comes to taking the wheel; in fact he never drives such vehicles. He prefers his own safe, quiet job—that of a test pilot.

▶MCAD MIRAMAR—This story came back with a returning Marine: A middle-aged Leatherneck was spearfishing somewhere in the Pacific when a young Marine swam out and joined him. They fished together for an hour before the older man handed the youth his spear.

"I have to leave now," he said. "When you're through, you can return this to my hut."

"Thanks," the youngster replied. He had gone only a short distance when the other called after him:

"Hey, Mac, I forgot to ask which is your hut."

"Just bring it to the commanding general's hut," replied "Mac," who turned out to be skipper of the entire unit.

▶NAS HONOLULU—Returning here after escaping unscathed from a plane accident at Guam, a plane commander sacked in for about eighteen hours, then went to brush his teeth. He was leaning on a BOQ sink while polishing his ivories. Suddenly the lavatory broke in half, cutting a gash in his hand that required fourteen stitches.

CVE SHIP'S COMPANY

WHILE pilots, enlisted men and air officers of the escort carrier's air department are being trained at various naval stations, men and officers who will operate the ship itself are undergoing training at the CVE Pre-Commissioning school at PUGET SOUND NAVY YARD, BREMERTON.

When the United States first entered the war its system of selecting aircraft carrier crews was vastly simpler than was possible under the speed-up program later required. Shipyards began to turn CVE's out as fast as one every five days. It was up to the Navy to produce crews to sail them and fight them. In the old days when carriers were launched months apart, it was possible to assemble crews with large numbers of experienced gunners, quartermasters, machinist's mates and others. They were just transferred from older carriers.

But in wartime those carriers are in the fighting zones and cannot spare their experienced men to form a backlog for newly-launched carriers. Today 65 percent of the new CVE's crews are under 21 years of age and never have been to sea. Officers often are almost as inexperienced in carrier procedures and have to be trained along with their men.

LUCITE MODEL OF 105-CLASS CVE TEACHES DAMAGE CONTROL

BRIDGE INSTRUMENTS VITAL PART OF QUARTERMASTER TRAINING

MODEL SHIP AND CARRIER ASSIST IN TEACHING REFUELING OPERATIONS TO DECK FORCE; TASK IS TICKLISH ONE WHILE AT SEA

CVE School Trained 60 Ensigns to Handle PC's

THE CVE school at BREMERTON started almost on a shoestring. About 60 ensigns were sent to BREMERTON in 1941 for instruction in handling inshore patrol craft. There was no school for them, but a building was being erected. So while the carpenters hammered and sawed, they were instructed by anyone whom the officer-in-charge thought might be able to give them something that would be useful in their future job.

It subsequently expanded into a school of indoctrination and fundamentals for both officers and enlisted men to be assigned duty in the 13th Naval District. In April 1943, the school formally was launched as an escort carrier training school. First CVE crew turned out was for the U.S.S. *Nassau*. Since then, it has expanded until it has about 25 officers and 100 men on its instructor staff. It has trained crews for dozens of carriers.

The school trained officers and men for the CVE-55 class built on the Pacific coast until the Navy began to produce the larger CVE-105 class flattops. The former are 14,000-tonners and the *Commencement Bay*-class 23,000-ton carriers, 43 feet longer and with somewhat different equipment.

MEN DESTINED FOR GUNNERY DIVISION ON A JEEP CARRIER LEARN ABOUT 20 MM. GUN

Crews Must Be Trained Fast

In four weeks, the school has to take the nearly 600 officers and men who make up the ship's company and give them as much training in their different jobs as is possible. To do this, it gives courses in damage control, signaling, quartermaster, radio, engineering, gunnery, sound-powered telephones, seamanship, physical training and supply. Special training is given officers who will have deck duties, and refresher work to engineering officers.

Everyone who is to help operate the carrier has to be trained, either at BREMERTON or nearby bases. Long before a CVE is launched they start training for the task ahead of them.

CLASS IN ELECTRICITY WORKS ON CONDENSERS, BATTLE PHONES

DAMAGE CONTROL INSTRUCTOR EXPLAINS SHORING, WATER MAINS

Month of Training Fits Crew to Operate CVE's

BESIDES the training afforded CVE personnel at BREMERTON NAVY YARD, numerous other schools also aid in preparing them for sea duty. Anti-aircraft gunners get firing at Pacific Beach, divers go to Keyport, welders train with Navy yard civilian workers, fire-fighters go through the school at Manchester, and a chemical warfare officer gets training at Denver then returns to his ship to pass the information along to others.

Two or three months before a carrier is to be launched, a "nucleus crew" of about 80 rated men gets a two-weeks training or refresher course at BREMERTON, plus two days at fire-fighters school. They then go to Tacoma where they begin collecting data, equipment and material to go on their carrier, which is being built in a nearby yard.

The CVE school for the rest of the crew runs from four to six weeks, depending on the commissioning date of the carrier. Crews are trained in a group and graduate together for the most part. Aptitude tests upon arrival help officers of the ship to decide on placement of men in various divisions of the ship.

Most Students Come Inexperienced

Once the men have been selected for jobs they are to do aboard ship, classes start to teach them their duties. Most of them are green. Many experienced men must be taught newest developments of shipboard equipment. Day classes are followed by night sessions of training films, special lectures and night duty-watches. A month is a short time to learn the technical tasks today's officers and men have to perform on an aircraft carrier. Training has to be condensed and streamlined to give them as much data as they can absorb.

Officers, Men Train Together

Since officers and men of a carrier crew have to be trained for their jobs, they often attend classes together. This way officers also can size up their men and see which will be most valuable. Daily inspections and drill help keep up the crew's military bearing.

Besides giving officers information on how to operate the carrier, the school gives department heads full sets of typical forms, records and reports they will have to make out, to familiarize them with the paper-work phase of their duties. Carrier officers usually adopt the forms when they take over their ships.

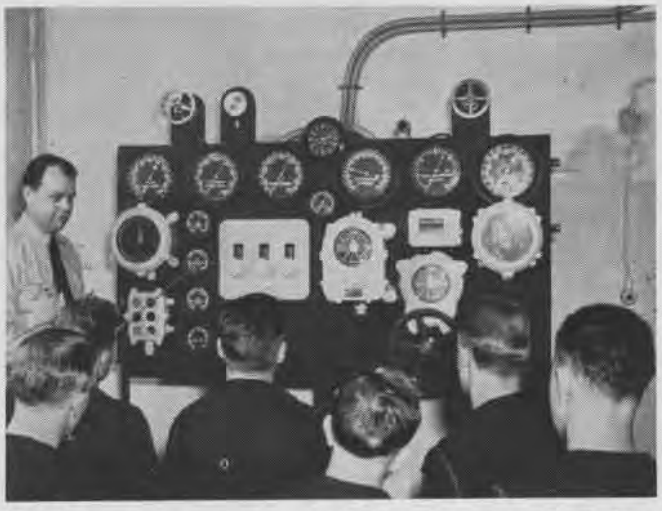
STUDENTS IN DIESEL CLASS ASSEMBLE EXCELLO PUMP AND CLUTCH

ALL HANDS GOING ABOARD CARRIER LEARN ABANDON-SHIP BILL

Fleet School Uses Variety of Visual and Training Aids

TRAINING at CVE pre-commissioning school includes everything from general seamanship to technical task a ship's company must perform on the Navy's fighting jeep carriers. Because training must be streamlined to fit a month or so, heavy use is made of visual aids and training devices of all types. Some of these, as illustrated on this page, are actual instruments taken from surveyed ships, hitched up so that they react just as they would on a ship at sea. Signals given at another part of the school are received and answered correctly by students. Fleet Operational Training Command operates this school.

Gunnery crews of CVE get firing practice after first learning fundamentals of aiming on school's synthetic gunnery devices, then firing at Pacific beach range. Gunners of 40 mm. batteries throw out AA barrage during a lull in flight operations



Throttle board in engine room, duplicated at CVE school classroom, gives engineers' division a chance to see how instruments actually operate. Hook-up with another room enables men in quartermaster school to send signals down to "engine room"

E division men use sound-powered telephone to work out problem on damage control. Room provides cables and connections so adequate training can be given students in various types they will run across in communications work on their carrier

Recognition class at CVE school learns ship types from models, and by use of overhead scale can estimate ranges and angles of fire by sighting through box to the right. Gunnery department men must be especially sharp in recognizing U. S. craft

Deck officer works out a plotting problem on a maneuvering board. Other phases of his training include rules of road, piloting, ship-handling, orders to the wheel, bridge communications and ship's organization, plus routine OOD watches

OFFICER OF DECK CLASS USES BRIDGE MOCKUP INSTRUMENTS TO SEND SIGNALS TO ENGINE ROOM FORCE IN ANOTHER CLASSROOM

Crew of the CVE Goes On a Shakedown Cruise

AFTER they have gone to school in BREMERTON a month, officers and men go aboard a training carrier and cruise for 10 days to two weeks. First they watch how the ship's crew operates, then later take over the duties themselves and work the ship. Battle conditions are practiced to catch errors in training and stress thoroughness throughout. A few planes come aboard to give the ship actual operating experience.

After this cruise they transfer to their own ship at Tacoma and the craft is commissioned. Supplies such as food, fuel, ammunition and spare parts are taken aboard. Tests are run on a practice cruise and the ship's degaussing and deperming checked. The final phase sees the air group come aboard at San Diego, followed by a shakedown cruise to teach the air department and ship's crew how to work together. Finally the CVE is loaded with all the planes its decks will hold, and it heads for the war zone.

School Teaches Many Subjects

Classes at the BREMERTON school provide a wide variety of training. In officer-of-the deck classes, such subjects as maneuvering board, ship's organization, battle and watch bills, piloting, communications and seamanship are taught. Air department officers sometimes attend and learn deck officer duties. Engineering officers get a refresher course that includes keeping records, logs and reports. An intensive damage control course provides gas mask instruction, fire-fighting, sound-powered telephones, compartmentation, fuel and water systems, mains, power systems.

Physical Training Is Stressed

Signal school teaches communications, recognition, lookout screening. As with all schools, swimming and abandon-ship drills are stressed. Men in quartermaster school get small boats, recognition, engine telegraph, soundings, weather, and other duties. Radio and engineering divisions are given training in their types of work, while gunnery students also get training in seamanship and damage control.

Radiomen practice taking code. Men must authenticate transmissions, encipher call signs and maintain security on job

Blue-print reading to determine compartmentation is taught officers of deck so they will understand damage control plan

EXCERPTS FROM ACTION REPORT: "There is still room for improvement in aircraft recognition. On one occasion, P-38's, the most distinctive American fighters, were fired upon by American ships. It is axiomatic that efficient aircraft recognition will breed good fire discipline.

"It is imperative that aircraft recognition be emphasized to a greater extent and that green crews and officers be familiar with all common American and Jap aircraft. A destroyer near our area brought down a TBF *Avenger*."

ALL I know about airyplanes is whut I read about 'em and by a-lookin at thar pictures. But honest Injun, I believe I'd know the old pot-bellied TBF and that funny lookin P-38 in hell 'r Heaven and my eyes aint none too good. Hit's hard fer me to understand why our eagle-eyed young gunners cain't re-cog-nize 'em.

Yit, I suspeck when one of our planes is a-comin right at us and don't show no fr'endly signs thar's a reason to believe th' en'my mought be in hit becaze they've captured some of our airyplanes and 've used 'em agin us.

But atter readin this, hit's seems to yer Uncle Kim thar mought be other reasons why these planes wuz shot at. Fer hit don't make no neverminds how fr'endly ye look if you don't behave ezakly right, ye're a-astin fer a bushel o' trouble. Ye got to make it a point of showin yer airyplane is fr'endly and prove hit. Ye cain't take a chance on yer not a-bein re-cog-nized by yer buddies.

ACTION REPORT: "On one of our strikes, one F6F developed engine trouble and the pilot was told to return to the ship with one other F6F ordered to return with him. As they passed over the picket DD, the latter opened fire, hitting one plane, forcing him to make a water landing, which he did very nicely. The companion started to orbit the downed plane, only to find himself also in fire. He did a wing-over to give the DD a good look at him, but soon found that he was only making himself a better target. The result was, he was forced to leave the spot. The DD continued to fire at the downed plane and the pilot naturally was lost."

WHEN a body reads this he knows thar's a lot of ways and means to keep our own boys from a-killin one another. But here wuz one of our airyplane pilots that didn't remember one of four things. And when a man can't remember one of four things he's got sumthin else on his brain. Hit could be a gal—not one but meny o' 'em. Leastways whatever he had on his brain wuz mighty big not to leave room fer two little words: I-dent-i-fi-cation and Re-cog-nition. Becaze in this case he surtainly fergot about all the rules. Mebbe he didn't give a hang about his own life 'r any other man's life. Leastways thar's somethin wrong with a man that'll make sicha mistake.

ACTION REPORT—Two of our PT boats were on daylight patrol in the Southwest Pacific. While lying-to off the enemy-held shore line, two B-25's were recognized very high, approaching on a quarterly course. One plane suddenly began a dive on the boats, and when in range opened fire with all machine guns. One of the PT's was hit, seriously damaged, and left in a sinking condition, completely disabled. Five men were wounded, two of them seriously.

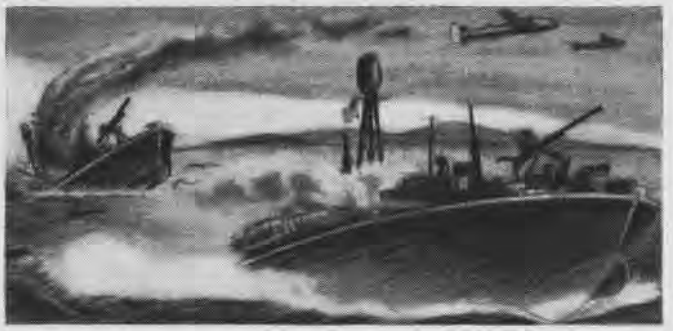
The PT's had recognized the B-25's as friendly and did not open fire at any time. Before and after the attack the PT's had attempted to contact the attacking plane on VHF. In addition the ABK (IFF) was on in an area that had been designated as totally restricted to air bombing and strafing.

▶ *The unnamed pilot of the B-25 was guilty of the following:*

1. Air attack in a restricted area
2. Failure to establish radio contact attempted by the PT boats
3. Failure to observe IFF signals sent out by the PT boats
4. Failure to recognize friendly PT boats

IN THE first place the pilots of both airyplanes had no business o' a-flyin low and straight at this ship. Even a guinea rooster would jump stiff-legged and git ready fer a fight if he seen a chicken hawk a-comin at 'im like this, I don't know ezakly what he'd do if he seen two hawks a-comin at 'im at onct.

In this case hit looks to me like they could've turned on



thar gadgets and done a little talkin with one another instead o' a-tryin to do flipflops and show the color of thar wings which made the whole affair more suspicy. If they'd done this in time the story might've been different. But the big mistake wuz they went at this ship like chicken hawks go attar a guinea rooster which is alright fer hawks and guineas, but the wrong way fer our men to approach one another when they're supposed to be on friendly terms.

LINE SQUALLS

PRIOR TO inauguration of the present air mass and frontal system of analyzing weather, the term "line squall" was applied to the phenomenon now called a cold front.

The old descriptive term still is in good usage, however, and indicates a band of bad weather associated with a cold front. The bad-weather band may consist of precipitation in the form of rain or snow; high, gusty winds, low trailing clouds, icing, turbulence and frequently, thunderstorms.

The more severe line squalls are those that occur with the passage of a vigorous cold front, when a warm, moist air mass is forced upward abruptly by an undercutting wedge of cold and relatively dry air. The action of the wedge of cold air is to force intense convective activity, often resulting in the formation of "thunderheads."

While the maximum wind velocity of a line squall normally is from 20 to 40 knots, peak gusts may register up to 100 knots. The destructive force unleashed by the wind varies as the square of its velocity, rather than in direct proportion to its velocity. For example, a 75-knot wind exerts a force not 5 times but 25 times as great as a 15-knot wind. Destructive winds, exclusive of tornadoes, have caused almost one billion dollar damage in the U.S. during the past 30 years.

Roll Cloud Announces Line Squall

The approach of a line squall is heralded by a "roll cloud" which usually appears 15 to 20 minutes before the storm strikes. This cloud generally is extremely ragged in appearance and, being white in color, presents a vivid contrast against the black storm clouds behind it.

A particularly good picture of such a cloud was taken at NATB CORPUS CHRISTI on March 6, 1945 (*See cut*). The picture shows the cloud formation as the cold front moved in over the station, the foremost clouds appearing to roll up over the wedge of advancing cold air.

With the passage of the cold front (line squall), the wind backed from ENE 10 knots to N 26 knots, with gusts to 35 knots; the temperature dropped 3° and visibility decreased to 2 miles to the N. After the front had passed, the ceiling and visibility improved rapidly, but the wind continued fresh and gusty with the highest gusts of 39 knots occurring about two hours after the frontal passage.

The Corpus Christi case is typical of what may be expected with the passage of a cold front, although the activity may be much more severe. When cold front passage is expected, all planes and movable gear should be secured in hangars, if possible.

For detailed instructions on precautions that should be taken, see ACL NO. 27-44 and BUAER letter of 29 June 1943, serial 99701, "Mooring of aircraft for extreme wind conditions." Both of these letters contain excellent suggestions.

TECHNICALLY SPEAKING

Slots Give Turret Ventilation

Hedron, FAW-16 has reported by RUDM 12-45 that firing trials for the NGF 250CH turret installed in the bow of PBY-5A airplanes have shown a need for more adequate ventilation.

It has devised such a system by cutting holes in the forward upper portion

ROTATING DISC REGULATES THE OPENING

of the plexiglass enclosure. Behind these holes a rotating plexiglas disc is affixed which regulates the size of the opening (*See cuts*). Activities desiring additional ventilation provisions in these turrets are urged to follow the FAW-16 fix.

The *Corsair* 250CH-10 turret, somewhat similar to the NGF turret, which will be installed in PBY-6A airplanes, incorporates additional ventilation means.

Turret Cover May Cause Damage

Canvas covers used for protection of turret domes can cause as much harm as they are supposed to do good. If they fit rather tightly and are used regularly on airplanes in hot climates, there almost is a certainty that when they are removed, the domes will be found to have sagged out of shape due to the high temperatures generated inside the turret.

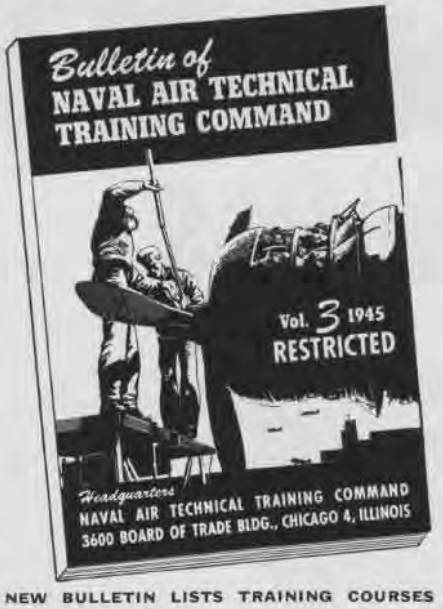
Effects on the line of sight through the dome cannot be predicted, but it definitely will be bad and may be deflected as much as 10-15 mils. The only recourse when this occurs is to change the dome.

Aircraft Armament Bulletins No. 8 and 12 discuss this condition and suggest that turret covers be used in tropical climates only during inclement weather. It further is suggested that if the covers currently furnished for the turrets are tight-fitting, they be discarded. New covers designed and fabricated locally should be loose-fitting to allow some circulation of air between them and the domes.

NATTC Publishes New Bulletin

Various training courses offered by schools under the Naval Air Technical Training Command is listed in a new and revised bulletin issued lately by NATECHTRACOM. Requests for the bulletin should be addressed to: COMMAND HEADQUARTERS, 3600 BOARD OF TRADE BUILDING, CHICAGO 4, ILL.

Qualifications, curriculum and convening dates of all courses offered at any of the command's 60 training activities are listed in the bulletin as a guide to commanding officers of naval establishments either ashore or afloat. CO's should make certain that men chosen for the training are qualified technically so they can get maximum benefits from this special instruction.



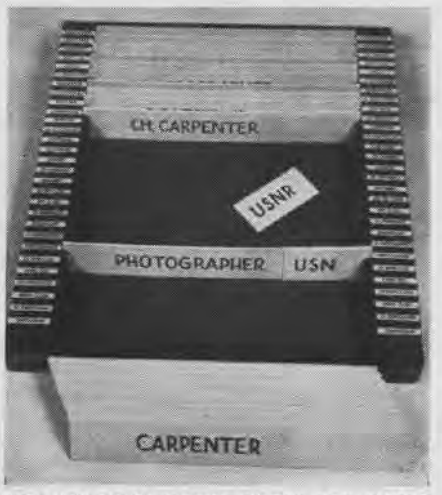
NEW BULLETIN LISTS TRAINING COURSES

Unqualified personnel will not be enrolled for instruction. At the close of their training course, the men will be returned to their units and should be assigned to billets for which their rating has best fitted them.

Title Box Helps in Making ID's

A method for handling title plates in making identification photographs has been suggested by the photographic laboratory at the NAVAL AUXILIARY AIR STATION, LOS ALAMITOS. The illustration shows a title box with printed strips, designating rank, which has been used successfully by this unit for some time.

The grooved box, which is easily constructed, will accommodate 30 plates on which have been printed the various warrant and commissioned offi-



BOX HAS NAVY RANKS, RATES FOR PHOTO

cer ranks within the Navy. Two thin metal plates have been designed to clip onto the title strips and have the designation USN and USNR.

The box is mounted between the uprights of the Graflex Identification Camera and is readily accessible to the operator. Other units doing a large volume of identification work may find this suggestion helpful.

Concrete Salvaged for Pavement

NAS PEARL HARBOR – Removal of heavy concrete revetments, constructed for protection of fighter planes and now deemed no longer necessary, was ordered at this station. At the same time, plans were approved for large areas of bituminous paving to improve station facilities.

Public Works Department forces, in cooperation with the Construction Battalion who were directed to lay the paving, broke down the revetments with a 2000-pound steel ball swung by a hoisting machine. With the aid of stone crushers, several thousand cubic yards of crushed concrete were obtained, part of which has been used as base material for the paving. Thus difficult and expensive transportation of a large volume of heavy material aboard this air station was avoided.

Radar Gear Scores First Rescue

Corner reflectors, the devices which team up with radar to help survivors adrift on life rafts, have scored their first official rescue.

According to a report from the 21st Bomber Command, AAF, the MX-138/A reflector used in multi-place rafts helped save the lives of 11 men who ditched their B-29 in the Pacific off the Marianas for lack of fuel.

A corner reflector was erected in one of the two A-3 multi-place rafts used by the survivors, and a PBM flying 10 miles away at 800-1000-foot altitude picked up the "blip" on its radar scope. The PBM directed a seaplane tender to the rafts. The tender reported it had also picked up the corner reflector indication on its radar from 5 miles range.

This Navy-helps-Army incident is the first authenticated rescue reported in which corner reflectors have played a leading role. However, as distribution of the MX-137/A reflectors for one-man rafts and the MX-138/A reflectors for multi-place rafts becomes more and more widespread in the Fleet, it is expected that they will assist in more and more rescues.

Personnel are urged to hold actual drills to become familiar with the procedure of erecting the reflectors, so that there will be no difficulties under real emergency conditions.

TRANSMITTER DISASSEMBLY IS ELIMINATED

New Repair Method Saves Time

Through the Beneficial Suggestion Program, a time-saving repair method has been devised for repairing plate lead connections usually on the type 837 oscillator tube.

This method consists simply of joining 2 broken parts of plate lead rod by means of a special brass nut, approximately ½" long, washer and lock nut. This may be accomplished without disassembly of transmitter by simply putting a slight pressure on side of insulator, to prevent broken lead rod from falling down through insulator while joint is being repaired. This repair operation now is performed in approximately 30 minutes, and can be made without disassembly of transmitter.

[DESIGNED BY PAUL B. ASMUSSEN]

Safety Device Reduces Accidents

NATB PENSACOLA—A safety device which prevents damage to PBY hulls from towing-eye casting failures has been improvised by Squadron VN8D8-A in the form of two sheet-steel "safety strap" reinforcements which work well.

EYE REINFORCEMENT AND CASTING FAILURE

Failure of several rear hull centerline towing-eyes resulted in identical towing accidents. A sudden overload strain on the tow-line would cause the castings to break. The break always occurred through the locking-pin hole, with the aft segment of the casting tearing loose and allowing the pin that holds the rear strut of the beaching gear to the towing-eye to drop free. The entire beaching gear would collapse immediately, damaging the hull.

To prevent damage in such accidents, the squadron devised the reinforcement, consisting of two .083 sheet steel "safety straps" bolted to the casting with two AN3 steel bolts. Two recent failures of castings having this modification definitely proved efficiency of the device, the locking pin being held in place in both cases. One of the pictures shows a failure resulting in no damage to the plane.

▸ *BuAer Comment*—**It is recommended that tractor drivers be instructed to take up the slack slowly when starting to tow, and cautioned against stopping with a jerk when letting the airplane pull the tractor down the ramp.**

Jeeps Rig Out For Crash Rescue

NATB PENSACOLA—Fire and crash equipment of the Naval Air Training Bases has been augmented by 10 newly-designed dual-purpose jeeps equipped to fight fire, do rescue work and act as ambulances when needed.

The new jeeps, assigned to satellite fields, are considered especially suitable to use in rugged terrain where standard equipment could not operate.

Equipped with complete crash kits, Stokes litter, first aid kit, and fire fighting paraphernalia, the bright red jeeps carry two 50-pound cylinders of carbon dioxide. One person manning the vehicle can speed to a crash and, using the CO_2, smother a fire long enough to effect rescue of personnel trapped in the wreckage. The equipment is not designed to extinguish large fires.

The jeeps are the product of the joint efforts of operations, safety office, transportation and public works.

▸ *BuAer Comment*—**Units as illustrated have value as stated but would not be of much use if fire of any consequence breaks out. Their value lies principally in being able to arrive at the scene of the crash quickly. Use of these jeeps is not recommended except in special cases where other crash trucks and ambulances cannot be used or are not available.**

AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

BuOrd Produces New 220-lb. Frag. Bomb

The bomb, fragmentation, 220-lb. AN-M88 is a refinement and improvement of the 260-lb., M81 (formerly AN-M81) which recently reached the Fleet. While the 260-lb. bomb is an effective munition, research and tests conducted on numerous different designs have indicated AN-M88 is the most efficient fragmentation bomb of its weight class.

One difference between the two frag. bombs is that casing of AN-M88 is made of a closely wound helix of ¾" steel bar around an inner steel cylinder, while M81 is similarly constructed of 1" bar steel. Since external dimensions of both bombs are the same, diameter of the explosive cavity of AN-M88 is therefore greater, resulting in a larger charge of explosive, Comp. B. for this bomb. Because of the smaller diameter helix steel bar and increased explosive quantity, initial velocity and effective range of fragments have been materially increased.

Expressed in percentage, gain of the AN-M88 bomb over present standard M81 bomb is as follows:

	Per Bomb Basis	*Per Pound Basis*
For casualty effect	13.0%	39.0%
Perforation of ⅛" mild steel plate	18.4%	45.2%
Perforation of ¼" mild steel plate	14.0%	39.0%
Perforation of ½" mild steel plate	12.0%	38.0%

Assembly and suspension of these bombs is identical. Both employ AN-M103A1 nose fuze set on instantaneous, the AN-M100A2 tail fuze with the non-delay M14 primer-detonator installed, and the same "box type" tail assembly secured to the bomb body by a locking ring. The M81 and AN-M88 bombs when using these fuzes are safe for all operational usage including catapult takeoffs and arrested landing. Minimum safe altitudes of release are governed by instructions as issued by COMINCH for bombs of this weight and fuzing.

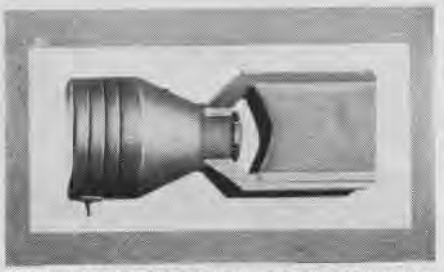
Total number of bombs, AN-M88, that may be carried in TBF-type aircraft is limited to eight due to bomb-bay dimensions and weight carrying capacity of the aircraft. This frag. bomb is slightly longer than the 100-lb. of GP bomb, and even though it is physically possible to load 12 bombs, one on each 100-lb. station in the TBF, 12 bombs over-load the plane and do not leave sufficient clearance between bombs for safety.

On aircraft where total length of the bomb is not critical, total number of 220-lb. bombs, AN-M88, carried may be the same as for 100-lb. GP bombs, subject of course to weight-carrying capacity of the individual bomb station and the aircraft. Both the frag. bomb, M81 and AN-M88, may be hoisted by hand; however, the 220-260. lb. weight of these bombs makes hand-hoisting somewhat difficult. Therefore, as soon as available, the recently developed bomb Hoisting Sling, Mk 36 Mod 0, should be used in hoisting these bombs for loading on racks or shackles of Navy aircraft.

Procurement of bomb, M81, will continue until manufacturers effect a shift to AN-M88.

100-lb. GP Bomb Has Longer Tail Fins

No difficulties were encountered from high altitude bombing with the standard-type tail fins now used on the 100-lb. GP bombs, AN-M30A1, until advent of the B-29 *Superfortress*. Bombing from higher altitudes made possible by this type plane revealed that the standard tail fin assembly now used on these bombs caused them to take an erratic flight. In some cases this would cause the bomb to have side, rather than nose, impact and fail to explode when it hit the ground.



TWO MORE INCHES ON FIN HELPS ACCURACY

Heavier gauge metal was used by Army in construction of tail fins in an effort to eliminate this factor. However, it was finally determined that a longer tail assembly was needed. Some 100-lb. GP bombs were equipped with a tail assembly from the 260-lb. fragmentation bomb, M81, which is 2" longer. Erratic conditions were eliminated and these longer tail assemblies will be made available by the Army for use on new 100-lb. GP bombs, AN-M30A1, but will not be furnished retroactively for bombs now on hand Bureau of Ordnance has announced.

These 100-lb. GP bombs soon will be shipped with shipping bands instead of being crated. Also, the new-length tail fins will be shipped separately, four to a container. Original containers used by Army were of wood construction, however, it has been recommended that metal containers for tail fins be made available for Navy, to eliminate fire hazards for fleet use.

The following bombs will now use this same type tail assembly:

1. 100-lb. GP bomb, AN-M30A1
2. Bomb, fragmentation, 260-lb. M81
3. Bomb, fragmentation, 220-lb. AN-M88
4. 150-lb. GP bomb, T1 (developed by Army as an intermediate substitute to alleviate a temporary shortage of 100-lb. GP bombs).

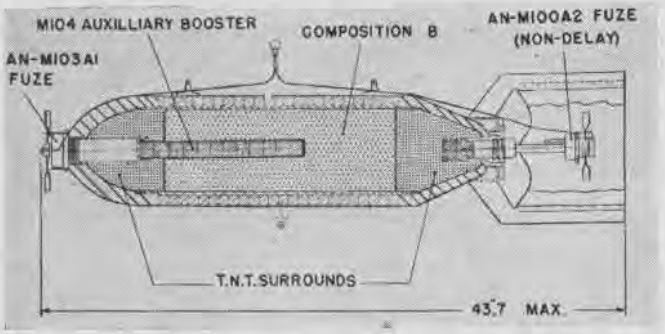
The photograph illustrates the newer type bomb fins whose extra two inches created the greater accuracy demanded from the 100-lb. GP bombs.

Hydrostatic Fuze Arming Wire Bracket

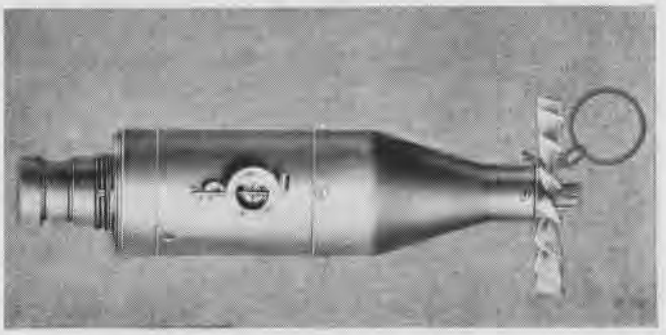
Cases have been reported in which fuze AN-MK 230 and MODS fitted to depth bombs AN-MK 54 have become armed inadvertently due to shearing of arming wire when carried on F6F pylon racks.

The shearing of the wire is believed due to high torque developed by the arming vane together with vibration from position of the bomb in the propeller slipstream. This easily can be remedied by using an arming wire bracket as employed with the fuzes MK 229 and AN-MK 228. Before the bracket can be fitted to the arming mechanism housing neck, heads of the two screws in the neck must be filed flush with the surface. Fuzes made in future production will have headless drive screws instead of the present round head type of screws.

Use of this bracket is required only for fuzes carried on external racks of high-speed aircraft and only sufficient fuzes for this special application should be modified to receive the brackets. Additional or replacement brackets may be obtained on application to BUORD. See OP988, pg. 69, for installation instructions for brackets.



NEW 220-LB. FRAGMENTATION BOMB HAS LARGER POWDER CHARGE



ARMING WIRE BRACKET FITS FUZE NECK, HELPING OPERATION

PUBLICATIONS

The following Flight Safety Bulletins, Aviation Circular Letters, Technical Notes and Technical Orders have been issued since 1 April 1945. Copies are available on request to Publications Branch, Bureau of Aeronautics.

FLIGHT SAFETY BULLETINS

8-45 *Passengers and Freight in Avenger (TBF/M) Aircraft.*
9-45 *Precautions to Avoid Mid-Air Collisions.*

AVIATION CIRCULAR LETTERS

31-45 *Night Vision and Night Recognition Training Program, Coordination of.*
32-45 (Conf. *Reconditioning and Redistribution of Aircraft.*
33-45 *BuAer Policy Relative to Reconditioning Process Specifications and Configurations for Combat Type Aircraft—Establishment of.*
34-45 *Overhaul Facilities for Aircraft Searchlights, All Types—Designation of.*
35-45 *Status of Officers of the U.S. Navy and Naval Reserve Ordered to Duty Involving Flying.*
36-45 (Joint Ltr.) *Supply, Maintenance and Overhaul of Generators, Alternators, Voltage Regulators, and Cutouts.*
37-45 *Overhaul Facilities for Aircraft Gun Turrets and Powered Gun Mounts for All Type Naval Aircraft—designation of.*
38-45 *Overhaul Facilities for Aviation Ordnance Equipment—Designation of.*
39-45 (Joint Ltr.) *Disposition and Handling of Salvaged, Exchanged and Returned Aeronautical Material including Aviation Ordnance Equipment within Continental Limits of the United States.*
40-45 *Aircraft Engineering Drawings and Technical Data Reproduced on 35mm Microfilm —Availability of.*
42-45 *Reconditioning and Repair Facilities for Self-Sealing and Bladder-Type Fuel Cells —Designation of.*

TECHNICAL NOTES

23-45 *Kit, Substance, Aircraft Droppable, Type ADR-1—Description and Use of.*
24-45 *Tape—Wing Slot Sealing.*
25-45 *First Aid Kits in Aircraft.*
26-45 *Replacement of the AC Electrical Connection on NEA-3, 4 and 5 Generators.*
27-45 *Jacks, Hydraulic Aviation.*
28-45 *Aircraft Remote Indicating Compasses Designation for.*
29-45 *External Droppable Fuel Tanks—Designation of.*
30-45 *Fuel and Oil Pressure Warning Nuts.*

TECHNICAL ORDERS

34-45 *Model PBY-5A, -6A Airplanes Restrictions and Permissible Maneuvers.*
35-45 *Model SB2C-5 Airplanes Restrictions and Permissible Maneuvers.*
36-45 *Model TBF-1, TBM-1, -3 Airplanes Restrictions and Permissible Maneuvers.*
37-45 *Pararafts—CO_2 Cylinder Valves—Replacement of.*
38-45 *Model RY-3 Airplanes Restrictions and Permissible Maneuvers.*
39-45 *Limitations on Speed, Heaviness, Loading, and Gas Pressure of Model ZNPK Airships.*
40-45 *Model JRC-1 Airplanes Restrictions on Maneuvering.*
41-45 *Conversion of Eclipse Type 1097-3-A and Type 1097-3-A (Navy Type NEA-5) Generators.*

SAFETY OF FLIGHT

BuAer recently has classified Aircraft Service Changes and Bulletins issued prior to 1 September 1944 affecting safety of flight. For a listing of these Changes and Bulletins see the *Naval Aeronautic Publications Index*, NAVAER 00-500 for JUNE 1945.

Advance Bases

LET NANEWS HEAR FROM YOU!

KEEP DYE MARKER OFF SKIN

IN OCTOBER of 1944, the pilot of an F6F on a mission in the Philippine area was forced to ditch when his plane was hit by enemy AA. Following the ditching, this pilot spent 48 hours in his raft before being rescued. He suffered considerably from sunburn but discovered that his ankles, over which he had accidentally spilled dye marker, were not burned.

On receipt of this report, a comprehensive study of dye marker as a sunburn preventive was made by the Naval Medical Research Institute at request of Bureau of Medicine and Surgery. It was discovered that the dye used in dye marker can cause exposed tissue beneath the skin to become sensitized by sunlight. By virtue of this photosensitizing quality, there is a possibility of its causing severe tissue damage if it is applied over an area in which the skin is broken.

In view of this fact, the Bureau of Medicine and Surgery does not consider it advisable to recommend the use of dye marker as a sunburn preventive. Sunburn preventive ointment is now standard equipment in all life raft kits and is far more effective than dye marker.

Another pilot forced to spend considerable time in a raft reported that although he had sufficient emergency rations, these had become stained by dye marker and he was afraid to use them, believing that the dye marker might have a harmful effect. Investigation has revealed that fluorescein, the dye used in dye marker, has a very low degree of toxicity when taken internally and the amount that would be present in rations or drinking water stained with dye marker would undoubtedly be harmless.

All pilots and aircrewmen are aware of the value of retaining their parachutes aboard life rafts for use as protection against exposure. Tests conducted at the Naval Medical Research Institute in recent months have shown that the permeability of nylon parachute cloth to ultra violet radiation is such that at least three thicknesses of the cloth should be used in the construction of all protective covering.

TURBO-JET SCHOOL

In Anticipation of Fleet Needs, NATechTraCom Trains Personnel To Service Advance Type Planes

NEWEST addition to NAVAL AIR TECHNICAL TRAINING CENTER, CHICAGO is a turbo-jet maintenance and repair school. There, for the past several months in the classes and shops at 87th and Anthony, men have received technical training necessary to service and maintain jet-propuls'on gas turbines that power the Navy's latest high-speed, high-altitude, fighter type airplanes.

Instruction is open to AMM2c or higher, AMMC3c or higher, and individually recommended men who have had prior experience in turbo-supercharger work. Trainees are ordered to the Chicago school from the Fleet and from various aviation activities. Most men now in training at turbo-jet school reported from combat theaters.

Secrecy surrounding jet propulsion has been lifted enough in recent months to provide a glimpse of what the Navy is doing in the development of jet-type planes.

Trainees Work In Well Equipped Shops

The four week turbo-jet course is divided into four phases covering both theory and practical shop work on turbo-jet equipment.

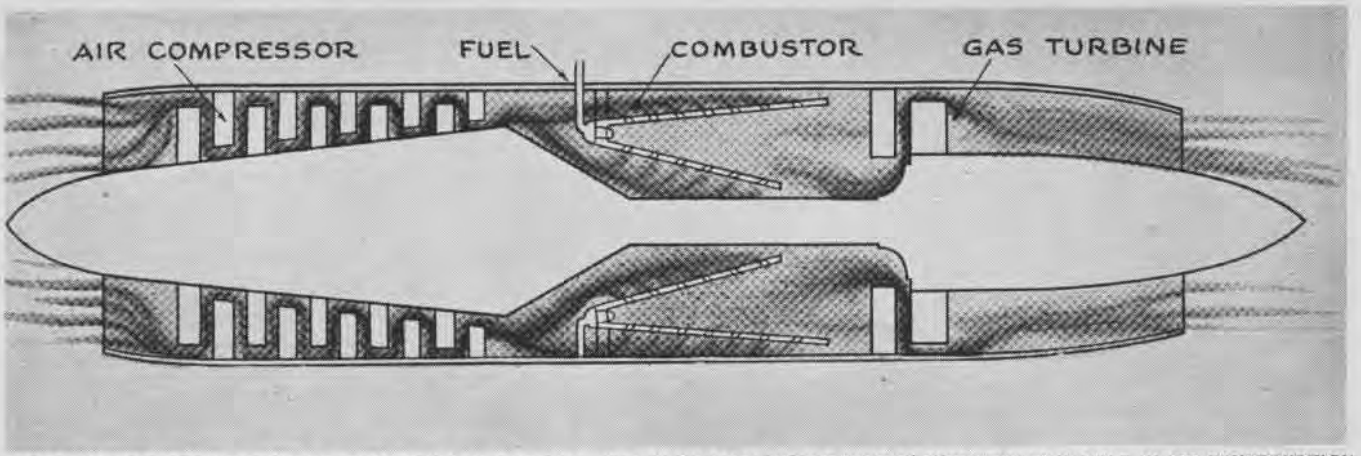
Principles of air flow, compression and expansion of gases are emphasized in the first phase. Theory is applied directly to the operation of the turbo-supercharger as a practical basis for the study of aircraft propulsion by jet.

During the second phase of their course, trainees devote intensive study to the air and fuel systems of the latest compressor and jet propulsion gas-turbines. Purpose of this work is to teach technicians how to quickly recognize causes for any failure by the power unit and how to make necessary repairs.

Trainees Operate Equipment

Lubrication principles and study of the electrical systems in use in the jet propulsion gas-turbines make up the third phase of the turbo-jet course.

Trainees spend 48 hours in actual operation of the latest gas-turbine jet propulsion unit. Full emphasis is placed on the speedy recognition of operational failures and proper maintenance and repair procedures. Trainees are instructed in the correct manner of removing and installing jet propulsion gas-turbines in aircraft. Mockups are used to teach proper handling of the quick change stand and speedy removal and installation of power unit and its accessories.



DIAGRAMMATIC DRAWING SHOWS THAT THE GAS-TURBINE JET-PROPULSION ENGINE UNIT IS ESSENTIALLY SIMPLE IN ITS CONSTRUCTION

Aviation's Demands for Power With Less Weight Speeded The Development of New Jet Designs

RADICAL as propellerless airplanes may seem, the idea of jet propulsion actually has been the subject of experimentation for more than 250 years. As long ago as 1680, Sir Isaac Newton produced a model automobile embodying the jet idea.

Since 1903 when the Wright Brothers made their historic flights at Kitty Hawk, the gasoline internal combustion engine has been the basis for modern developments in aircraft propulsion. As aviation developed, demands for increases in speed, operational height, rate of climb, and load carrying capacity were continuous. Revolutionary changes in aircraft design as well as multi-cylinder engines of great weight developed. Endeavoring to meet the constant demand for more power from smaller, lighter engines, engineers have turned to gas-turbines and rockets.

Inventors in Italy, Great Britain, Sweden, Germany, France, and the United States all have patented gas-turbine rocket propulsion devices. In 1940 at Milan, Italy, S. Campini managed to stay in the air 10 minutes with a jet propelled plane.

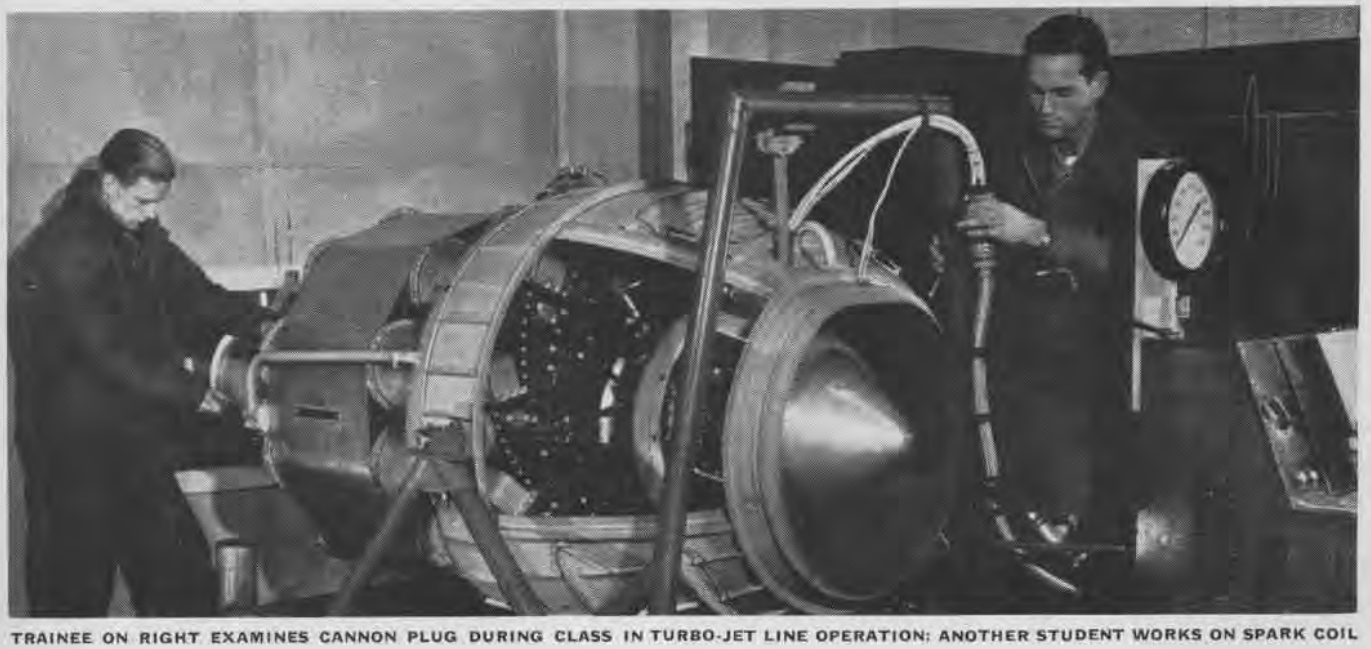
Germany has placed two jet type aircraft in combat; the rocket type ME 163 and the ME262 with twin turbines. Observers credit these German planes with speeds of 500 to 600 miles an hour at high altitudes. It is probable that jet propulsion units developed by F. Whittle, of Great Britain in 1941 and the work of American engineers has gone forward at a pace equal to that of the *Luftwaffe*.

BuAer Issues New Engine Bulletins

Three new engine bulletins (*confidential*) are being issued by BUAER on turbo-jet power plants. *General Turbo-jet Engine Bulletin No. 1* outlines the theory of jet propulsion. *General Electric 1-16 Turbo-jet Engine Bulletins No. 1* and 2 explain model differences and give overhaul and maintenance data, check period intervals and instructions for the 25-hour engine check.

The jet is most efficient at high altitudes in propulsion utilizing the usual liquid fuel type. Because of its demand for air for combustion, power drops off with altitude unless provision can be made to supply air artificially. In a rocket, where the power plant charge carries all ingredients required for generation of gases regardless of density of atmosphere, the engine is more efficient and develops power at altitude.

Jet propulsion engines using liquid fuel and air usually are rated according to their thrust measured statically. Horsepower developed by a jet is the product of the thrust times the speed in feet a second divided by 550 (*ordinary formula for horsepower*). The thrust of a jet of air, produced by the propeller of a conventional engine, times speed of the aircraft gives the thrust horsepower that corresponds to the calculation for horsepower developed by a jet.



TRAINEE ON RIGHT EXAMINES CANNON PLUG DURING CLASS IN TURBO-JET LINE OPERATION; ANOTHER STUDENT WORKS ON SPARK COIL

USE COMBAT POWER WISELY

SHORTLY BEFORE *the war, the maximum power used in flight was normal rated power. This power was the ultimate, safe continuous or "all-day" power. But—when war was imminent, it became necessary to soup up the engines for short periods of time and rating was developed and is known as* MILITARY POWER.

MILITARY power is the maximum safe power output with present military fuels. Thirty minutes is the limiting period of operation in military power in newer installations, although inadequate cooling capacity of certain older combat-type airplanes requires limiting its use to five-minute periods.

A few enterprising souls found they could exceed military power without incurring engine failure—which helped no end in some combat operations. This encouraged establishment of a higher rating than MILITARY, even though this power represents considerable strain on the engine, thus a reduction in engine life. This higher rating first was called WAR EMERGENCY, now is known as COMBAT.

Making a COMBAT rating isn't all duck soup. Engine power is limited in any or all of three ways: by supercharger capacity, by detonation, by structure. Supercharger capacity and ram determine maximum manifold pressure attainable at full throttle. Structural considerations usually limit the rpm and manifold pressure allowable. Detonation may be taken care of by using higher grade fuels or water injection.

From this it may be seen that *any* combination of manifold pressure and rpm won't do. The pilot who tries to dope out a new daily double is liable to wind up with a few extra parts. Don't try it unless you have your swimming trunks and card (NAVAER 1234) with you.

The term WAR EMERGENCY has been misconstrued and misused. Pilots have been prone to use this power in circumstances other than combat. Engines without war emergency rating (WER) equipment have been subjected to war emergency power (WEP). It is believed that much of this misunderstanding has been due to the term WAR EMERGENCY. There being a war on, a pilot considering himself in an emergency feels justified in using WAR EMERGENCY power. For this reason the Navy has changed the name to COMBAT power.

COMBAT power equipment consists of water/alcohol injection systems coupled with automatic power (manifold pressure) regulation devices. A good example is the FM-2 airplane with the R-1820-56W engine. In low-blower, no water injection is used, but COMBAT power is developed at 50" MAP. This 50" is the maximum the manifold pressure regulator permits in low-blower whether throttle is full forward or not and, since no detonation occurs at this MAP in low-blower, water is not needed. (Don't be surprised, however, if you don't get 50" near sea level at full throttle, because of individual differences among these engines and because you're operating near the top limit of the supercharger capacity.)

WATER/ALCOHOL injection is used in high-blower combat power in the FM-2 and MAP is limited to 52". When the supply of water is exhausted, the power regulator automatically reduces manifold pressure to a limit of 46", which is the maximum value at which the engine can be operated DRY in high-blower without destructive detonation.

▶ COMBAT power shall be used only on engines having combat power equipment (those designated with w as in R-1820-56W). For design study purposes, combat power is considered to be a five-minute rating. When used in combat, however, it is expected it will be used as long as needed (or until the water/alcohol supply is exhausted)—and no longer. The longer COMBAT power is used, the greater the possibility of engine failure. COMBAT power shall not be used more than a total of five hours between overhauls. COMBAT power shall be used only in combat operations and then only in an emergency. COMBAT power is like ammunition—don't expend it needlessly.

Folded Wings May Cause Damage

Atlantic Fleet has directed that models TBF/TBM, FM-2, F6F and SC airplanes be taxied with wings spread. While taxiing, wings should be folded only when absolutely necessary. Unnecessarily long and fast taxiing in planes with the fold-straight-back type wings damages tail wheels and tail wheel tires, as well as unduly straining the wing hinge fittings and cap strips of the main spar in the stub wings.

External Droppable Fuel Tanks

Technical Note No. 29-45 has been issued outlining a new marking system to aid in identification of all external droppable fuel tanks. To identify clearly and simply each of the various types, and to distinguish between modifications of each, a "mark" system of identification has been established, similar to that now used for armament items.

▶ All external droppable fuel tanks manufactured subsequent to 15 April 1945 are identified according to the following schedule:

Mk 1—58-gallon drop tank
Mk 2—150-gallon F6F centerline drop tank
Mk 3—160-gallon F4U-1 centerline drop tank
Mk 4—100-gallon standard drop tank
Mk 5—150-gallon universal drop tank
Mk 6—165-gallon P-38 drop tank—Army design
Mk 7—150-gallon self-sealing drop tank—U.S. Rubber Co.
Mk 8—300-gallon standard drop tank
Mk 9—100-gallon knockdown plywood drop tank
Mk 10—100-gallon self-sealing drop tank—Firestone Tire & Rubber Co.

NOTE: All drop tanks above, manufactured prior to 15 April 1945, as well as all subsequent, shall be referred to according to the above schedule.

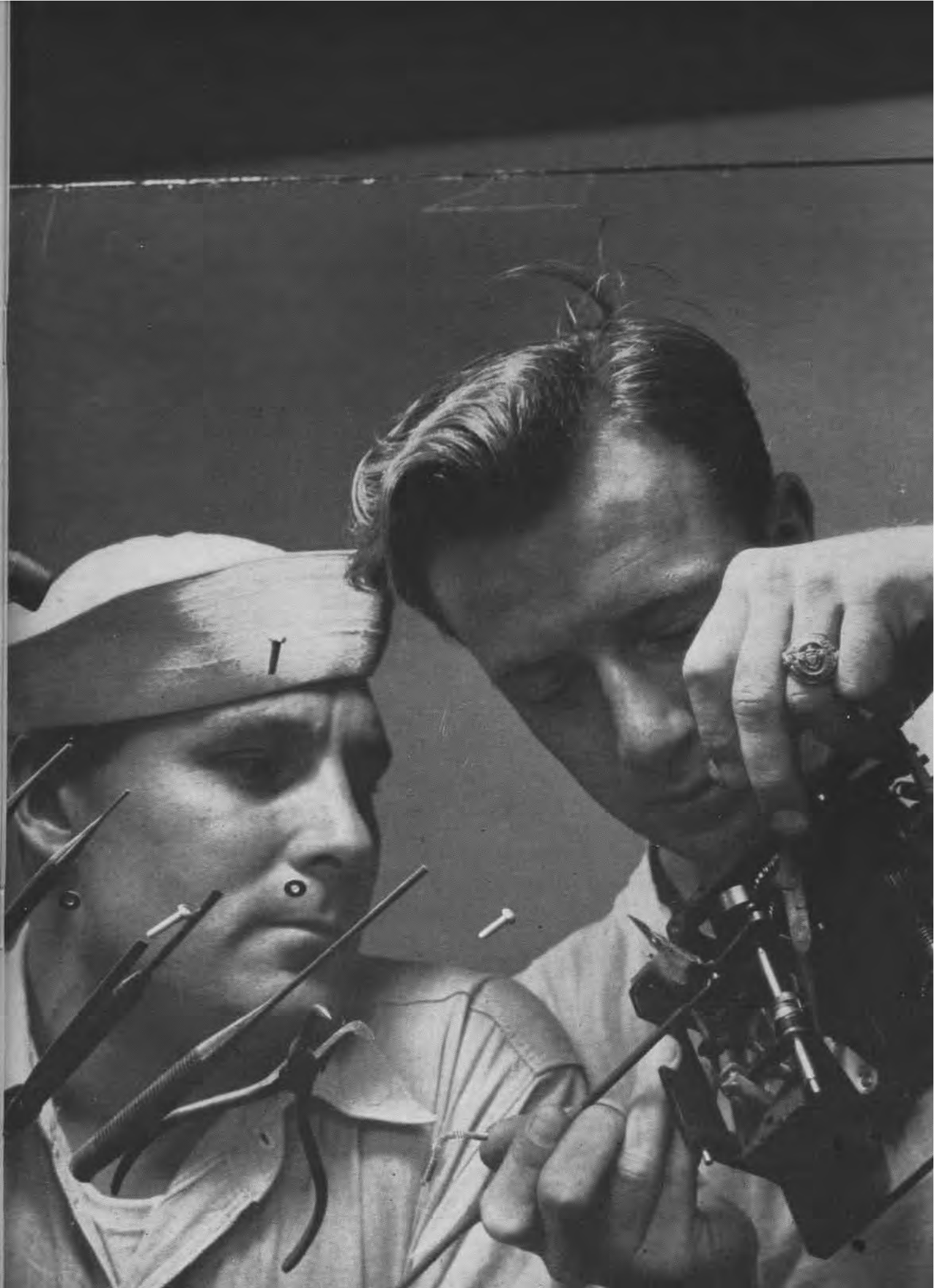
As changes in a tank are made which affect its strength or aircraft applicability, modification numbers will be assigned. There have been two such modifications made to date:

a. Mk 1 mod 1, 58-gallon drop tank with increased hanger lug attachment strength to prevent the lug from pulling away from tank under normal usage.

b. Mk 5 mod 1, 150-gallon universal drop tank with increased strength in the centerbeam to provide necessary strength for the drag post casting used with the F6F fuselage installation of this tank.

CAMERA SHOWS HOW

Camera maintenance and repair is an important and highly technical job. A Navy photographer at VB4, Operational Training Unit number 2 NAAS JACKSONVILLE, showed ingenuity in his pictorial recording of a lesson in camera repair. Classes in repair and maintenance are held for station personnel attached to the photographic department. To take this photograph of a camera repair instructor and his student at work on an intervalometer the photographer shot from below through a glass-topped work bench in the photo laboratory. Tools, screws, washers, and even the piece of equipment upon which the instructor is working, appear suspended in air. Ingenuity on the cameraman's part can give life and interest to the most routine job and at the same time record an important picture lesson. Combat photo crew training at OTU 2 is comprehensive.



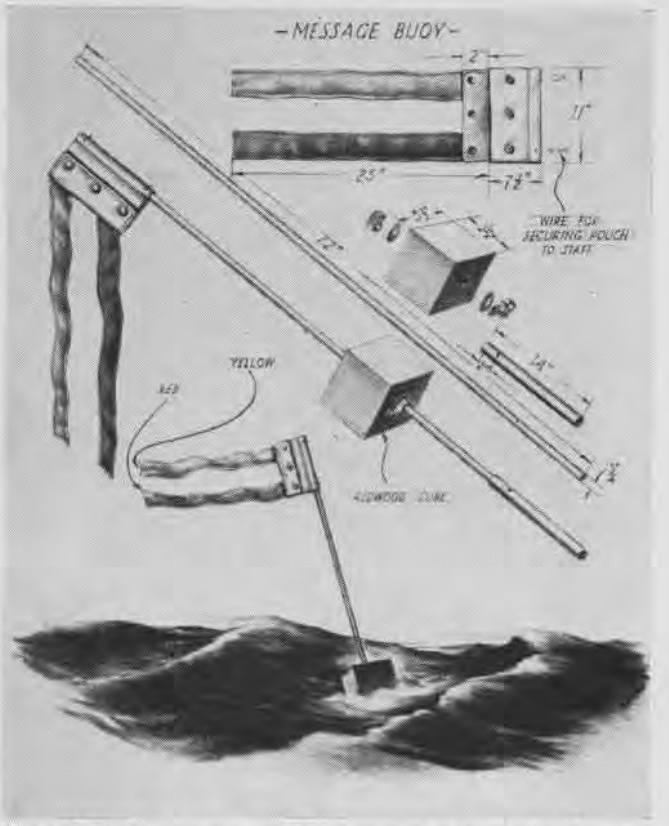
RESCUE SQUADRON DESIGNS EQUIPMENT

IN THE course of carrying out rescue work in Pacific waters, Rescue Squadron Three has developed and thoroughly tested a message buoy, tunnel chute, and a rescue ladder. This gear, designed and built by officers and enlisted personnel attached to the squadron, has proved to be successful under varying weather conditions. The message buoy materially aids survivors in spotting messages dropped from a rescue plane.

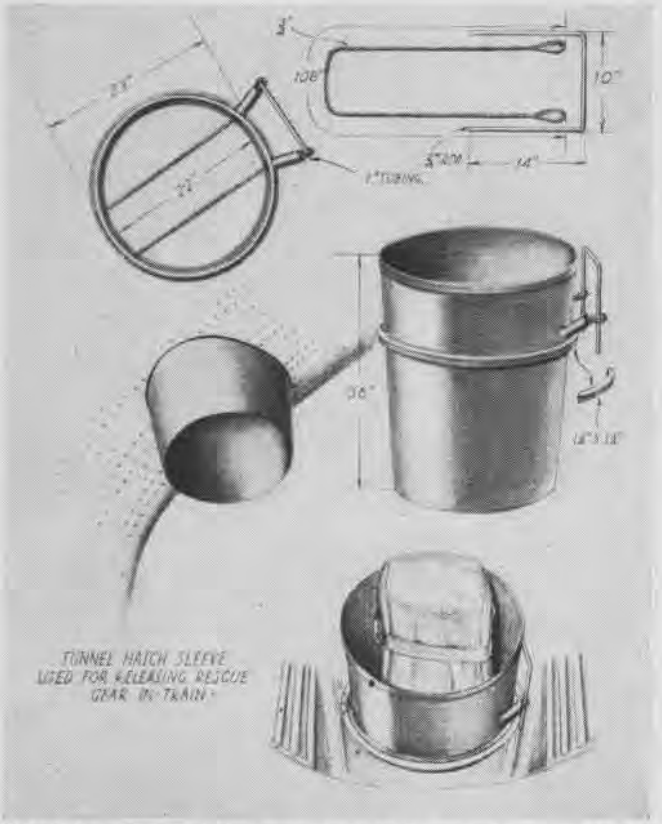
Tunnel Chute Increases Accuracy of Drop

The squadron has designed and used a tunnel chute to aid in dropping rescue gear from the plane to survivors. The chute increases accuracy of the pilot's drop by eliminating the variable delay of throwing items overboard. The chute also eliminates much of the hazard to crew members encountered when dropping units tied together with line.

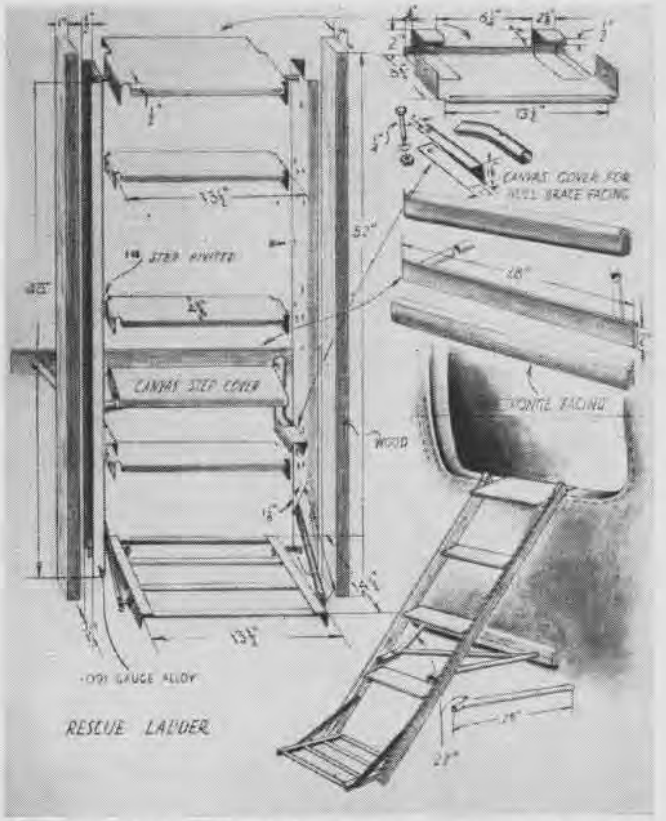
A rescue ladder attached to the waist hatch of a PBM has reduced the time required to bring survivors aboard in rescue drills. The bottom step of the 52″ ladder serves as a platform for a member.



Message printed on water-proof acetate and enclosed in white canvas pouch with red and yellow streamers attached floats about 3 ft. above surface. Buoy itself is a dowel 6 ft. long, weighted at bottom with pipe. Ensign Willard J. Fisher, USNR, designed buoy



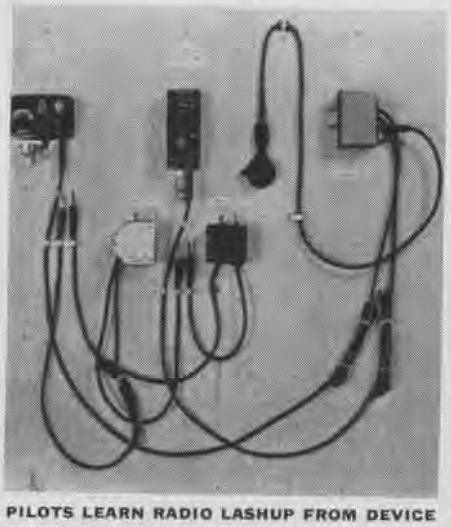
Galvanized cylindrical sheet metal chute fits into the tunnel hatch of a PBM. Two wires strung across the bottom of chute prevent gear from dropping until the release handle is tripped. Device designed by T. H. Kemp, AMMF1c and W. E. Puffer, Jr., AMM1c



Ladder is attached to side of the plane by securing the lip on the top step to edge of PBM waist hatch. Steps are covered with canvas to increase friction and prevent injury from cutting. Ensign Willard J. Fisher and J. W. Herrick, AMM2c, designed ladder

Device Shows Radio Gear on VTB

VTN-55—A chief radio technician with this squadron has developed a device to train pilots in the various lash-ups of radio gear found in the squadron's training planes. Pilots in the ready



PILOTS LEARN RADIO LASHUP FROM DEVICE

room can practice throwing various combinations of switches and, by seeing which lamp lights, tell which transmitter is being used.

The board includes a 233A VHF transmitter, BL interphone, ATC MHF transmitter, Norfolk, Quonset and NAF boxes.

[Developed by D. P. Conway, ACRT]

NATS Develops Water-proof Bag

VR-10—Necessity being the mother of invention, an aviation chief machinist mate in the ships' equipment section of this squadron, maintenance unit for NATS Pacific, developed a water-proof bag to carry blankets to and from aircraft and to stow them while in flight.

Each departing plane must have a sufficient number of blankets to satisfy

20 BLANKETS WILL GO INSIDE TWO BAGS

the needs of passengers. It became a major problem with Pacific-based NATS squadrons to have enough blankets on hand that were both dry and clean.

The water-proof bag is resin-impregnated canvas about 20" long, 15" wide and 30" deep. It has a top that snaps in place, two handles for carrying and holds 10 blankets.

[Designed by M. L. Spurlin, ACMM]

SCREEN NEWS

Cocoanut Casualty. Failing to administer first aid is not a comic subject, since it can lead to loss of life or limb, but the humorous slant given the matter in the newest McGillicuddy cartoon is enough to serve as a nudge-of-the-elbow reminder, which is all most fellows need to do the right thing:

MN-2808b *Commandments for Health—First Aid*—Unclassified, 6 min.

McGillicuddy, notoriously dim-witted character whose brains are consistently revealed as of the peanut, or 0.2 variety, is allergic to all kinds of mental exercise. It seems that learning first aid back in training school was one of his special aversions, since he was brushing up on *Breezy Stories* at the time. So when his buddy, Joe, stops a cocoanut with his head, McGillicuddy's own personal interpretation and application of first aid for Joe almost turns out to be his last. The correct procedure is left for Joe to demonstrate.

Test Pilot Know-How. Pilots shifting from the one-engine F6F to the two-engine F7F find plenty of hazards in the switch-over. There are differences in taxiing, normal take-off, procedue for engine failure on take-off, normal approach and landing, and many other points. The following sound slide films present the essential procedures:

SN-4923a *F7F-1 and 2N Cockpit Check-out, Starting and Warm-up Procedure*—Restricted, 14 min., 70 frames

SN-4923b *F7F-1 and 2N Taxiing, Normal Take-off, and Engine Failure on Take-off*—Restricted, 9 min., 49 frames

SN-4923c *F7F-1 and 2N Normal Twin Engine Flight and Single Engine Emergency Flight*—Restricted 11 min., 50 frames

SN-4923d *F7F-1 and 2N Normal Approach and Landing, and Single Engine Approach and Landing*—Restricted 7 min., 40 frames

Material for the above films was gotten together the hard way by a flier who had been a test pilot on the P-38. He summarized his knowledge of the difficulties encountered by Army pilots in the switch-over to a two-engine plane. He learned the causes of crashes, worked out and assembled methods to prevent such accidents, and became technical adviser in the production of the films.

That Extra Something.

MC-3925c *Double Wasp Water Injection System*—Restricted, 35 min.

Here's one case where water in the gas is a blessing instead of a gyp. Animated diagrams show how the principles of water injection in a Double Wasp engine give 5 percent extra combat power. Water injection in the gas supply reduces knocking by cooling the engine, and so increases efficiency. Daily and preflight inspections and period inspections are demonstrated. Planes shown: F4U, F6F, P-47.

Slide Film Meets PV-2. One advantage of the slide film over the motion picture in training is that the still picture "stops" motion at the important point under discussion and holds it for study, comment and questions. This particular virtue of the filmstrip is well illustrated in the *Servicing the PV-2* series (restricted) recently distributed.

SN-3733a *The Crew Meets the PV-2*—33 frames

SN-3733b *The Crew Meets the Flight Stations—Part I—Pilot, Co-Pilot and Radio Operator*—49 frames

SN-3733c *The Crew Meets the Flight Stations—Part II—Navigator, Radar Operator, Turret and Tunnel Gunners*—26 frames

SN-3733f *Take-off and Climb*—42 frames

SN-3733g *Cruising and Landing*—63 frames

SN-3733h *Emergency Equipment*—35 frames

SN-3733i *Line Service*—49 frames

SN-3733j *Daily Inspection—Part I—Inside*—35 frames

SN-3733k *Daily Inspection—Part II—Inside*—35 frames

SN-3733q *Loading and Unloading the Torpedo*—54 frames

SN-3733r *Loading and Unloading the Bomb Bay*—68 frames

SN-3733s *Introduction to the Electrical System*—80 frames

SN-3733ag *Maintenance of the Main Electrical Circuits*—64 frames

SN-3733bp *Loading the Fixed and the Tunnel Guns*—44 frames

SN-3733bq *Removal and Installing the Fixed and Tunnel Guns*—59 frames

SN-3733br *Removal and Installing of the Mark II Power Gun Mount*—23 frames

These slide films complete the series on the PV-2.

Other Films Being Shipped:

MN-1673e *Flight Deck Crews—Arresting Gear on Carriers*—Confidential, 30 min.

MN-4355 *Coordinated Attack on Enemy Convoys*—Confidential, 30 min.

MN-3726f *Medicine in Action—Release No. 6—Trench Foot*—Restricted, 11 min.

MN-3197f *Aircraft Recognition Tests—Test No. 6—U. S. Navy, Army and British Aircraft—40 Selected Planes*—Restricted, 18 min.

Where to Get 'Em: Central Aviation Film Libraries and Sub-Libraries are listed below. Check your nearest library before ordering.

NAVAL

ABATU, NAS St. Louis
CASUs 2, 4, 23, 24, 31, 32
CASU ComDet., Port Hueneme
ComAirPac
FAW 15
Hedrons 2, 4, 7
12, 16 Det.
NAB Seattle
NAB Navy #939
NAC Navy #140
NAC Navy #3205
NAMC Philadelphia
NAOTC Jacksonville
NAS Alameda
NAS Atlanta
NAS Brunswick
NAS Clinton
NAS Kodiak
NAS Moffett
NAS New York
NAS Norfolk
NAS Patuxent
NAS Quonset
NAS San Diego
NAS Squantum
NAS Willow Grove
NAS Navy #115
NAS Navy #117
NAS Navy #720
NATB Pensacola
NATB Corpus Christi
NATEC Lakehurst
Navy #3233
TAL Navy #116

MARINE

MarFairWestCoast
MCAD Miramar
MCAF Newport
MCAS Cherry Point
MCAS Eagle Mountain Lake
MCAS El Centro
MCAS El Toro
MCAS Mojave
MCAS Navy #61
MCAS Parris Island
MCAS Santa Barbara
4th MAW

PIX QUIZ What do you know about TELETYPE SYMBOLS?

HIEROGLYPHICS of the ancient Egyptians make very little sense when first read, but the longer they are studied the more sense they make. The same might be said for teletype symbols used to indicate weather conditions. They make plenty of sense to those who read them regularly. See answers on p. 48.

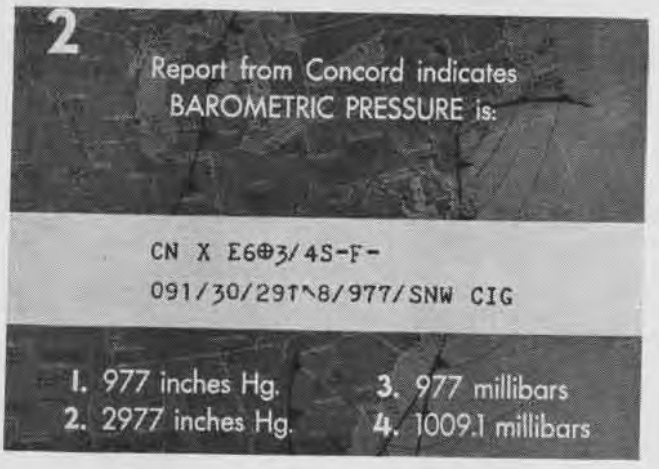
[QUESTIONS FROM BUAER SPECIAL DEVICES VISUAL QUIZZER FILM NO. 43, TELETYPE SYMBOLS]

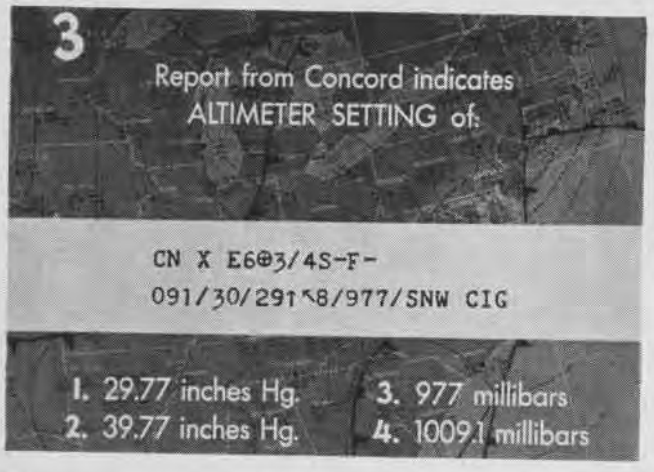
Write your answers here

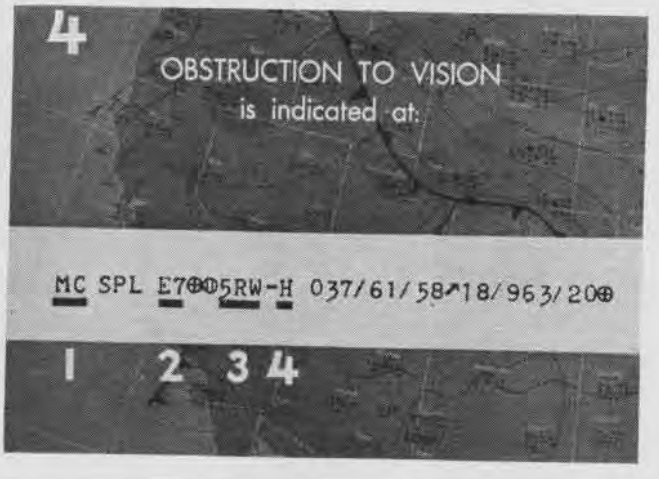
1..... 4.....

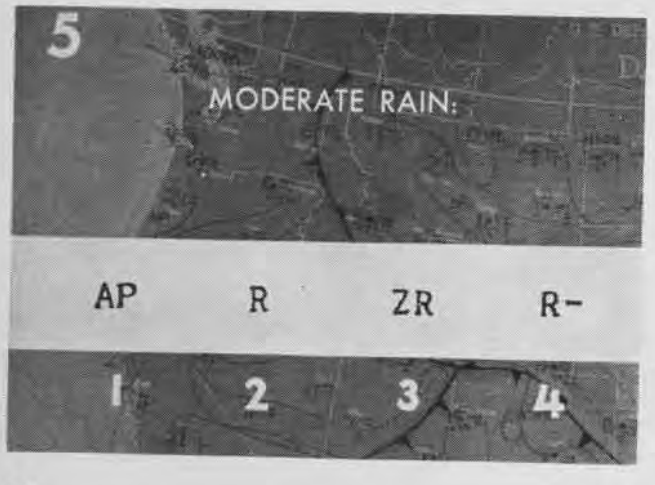
2..... 5.....

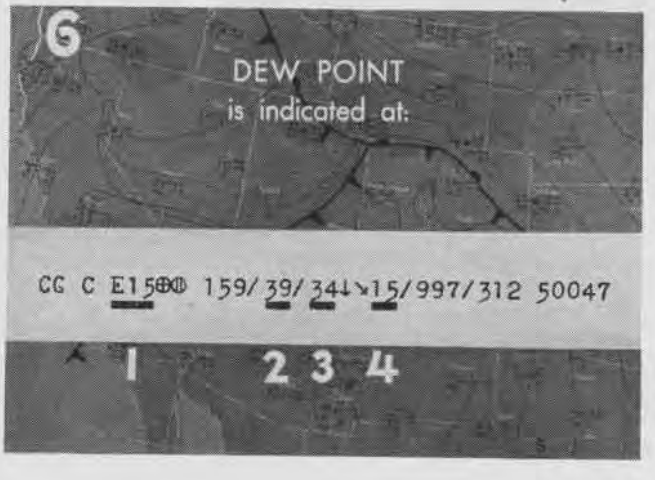
3..... 6.....











PHOTOGRAPHY

Sprocketless Type Gun Camera Magazine

In order to simplify reloading 16-mm gun camera film magazines and thereby save time and eliminate causes of jamming, BuAer has adopted as standard, the sprocketless magazine (AN-A-6). This is the magazine currently in use by AAF and Navy adoption of this method will standardize procedures.

All future procurement of gun camera magazines will be of the sprocketless type, and will be carried under stock number 18-M-470-200. These will eventually replace all of the present Eastman Kodak Co. type "G" magazines now widely distributed throughout the Naval establishment. However, the type "G" magazine can rapidly be converted to the method of loading by substituting a Double Gate Spring (Eastman Kodak Co. Part No. 94145) for the former Single Gate Spring (Eastman Kodak Co. Part No. 49705). Quantities of Double Gate Springs are being procured and will be stocked at the four mainland photo supply points under stock No. 18-S-228-200. These springs are to be requisitioned in the same manner as other photographic supplies.

A handbook of instruction, Army TO 10-1-54, describing the inspection of magazines prior to reloading and the method of loading the new "sprocketless" type magazines is presently being procured from AAF and will be given wide distribution.

Bulk Chemicals for Houston Machines

A chart listing the bulk chemicals required and the quantities needed for reversal processing of 16 mm. universal film in Houston machines has been prepared for guidance in requisitioning supplies. This chart has been forwarded to supply points for information and also reprinted in the current Photography Technical Bulletin.

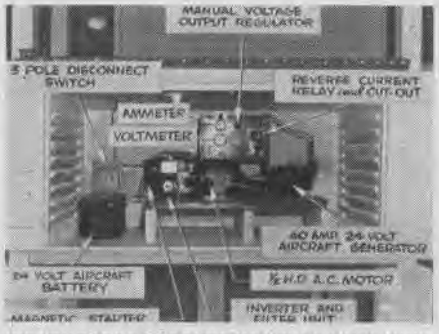
Universal 16 MM. Film Exposure Data

Photographic Science Laboratory has advised Director of Photography that all units should bear in mind that universal 16 mm. film when developed to a negative results in an exposure of approximately one-half of what it would be if developed to a positive image. In other words, if universal film with a speed group of 100 were exposed using that as a guide it would result in a negative that would have only one-half the proper exposure, which if developed to a positive, the result would be satisfactory.

Photographers using universal film, such as Eastman Super XX Blue Base, should bear this in mind when exposing the film for negative development. Exposed film forwarded for processing should contain complete information on the Photographer's Data Sheet, stating clearly what exposure guide or film speed rating was used in exposing film. This will assist processing agencies in developing film to a proper density either positive or negative.

Radio D/F Trainer Aids Cadets

NAAS Rodd Field—A Bendix radio direction finder trainer developed by this station's navigation department has markedly improved quality of cadet radio work on training flights. The training device improves cadet's technique in use and operation of Bendix equipment installed in the SNB-2's and SNB-2C's and overcomes their general lack of confidence in radio fixes.



WEATHERPROOF COVER HOUSES POWER UNIT

The trainer consists of a Link fuselage stripped of everything but the compass and clock. A standard Bendix radio, Army designation SCR269G, type currently installed in *Beechcrafts* in this squadron, is added to the fuselage. A power unit is housed in a weather-proof assembly outside the ground school building. Elimination of non-essential instruments in the Link's panel arrangement facilitates instruction in proper technique of taking radio bearings.

During this phase of training the cadet is interested only in the clock (time), compass (heading), relative bearing indicator and the radio itself. The loop mounted forward of the panel is in a plastic shield that permits the student to see its actual operation as stations are tuned in. Because it revolves freely through 360°, the Link can be placed on any heading by the instructor. A stop prevents more than one complete rotation.

Cadets may tune in any of 20 to 30 stations within a radius of 150 miles of Rodd Field. Bearings obtained are plotted and fixes checked with the known position of the field. Celestial-radio fixes are determined by crossing a sunline with one or more radio bearings.

Use of the ground trainer saves time in the air and materially reduces maintenance of squadron radio equipment.

[Designed by Lt. (jg) Thomas S. Francis]

Lubricating Cams Ends Jamming

Several activities have reported failures of the rotary bomb selector switch in SC-1 aircraft. The failures consist of jamming and freezing of the switch after a certain period of operation.

▶ The condition can be prevented by application of a small quantiy of lubricating graphite grease (in accordance with specificaion AN-G-6) to the surfaces of the detents in the master cam and the switch cams of the switch.

Succeeds List of 1 April 1945 — *1 May 1945*

AIRCRAFT SERVICE CHANGES AND BULLETINS

Airplane	Bulletin	Date	Change	Date
F6F	109	4–14–45	88	3–27–45
FM	43	4–9–45	57	2–28–45
F4U–F3A–FG	194	4–17–45	211	3–31–45
F7F	12	4–14–45	8	4–11–45
F4U–4/FG–4	15	4–17–45	1	12–9–44
GB	16	4–12–45	14	3–24–45
HNS	3	4–21–45	6	3–24–45
JM	36	4–14–45	43	3–1–45
JRB–SNB	31	4–7–45	27	3–20–45
N2S	30	4–17–45	40	4–20–45
PV	117	4–9–45	158	2–7–45
PBJ	51	4–7–45	69	4–16–45
PBM	105	4–9–45	162	4–18–45
PBY	105	4–10–45	176	4–5–45
PB2Y	62	3–31–45	153	1–3–45
PB4Y	138	4–17–45	141	4–6–45
R5C	28	4–7–45	98	4–14–45
R4D	39	3–30–45	35	3–9–45
R5D	53	4–10–45	99	3–24–45
RY	50	4–16–45	27	4–6–45
SBW–3	65	4–20–45	66	2–17–45
SB2C–SBF–SBW	174	4–21–45	136	4–21–45
SC	46	4–13–45	28	4–4–45
SNJ	33	3–17–45	27	1–13–45
TBF–TBM	179	4–17–45	231	4–20–45
TBY	3	3–12–45	0	——
TD2C	2	4–9–45	3	4–5–45

For a complete list of Aircraft Service Changes and Bulletins, see Naval Aeronautic Publications Index NavAer 00-500 and Supplement NavAer 00-500B.

DITCHING

Crew Members Get Ditching, Survival Experience By Riding a Perforated PBY Hull Into the Water

A REALISTIC survival training program for PBY pilots and aircrewmen, designed to cover a wide variety of emergency conditions with easily remembered principles of self preservation, now is being conducted at NAS JACKSONVILLE. Instruction includes lectures, demonstrations and drill in use of regulation equipment, and practice in improvisation.

Most important phase of the training is a ditching drill that utilizes the perforated hull of a surveyed PBY. During the course of this drill the hull, with a normal crew of seven and all gear that has potential survival value aboard, is lowered slowly down a ramp into the water. Once in the water the hull begins to sink almost immediately. The crew carries out prescribed ditching procedures in abandoning ship and unloading all useful gear.

Instructors Must Always Be On Alert To Catch Mistakes

Several crew members, in photographs taken during one actual ditching demonstration, were shown wearing life jackets wrong side out. In a real plane ditching, carelessness can cost lives. Life jackets to be completely effective must be properly fitted to the wearer's body so they will not be too tight when inflated. When right side out, the straps on the jacket are attached on the side next to the body, and oral inflation tube is on the wearer's right. A life jacket that becomes too tight when inflated makes the man virtually helpless in the water and unable to swim.

Instructors, like Aviation Equipment and Survival Officers, must be alert at all times to check equipment and correct mistakes before emergencies occur. If students make mistakes right under the instructor's nose, they are likely to make the same or worse errors in a real ditching emergency. There is no substitute for constant practice when it comes to ditching procedure. Every man must know his station and duties, as well as how to use survival gear when a plane is ditched.

1. To save lives and perform the jobs it was procured to do, survival gear must always be properly stowed in the plane. If survival gear is not carefully checked, important items may be missing in an emergency. Instructors must be on alert

2. As hull descends into water, crewmen take prescribed positions in accordance with PBY-5 crash bill. To avoid injury when hull strikes water in a real ditching, men brace themselves. Hands and arms protect head from severe bumps

3. On signal from pilot, crewmen carry out abandon ship procedure as water rapidly rises inside plane hull. If every man knows his job and performs it efficiently, all survival gear can be broken out in record time and crew can make escape

4. Instructor atop sinking hull times the crew as they break out life raft and begin inflation. Other crewmen with survival gear ready stand by preparatory to entering raft. Instructor must be on the alert for mistakes that could cost lives

Restricted

Prior to each ditching drill, the instructor briefs all hands on procedure. A small building erected near training area serves as a classroom where ground training personnel instruct crews in correct use of survival equipment. Demonstrations are conducted here. Instructor is pointing out procedure to be followed in inflating life raft. Life vests lining bulkhead in rear must be properly fitted to the wearer's body before every flight. If a life vest is too tight when inflated the survivor may be helpless in water

5. Hull sinks lower in water as crewmen begin job of loading survival gear aboard raft. Teamwork counts here. Gear that is left in sinking plane or lost overboard materially lessens a crew's chances for survival when a real ditching occurs

6. All aboard the life raft PBY-5 crew shoves off. The hull of ditched plane now rests on bottom of shallow river. Instructor atop hull calls out the time taken for ditching. Average elapsed time for drill is about 70 seconds, record time is 45

Restricted

LETTERS

SIRS:

Would appreciate information from you concerning the "Goldfish Club" as to what is necessary in the way of application forms to become an official member of said club.

I believe I qualify, having made a water landing in the Philippine Sea at night and shortly thereafter was picked up by a destroyer.

Oakland, Calif. LIEUTENANT (jg) USNR

¶ Applicants for membership in Goldfish Club must be flight personnel who have saved their lives through use of a Mae West or an inflatable dinghy. The following information should be sent to Max Karant, secretary, American Division of the Goldfish Club, c/o Flying Magazine, 185 N. Wabash Ave., Chicago 1, Ill.:

1. Name, rank and serial number.
2. Home address.
3. Service address.
4. Description of incident.
5. Date and location of incident.
6. Certification of application by applicant's commanding officer.

The Goldfish Club was founded in Great Britain in January 1943 and originally was for the RAF and FAA.

SIRS:

The 15 January issue of NANEWS has reached this station and been well thumbed by all hands. Your publication is a source of much interest, information, and news to all of us in the field. Naturally, we scan the contents of each issue for news and views of the activities of fellow-Marine squadrons in particular. In this manner we came across a brief review of accomplishments by Marine units for 1944.

In this article you state that a Marine Fighting Squadron dropped a total of over 200,000 lbs. of bombs on the enemy in the course of seven weeks' operations. This is no mean record for a fighting squadron, but at the time you were going to press, we were busy belittling this achievement. During the period of 23 January 1945 to 23 February 1945, this squadron dropped a total of 640,648 lbs. of bombs on various enemy targets. This was in addition to the other assignments usually accorded a fighting unit—sweeps, strafing missions, ground support, combat air patrols, *etc.*

In addition to the sheer volume of these operations, the record of hits was more than impressive. No small number of our missions could easily have been classified as having been in the 'pickle-barrel' class.

VMF-211 TSGT., USMCR

SIRS:

On 6 March 1945 the enclosed picture was taken of a cold front moving from the north into this area. This occurrence is not rare, as three to five are experienced each year. This particular one, however, was rather spectacular in appearance and may be of some interest.

The pictures were taken at approximately 0820. The wind varied from S to N and from 8 knots to 28 knots in velocity. Temperature changed only slightly during the period from 0500 to 1100, averaging about 68° F. As wind velocity increased, relative humidity decreased slightly.

NATTC CORPUS CHRISTI COMMANDING OFFICER

¶ For another interesting photograph of this same storm, see article on "Line Squalls" in this issue.

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.

CONTENTS

ANSWERS TO QUIZZES

● BEST ANSWERS (p. 12)

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

● NAVIGATION PROBLEM (p. 16)

1. 322°
2. 322°
3. 1325
4. Lat. 20° 53' N
   Long. 138° 12' E
5. 102 k
6. 215°
7. 1425
8. 133°
9. Lat. 17° 29' N
   Long. 139° 04' E

● PIX QUIZ (p. 44)

1.4 2.4 3.1 4.4 5.2 6.3

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. Upon completion of any flight for which a flight plan has been submitted. Ref: Par. 60.430 of *Civil Air Regs.*
2. Yes. Ref: TO 42-43 and Art. 6-111 in new *BuAer Manual.*
3. a. Inflate vest, using oral inflation tubes.
   b. Put it on; then adjust crotch, waist and back straps for comfortable fit. Ref: TO 30-45.
4. a. Check oral inflation valves. They are not self-closing and must be closed at all times except when vest is being inflated by mouth.
   b. Check CO_2 actuating lever lanyard for freedom.
   c. Check to see that CO_2 cartridges have not been discharged. Ref: TO 30-45.
5. First check the suction gauge reading and then check the indication of the horizon against the rest of the instrument panel. Ref: *Flight Through Instruments.*

Puddinhead Tussie

THIS IS THE SONG OF PUDDINHEAD TUSSIE
BORN, THEY BELIEVE, IN DECEMBER
PUDDINHEAD'S MA AND PUDDINHEAD'S PA
ARE PEOPLE WHO CANNOT REMEMBER.

Lyrics by
Chance

1 EARLY IN SCHOOL HE LEARNED AS A RULE
THAT TEACHER WOULD REACH FOR HER SWITCHES
WHEN HE FORGOT, THE THINGS SHE HAD TAUGHT,
SHE SHARPENED HIS MIND THROUGH HIS BRITCHES.

2 AT TWENTY-ONE, HE THOUGHT 'TWOULD BE FUN
TO MARRY A LUSCIOUS YOUNG CREATURE
HE HAD NO RING, FORGOT THE DARN THING,
SO BABY RAN OFF WITH THE PREACHER.

3 WHEN PUDDINHEAD JOINED THE NAVY, THEY SAID,
THIS IFF — DON'T FORGET IT.
I-DEN-TIFY. IF YOU DON'T WHEN YOU FLY
BACK TO YOUR SHIP, YOU'LL REGRET IT.

4 HAVING NO STRING ON HIS FINGER, LAST SPRING
PUDDINHEAD WENT TO HIS GLORY.
WHEN HE FORGOT IFF — THEY SHOT!
THIS IS THE END OF THE STORY.

Chorus: IDENTIFY WHEN APPROACHING FRIENDLY SHIPS

TWO JAP CV'S, ONE CVE AND A SUBMARINE (UNDER WAY) ARE SURPRISED IN KURE HARBOR WHEN U. S. CARRIER PLANES SWOOPED DOWN UPON THEM

BURNING NIP SURFACE CRAFT ATTEST TO ACCURACY OF NAVY BOMBERS

RAID ON KURE

STRIKING deep into the heart of territory that the Japanese once thought inviolable, carrier-based planes of the Pacific Fleet are delivering telling blows against the enemy. Photo above was taken during the mid-March raid on the Jap naval base at Kure. Nip submarine, upper left, was caught surfaced but got under way in attempt to escape U.S. raiders, while the three carriers rest at anchor, perfect targets for *Avengers* and *Helldivers*. Scenes like the one at left are being reenacted all over the Pacific as U.S. Navy aircraft prowl the sea-lanes in search of enemy shipping. Nip lines of supply feel the effects of American plane raids.