NAVAL AVIATION NEWS

Kyushu • Pettibone
Naval Crash Boats
Cold Weather Flying

August 15, 1945

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No. 28 of a series

"I WAS ABOUT FAGGED OUT WHEN THEY PULLED ALONGSIDE"

▸ A few moments after the Helldiver had cleared the flight deck, there was a terrific jolt and John E. Novesky, ARM1c, found himself struggling in the water. The plane had stalled and crashed a hundred yards dead ahead of the carrier.

▸ Novesky scanned the water for his pilot but saw only the sinking plane. Glancing over his shoulder, a few moments later, he glimpsed the towering bow of the carrier bearing down on him. Novesky churned through the water toward starboard and the next moment was engulfed by the bow wave as the flat-top swept past.

▸ He heard a grinding jar as the bow struck the sinking plane, then saw his pilot floating a short distance away. Men on the carrier had tossed a life ring overside but the pilot was unconscious. Novesky worked the ring around him and held the injured man's head above water.

▸ "I kept swimming to hold him up," Novesky said, "because I knew a destroyer would pick us up. One got there in about 15 minutes but it seemed to me like a couple of days. I was just about fagged out when they pulled alongside. They lowered a stretcher and I put the pilot on it. Then they hoisted me up."

▸ While Novesky was changing to dry clothing, the ship's medical officer came below to tell him his pilot was dead. Apparently he was injured fatally when the carrier struck the plane. Novesky had gambled his own safety in an effort to save the pilot's life, and had proved again that . . . . . .

AIRCREWMEN HAVE WHAT IT TAKES

PHOTOGRAPHIC INTELLIGENCE

Kyushu . . .

Its Airfields Harbored Jap Suicide Planes

CUTTING OFF *Kamikaze* attacks at their roots was the job that U.S. airmen undertook as they smashed Kyushu airfields during the past five months. Reconnaissance in March showed that the enemy had hundreds of planes on Kyushu ready to hurl against U.S. ships. While the American Fleet lay off Okinawa, the Japs hurried more planes to Kyushu and launched series after series of suicide attacks. Faced with this threat, the U.S. command moved to attack major airfields on the southern home island, intent on destroying every possible aircraft and all airfield facilities.

The work of destruction was hampered at times by strong fighter opposition, flak and even by barrage balloons. Although airfield construction on Kyushu was less advanced than on Honshu, the island was well covered with fields, and there was a strong concentration in the south, closest to Okinawa. Some airdromes, like Kanoya, proved to be very large and elaborately equipped. Presence of a great many dummy planes made identification of aircraft targets difficult.

Although many *Kamikazes* from Kyushu did manage to attack and damage the Fleet, U.S. Navy and Army fliers gave the Japanese air force and its nest of Kyushu bases a punch from which they will not recover.

Kyushu
CRADLE OF KAMIKAZE

1. The MENACE: Scourge of Ships

Suicide Tactics Had Come Long Way Since Philippine Campaign

THE KAMIKAZE CORPS, suicidal defenders of the Jap empire, were crashing destructively into the U.S. Fleet. Ship after ship suffered injury as the Navy waited off Okinawa. Kamikazes were concentrated on airfields in southern Kyushu, and Okinawa was only some 350 miles distant. Fields in the northern Ryukyus also were used for staging. Suicide tactics had been developed to a much greater degree of effectiveness than was achieved in the Kamikazes' Philippines debut, the Japs, for example, no longer making low-level runs at their targets but diving sharply down from obscuring clouds. Many Kamikazes were knocked down, but enough got through to cause great damage.

GUNNERY COULDN'T STOP ALL THE KAMIKAZES; STRIKES AGAINST KYUSHU WERE IMPERATIVE

2. The TARGET: Source of Suicide

Island's Bases Had Served as Training Fields for Air Force

PRINCIPAL target for Navy attackers was the Jap air force. The enemy relied heavily on dummy planes to draw U.S. strafing and bombs. No less than 99 dummies, for instance, were observed on Kanoya airdrome after a photographic sortie of April 1.

A great number of hangars, shops, barracks and other buildings had been erected by the Japs throughout Kyushu, and these also constituted major targets for U.S. fliers.

Many Kyushu airfields had been training bases in the days when Japan's combat air force was serving in far-flung areas. At some there were elaborate Army or Navy air depots and workshops. Several were still partly under construction, but most were operational. It was found that the enemy tended to build several smaller, less well-equipped fields around a large airdrome. The Japs also managed to have an airfield near most seaplane bases. Camouflage, in the form of roof-painting, netting, and even rows of trees planted at angles, was intended to confuse U.S. airmen. A few barrage balloons were seen, and photo interpreters discerned such miscellaneous Jap equipment as Baka bombs and other units.

Fat target Omura in northwest Kyushu contained aircraft engine and assembly plants, airfield and seaplane station. Demolition of airplane factories clipped Kamikaze strength at its very source

Nittagahara airfield was well supplied with hangars, shops, barracks, administration buildings and other structures. It formed part of a great ring of protecting fields that encircled Kyushu

KANOYA, JAPS' LARGEST AIRDROME IN SOUTH KYUSHU, WAS FOUND TO BE PACKED WITH PLANES

TOMITAKA FIELD WAS ON E. CO

Kyushu — the TARGET... cont'd.

MODELS OF KYUSHU BASES WERE USED TO SUPPLEMENT PHOTOGR APHS AND CHARTS IN BRIEFING CARRIER PILOTS BEFORE STRIKES

ENEMY CONSTRUCTED TWO PRACTICE CARRIER LANDING STRIPS HERE

Island Was Loaded with Industrial Targets But Fliers Concentrated on Jap Air Bases

KYUSHU IS about 200 miles long from north to south and approximately 150 miles across at its widest point, with a total area of 16,000 square miles. In 1935 the population of the island was reported as 9,250,000, mostly concentrated on coastal and river lowlands. Cloudiness is persistent, interfering with air operations, and typhoons occur from May to October. Most of Kyushu is hilly or mountainous. The largest area of interconnected lowlands is in the northwest; other lowlands are small and usually isolated.

A rail line and national highway encircle Kyushu, but the transportation network is not nearly so well developed as on Honshu. As a consequence of this, the enemy is thought to encounter considerable difficulty in getting repair materials to some Kyushu airfields. One very important product of Kyushu is coal, vital to Japan's war industries. Steel is made in the northwest, the Yawata Imperial Iron and Steel works being the largest producer in Japan. Coke, chemicals, zinc, synthetic oil, munitions, and other war materials are manufactured or processed in Kyushu. But to the U.S. Navy the Kamikaze bases were the most important targets.

At Saeki the Japanese had an airfield with an elaborate dispersal, seaplane base, ordnance storage areas and mine school (burning)


OBJECTIVE
Kyushu
OZUKI
BOFU
SHIMONOSEKI
TOBATA
WAKAMATSU
MOJI
KOKURA
ASHIYA
YAWATA
GANNOSU
GANNOSU
FUKUMA
SHIGA
SAITOZAKI
NAJIMA (2)
NAJIMA (1)
TSUIKI
IMAJUKU
ITAZUKE
WAJIRO
USA
SHISOJIMA
TACHIARAI
AMAGI
JUMONJI
METATSUBARA
KURUME
AINOURA
AINOURA
SESBO
SASEBO
SASEBO
SASEBO EAST
FUKUSHIMA
OITA
OITA
OMUTA
SAEKI
SAEKI
OMURA
KUROMARU
OMURA
KIKUCHI
MIYAH
TAMANA
ISAHAYA
KIKUTOMI
KUMAMOTO
KUMAMOTO
NAGASAKI
KUMANOSHO
KAGAMI
GORYO
TOMITAKA
HITOYOSHI
KARASEHARA
ZUMI
NITTAGAHARA
SADOHARA
MIYAZAKI
MIYAKONOJO NORTH
RONCHI
KOKUBU
KORIMOTO
MIYAKONOJO
KAGOSHIMA
KAGOSHIMA
IWAKAWA
KAGOSHIMA
SHIBUSHI
KUSHIRA
TOJIMBARA
CHIRAN
KANOYA EAST
KANOYA
BYU
IBUSUKI
Airfields
Had – Heavy Bomber Airfield
Mad – Medium Bomber Airfield
Fad – Fighter Airfield
Landing Grounds
HLG – Heavy Bomber Landing Ground
MLG – Medium Bomber Landing Ground
FLG – Fighter Landing Ground
ELG – Emergency Landing Ground
Seaplane Bases
SS – Seaplane Station
ASS – Auxiliary Seaplane Station

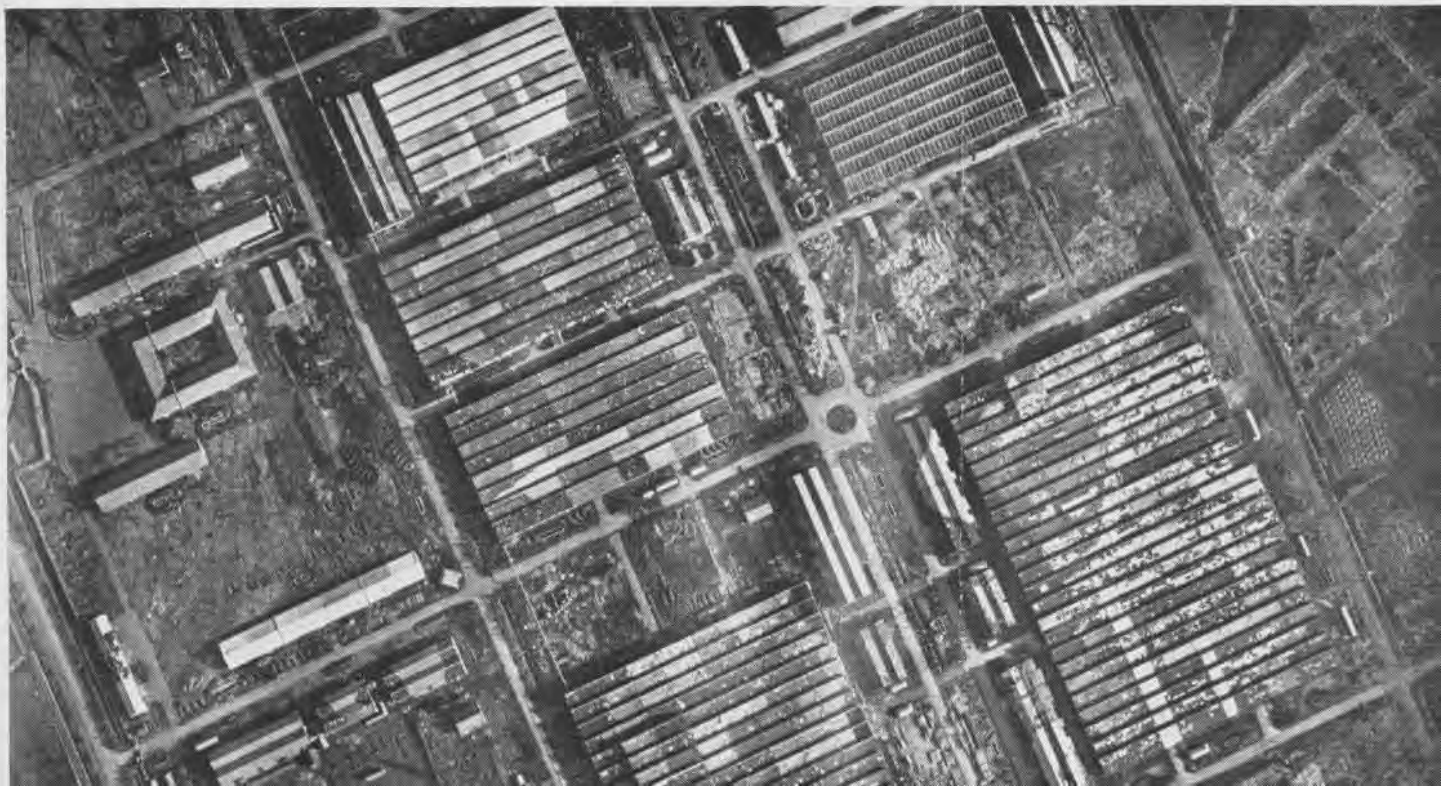
NAVAL AIRCRAFT SHOWERED BOMBS ON SAEKI, DESTROYING JAPANESE PLANES AND WRECKING BUILDINGS AND OTHER INSTALLATIONS

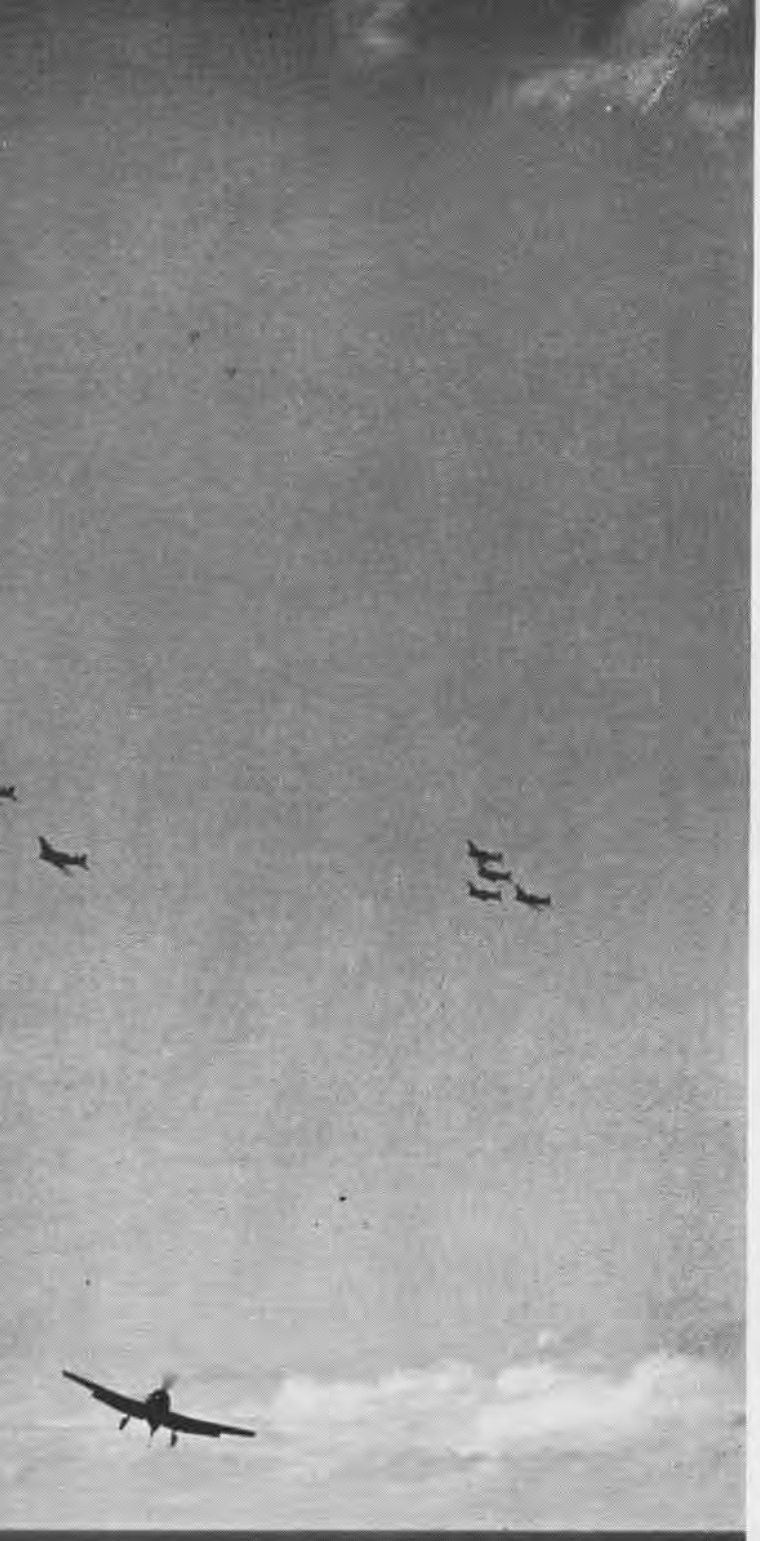
3. The STRIKE: Sign of Strength

Carrier Planes Blasted Airfields, Aircraft Works, Causing Heavy Destruction

STARTING with the carrier strike of March 18, U.S. airmen began in earnest the task of destroying Kyushu's Kamikaze threat. Air strips were cratered, hangars and shops set afire, and hundreds of Jap planes destroyed in the air and on the ground. Aircraft assembly and engine works were bombed at Kumamoto, Omura, Tachiari and other centers. Seaplane stations were hit hard by U.S. pilots. (At Ibusuki facilities were 100 percent destroyed). The Japanese put up fierce resistance at first, but huge plane losses diminished their opposition. During later strikes, pilots had difficulty locating enemy planes, some of which probably had been flown to safety at more remote fields. Although Kamikazes continued to harass American ships, the bulk of the Fleet was enabled to remain at its post in support of the ground forces taking Okinawa. And the Jap home islands had felt the power of the American Fleet's carrier offensive.

SAW-TOOTHED ROOFS OF KUMAMOTO AIRCRAFT ASSEMBLY PLANT WERE SMASHED AS WAVES OF NAVY PLANES BATTERED THE FACTORY





SCENES LIKE THIS WERE COMMON AFTER STRIKES BY NAVY PLANES

Kyushu

4. The RESULT: Symbol of Victory

Strikes Left Hundreds of Wrecked Planes, Cratered Airfields in Wake

THERE WASN'T much left of Kyushu's airfields after the U.S. Navy and Army finished hitting them. Navy pilots experienced difficulty in spotting real Jap planes on the ground because the enemy camouflaged them carefully with netting and other materials and crowded *bona fide* aircraft and dummies together in the same revetments. When photo interpreters located genuine planes on photographs, and pilots were assigned specific revetments as targets, the rate of destruction was speeded. The enemy's practice of defueling parked planes probably decreased the number of planes lost by burning, and Jap camouflage and dummies made plane damage assessment a complicated process.

Throughout Kyushu, airfield maintenance facilities were smashed thoroughly. Complete destruction of above-ground service installations was visible on photos of Kanoya East, Kokubu, Miyakanojo, Miyazaki and Usa fields, and at others rate of damage was very high. It was considered possible that the enemy might have some underground maintenance facilities still available. Armament areas and pilot training facilities also were put out of commission. Persistent repairmen that they are, the Japs were not able to rebuild hangars and shops to any degree, although they did patch runways.

The net results of the Kyushu attacks were a drastic reduction in the number of Kamikaze aircraft and a body blow to the island's facilities for keeping Kamikazes in the air.

Striking from carriers, Navy pilots heaped tons of bombs on Kyushu airfields and other war-important Japanese installations

BEFORE U.S. airmen attacked Usa field it was loaded with Japanese aircraft and had ample hangars and facilities. A baka bomb was noted here by photographic interpreters.

AFTER successive Navy and Army strikes, hangars and most buildings at Usa appeared ruined and airfield was unusable. Kamikaze aircraft couldn't easily operate from here.

GRAMPAW PETTIBONE

Gadget Trouble

Grampaw Pettibone says:

I'm running into considerable difficulty getting certain safety devices installed in our planes, particularly such items as the "Automatic Stimulator" and the "Taxi-Accident Eradicator" which were described in recent issues.

For example, an ex-squadron commander who now occupies one of the Bureau design desks made the following comments upon being faced with a recomdation for installation of a rather complicated safety gadget:

"Installation of this special equipment is not considered desirable. Pilots who cannot be depended upon to operate such basic equipment as retractable landing gear are not qualified to fly modern aircraft. We are already carrying around a great many pounds of so-called safety equipment at the sacrifice of bomb load and performance—supposedly to prevent stupid pilots from making more stupid errors. Such installations, however, only serve to make pilots feel less responsible for their equipment and become *more and more careless.*"

You might construe these comments to mean that come peacetime, when we don't have to lug these doggone bombs around any more, we can replace them with safety equipment—the only criterion on any device then being, "Will the plane be able to take off if this is installed?"

In the meantime, might I suggest that you learn how to fly without these special aids. Ask somebody to kindly show you how to operate everything you've got aboard and use the check-off lists to tell you when. If you don't, my dear young friend, you are apt to crash—and break your damn neck!

Kerplunk in the Creek

"CREEPING CORSAIR CAUSES CARRIER CATAPULT CRASH!" These headlines might have appeared in a certain ship's

paper recently, following a catapult accident.

While the plane was being given its first engine run-up prior to night catapulting, the hold-back tension ring broke. Both the dispatcher and the catapult crew tried in every way possible to attract the pilot's attention, so he could apply brakes. The pilot, however, apparently absorbed in checking his instruments, did not realize he was moving, nor did he see any of the emergency signals. The plane continued creeping forward until it tumbled off the deck into the water.

The accident report contained the following recommendation: "Pilots should be cautioned against withdrawing their attention from the launching officer for long periods of time."

Grampaw Pettibone says:

Just another of the countless ways in which an aviator can get into trouble—indicating why pilots always have got to be "on their toes".

Word drifts in occasionally that some pilots go into a foaming frenzy over this type of report. Here's a 100% material failure, and yet the pilot is told what he should have done! "Gawd, can't that old gink pick on somebody besides pilots once in a while!"

Lets get it straight; this is not the Pat-on-the-Back Department. This section mainly tries to show pilots how they can protect their own necks by being primed and ready for any kind of trouble—no matter what happens or who's the blame. When things start going wrong in an airplane, the pilot is in no position to argue about "whodunit." "His, then, but to do or die."

Those more interested in material and maintenance troubles can find out what is being done about them in the literature disseminated on this subject, especially the NavAer *Maintenance* pamphlet issued monthly by BuAer's Maintenance Division

Be it understood then, this section is mainly for flight personnel—to warn them of potential dangers, to suggest preventive and corrective action and to goad them into being fully prepared to protect themselves in any emergency.

Survival Advice

Excerpt from an action report: "The pre-dawn ditching experience of an FM-2 pilot emphasizes the importance of frequent instruction and practice in ditching procedure and in operation and use of emergency equipment carried in aircraft. This pilot had trouble in the dark locating the lock pin lanyard of the CO_2 bottle in the one-man raft and determining how to pull it. He had been previously instructed and checked in this procedure, both during training and after reporting to the squadron. . . . He was dangerously near exhaustion before he succeeded in inflating the raft. . . . The need for including blindfold practice in ditching instruction and checkouts is shown by this experience."

A report from another carrier contains information of interest to future dunkers concerning the use of dye at night: "The dye was invaluable in helping searchlight operators keep trained on the man in the water."

▶*Comment*—Dye will reflect light and, in the absence of more suitable night distress signal, can be particularly helpful to shipboard lookouts when a sea is running. Where an individual may be lost sight of between waves, some part of the dye will always be in sight to mark the spot.

This does not mean that dye should be used indiscriminately at night; only when there is a chance of it being seen. Due to the limited amount of dye carried, personnel are advised to conserve it until it will do the most good.

Are Your Wheels Locked?

A review of landing accidents in which wheels collapse shows that many of them occur because pilots either neglect to look at their electrical landing gear position indicators or do not understand how they operate.

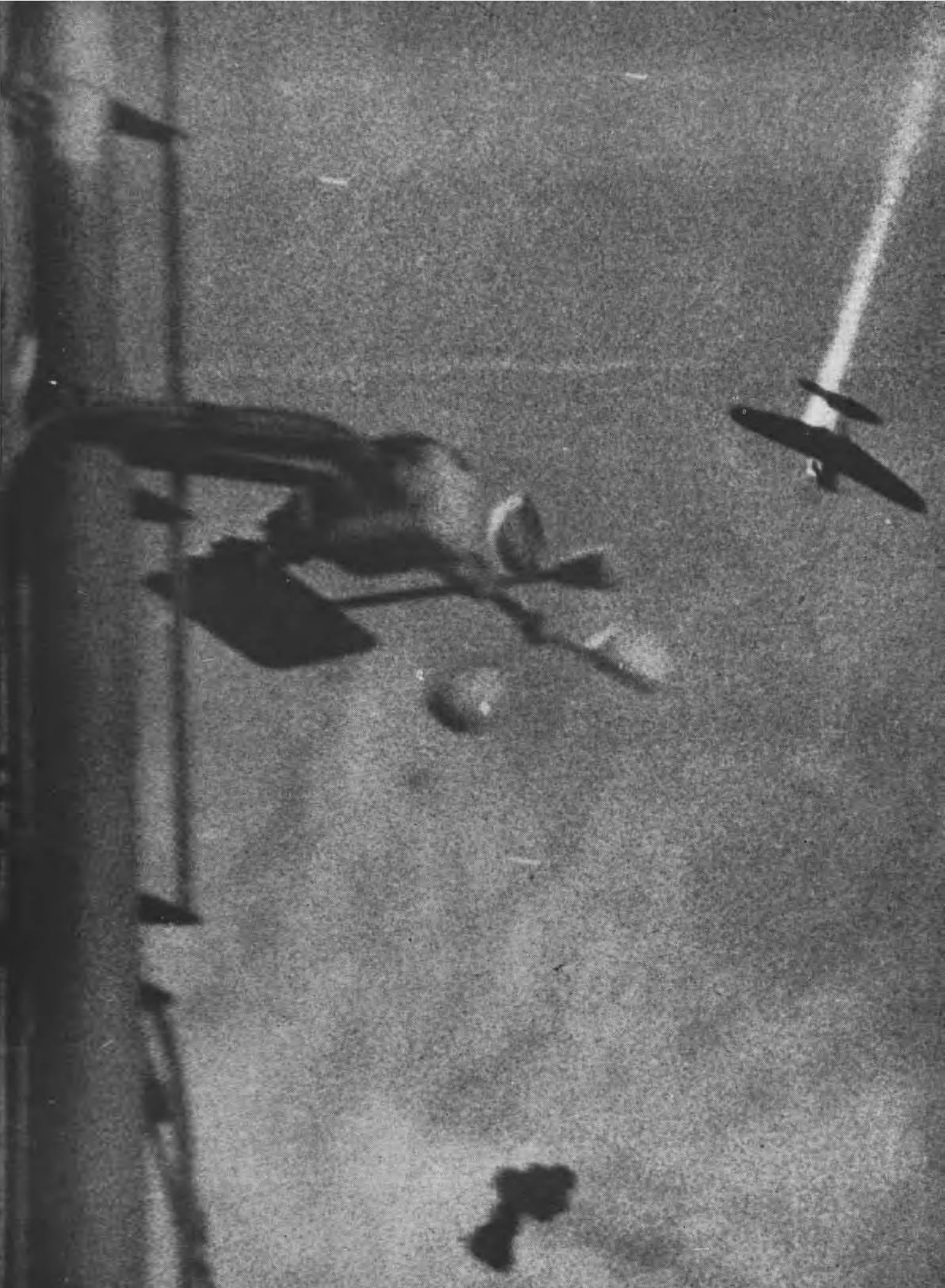
Grampaw Pettibone says:

Merely going through the motions of lowering your wheels isn't enough. You must *check* that they are down and locked.

If you have to make a belly landing, there's no need of doing it blind. You might as well look at your indicator and know about it in advance. Then too, if it shows your wheels are unlocked, a couple more tries or a shift to the emergency equipment might even lock the things.

An illustrated Technical Note No. 35-45 recently was issued to show how these indicators work. At least look at the pictures!

Accurate AA Fire *sent a sulcide-bent* Zeke 52 *down in flames off Okinawa. An alert Navy photographer framed the smoking* Kamikaze *in the rigging of his carrier. The Jap fighter fell wide of its target. Accurate and concentrated AA fire from Naval surface units took a major slice out of Japanese air power during the action around the Ryukus.*



Bewitched, Baffled and Bewildered

Unfortunately, movie cameras were not available to record a nightmare catapult shot which occurred at a CQT unit. Here is how it looked to the pilot:

"After everything was checked, I gave the go signal and was immediately shot off the catapult.

"Shortly after becoming airborne, the plane suddenly stopped and started *backwards*. Acceleration in reverse was very fast. I repassed the catapult crew and the other F6F's which were standing by. My wing finally struck the fire truck which spun me around and started me going nose first again, but still in the wrong direction. I finally rolled off the runway and stopped.

"I unstrapped my safety belt, turned off the switch and jumped out of the plane as fast as I possibly could. I ran away from it and waited a short while before returning to look it over."

Grampaw Pettibone says:

Don't laugh! If your plane defied Newton's laws of motion during take-off, you'd be baffled and bewildered too—particularly the first time.

This plane wasn't bewitched, however. All that happened was that the tail hook dropped down when the plane was catapulted and caught the tow cable. The tow cable was pulled out far enough to recock the catapult, which then fired the airplane in the reverse direction. Newton is still right!

It was estimated the plane gained a speed of approximately 55 knots while traveling backwards.

All on One Flight

Two combat-experienced pilots took off in torpedo planes on a cross-country familiarization flight in mountainous country under CFR clearance. All went well until 18 miles past their first contact point, when they ran into bad weather. Instead of turning back, they changed course and flew at a lower altitude on various headings until they finally found a CAA airport where a landing could be made. This field was 112 miles beyond their destination.

Ten minutes after landing, these fiends-for-punishment again were in the air, headed back through the same stuff. Once in it, they flew through incessant rain, a good part of the way at low altitude along a railroad track. Finally, with fuel getting low, they made forced landings in a cleared area. Fortunately, none of the personnel was injured although extensive damage to engines, propellers and fuselage of both of the planes occurred.

This flight is eloquent proof, if such is needed, that experience and proficiency in one type of flying don't necessarily make you an expert in any other type. Investigation by the local Aviation Safety Board showed that these aviators made the following errors on this one hectic flight:

1. Failed to check their airways transmitting frequency prior to take-off

2. No position reports with range stations were effected enroute

3. Violated CAA procedure while continuing to let down in the process of crossing airways under marginal weather conditions

4. Upon encountering instrument conditions, failed to return 18 miles to their first contact which they knew to be clear

5. Continued on into totally unfamiliar mountainous country under instrument conditions without clearance having been granted or communications established

6. Made no effort to obtain adequate weather information from teletype reports at the CAA airport

7. Also made no attempt to replenish their fuel supply at this field

8. Failed again to check their transmitters at this field

9. Failed to notify departure and destination points of any changes in flight plan

10. Used poor judgment in heading back into the same bad weather area they recently had traversed and failed to reverse course as the weather became progressively worse—this in violation of contact flight rules

11. Place they landed was 1½ miles from an airstrip which was clearly marked on their regional charts.

GRAMPAW'S SAFETY QUIZ

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

1. **On which side must you pass an overtaken airplane?**
2. **What is the prescribed visual signal for indicating your intention of making a forced landing when in company with other aircraft or in visual signal distance of a surface vessel?**
3. **To prevent faulty oil scavenging during prolonged dives, what propeller setting should be used?**
4. **What are ceiling and visibility minimums for flight in a control zone?**
5. **What publications contain the maneuvering restrictions of naval aircraft?**

(Answers on page 48)

Harness Works As Advertised

This is part of an F6F. The rest of it is scattered over a broad area.

It got this way when the pilot lost flying speed and spun in during a landing approach, following engine failure.

The accident report stated "the pilot appeared slightly dazed as he left the cockpit". Undoubtedly, the shoulder harness saved his life.

Grampaw Pettibone says:

With apologies to Oliver Cromwell, I recommend as the modern aviator's slogan:

"Put your trust in God; but keep your shoulder harness tight."

Dead-Stick Landing

While conducting a carburetion test in an SC-1, complete engine failure was experienced at 27,000 feet. This pilot was lucky for he was over an air field while he still had 10,000 feet altitude.

Not too lucky, however, for he had to make a 180-degree turn to enter the landing approach and, even though he had 2800 hours flight time, he was unable to judge his approach properly. He *undershot* and was forced to land in a rough field short of the runway. The airplane plowed through some small trees, crossed a ditch and then nosed over. The plane suffered strike damage, but the pilot was uninjured—because he had his shoulder harness secured.

The Accident Board attributed the pilot error in this dead-stick landing to two factors: *a.* lack of recent experience in forced landing procedure, and *b.* the necessity for making a 180-degree turn to enter the landing approach. The Board made the following pertinent comments concerning power-off landings:

"All pilots should bear in mind that a combination of rapid rate of descent and moderately strong winds, unless compensated, will invariably cause undershooting, particularly if a turn must be made which may double or triple the normal rate of descent.

"It is recommended that initial familiarization flights always include, in addition to stalls and other handling characteristics, power-off glides and turns simulating engine failure with and without wheels down—so that the pilot can note his instrument readings and know what to expect when he is faced with the real thing."

DID YOU KNOW?

ALNAV 161-45 on Flight Training

Reduces Applications From Officers

Requests for flight training from officers, other than U.S. Naval Academy graduates, classes 1944 and 1945, are not desired by BuPers until further notice, pending consideration of present large backlog of applications from Reserve officers. Further instructions will be issued later.

Applications from U.S. Naval Academy graduates, classes 1944 and 1945, should bear endorsement by medical examiner as to physical qualifications for flight training and give scores on aviation aptitude tests.

This information is contained in ALNAV 161 of July 16, 1945, which cancels ALNAV 63-45.

War Bond Sales Hit Peak Again

Military Allotments Increase in June

Going over the hundred-million-dollar mark for the second time in the history of the Navy War bond program, bond purchases for June totaled $110,517,669.75, bringing the cumulative total since the program was established to $1,307,204,512.50. The June total was outranked only by that of last December when $120,701,910 in bond purchases for that month set an all-time high.

Another new high was placed on the record books in June when the $46,959,056.25 total of allotment purchases by military personnel broke through all previous peaks. Other components of the June total were $45,394,719.75 in cash purchases (including a portion of the Independence Day campaign results), and $18,163,893.75 in civilian purchases under the payroll savings plan.

June showed a 113 percent increase over the total for the same month last year, while the $324,611,498.50 figure for the first six months of 1945 reflected a jump of 49 percent over the corresponding period in 1944.

Naval air stations with a combined efficiency index of 107.9 percent, and led by NAS CORPUS CHRISTI, were runners-up to the Navy yards for leadership in the payroll savings plan. For the entire naval establishment, 93.1 percent of the civilian personnel invested 10.9 percent of gross pay in bonds.

Effective allotments by uniformed personnel as of 30 June totaled 2,282,358, of which 1,892,927 were Navy, 291,000 Marine Corps, and 98,431 Coast Guard. Allotment purchases in June were $39,968,906.25 by Navy, $4,714,818.75 by Marine Corps, and $2,275,331.25 by Coast Guard.

BuShips Issues New Painting Rules

Air/Sea Rescue, Target Craft Affected

Copies of a BuShips letter giving specifications for standardized identification painting for air/sea rescue and bombing target boats, dated July 4, 1945, have been mailed to all naval aviation activities.

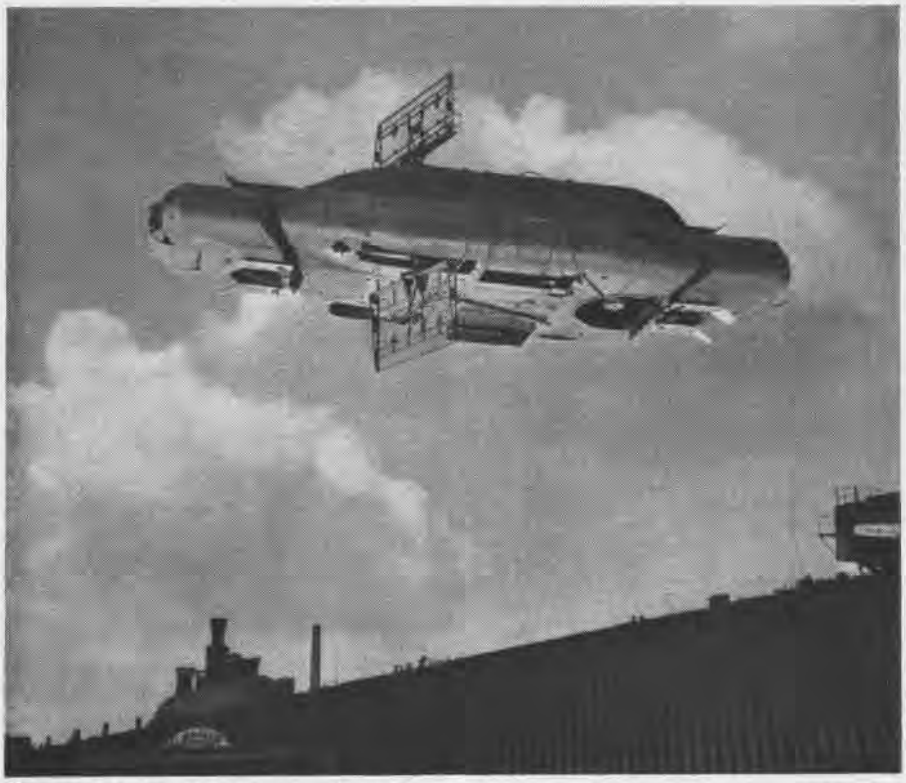
Purpose of specifications is to provide adequate means for spotting, identifying and particularly for differentiating between craft assigned to air/sea rescue duties and those in use as bombing targets. Applicable identification painting shall be considered mandatory for all boats in actual use as bombing targets and for all craft within the limits of the continental sea frontiers that are specifically assigned to air/sea rescue duties.

All air/sea rescue craft operating in other areas shall be painted at the discretion of force or area commander concerned with the standard painting design outlined in the general specifications or with an appropriate camouflage measure. No other craft shall be painted with any pattern that might be confused with air/sea rescue or bombing target boats.

The painting instructions conform with recommendations made by the Air/Sea Rescue Agency that identification painting of aircraft rescue boats for all services be standardized to improve efficiency.

The BuShips letter specifies that yellow striping paint be used for tops of all deckhouse and upper outboard portions of their bulkheads and attached coamings and bridge wings on air/sea rescue craft.

On bombing target boats ready-mixed international orange paint is specified for weather decks, hatch covers and other exterior appendages and items that may be seen clearly from the air.



What is it? *The latest jet-propelled liferaft? An armor-plated magic carpet with radar topside and below? It could even be mistaken for a plane fuselage viewed from above. Turn it upside-down. This puzzling photo, taken by Army Signal Corps at Bremen harbor, actually is a sunken submarine's conning tower projecting a few feet above water near the dock. Close inspection shows submarine's outline below the surface.*

Navy Hour Is Weekly Air Show

Navy, Marines, Coast Guard Take Part

The Navy Hour, a new weekly broadcast sponsored by National Broadcasting Company, now is on the air every Tuesday night from 9:00 to 9:30 EWT, spotlighting the Navy and its major task in the war against the Japs.

A dramatic spot in each program,

LT. TAYLOR, LT. (jg) KELLY ENACT SCRIPT

which emanates from Lisner Auditorium of George Washington University in Washington, D.C., is furnished by enlisted men of Navy, Marines or Coast Guard, who broadcast by a direct hook-up with one of the fighting ships at sea, making the public feel in close contact with the men as they are defeating the enemy.

The program was suggested by NBC, has SECNAV backing and is put on in cooperation with Navy's Office of Public Information. Famous Hollywood stars now in the Navy and other big names in radio, screen and stage are being cast in the program, which is dedicated primarily to enlisted men of Navy, Marine Corps and Coast Guard. Music is furnished by the 80-piece U.S. Navy symphony orchestra.

NavAer 2126 Reduces Red Tape

Publications Simplify Many Requests

A new form, NAVAER 2126, provides a convenient method of reporting to Chief, BUAER (Publications Branch) all requirements for aeronautical technical publications. This was an enclosure to Aviation Circular Letter 50-45 dated 9 June 1945—*Distribution of Aeronautical Technical Publications.*

Publications Branch urges all activities to keep BUAER advised regarding changes in aircraft and type of publications desired. An "o" marked on NAVAER 2126 form will cancel receipt of the publications that are not needed.

THE COVER. Fire fighting crews of U.S.S. *Bunker Hill* fought to bring fire and explosion under control after *Judy* hit among planes waiting to take off for strike

FLIGHT SAFETY

Don't Be a G Hog

It seems that in every squadron there are one or two pilots who atempt to exceed the limits of performance set down by design experts. None of these pilots is looking out for himself nor is he considering his fellow pilots. This is unfortunate because some innocent pilot is likely to suffer for the G Hog's stupidity. The G Hog will overstress structure of the plane during his flight with no visual material failure, but subsequent flights will find his conscientious squadron mate having a structural failure doing an authorized maneuver and not exceeding the G limits.

Speed and acceleration limits as well as permissible maneuvers have been carefully set by Technical Orders for each type airplane to permit operation of high speed aircraft within their safety limits. It must be realized that additional speed requires reduced G acceleration to prevent the plane from reaching dangerous limits where disintegration may occur. For example, an F4U in its normal loaded condition suf-

DILBERT DIVERSIONS ARE RISKY

fers a rapid loss of permissible accelerations with increases in the high speed range. If you increase speed from 340 knots to 410 knots below 10,000 feet, you reduce permissible Gs from seven to four. Similar limiting accelerations hold for any type plane.

Modern combat airplanes readily are maneuverable, control forces are light, and amount of stick motion necessary for control is small, particularly at high speeds. These factors, in addition to providing for good control, make it possible to impose severe loads that might result in overstressing structure of the airplane. This is particularly true when engaging in maneuvers involving high diving speeds if smooth control of the airplane is not exercised.

It boils down to this: you *may* overstress the structure of the plane by riding too hard on the controls even at limits of permissible maneuvers and speeds. So take it easy.

The following typical case histories are direct results of disobedience of existing Technical Orders on maximum permissible speeds and accelerations:

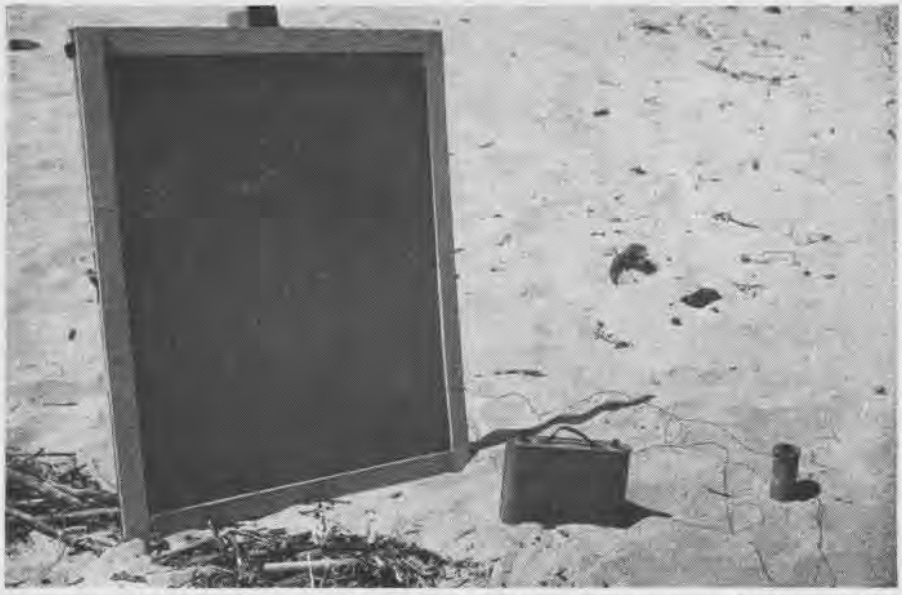
Case I. An F4U pilot commenced his first dive-bombing run from 10,000 feet. The dive was made at an angle of 50 to 60 degrees in a clean condition with wheels up and no external tank. A speed greater than 350 knots, confirmed by other pilots of the flight, was attained and a sharp pull-out was started at an altitude of 3000-5200 feet. During pull-out various parts were seen to separate from the plane. At this point the plane started a series of violent snap rolls and then entered a steep dive into the sea.

SHARP PULL-OUTS DO DAMAGE

The bomb spotter's statement as to difference in altitude from start of pull-out to attitude of plane at the time of separation of parts substantiates the accident board's opinion that this accident was caused by a high G pull out.

Case II. During rocket training an F6F pilot attempted to turn his plane on pull-out in order to see the results of his rocket run. This maneuver imposed severe loads on the plane due to high G pull-out and accompanying high speed turn, resulting in following structural damage: Right wing, fuselage and tail assembly severely buckled. This aircraft was flown back to base but was adjudged unstable for flight.

Case III. An F6F pilot was practicing permissible sharp pull-outs and vertical banks during simulated combat maneuvers. Upon return to base, pilot noticed a separation of flaps from the port wing. Further investigation found evidence of old damage to both wings which indicated that excessive loads had been imposed on this aircraft in previous flights. It might have collapsed.



WHEN STRAFING BULLET HITS COPPERSCREEN, GRENADE IGNITES AND STARTS SMOKING

CLOSE AERIAL SUPPORT

AIR GROUPS assigned to Pacific theaters get practice in close air support of ground troops under the training officer, Commander Air Support Control Units, Amphibious Forces, Pacific Fleet.

Live bombs and rockets are used on the various impact areas, and ground troops are used where available. Pilots are briefed according to standard doctrine, an air plan is prepared and complete report is made by the training officer on each exercise.

Planes report on station and are assigned missions by CASCU. Early fortifications on the islands help make training realistic. Concrete pillboxes were moved up from beaches and put in impact areas, and two dummy 12-inch mortars were set up as targets.

To simulate target marking by white phosphorus, a timing device firing an AN-M8 HC smoke grenade is used. The clock is a standard Navy Timer and Battery Box MK 3 and is placed inside a pillbox and can be reused indefinitely. The grenade's firing device is removed and an electric squib inserted. The clock is set to go off at a certain time and planes are called to strike. Smoke grenades are used to stimulate interest in strafing. A yard-square piece of plywood is covered with copper screening separated by insulating paper so that a bullet hit closes electric circuit and fires smoke grenade.

CLOCK SETS OFF SMOKE GRENADE, SIGNALING FOR PLANE STRIKE AT PLYWOOD TARGET

BEST ANSWERS

Bombs and Explosions

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

1. **Blast waves from the explosion of a large bomb travel in air at the rate of about—**

- ☐ *a*–100 ft. per second
- ☐ *b*–1000 ft. per second
- ☐ *c*–10,000 ft. per second
- ☐ *d*–100,000 ft. per second

2. **The duration of the initial pressure blast wave from a bomb explosion is about—**

- ☐ *a*–1/20 of a second
- ☐ *b*–1/200 of a second
- ☐ *c*–1/2000 of a second
- ☐ *d*–1/20,000 of a second

3. **Protection by a log, rock or stone wall would be insufficient to prevent serious injury or death if a man were closer to the explosion of a 12,000-lb. "block-buster" bomb than approximately—**

- ☐ *a*–50 yards
- ☐ *b*–200 yards
- ☐ *c*–800 yards
- ☐ *d*–2400 yards

4. **Aside from injuries caused by flying debris, fatal effects of a nearby bomb explosion are most likely to be the result of—**

- ☐ *a*–impact or pressure changes transmitted through the air
- ☐ *b*–shock effects transmitted through the ground.
- ☐ *c*–heat or other intense radiant energy generated by the explosion
- ☐ *d*–noise and vibration

5. **A large crater is most likely to be made by a bomb which—**

- ☐ *a*–explodes on contact
- ☐ *b*–has a delayed action fuze
- ☐ *c*–is designed for fragmentation
- ☐ *d*–detonates slowly

6. **In order to span the Atlantic from Berlin to New York with an effective explosive charge, a rocket bomb would have to weigh, initially, about—**

- ☐ *a*–6 tons
- ☐ *b*–80 tons
- ☐ *c*–2500 tons
- ☐ *d*–50,000 tons

7. **The maximum speed attained by a V-2 ("telegraph pole") bomb is in the order of—**

- ☐ *a*–450 ft. per second
- ☐ *b*–1500 ft. per second
- ☐ *c*–4500 ft. per second
- ☐ *d*–15,000 ft. per second

OPERATIONS IN COLD WEATHER

Flight operations in cold weather, such as this PV taxiing on an Aleutian airstrip, require special techniques and know-how. As Pacific war moves northward, it brings with it new problems to be solved by the aviation branch of Navy

Fleet Air Wing 4 ordnancemen load a torpedo in bomb bay of a Harpoon preparatory to aerial strikes against Japanese shipping

Aerology helps Navy meet cold weather problems. Radio sonde balloon is useful in charting weather conditions in the upper air

Navy Publications Tell How to Fight in Cold Areas

As the Pacific war moves northward out of the steaming tropics and temperate climate into colder areas, problems of aerology, survival and mechanical operation of naval aircraft are changed.

Attention to cold weather operations has not been as strong in recent months as it was when the Aleutian theater was more active. Naval Aviation News presents on these pages a listing of various bulletins, pamphlets and orders dealing with cold weather operations. This listing does not attempt to be a complete one of everything published by the Navy or Army on the subject, but details data which should be readily available aboard larger craft or can be obtained through regular channels.

Situated as they are off the east coast of Asia, the Japanese chain of islands has much the same climate as the eastern coastline of United States, ranging from frigid around the Kuriles to warm around the Ryukyu and Nanpo Shoto chains. Ships operating in these areas as cooler weather comes on will find their operational problems different from those encountered in such areas as the Marshalls and Philippines with their warmer climate.

Since much of Naval Aviation's experience in colder weather operations has been around the Aleutians, most of the printed material details conditions met in that area. Information obtained from those operations earlier in the war can prove valuable since weather and winter around much of Japan can be severe. As around the Aleutians, fogs and heavy weather are common—in fact, weather moves from west to east, thus giving the Japs advance notice about weather on the other side of the Pacific.

The fact that many publications and technical data cited in this article mention northern Pacific areas has no tactical significance. They are mentioned only because most of the cold weather operations information to date has been based on findings amassed earlier in the war when the Japs were in Alaska.

The publications here are merely a check list against which shipboard officers may check publications already on hand, in case their carrier might be cruising off the Japanese coast launching strikes under adverse weather conditions. Most of those listed already have been sent out to regular distribution lists but if not available may be obtained from BuAer's Publications Branch, using Form No. 140 in the back of the *BuAer Publications Index*.

For emergency distribution, requests may be taken care of at one of the following points: Aeronautical Publications Center, ComAir 7th Fleet (Logistics); ComAirPac or ComAirSubComForward. Continental activities can obtain them from Aeronautical Publications Centers at NAS Quonset Point, Norfolk, San Diego, Alameda, Seattle, Jacksonville and MCAS El Toro and Cherry Point. Some survival publications are available from BuMed or Air/Sea Rescue Agency, Washington, D. C. Joint Army and Navy Intelligence Studies (JANIS) are sent to all large craft and commands. Training films are distributed through numerous Central and Sub-Aviation Film Libraries listed in the *Screen News* section of each Naval Aviation News issue.

BuAer has many types of flight gear to issue aviation personnel operating in cold areas such as the medium weight leather jacket above and the complete winter flying suits below. The man on the right wears the winter shearling trousers and jacket and winter helmet while the pilot on the left wears an electrically-heated suit. Also available are gloves, gauntlets, helmets, coats and other gear to protect personnel in northern climes

Publications And Films On Cold Weather Operations

URVIV AL DATA:

Edible plants of Arctic Region, NAVMED 119, 1943, Bureau of Medicine & Surgery
Air/Sea Rescue Equipment Guide, NACCG 1171, by Coast Guard for Air/Sea Rescue Agency
How to Survive on Land and Sea, by CNO, Aviation Training Division, NAVAER 00-80S-56
Survival on Land and Sea (Jungle-Desert-Arctic), NAVAER 00-80R-9
Survival on Land and Sea, prepared by Smithsonian Institution for Navy, NAVAER 13-1-501
Manual for Aviation Equipment and Survival Officers, NAVAER 00-80V-36

SENSE PAMPHLETS:

Arctic Sense, Aleutian Sense

FLIGHT SAFETY BULLETINS:

Flight Safety Bulletin 10-44, Induction System Icing
Flight Safety Bulletin 12-44, Precautions regarding take-offs and use of flaps.

SHIP'S INSTALLATIONS BULLETINS:

Aircraft Carrier Cold Weather Operations, Oct. 23, 1943, Bulletin 1
Aircraft Carrier Cold Weather Operations, Pools of Special Equipment for Bulletin 7
Aircraft Carrier Cold Weather Operations, revision 2, Nov. 15, 1944, Bulletin 7

JANIS PUBLICATIONS:

Topographical studies (CONFIDENTIAL) of areas of primary interest in the Pacific, published jointly by the Army and Navy, are available to BB's, CA's, CL's, CV's, CB's, DESRONS and other large commands. Obtained through registered publications issuing office, clearing through communications officer. Joint Army and Navy Intelligence Studies.

PILOT'S HANDBOOKS:

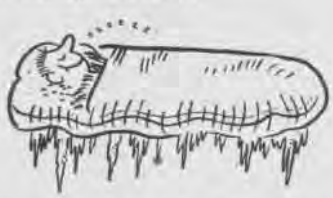
BD-2; F7F-1, -2N (information will be supplied when available); FM-2; FR-1 (information will be supplied when available); GK-1; JRC-1; OY-1; PBJ-1C, -1D; PBJ-1H; PBM-3D; PBM-5; R5C-1; R5D-1; SB2C-5; SNJ-4; TBY-2 (should be in reissue); TD3R-1.

TECHNICAL AIR INTELLIGENCE PAMPHLETS:

Bombing Paramushiru Through Overcast, OpNav 16-V-2170, Dec., 1944
Interview of Lt. J. L. Schon, USNR, OpNav 16-V-E121, June, 1944

TECHNICAL NOTES AND ORDERS:

Anti-freeze compounds, Alcohol, methyl—Mixture with water for injection in engines for war emergency power operation in cold climates—TN 70-44
Alcohol, Spec. AN-A-18—Mixture with water for injection in engines for war emergency power operations in cold climates—TN 70-44, TO 71-44
Alcohol, Spec. AN-O-A-391—Mixture with hydraulic fluid Spec. M-574, Grade II to prevent freezing—TO 109-44



De-icing fluids—Mixture of Specs. M-536, AN-F-13, and AN-A-18 fluids permissible—TO 64-44
De-icing fluids—Specifications AN-A-18, AN-F-13 and M-536, application to propellers, carburetors and glass and plastic windshields or against such use—TO 64-44
De-icing fluids—Use of chlorinated hydrocarbons in place of prescribed de-icing fluids prohibited—TN 36-44
De-icers, windshields—Procedure for using de-icer spray system for degreasing night-fighter windshields—TO 109-44
De-icing systems—Use of non-chlorinated solvents and rinsing with water and with dilute chromic acid recommended—TN 36-44
De-icing systems, corrosion—Use of chlorinated hydrocarbons prohibited as cause of corrosion—TN 36-44
Windshields, de-icing system—Fluids, Spec. AN-F-13 for glass windshields only and Spec. AN-A-18 for glass or plastic—TO 64-44
Windshields, de-icing system—Use of spray in degreasing night fighters and solvents to be used—TO 105-44
De-icing, wipers, electric—Operating instructions for Aerotorque wiper with reversible motor to prevent failure—TN 64-44

Windshields, fogging prevention—TN 53-44
Windshields, rain-repellent compounds—NRL repellent No. 199—Applications, and renewal—TN 89-44
Bomb-bay doors—Precautions for hydraulic system before engine starting—TN 80-42

Heaters, engine—electric—Operation, maintenance, photographs and diagrams of Colcinex heater—TN 55-42
Heaters, portable—Herman Nelson—Heaters to be used on carriers until York heater available—TN 62-43
Heaters, portable—Operation, starting, maintenance, photographs and sketches of engine and shelter heater—TN 83-42
Heaters, portable—York 50-H heaters, operating instructions, TN 2-44
Heaters, oil-immersion—Operation, maintenance and various types for specified airplanes—TN 65-42
Hydraulic fluids—Addition of alcohol to hydraulic fluid to be used in emergency to prevent freezing; and hydraulic fluids for cold-weather operations—TO 109-44
Hydraulic fluids—Identification—TN 84-43
Hydraulic hose—Marking and identification—TN 84-43
Hydraulic oils—Precautions to warm up before take-off—TN 80-42
Hydraulic packings—Leather V rings suitable—TO 94-43
Hydraulic packings—Marking and identification—TN 84-43
Hydraulic systems—Operating precautions before take-off and in flight—TN 80-42
Hydraulic units—Marking and identification—TN 84-43
Icing—Airplane structures and carburetors—Icing forms and conditions—TN 33-43.
Icing—Wings—Effects on wing-tip stalling—TN 17-34

OPERATION of fighting naval aircraft in cold weather involves problems different from those met in the warmer climates where most of the Pacific war has been fought thus far. Data which the Navy was able to amass from air operations in the Aleutians will be valuable as the war moves northward and colder weather begins. Many publications and films have been issued on the subject of how to make aircraft operate best in cold conditions and how to survive if forced down in frigid areas or wintertime. Most of these are already available aboard ship, but may be obtained through regular Navy channels—BUAER Publications Branch in Washington or Aeronautical Publications Centers in forward areas and continental United States. Many technical notes and orders are available to facilitate upkeep and maintenance of planes in cold weather areas.

Carbon-dioxide cylinders—Precautions in storage—TO 57-37
Carbon-dioxide cylinders—Water elimination to prevent freezing, and support rack for supply cylinders—TN 12-44
Carburetors—Choke position for specified low temperatures in starting Eclipse NEP-1A and NEP-2 auxiliary power units—TN 34-41
Icing—Conditions and precautions in flight—TN 33-43
Icing—Hazards in operation of airplanes with certain filters—TO 74-42
Icing—Prevention by use of alternate air compared with use of alcohol injection or preheat—TN 36-41
Control systems—Lubricants required, and simulated landing at safe altitude necessary to determine satisfactory operation—TO 118-43
Engines, cowling covers—Design and use with engine pre-heaters—TN 1-44
Engines, draining intervals, lubricating-oil—Continued operation with oil-in temperatures below minimum requiring change periodically to prevent accumulation of water—TO 129-44
Engines, oil dilution systems—Operation and precautions—TO 4-43
Engines, starting, cold weather—Oil pressure-gage protecting valve installation—TN 35-42
Flaps—Precautions for hydraulic system before engine starting—See Technical Note No. 80-42.

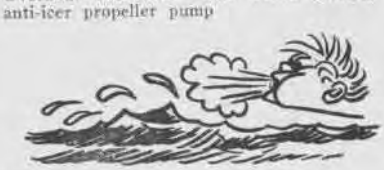
Lubricants—Specification, grades, specification superseded, British equivalent, intended applications and remarks—TN 32-45
Lubricants—Low temperature, Bearings, Bomb-bay doors, control systems, fuel tank release, landing flap screws, Gear mechanisms—TN 50-43 and TN 64-43.
Maintenance, shelter heaters—Herman Nelson—Operation, starting, maintenance—TN 83-42
Oil-dilution system—operation and precautions—TO 4-43
Oil-pressure gages—Drilling and filling with transformer oil—TN 43-36
Oil-pressure gages—Protecting valve—Installation of valve and interval for filling gage—TN 35-42
Oxygen equipment—Socks, electrically-heated—Use in cold weather operations over canister and breathing tube—TO 32-44
Power units, auxiliary—Starting instructions for Eclipse NEP-1A and NEP-2 power units at specified low temperatures, and carburetor choke positions, and test results—TN 34-41
Shock absorber, hydraulic—Marking and identification—TN 84-43; Precautions, TN 80-42.
War emergency power operation—TN 70-44 and TO 71-44
Wing icing—Wing-tip stalling effects—TN 17-37

AEROLOGY PUBLICATIONS:

Climatic Atlas for Alaska. Report # 444. NavAer 50-1R-5
Information on Weather Conditions in the Aleutian Islands and Adjacent Waters. NavAer 50-1R-29
Climate ad Weather of S.E. Asia, India, Burma and South China. AAF manual. NavAer 50-1R-36
Climate and Weather of S.E. Asia, Further India and Netherlands East Indies. NavAer 50-1R-37
Climate and Weather of Central East Asia Including the Japanese Islands. AAF NavAer 50-1R-47
The Climate of Japan. NavAer 50-1R-60
Climate of East India Islands and Southeast Asia. NavAer 50-1R-61
Weather Conditions Affecting Incendiary Bombing of Japan (CONF.). NavAer 50-1R-77
Climate and Weather of the Asiatic Portion of the Union of Soviet Socialist Republics and of its Air Approaches, AAF manual. NavAer 50-1R-86
Typhoons and Depressions Originating in the near east of the Philippines. NavAer 50-1R-136
Typhoons Originating in the China Sea. NavAer 50-1R-137
A Climatic Summary of the Caroline Islands (CONF.). NavAer 50-1T-4
Weather and Climate of Tsushima Island and Surrounding Strait (CONF.). NavAer 50-1T-8
Weather and Climate of Formosa (CONF.). NavAer 50-1T-9
A Climatic Summary of Korea (CONF.). NavAer 50-1T-18
Climate and Weather—Taiwan Area. AAF Report. (CONF.). NavAer 50-1T-19
Climate and Weather, Celebes Sea Area. (CONF.). NavAer 50-1T-23
Weather Notes for Pilots, Aleutian Islands, Sept.-Dec. By FairWing Four (CONF.). NavAer 50-20T-1
Truk, Ponape and Caroline Islands. NavAer 50-15R-1
Jaluit, Marshall Islands. NavAer 50-15R-3
Batavia, Java. NavAer 50-15R-12
Penang Island, Straits Settlements, NavAer 50-14R-13
Eastern Java and Bali. NavAer 50-15R-15
Shana, Kurile Islands. NavAer 50-15R-17
Formosa. NavAer 50-15R-18
Hokkaido, Southwest Part. NavAer 50-15R-19
Hakkaido, South Central Coast. NavAer 50-15R-20
Hokkaido, Eastern Coast. NavAer 50-15R-21
Climate and Weather for Flight in Naval Operational Zones. NavAer 00-80U-20

MISCELLANEOUS:

ACL 83-44—Night vision training
CL 2-38—Night Vision
CL 11-41—Flight equipment to be worn by pilots
TN 89-44—Rain Repellent
TN 26-40—Tactical Use of Clouds
ACL 20-45, De-icer boots, policy regarding installation and centralized recondition or repair
ACL 27-44—Aerology, Destructive Storms, Information Relative to
Air. Acc. Bull-21-44—Anti-icing system, modification of Revision #1
Air. Acc. Bull. 12-45—Anti-icing pumps, conversion of
PP Acc. Bull. 7-44—Loaded hydraulic pumps, winterization of
NavAer 03-10EA-501—Operation, Service and Overhaul Instruction with Parts Catalog for anti-icer propeller pump



TRAINING FILMS:

SN-144—*Cold Weather Starting*
MA-2627—*Land and Live in the Arctic*
SA-5990—*Cold Weather Photography*
SC-1231—*Development of the De-icer*
MN-119A—*Aerology, Ice Formation on Aircraft*
MN-119B—*Aerology, Fog*
MA-4802—*All Weather Flight Methods*
MA-3819—*Personal Health in Snow and Extreme Cold*

Operation, checking and servicing of de-icers and heating systems on all types of Navy planes are available in film strips which are included in the maintenance kits, *Servicing Naval Aircraft.*

COLD ALTERS CHARACTERISTICS OF ROCKETS, SUCH AS THESE FIRED ON JAPS IN KURILES

COLD WEATHER CREATES NEW FLIGHT PROBLEMS, WHETHER CARRIER OR LAND BASED

TYPHOONS SUCH AS HAVE HIT FLEET OFF JAPAN CREATE ANOTHER WEATHER PROBLEM

TOKYO TALKS

—To the United States

Raids by carrier-borne planes have followed several days of repeated attack by B-29's and P-51's and indicate that something is stirring. The general impression here is that the Americans will commence their landing operation on the Japanese mainland very soon. The only point of doubt is, where? Judging from the fact that the Americans are intensifying their attacks, and also that the Japanese papers are filled with reports giving detailed accounts of possible landings, one might obtain the impression that the Japanese people are getting jittery. Nothing could be further from the truth, however, and there is not only determination but confidence among the Japanese people.

—To Japan and Empire

The food distribution is by no means satisfactory and the insufficiency of rice this year has made things more difficult than ever. Although this is due to unavoidable circumstances, it is extremely regrettable that the situation has come to such a pass. To overcome present difficulties, farmers are asked for greater efforts to increase food production. At the same time, consumers are asked to be prepared to withstand even greater hardships than hitherto.

—To Japan

People say "I can't do anything when I'm hungry," but since the idea is to plant something—anything—and eat that, we should be able to get along all right if we get used to it. We have also a request to make to the farmers. Just because you grow rice yourself, please don't eat it at all meals but pass it around to people working in airplane factories and other essential industries. Increased production of food is right now our most important business, so we would like to have the farmers market even a little more rice than hitherto.

—To the United States

The veteran journalist Tokutomi has branded the Suzuki Cabinet as failing to reflect the personal courage of the Premier and wasting much precious time in idle deliberations. He stigmatized their movements as "irreparably inactive" and counter to the expectations of the people at a time when the Empire is being confronted by its most serious crisis. Tokutomi also severely criticized the Japanese government for not telling the people the truth about military setbacks in the Pacific since the Americans invaded Guadalcanal.

—To the United States and Australia

There are many indications that the enemy is planning a landing attempt on Car Nicobar island. Information has been received that the enemy recently laid buoys in waters adjacent to the Car Nicobar group, and later more than 200 carrier planes from a British task force bombed Sabang, a small island off the northern tip of Sumatra. Enemy agents who were landed on Tanahmasa island recently have been eliminated by Japanese troops.

—To Japan

It is apparent that the enemy needs to acquire operational air bases closer to Japan. Closer attention should therefore be paid to the enemy's offensive operations with his carrier task force. He knows that he cannot hope to attack our air-bases effectively with land-based planes from Iwo Jima and Okinawa, due to limitation of cruising range. Hence he hopes to obtain his objective by making a sustained attack with carrier-borne planes.

—To Japan

It is fully apparent that the enemy is stressing the importance of driving forward from the air and from the sea for bases in an attempt to cut off Shonan [Singapore] and Malaya. Simultaneously, completion of the huge enemy bases uniting the line from Okinawa to Luzon, Mindoro Island, Palawan Island and to the north coast of Borneo, means that the Japanese homeland will be more than ever isolated from the south. Also, it can be clearly seen that with the completion of enemy bases on Okinawa, the velocity of the enemy operation in Borneo has a direct bearing on the coming operations against our homeland.

—To Australia

There has never been a quarrel between Australia and Japan, and there is no axe to grind. Japan and Australia are in a position to work together economically. Before the war, Japan procured her wool from Australia, and Australia imported numerous manufactured goods from Japan. The most cordial relationship and goodwill prevailed between the two countries, and although they have been fighting at cross purposes lately, Japan wants the friendship and goodwill of Australia.

—To the United States

The authorities are planning evacuation of native non-combatants from Shonan [Singapore] in order to "clear the decks for action." Reports from British and American sources to the effect that we have undertaken a mass pull-out from the southern regions is an absurd attempt to distort the truth. If the enemy naively believes in this wishful thinking, a rude shock awaits him should he attempt to storm Shonan island.

—To Japan

The most significant feature of the enemy's campaign against Borneo is the concentration of attacks against oil-producing areas. This fact clearly indicates that the enemy is frantically seeking to remove the bottleneck in transportation of fuel by capturing oil fields in Borneo.

—To the United States

People are not disturbed by the destruction caused by enemy air raids. The number of victims runs to a huge figure, but despite the severe damage the people are cheerful and show little concern. They seem to be trying to suppress the rise of resentment against indiscriminate enemy attacks.

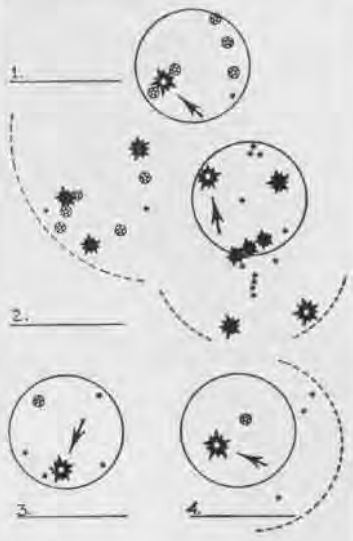
—To the United States

It cannot be denied that the enemy achieved the objective of seizing strategically important bases on Okinawa, costly as the price was. While the experiences of the battle of Okinawa increased our confidence in final victory, they also gave the enemy a lesson which is bound to prove valuable in future operations against the Japanese forces. To be frank, we must admit losses as losses and blows as blows and then muster up our courage and strength to find a way to overcome the present crisis.

—To Japan

The enemy task force, which suffered a 50 percent loss in carrier strength in the battle of Okinawa, appears to have regained its normal strength. A total of 800 carrier aircraft recently raided the Kanto district, attacking airfields and cities. It is clear that this latest enemy attempt is aimed at reduction of our air power in this area, and in view of the situation known so far, the enemy appears to have mobilized not only carriers repaired from damages received since the sea battle of the Philippines, but a few newly-commissioned carriers as well, to fight against Japan.

SHOW ME THE WAY TO GO HOME



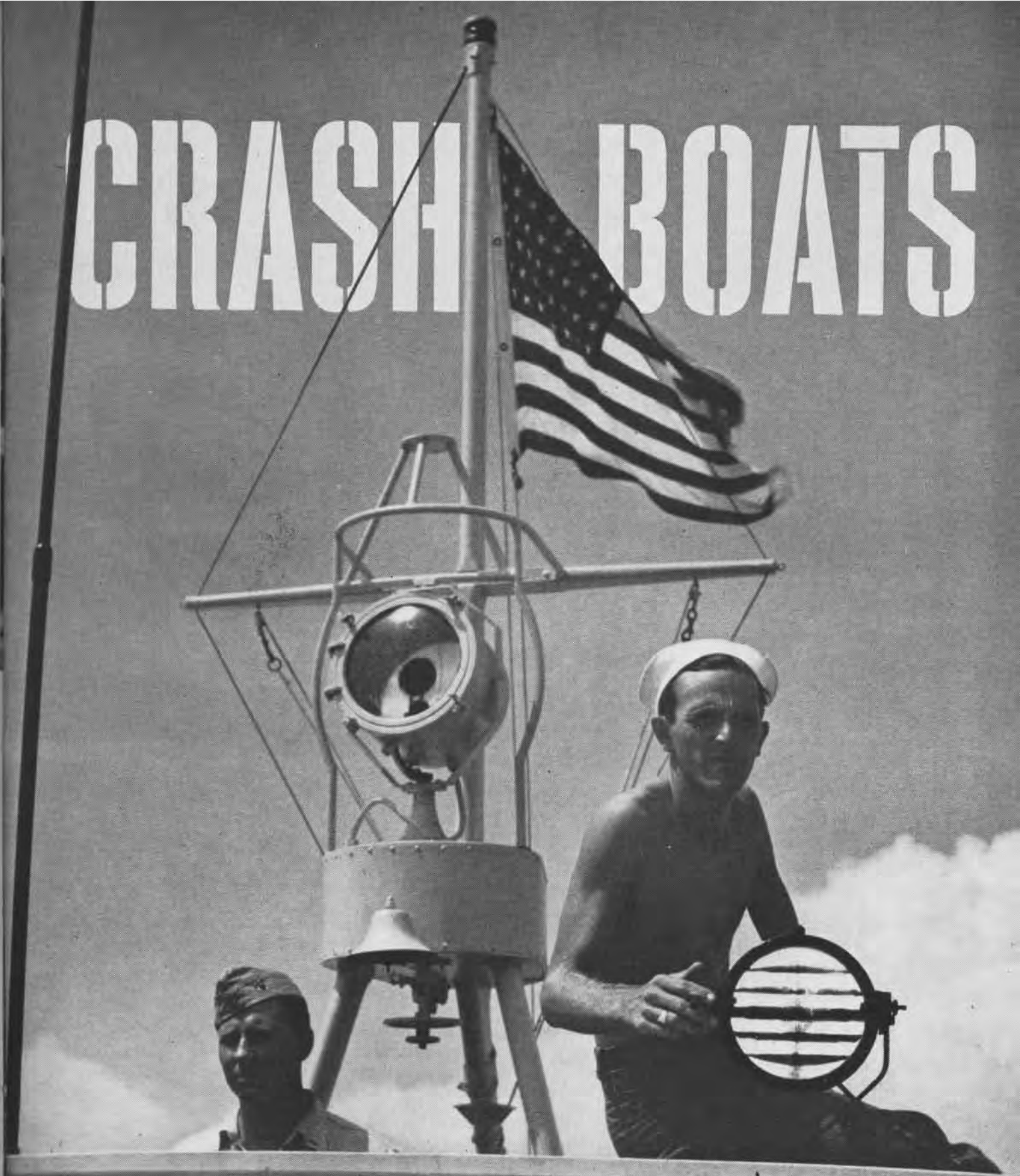
Star Identification

How good are you in star identification?

Each circle represents the field of the MARK V or Bausch and Lomb Sextant, 12° of the sky. The stars are drawn to scale, both as to position and to brightness, the scales of magnitudes being the same as on the Almanac star chart. The stars shown in the field of the sextant are enough to identify the star indicated. Stars are shown outside the field where necessary for positive identification.

(Answers on page 48)

CRASH BOATS



Japs Are Feeling the Sting of Hundreds of Pilots and Aircrewmen Saved from Water Crashes by Busy Fleet of Crash Boats and Dumbo Planes Operating Under Network Perfected by Air/Sea Rescue Agency

FAST 63-FOOT CRASH BOAT PUTS TOW LINE ABOARD PBY; SKIPPERS AND CREWS OF BOATS ARE PROUD OF THEIR RESCUE RECORD

CRASH BOATS

"Thank God for You Fellows!" Is What Rescued Pilots and Aircrewmen Say When Pulled From Sea

HUNDREDS of fighter and bomber pilots are flying against the Japs today because of fast action by Navy, Coast Guard and Marine Corps crash boat crews in rescuing them after water crashes while in training.

These rescue craft, which usually operate from a boat facility near an air station, range all the way from big sea-going 104-footers to "weasels" or "swamp gliders" designed to navigate swamplands and marshes.

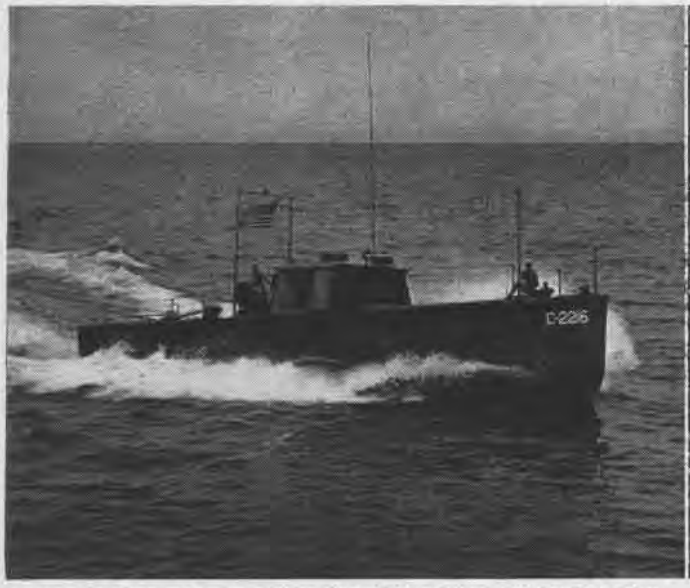
Under the well-organized air/sea rescue program now in operation in the Atlantic, Pacific, Gulf and other flight areas, these boats cooperate with *Dumbo* planes to save lives. A network of radio and telephonic communications links rescue agencies at key points up and down the coasts. As soon as a pilot shouts "Mayday!" in his radio, monitor stations relay the call to all nearby rescue points. Soon a fleet of crash boats and planes is converging on the spot where he went down.

Crews of these crash boats, most of them specially trained, perform a little-publicized but highly-important job patrolling coastal waters where pilots in training fly. In war zones, they frequently go in as soon as an airstrip is launching planes.

Theirs is a job filled with monotony, but when the emergency comes and they make a rescue, the pilot's gratitude is repayment for the hours of watchful waiting on station. Men who have been pulled out of the water by crash boats almost invariably say, "Thank God for you fellows!" The task can be exciting, often hazardous and usually under pressing conditions when a crash occurs. Minutes may mean a life and speed is important.

ELEVEN MEN AND TWO OFFICERS MAN THIS 104-FOOT CRASH BOAT

SLEEK 63-FOOT CRAFT WILL MAKE 33 KNOTS GOING TO A CRASH



ARMOR-PLATED TARGET CRAFT OFTEN IS CALLED TO RESCUE MEN

CATERPILLAR TREADS PROPEL WEASEL THROUGH SWAMPY AREA

CRASH boat crews have to know not only how to operate their craft but how to pull survivors out of the water or wreckage and to perform first aid.

The Navy relies on two main types of crash boats for its rescue work offshore—the 104-foot boat with twin 1350-hp Packard engines and the fast 63-foot craft with 630-hp Hall-Scott engines. They will go about 20 and 33 knots respectively and carry 11 men and two officers on the big ones and six men and one officer on the 63-footers.

While these two carry the load in the open ocean, the Navy also has smaller craft for inshore and other patrol work, including a 45-footer with four men for a crew; "retrievers" with two or three men, and target boats. The latter have armor-plate topside and are used in dive-bomber and bomber training. They cruise off shore on the gunnery areas. Planes make runs, dropping small dummy bombs. Because of their proximity to operations, they frequently act as rescue craft.

Life aboard these target craft can be nerve-wracking. One Marine skipper got his radio instructions wrong and failed to close the armored doors and hatches. Planes screamed down and dropped bombs with light charges that burst on the deck, showering the boat with shell fragments. The pilot's luck was phenomenal, however, and he was unhurt.

Two other types of rescue craft are especially designed for operations in swampy areas where boats or land vehicles cannot run. These are the "swamp gliders" and weasels." The former are shallow-draft boats powered by airplane propellers. "Weasels" are amphibious craft propelled by tractor treads.

Not all rescue operations involve pleasant results, however, since some pilots and crewmen do not survive the crashes. The task of recovering their planes and bodies usually falls to the larger 104′ crash boats or the *Mary Ann's*, those lumbering barge-like craft with cranes which can lift many tons. Deep sea divers can operate off them.

THE BIG YSD salvage boats go out as soon as possible after a crash to pull a plane out of the water before corrosion begins. They take divers with shallow or deep water gear to assist in raising the plane and recovering any bodies. If the plane is taken out of water before too many hours, many parts can be salvaged. Another reason for recovering it is to determine if possible the cause of the crash so that future ones can be averted. Often a plane is little damaged.

AIR / SEA RESCUE

Network of Crash Boats and Planes Patrol Off Coast, Linked by Radio, to Pick Up Survivors

DESPITE the thousands of planes that fly daily in all parts of the world, the number of sea crashes is comparatively small. Rescues usually are made from five to 40 miles offshore, since most gunnery, dive-bombing and bombing practice usually is done close to the coastline. Rescue boats are spotted at strategic places along the coast.

Crash boat crews are on call for long hours of duty. Their days may run from 0630 to 2000 for three days, then three days on-shore duty. Sometimes they may be on a search 48 to 72 hours without rest or at sea a week. Men have to be good sailors to take the rough seas and weather pounding their small craft hour after hour. Lying-to involves many hours of boredom with little to do but polish brass, fight off seasickness or read. But they have to be ready to go—and fast—at a moment's notice.

A typical example of how successful air/sea rescue units are in saving U.S. and Allied Nations pilots' lives can be seen in a few figures. Off the Jacksonville area 184 pilots and crewmen were saved between March 1942 and June 1945. Forty-two planes were salvaged and 11 seaplanes towed in. One West Coast sector pulled 192 men out of the water in a period of 16 months while another saved 99 in 14 months. A total of 452 were saved in a 12-month period in the Eastern sea frontier. Those men are flying and fighting again, thanks to the crash boats and *Dumbo* planes or blimps. Rescues naturally depend on flight density—more occur where the most flying is done.

In earlier days of the war, the system of rescuing pilots was uncoordinated and haphazard, each station attempting to take care of its own problems. Air/sea rescue networks were set up with Navy, Coast Guard, Marines and Army all cooperating.

Life jackets and other safety equipment were inadequate for the task in early days. Because a man floating in a Mae West is hard to see, smoke grenades later were attached, dye marker and whistles added—all to help the pilot and aircrewmen attract attention of mates anxiously trying to find them. Today, aviation survival and equipment officers aid in seeing that pilots go out with their gear in proper order, ready for an emergency landing which no one expects but which occasionally happens.

AIR/SEA rescue agencies report many interesting stories of rescues made. Holder of the unofficial title of "Most Fortunate Man" is an F6F pilot who flew his plane into a lake at night. A *Dumbo* plane and swamp glider crew went to hunt for him. A boat crewman dived underwater and found only the plane, its cockpit enclosure closed and the pilot's chute in it.

Later that night, the pilot was found wandering four miles from the lake. He had been thrown completely through the canopy when the plane hit the water and was uninjured. He could not remember anything about crashing, nor how he got out of his plane, or even remember walking four miles.

The Mayport, Fla., task unit had three crashes reported within four minutes, with 11 persons involved. Only five crash boats were available at that time, so a PT boat undergoing repairs at the base was pressed into service. One time a plane was located in the sea. A PBY trying to rescue the fliers broke its hull on the rough water. Crash boats then had to save twelve persons from the two planes.

1 Pilot shouts 'Mayday' in microphone, tells his plane position at that time

4 Crew of 63-foot ready boat leap aboard, cast off lines and prepare to begin the hunt at sea

7 Boat crewmen haul the pilot up on the craft's boarding ladder, he needs aid

2 Air/sea rescue monitors receive call for help, locate it on map, relay call

3 Almost as soon as plane hits water rescuers are converging on the scene to pick up downed survivors

5 Crash boat wastes little time in pulling away from dock side, seconds count

6 Accurate data radioed by pilot are great help in finding fliers down at sea

8 Crash boat crew must know first aid in addition to its various other duties

9 Mary Ann's powerful crane hauls up many ditched planes from ocean floor

STUDENT OFFICERS ON TRAINING CRASH BOAT PRACTICE DOCKING AT HURRICANE HARBOR IN PALM-STUDDED ISLE OFF FLORIDA

TRAINING

Skippers of Crash Boats Have to Master Wide Variety of Skills; Get Training at NTC Miami

TRAINING of officers and men to handle crash boats has tapered off, but a small number of officers, graduates of midshipman school, is turned out monthly at NAVAL TRAINING CENTER, MIAMI. They get further training at Port Everglades or San Pedro.

Included in the three-week course given officers at Miami is everything from gunnery to communications, marine engines, navigation and recognition. Crash boats do not now carry machine guns, except in advanced Pacific areas. One crash boat in the Pacific shot down three Japs.

One week of the training at Miami is spent in engineering school and the other two aboard a training crash boat. Under guidance of experienced officers, they learn to swing ship, pilot, use the lead line, navigate, conduct searches, anchor, refuel, keep records, fight fires and dock their boats. Crewmen assigned to crash boats usually are experienced men from larger craft.

All crash boats are not yet equipped with latest search and rescue communications gear, such as IFF, automatic direction finders or VHF, although authorized for the two larger-sized craft. Installation will further facilitate rescue operations since boats then can work more closely to trace down calls for help from planes. In rescue headquarters ashore, half a dozen radiomen stand watches with headphones, listening in on various distress frequencies for crash reports. These include the international distress frequency, 500 kilocycles; the U.S. Emergency one on 8280 KCS, and the 3000 KCS U.S. rescue scene of action frequency. Pilots about to crash also may call for help on their regularly-assigned station frequency or VHF, so all likely channels have to be listened on at all times at key rescue unit points.

An indication of the importance the Navy places on its crash boat program is seen in the fact it has more than 300 of the 63-footers and 50 of the larger crash boats engaged in that type of duty, not to mention hundreds of the smaller craft. Blimps and planes swell the number.

RESCUE authorities estimate about 95 percent of actual pickups of survivors are made by crash boats. The main reason for this is that the P-boats cannot land on rough water and take-off with safety. Their role usually is to conduct the aerial search and orbit overhead until the crash boat arrives to pull the men out of the water. At all times they are in direct radio communication with the boats and the base directing the search, for swift interchange of information. In war zones, destroyers, subs and *Dumbos* play a large part in rescue activities, but there also are many smaller crash boats cruising offshore around islands with air bases. They are too small to go with the fast task forces.

CRASH BOAT CREWS ARE SKILLED IN MANY TASKS

Marines at Cherry Point operate their own crash boats; here mechanics tear down and repair an engine from their rescue craft

Near native huts constructed for filming movie at Hurricane Harbor in Florida, students from NTC MIAMI practice boat handling

Rigging an anchor and heaving it in are tasks done by student officers, even though their crewmen later on will do the work

Skipper of Marine crash boat keeps sharp lookout for plane as his helmsman watches the compass; seamanship must be mastered

Deep-sea diver on *Mary Ann* gets his helmet preparatory to descending to find a sunken aircraft and preparing to salvage it

Four radiomen stand watch in monitoring room at Mayport rescue unit, each listening in on different emergency radio frequency

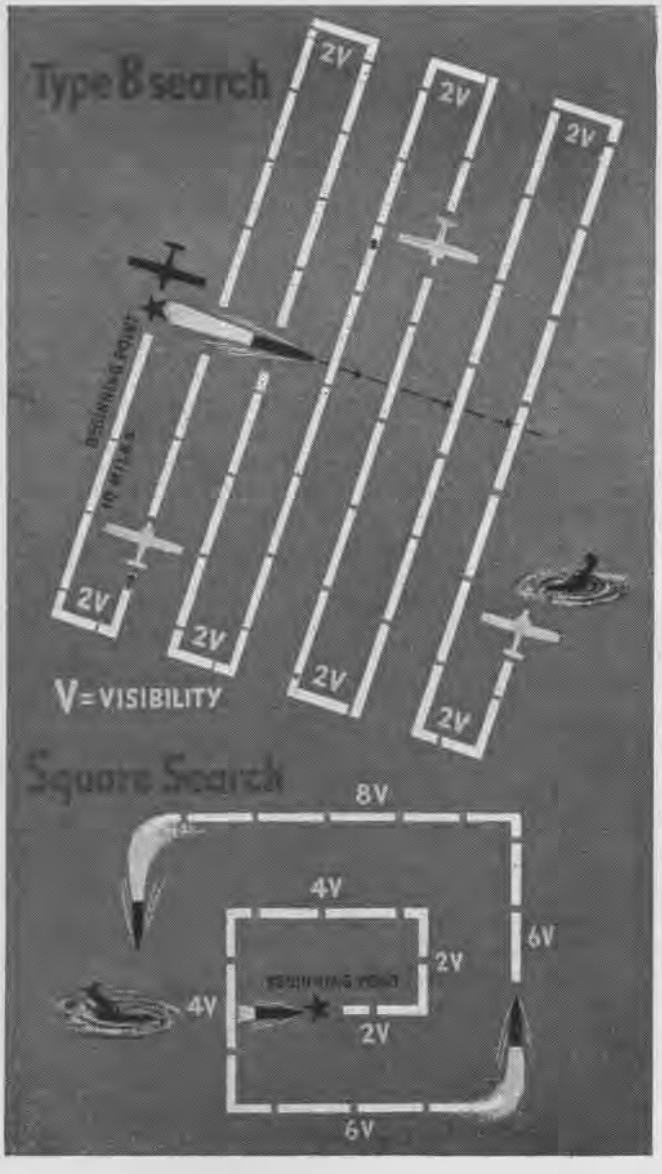
SEARCH

Scientific Search Plans Enable Many Rescues To Be Made; Hunt May Yield Extra 'Dividends'

ON RECEIVING a report of a crash, the rescue task unit commander immediately dispatches a boat and *Dumbo* plane to the reported area where the plane went down. A smart pilot, if he has time, will turn on his emergency IFF, send his position, plane type and intentions. If searchers can fix his location, rescue is comparatively simple. If the crash or survivor is not immediately located, a localized search is started.

Two general types of search usually are undertaken in this event—the square, used for planes and men in the water or life raft low in the water; and the parallel, used for a disabled plane on the surface. A variation of the latter, called TYPE B, has a plane flying the parallel pattern, as illustrated in the chart, and a boat going along the straight line.

In the square search, the boat begins an expanding search with legs of the square equal to twice the limit of visibility. This will vary with weather but should not exceed 500 yards. Legs of the parallel search are usually 10 miles wide with distance between equal to twice the visibility.



Sometimes sea searches bring more results than expected. A big Army bomber was reported by a blimp to have crashed about 100 miles offshore. While the crash boat was on the way out, it picked up the pilot and crewman from an SBD that had ditched nearby. When they reached the floating bomber, the SBD pilot went aboard and collected valuable data from its instrument panel. No crew members were found. A tanker rescued a single survivor 11 days later.

Another rescue, involving a big Army cargo plane, closely paralleled that. This plane was down 300 miles offshore. A week later a P-boat sighted it with two rafts nearby. Crash boats were dispatched. On the way out, a lookout on one of the boats heard a shout. Searchlights were turned on and the crew of an SNB, which no one knew was missing, was saved. The boats proceeded out and also rescued the Army men. One search for an SB2C pilot down 100 miles off Jacksonville extended over seven days, with up to 125 aircraft and four crash boats carrying out the search.

Towing a seaplane in the open ocean is not an easy task, but one unit made a long-distance job of a PBY that was down 60 miles out. The nine-man crew of the plane stayed aboard, but, because of gasoline leaks inside, could not start their engines. The crash boat towed the plane 60 miles in 16 hours. Because most of the tow was at night and the task a precarious one, boat crewmen stood by lines to the plane all night with an ax and butcher knife to sever them if the tow became balky.

NOT ALL rescue jobs take a long time, however. There was one *Corsair* fighter pilot who bailed out of his plane after radioing his position. A nearby 104′ crash boat arrived while the pilot was floating down in his chute and rescued him as soon as he hit the water.

Another speedy rescue was made in a river a few hundred yards from a boat facility. A plane hit the water just after take-off. A 24′ personnel boat rushed to the spot, buoyed the plane's location and rescued the pilot, who walked off the wing without even getting wet. Eight minutes after he hit the water he was back on the airstrip.

One British sub-lieutenant developed engine trouble over the Atlantic but had enough altitude so that he was directed by the boat control officer via radio to a landing alongside a nearby crash boat. He was rescued after ditching, hardly getting wet.

Probably the oddest rescue story is that of a fighter pilot who crashed into some trees, cracking the trunk of one but not breaking it. Unhurt, the pilot climbed out of his plane and sat down on a nearby log to await arrival of the crash party. While he was sitting there, the tree broke off and fell on him, injuring him slightly.

Crash boats spend many long hours searching the oceans for pilots and their aircrewmen. Often their searches are futile because the pilot was unable to give sufficient information on his position so the boats can locate the spot.

ONE CRASH boat skipper and his crew earned the undying gratitude of the mother of a *Liberator* crewman who was killed in a crash offshore. Because she felt so badly about his being lost at sea and his body not recovered, she came to the boat facility near the area. A crash boat took her out to the spot in the ocean.

A chaplain accompanied them on the trip and said a prayer for the son while the crash boat cruised over the place where he died. The ceremonies helped assuage the mother's grief and she returned home, her mind at rest.

[SEE MOTION PICTURE, MG-4327, "AIR/SEA RESCUE," AT FILM LIBRARY]

All crash boat duty is not under tropical sun, as this picture of a Coast Guard boat indicates. Crewmen hack off heavy coat of ice which accumulates quickly on cruises in colder climates

Speedy Navy crash boat churns up waters of bayou near New Orleans, searching for downed flier. Boat pilots must take care not to throw up too big a wake and damage property along banks

PIX QUIZ What do you know about CHARTING YOUR COURSE?

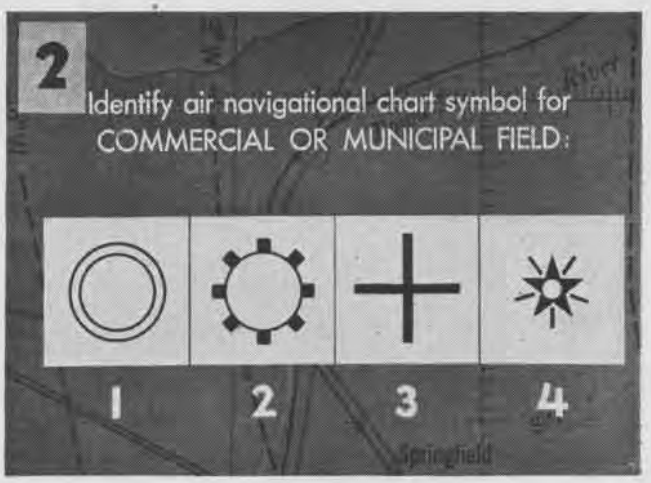
Write your answers here

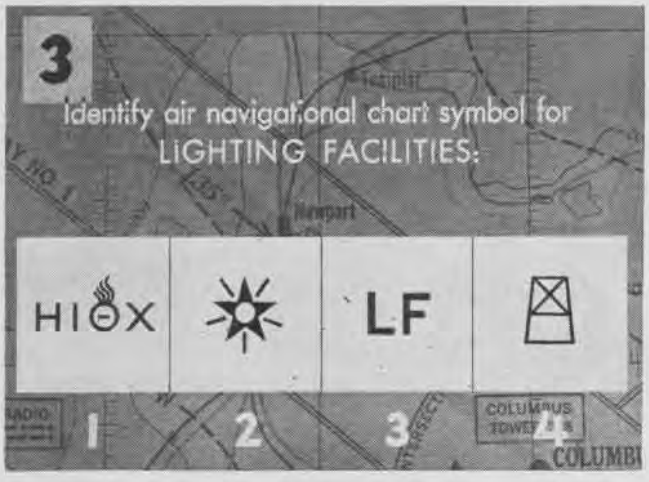
1. ..... 3. ..... 5. .....

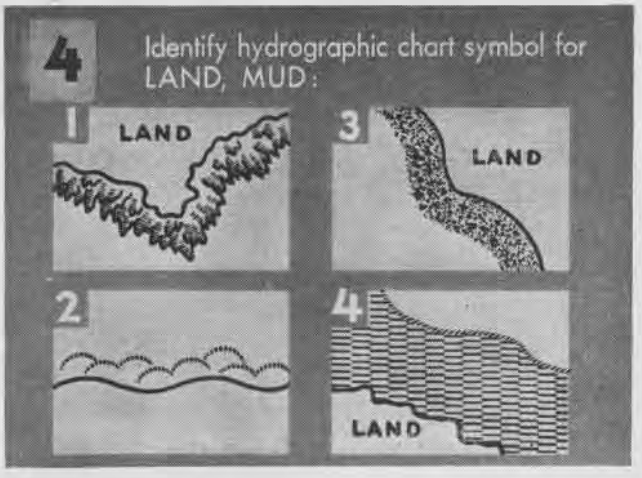
2. ..... 4. ..... 6. .....

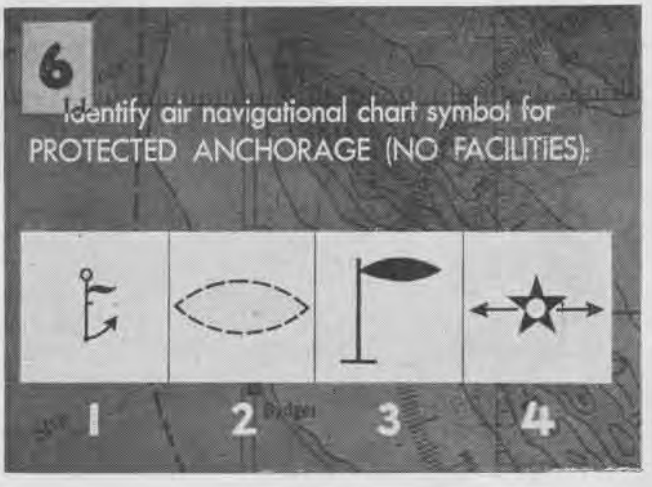
NOT EVERY one in naval service has to know the ins and outs of navigation. But those who must know *must know*, and there can be no questions about it. Whether you are a navigator or not, you'll probably enjoy this quiz. See the correct answers on page 48.

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









SHORE STATIONS

▶MCAS CHERRY POINT—The very pleasing aroma wafting from a WR's cigarette does not indicate that she is smoking a special or expensive brand. By error, a lady Leatherneck poured half a bottle of her most "stinking" perfume into a lighter before realizing that it was not lighter fluid. Needless to say, her erroneous act has developed into a fashion for other Women Reserves.

▶MCAS EL TORO—Most people agree that having a picture taken is more painful to the subject than it is to the photographer, but the tables have been turned. A photographer set out to shoot some bees and got shot himself.

For more than a year a swarm of bees made their home between the walls of the photo lab. The swarm kept increasing and someone had to move. Needless to say, the bees were "it".

They didn't like the idea even a little bit, and as their combs were being moved into a box, they went on a rampage. The photographer grabbed his camera and the bees descended on him. Now the bees have all the room they want.

▶NAS HONOLULU—A yeoman on this base had acquired such a large collection of pictures of WAVES, WACS and civilian FEMS that he found himself slowly going broke trying to buy frames so he could bring out the finer points in his art collection. To solve his problem he decided to go into the picture frame business for himself. He is now taking orders from 1700 to 1900 each day.

▶MCAD MIRAMAR—According to a combat veteran, accommodations in the Pacific include the "Flyspeck Hotel," so named because it is located on an island that is a mere dot in the middle of nothing.

Transient pilots are the guests, and accommodations include tents in which cots are reserved for them. What the hotel lacks in modern conveniences is made up by the geniality of the captain (manager). His trusty "desk clerks" require every new transient to sign the hotel register.

▶NAS OAKLAND—Wielding a bottle of champagne and muttering a prayer, the commanding officer recently launched a new journalistic ship, *The Oak Log*.

"Dedicated to the men who serve Uncle Sam here at NAS OAKLAND," the skipper announced. And *The Log* slipped unsteadily into the bubbling waters of Navy life.

"Navigation of our new 'ship' will be up to the enlisted personnel based at this station," the skipper went on. "There have been many requests for a station newspaper and here it is. Take her away; she's yours! Full speed ahead, and damn the torpedoes!"

▶NPFS ATHENS—A junior grade lieutenant, training officer won top cash prize of $20 in the station's annual victory garden contest that was judged by a professor of the University of Georgia's College of Agriculture.

Second prize of $15 went to a SP (S); while the third prize of $10 went to a navigation instructor. A fourth prize of $5 was given the labor engineering officer.

The agriculture professor said the garden that won first prize was one of the best he had seen in this part of Georgia and was remarkable considering the unusual lack of rainfall.

▶NAS PEARL HARBOR—It may prove a bit difficult for a SP(A) of the Athletic Department to keep a previous engagement even though his reputation as a Pawtucket, R. I. defense warden is at stake.

Now in the Navy a year, this SP(A) received a delayed notification by his home town civilian defense council to be on the ball during VE-DAY. The letter follows:

Dear Sir: In event of VE-Day, please report to Fire Headquarters, Roosevelt Avenue. You will be assigned to various sections of the city to patrol and protect Fire Boxes, and assist in maintaining order in the city of Pawtucket. Thanking you for your protection, I remain,

Very truly yours,

James F. McCaffrey.

"I don't think I can make it this war," the SP(A) remarked a bit sadly.

▶MCAS CHERRY POINT—Aviation Transport Division, carriers of the Wing's many tons of express freight between Cherry Point and outlying fields, put in more than 2,000 hours a month carrying everything from ice cream mix to airplane wings.

ATD pilots have performed mercy errands flying emergency cases to hospitals; dropped paratroopers in mock attack problems; flown navigational hops for students; transported generals and privates, as well as entertainers, to Marine bases.

▶NAS HONOLULU—While a sailor was talking to a civilian outside the gedunk factory recently, the idea that a crowd was gathering subconsciously dawned on him. Looking behind him, he discovered that he had become the head of a long line waiting for something. What that something was, will never be known.

"It's a perfect example of what habit can do to a man," the sailor said as he suddenly made himself scarce.

▶NAAS FALLON—What is probably the only amateur flying club for naval personnel exists at this station.

This flying club, dubbed "The Navy Sagehoppers," was first conceived in the mind of a seaman, who in October 1944 asked an ensign, CASU Educational Officer, for organizational aid, and by the end of that month, 37 members had joined up. The club now has about 100 officers and men, many of whom have soloed.

By thus banding together, they have succeeded in getting reduced rates for their flying time. Using the *Taylorcrafts* of a local school of aeronautics, club members ride dual or solo for reduced prices.

▶NAS ANACOSTIA—When boy meets horse, the results are not always too happy, as an ARM1C stationed here can readily testify.

The sailor meet his four-footed Waterloo at Aiken, N. C., where he had flown as a transport radioman. Aiken is well known

as a health resort and is particularly noted for its beautiful trails.

The bluejacket decided to make good use of his few hours lay-over by exploring these trails. Enter the horse. The meeting was not love at first sight, and the fugitive from the surrey with the fringe on top greeted our hero with a kick to his port appendage.

Results: a trip to Bethesda and an oversized cast. The sailor is recuperating nicely, and as soon as the cast is removed from his leg, he will take a seven-day leave. It is safe to say that this flying sailor will not go horse-back riding.

▶NAS BUNKER HILL—A novel campaign was *Bunker Hill's* tie-in with the announcement of damage to the carrier U.S.S. *Bunker Hill*. The day the news was made public the War Bond Officer designated the campaign "Get the *Bunker Hill* Back into the Fight," and posters were made featuring newspaper clippings of the action. Photographs of personnel buying bonds for their namesake were made, and stories on the novel campaign made newspapers throughout the Middle West. Over $40,000 worth of extra bonds were sold, a goodly portion sparked by naval tie-in.

Marine OY observation plane flies low over ruined Naha, Okinawa's main city, helping to direct U.S. attack on Jap defenders

Unarmed OY's present easy target to enemy antiaircraft and small arms fire; Marine ground crew gasses up for another flight

During early hours of an invasion, support air observer plane flies off carrier decks. Later they operate from bases on land

SUPPORT AIR OBSERVER

IN PRESENT-day amphibious operations, four different types of aerial observers are used, each for a specific purpose. There are Support Air Observers, Artillery Spotters, Naval Gunfire Spotters (though usually specially-trained pilots do this job), and Hydrographic Observers.

All Marine Corps officers flying as observers, regardless of type, are ground officers who, for compensation purposes, are designated as "aerial tactical and gunnery observers," entitling them to $60 a month additional compensation and flight gear. They are not authorized to wear any type of wings.

Support Air Observers (SAO) are Army and Marine officers trained in technique and tactics of ground warfare. Generally, their function is to patrol at minimum altitudes, the objective area, from D-day until the objective is secured. They report on enemy activity, the terrain, progress of friendly ground forces, likely targets.

The SAO makes all his reports over the SAO radio net to the Commander Support Aircraft (CSA). As the SAO reports, his information is simultaneously available to all commands monitoring the SAO net and, through CSA, any and all these commands may request missions of the SAO.

In an amphibious operation, the SAO may be employed prior to D-day for any appropriate mission which might include such jobs as to verify terrain information or data found in aerial photos, to locate suitable targets for immediate air strikes, or for naval gunfire or eventual artillery targets. A third task might be to accompany and assist the air coordinator.

At one time, a prior to D-day mission for the SAO was to determine condition of surf, reefs and beaches, including, if possible, presence of obstacles on beaches and reefs, and the physical consistency of the beach. Now the job is done by Hydrographic Observers.

Pilot and observer in Stinson plane keep contact with ground forces, giving them full information on how invasion is going

Marine spotter plane over Okinawa battlefield sends in reports on enemy troops, artillery, defense installations and dumps

How our own troops are doing on Iwo beachhead, location of ships and direction of movement are reported on by the observer

Locations of Jap defense installations, such as these 8" naval guns on Tarawa, are reported by SAO plane flying cruising overhead

WHILE airborne and on station during an amphibious operation, the SAO is a first-hand, on-the-scene source of information to give flash reports on: *1.* Progress of landing craft to the beach. *2.* Landing of LVT's, armored vehicles and supplies. *3.* Friendly troops, such as progress of troops inland, front line locations, direction of movement, locations where flame throwers are used. *4.* Any type of enemy activity—location of anti-boat guns, artillery, amphibious reserves capable of counterattacks, bivouacs, observation posts, mechanized forces, massed troops, defensive installations, dumps. *5.* Results and effects of naval gunfire and artillery. *6.* Shipping, friendly and enemy. *7.* Damage to landing craft. *8.* Condition of landing beaches, flow of traffic. *9.* Results and effect of Close Air Support.

Often the CSA requests weather reports of the SAO for a specific area to determine feasibility of putting an air strike into the area. The SAO often is used to contact friendly patrols or check camouflage and camouflage discipline of friendly troops. They may direct artillery or naval gunfire.

At present there is no standard training for Support Air Observers. Their training is a responsibility of the Division or Corps to which attached. This training includes such things as a refresher course in infantry and amphibious tactics, recognition, review of Jap tactics, radio procedure and communications, familiarization with all types of air observation planes, particularly the TBM, refresher map and aerial photography interpretation, spotting gunfire, communications and training exercises in recognizing weapons, troop numbers, calibers of weapons.

He has to know weather and hydrography sufficient to describe weather conditions in an area, also the Marine Corps tables of organization—what every type of unit has in the way of men, material and weapons.

Other training includes camouflage, theory and practice of air observation, check-out in life raft and survival, use of parachutes, terrain studies and aerial gunnery. The little OY planes afford the SAO little protection from enemy gunfire or attacking planes. In earlier phases of an invasion they operate from carriers, later moving to land bases.

PHOTOGRAPHY IN THE NAVY HAS MADE TREMENDOUS STRIDES SINCE W. L. RICHARDSON BLAZED TRAIL BEFORE WORLD WAR I

NAVY CAMERAMAN No. 1

First pictures of U.S. naval vessels and aircraft in action were taken by a young unrated sailor with a box camera, Walter L. Richardson, who now is regarded as the father of naval photography. In 1914 Richardson's efforts provoked only mild interest as those of an ambitious amateur, but in 1915 he was rated a machinist's mate second class, and combined his duties of servicing airplane engines with taking photographs with a newspaper camera reinforced against the wind with cigar-box slabs.

At Pensacola he attracted the attention of his superior officers and finally was named official station photographer. This was the first time in the history of the Navy such a designation had been made. Success of his efforts with crude equipment led to development in 1916 of a more complex but efficient telescopic aerial camera, strictly hand-held and first of its kind produced in the United States.

By this time, the value of aerial photography as a weapon of war was becoming apparent, and the Navy decided to promote it as an official activity.

Plans were made for establishment of a photographic laboratory at Pensacola, and Richardson was sent to the new Army school of photography in Washington. Here he prepared himself for a major role in operation of the Navy's first photographic lab.

By 1918 Richardson had been commissioned, and he returned to Pensacola to give impetus to the organization which today controls such vital military functions as aerial mapping and the making of all training films. In 1922 Lieutenant Richardson was placed on inactive duty as an officer and reinstated in the Navy as a civilian with the designation Senior Scientist.

The passing of Walter Richardson in June 1945 recalled to many the pioneering days of naval aerial photography which inspired development of equipment vital to the Navy in World War II.

SEAPLANE FIRST AID

WHEN a seaplane loses a wing float and the wing is caught in the water, the plane often capsizes and sinks. This happens because the rescue crew is unable to put sufficient weight on the up-wing to force it down, or the plane is in such a position that wind on the up-wing forces it still higher.

This is a description of a simple method developed by two chief boatswain's mates at Saipan for handling a seaplane with a sunken wing. The boat best fitted for the operation is the standard Navy rearming boat equipped with a two-fold block and tackle secured to the forward lifting pad eye in the boat. The running end of the tackle is hooked into a padded wire strap long enough to take a complete round turn about a wing tip (*Method*).

When the emergency crew is notified that a plane has a broken wing float, it proceeds at once to the scene with a rearming boat, equipped as described. The boat approaches the plane from the stern (*step 1*). When under the good or up-wing, a heaving line is passed to a man on the wing who secures the strap. When this is secured and eyes evened up, the hook on the running end of the tackle is hooked through the eyes.

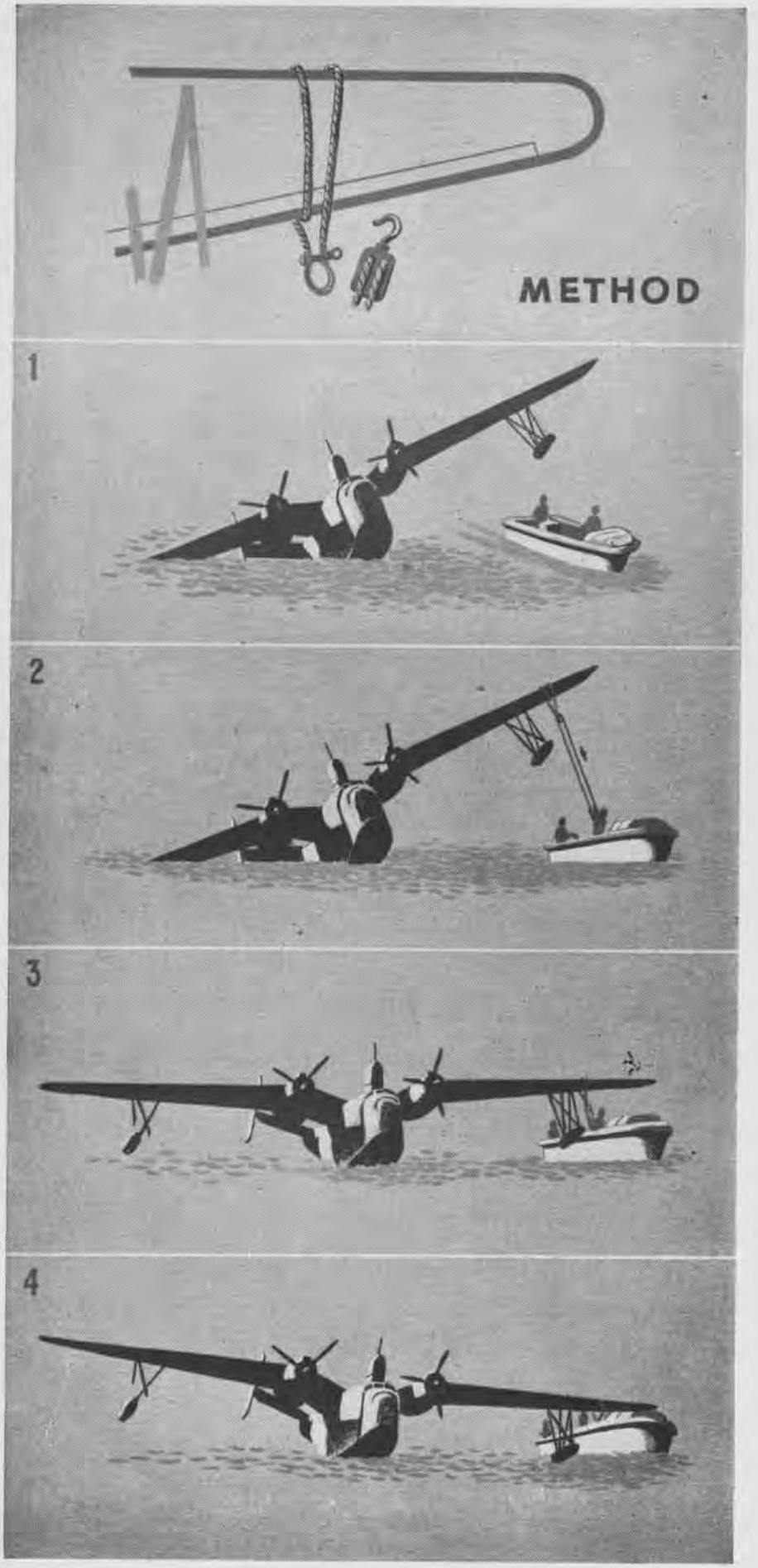
During the first part of the operation, the coxswain of the boat keeps enough way on to keep under the wing, if plane is in tow. When tackle is secured to the strap the crew in the boat heaves in and takes a steady strain (*step 2*). It is best to have the hauling part of the line around a cleat to hold the gear taut.

IT MAY be possible to heave down the wing with the tackle, but usually the best practice is to let the motion of the boat exert the strain, the crew taking in slack as it comes in the line.

When the wing starts to level with ease, the boat coxswain shears out, allowing the sound float to land in the water. The boat crew puts adequate fenders between boat and float and secures boat alongside the float (*step 3*). Now plane may be towed on even keel.

In the event that both wing floats are damaged, procedure is the same, except that before proceeding to ramp or tender, the wing tip of the up-wing is heaved down and lashed to the forward part of rearming boat (*step 4*).

[DEVELOPED BY S. L. WHIPPLE, CBM, AND H. JORGENSEN, CBM]



EXCERPT FROM AN ACTION REPORT: "The firing at a friendly plane was unfortunate but the *Zero* target angle and glide-approach made by the SB2C made it difficult to distinguish it from an *Oscar, Jill* or *Zeke,* and it maintained a definitely hostile attitude of approach. The excessive delay in some guns ceasing fire on order was due to the noise of planes on the flight deck turning up engines, in addition to the noise of gun fire."

HIT'S anoother instunce uv whar a hoss-tile approoch ment the kneecessity fer openin fire on a "frendly" airkraft which wuz a-doin "unfrendly" things. We mite komint that onct a big ship starts a-shootin, hit's not ezy to stop the flow uv hot lead instuntly atter the missteak has bin diskivered. One ship in makin an unfrendly approoch sturs up a helluva storm uv hot lead that starts a-comin at ye and which ginnerally keeps on a-comin until ye find yerself in the drink.

EXCERPT FROM A FLEET REPORT: "On the night of 14-15 December the first VFN to reach A—— saw several lights on the strip. The pilot blinked his running lights and the Jap obligingly turned on more lights, at which the VFN promptly strafed the field and produced the desired effect, complete blackout."

EF I REMEMBER rightly, we had this same thing to happen to us back in the roarin twenties. I's a-haulin a jolt-wagon load of herbs to Greenupsburg to wet men's parched gullets. I had 24 milk cans that helt five gallon a-piece and a few extra jugs. I had 'em kivered with a load of fodder. First thing I knowed three men rode down the rutty road on mules a-givin me the right signal with flashlights.

Then Cousin Millard give 'em our signal and soon as they'd rid up beside us and thar mules started a-pickin fodder offen our wagon I saw we'd been tricked. They were revenooers. We wuz arrested and our good herbs poured in the river. Possum, who's jist a strip of a boy then, got down on his knees to drink our herbs from the gutter as they's a-flowin into the river. They arrested him fer a-drinkin in a dry season. This is whut I'd call i-dent-i-fication in reverse. Hit's all right when ye're out to git the en'my. I'm a-tellin ye hit's shore bad when it happens to you.

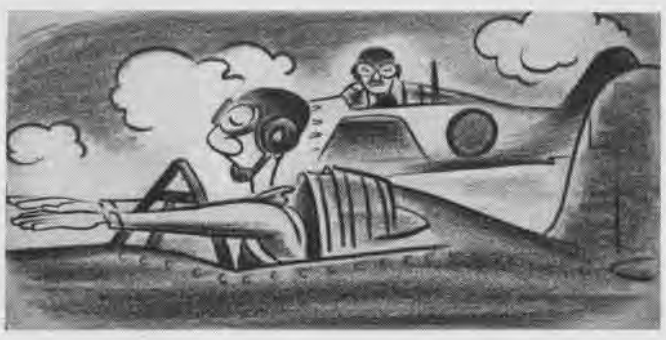
ACTION REPORT: "Two F6F's orbiting over the water two miles north of Zambi-Misaki saw a plane being taken under AA fire by surface vessels. Diving down to 700 feet altitude to investigate, the plane under fire turned out to be a F4U. To show the friendly surface forces that they were firing on a friendly plane they flew wing on the F4U. Both planes were also taken under AA fire and crossing Zambi-Misaki towards Yontan Airfield, ground forces took the planes under AA fire. The F4U is not believed to have been hit, but both planes from this ship were damaged, one landing and ground looping on Yontan, the other made a crash landing near the Katena Airfield. The plane landing on Yontan was subsequently repaired and returned to the ship. The plane which crash-landed at Katena was a total loss. The pilot suffered lacerations on the forehead, a splinter in one eye and shrapnel in the right thigh. After a period of convalescence the pilot was returned to the ship."

THIS AXION report almost constitoots a komedie uv errors if hit wuzn't fer the fack that one pilot wuz wounded, one F6F wuz lost and anoother dammaged. The "Good Samaritan" ack which the two F6F's tried to akomplish wuz foiled by bad reck-og-nishion 'r wuz hit becaze the three planes flyin in formashion looked menancing? Mebbe the gun krues wuz purty trigger happie that day becaze of enmy attack. Enyway good reck-og-nishion wood surtainly have saved the day.

Not a-knowin yer frend can be even more tragick than not a-knowin yer en'my.

ACTION REPORT: "At 1135 a *Zeke* approached one of our own destroyers undetected until the plane was only 3500 yards away at an altitude of about 1500 ft. The *Zeke* made a shallow dive on the destroyer, dropping a bomb estimated to be about the size of a 100 pound GP. . . .It fell approximately 50 yards off the starboard quarter without exploding. The enemy plane passed directly overhead in making his attack, pulling out at about 200 feet over the ship. The *Zeke* was smoking as it disappeared into a cloud and was later shot down by one of our F4Us. The failure to observe the *Zeke* sooner was attributed to the fact that the *Zeke* was trailing about 100 yards behind and between two friendly F4U's, a position where he would be secure."

WE WOOD reazonably expect distroyer lookouts to no thar reck-og-nishion at least well enuf to tell a *Zeke* frum a *Corsair.* We wood also expect that the F4U pilots surtainly wood be able to tell the difference betwixt a Jap and thar own planes, particularly when flyin formashion. Reazonable assomptions granted, hit follars that perhaps both the pilots 'nd the ship wuz not quite on thar toes. You may no yer own reck-og-nishion, be a whizzie-dizzie at hit in fact, but it don't make no nevermind if you're sleepridin' and a-havin sweet dreams o' sum purty gal.



SIGHTING TINY BLACK SPECKS ON WATER, PBM SWOOPS LOW TO PARACHUTE LIFE RAFT AND SURVIVAL GEAR TO MEN IN WATER

SIX AIRMEN IN WATER WASTE NO TIME IN SWIMMING TO FLOATING PACKAGE CONTAINING RAFT, FOOD, WATER, FIRST AID KIT

SAVED BY A SUBMARINE

OPERATING almost within sight of the Japanese shoreline, a Navy *Mariner* teamed up with a submarine to rescue American airmen downed at sea. The Navy exerts every effort and throws every resource into its rescue operations. This PBM, and others like it, based at a former Jap seaplane station, take off regularly to scour the ocean for survivors. Where necessary, seaplanes make the rescue. Usually the rescue plane drops a life raft, provisions and signalling equipment to these pilots and aircrewmen and directs surface vessel or submarine to pick up drifting survivors.

DIRECTED TO SURVIVORS BY THE PBM, A SUB SURFACES AND TAKES AIRMEN ABOARD

20 EYES SHOULD SEE THIS COPY OF NAVAL AVIATION NEWS

FIGURING at the rate of two eyes per head—serving in billets ashore or at sea—that makes 10 officers and men whose peepers should light on the pages of this single copy of Naval Aviation News. ▸▸ So if there's something you'd like to mull over in the magazine, but can't now, why not route it on, then catch it further along on its itinerary? In that way, Naval Aviation News will reach ALL its readers . . . and sooner!

IT'S OUT... GET IT AROUND!

TECHNICALLY SPEAKING

Serving Board Is Time Saver

NAS SAN DIEGO—By means of an air and electrical serving-board stand developed at this activity through the Navy employees' suggestion program, servicing of both compressed air and electrical current in areas where aircraft is being repaired, is simplified greatly.

The wood stand includes six 110-volt single-phase receptacles, one 220-volt, three-phase female receptacle, one 220-volt male receptacle and four Hanson connections with necessary pipe fittings. Two Hanson connections are at the rear of panel and do not show in the picture.

This fixture can be made up for permanent installation, or it can be used as a portable unit, with casters installed on the legs. The stand has reduced the number of connections and fittings needed by a substantial amount. It has made these services available where and when needed more quickly and at less cost.

FIXTURE CAN BE PORTABLE OR PERMANENT

[DESIGNED BY LON BOWMAN]

Fender Protects Seaplane Hull

Difficulties experienced in forward areas in refueling seaplanes in the water brought a request from COMAIRPAC for an improved method of protecting seaplane hulls from damage during refueling operations. To meet this demand BUAER has obtained pneumatic fenders, fabricated of rubber-coated duck, each 16 feet long by 24 feet in diameter, for use on the 42-foot refueling boats and the 40- and 50-foot motor whale boats that are equipped with bowsers.

PONTOLOGS SEPARATE PLANE FROM BOAT

Tests conducted at NAS PATUXENT RIVER under simulated service conditions indicate that the new pneumatic fender, when rigged outboard of refueling boat so that fender just skims surface of the water, will absorb the entire shock of contact with a seaplane.

In tests it also was found that shock absorbing qualities of this fender were superior to those of the rubber seaplane mooring buoy, which, it is understood, has been used in the past. These fenders are designed for use in seaplane refueling and servicing operations only and should not be used as a general utility fender, as equipment is of pneumatic construction intended for contact with only smooth surfaces.

This equipment has been given STOCK NO. BR-23F-219 and has been added to the Section C allowance list for seaplane tenders. Distribution to forward areas is under cognizance of the AMO, COMFAIRALAMEDA. The equipment will be made available to U. S. stations upon request to BUAER.

Come-Along Helps Moor Planes

U.S.S. LUNGA POINT—Heavy weather securing equipment developed and used aboard this vessel appears to possess several advantages over other methods advanced heretofore. The equipment features use of a come-along tool by which ends of the mooring cable can be brought tautly together in short order and held there while being secured with a U-bolt.

In securing planes, two crews of two men each are used. Each crew has a come-along. One man handles the come-along while the second crewman guides the cable into the tool and fastens it together with U-bolts. This secures one side of the plane and the two-man crew moves on to the next plane. By this method a plane can be secured with ⅜" cable in three or four minutes.

Another advantage is the fact that there is only one point of connection. A single cable is used in each side of the plane. After it is passed through the aircraft tie-down fitting and under a series of finger cleats, at least two feet long, the cable is doubled back and secured to itself with U-bolts.

This system can be used equally well on flight or hangar deck, and, since equipment is very compact, it can be employed in restricted areas. Since the handle of the come-along is 22" long, there is enough leverage for any desired degree of tautness in securing the cable.

BUAER APPROVES THIS COME-ALONG TOOL

***BuAer Comment*—This come-along appears to be well thought out and provides an excellent and necessary piece of heavy weather securing equipment. A similar device, the Woods Cable Stretcher, has been furnished Fleet activities by ComFair Alameda, and is carried in stock at NAS Alameda under stock No. (L)-41-T-4080. However, the come-along described here has the advantage over the Woods Cable Stretcher in that there is less crushing of cable when tensioning. BuAer has under consideration development of a standard come-along for issue to various Fleet units.**

PHOTOGRAPHY

Handbook on F6F Camera Installations

Aerial camera installations in the F6F-3P and 5P aircraft are described and explained in a new handbook of instructions, NAVAER 10-1-524, which has been distributed to the Fleet.

Featuring a camera mount constructed in accordance with San Diego Local Change NO. 113, the new F6F is the most completely equipped carrier-based photographic plane in use, as well as one of the most versatile of any type of reconnaissance plane.

The San Diego Local Change NO. 113 mount is designed to carry, singly or in various combinations, the following cameras: K-17, K-18, K-25 and F-56. One combination, for example, consists of three 6" K-17's in tri-metrogon arrangement and a K-25 mounted aft to shoot obliques.

Re Shipment of Photographic Material

Photographic activities forwarding equipment to the newly-established Repair, Salvage and Conservation of Photographic Material Unit, NASD PHILADELPHIA, are cautioned that certain pertinent information must accompany the shipment. This information should be written, placed in an envelope and attached to the equipment by the shipping activity.

If the equipment is in excess, if it is new and in all respects fit for re-issue, or if it is used and with minor repairs can be returned to stock, it should be so stated. Include all information that will be of assistance in rapidly determining extent of repairs necessary. When exact nature of repairs is not known, indicate the particular difficulty experienced.

Material must be forwarded complete, including all lenses and accessories. Careful packaging of vital parts for shipment is important.

Lens elements should be packed in cotton or other suitable material. Be certain all bellows assemblies are shipped closed. Protection of reflectors can be assured by wrapping them in cardboard or cloth. When shipment is crated, utmost care should be taken to prevent any further possibility of damage while it is in transit.

Dope on Storage of Color Materials

Unexposed color film will remain in good condition for periods varying from four days to eighteen months, depending upon storage temperatures, according to a study of keeping qualities recently completed by the Eastman Kodak Company of Rochester, N. Y.

Kodacolor aero reversal and camouflage detection films, stored in the original package, will give inferior results after four days at 120° F, after two weeks at 100° F, after two months at 85° F, after six months at 70° F, and after 18 months at 50° F.

The phrase "inferior results" refers to an appreciable change in color quality, a condition that generally develops before there is any significant lessening of film's speed.

Work Stand for Martin Mariner

NAS CORPUS CHRISTI—OTU-4 has developed a sloping work stand to aid the structural gang make repairs and checks on tail and wing surfaces of the *Mariner*. Use of the stand has reduced the number of man-hours required for 240-hour checks.

Other stations wishing to copy this idea should follow dimensions (*see cut*) fairly closely because of the small clearances allowed. The first platform must not exceed 10' from the ground.

▸ *BuAer Comment*—A more positive method of preventing this stand from rolling, once in position, should be provided. All edges and corners likely to come in contact with any part of the aircraft should be padded to prevent any possible injury.

CORPUS TRAINING UNIT SPEEDS REPAIRS

DAMAGE TO FLOAT CAUSED BY LIGHTNING

BuAer Studies Lightning Damage

If lightning rips holes in aircraft floats and wingtips, don't throw them away, BUAER asks. Even the damaged pieces may help prevent future trouble.

Careful study of these parts is considered highly important.

Field reports indicate that holes like the ones illustrated have been caused by lightning and have made floats no longer watertight. BUAER hopes to work out corrective measures but needs actual samples of the damage done. Therefore, it asks field activities not to destroy damaged floats and wingtips but to request shipping instructions from BUAER so that the pieces can be sent to a special laboratory for study.

New Single Assembly Line Saves In Personnel, Time and Space

NATB PENSACOLA — A precision-timed single assembly line that enables the final assembly section to adjust itself to increases or decreases in production with a minimum of difficulty has been set up in the A&R department at this activity.

The new assembly line, which replaces an old type double-line, is made up of 28 stations, all located in one building. Inauguration of the new type assembly line has resulted in a substantial decrease in number of personnel needed, and at the same time conserves space. The line now occupies less than half the space formerly used. In addition it provides a greater flexibility in the line in plane output and personnel.

PLANE ON THE END OF ASSEMBLY LINE MOVES OUT READY FOR INSPECTION AND TESTS

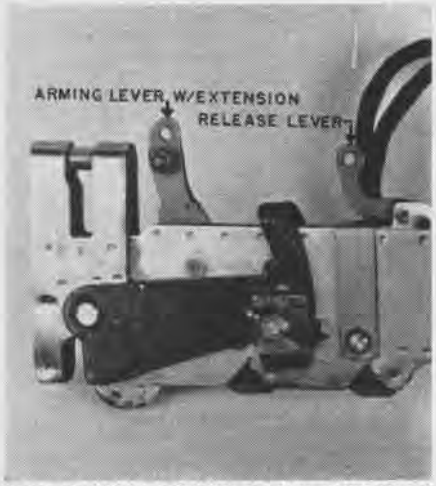
AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

Attachment for Bomb Shackle Mark 4

A suggestion for eliminating interference between the rods actuating the arming and release levers of the Bomb Shackle MARK 4 type in the TBF-TBM bomb bay has been made by MAG 11, 4TH MAW.

As originally installed, these actuating rods have only a minimum clearance. If they are bent during bomb loading or if adjustment is changed by vibration during flight, there is danger that the lock nut of the arming rod will become fouled with the spring on the release rod. When this occurs, the arming lever may be pulled



MAG DEVISED ARMING LEVER EXTENSION

into the tail armed position by actuation of the release lever, thus preventing "safe" release when jettisoning bombs.

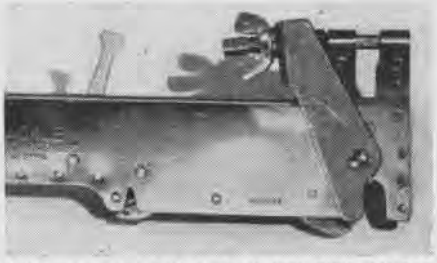
To remedy this trouble, MAG 11 has devised an extension to the arming lever that was tested in *Avengers* of VMTB-134 and found successful. Therefore this item is recommended for all such installations in view of the delay in retroactive replacement of all Bomb Shackles MARK 4 and MODS by the new MARK 8 MOD 0.

As fabricated by MAG 11, this extension consists of two slightly curved strips of .040" stainless steel approximately 1½" long and ½" wide, with ears welded together to form one piece. One end of this extension is bolted to the arming lever; the other end has a hole suitable for accommodating the arming lever rod. The resulting added clearance between this rod and the release lever rod prevents contact under operating conditions.

Bracket for MK 3 Shackle Fits AN-B10

The bomb lug displacing bracket designed for use with the MARK 3 type bomb shackle, (*see* NAVORD OMI V5-45) when installed on the Bomb Shackle Type AN-B10, alleviates hang-ups caused by incomplete opening of suspension hooks during glide or dive bombing.

No modification of the B10 shackle is required for installation of this bracket, however. The bracket only recently has been placed into the supply system and may not be readily available at certain activities. The bomb lug displacing bracket most familiar to Fleet activities at the present time is the one designed for use on the MARK 4 type bomb shackle. This bracket may be installed on the Bomb Shackle AN-B10 by drilling through the shackle side plates. (*See July 1 issue of* NANEWS *for information on installation*).



MK3 TYPE SHACKLE BRACKET FITS AN-B10

Bomb Shackle Mark 8 Mod 0 Will Work

Early production Bomb Shackles MARK 8 MOD 0 will corrode to the extent that release failure may occur unless they are maintained properly. Procedure for maintenance of these bomb shackles was outlined in the April 15 issue of NANEWS. This information was taken from OP 1342, which has been released for distribution.

Composite Squadron 58 reports having made 3028 drops with the MARK 8 MOD 0 shackle, treated as recommended, with no malfunctions or hang-ups owing to faulty operation of the bomb shackle.

Activities concerned are urged to follow this recommended maintenance for all MARK 8 MOD 0 bomb shackles to assure satisfactory performance.

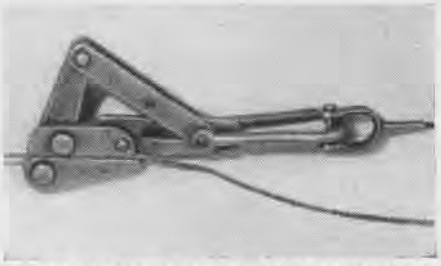
New Cable Clamps for AA Target Reels

Utility squadrons have found that by using a cable clamp of the "Chicago" grip type, frequently referred to as a "come-along," to transfer the towing strain of target cable from reel to frame of plane, wear and damage to reels has been reduced materially.

The clamp, attached by means of a line to a convenient part of the reel mount or air frame, may be placed on the cable and the reel, then backed off to remove the strain from the level wind mechanism, reel drum and brake.

Activities based within the continental limits in the past have been able to obtain these clamps locally without great difficulty, but squadrons outside the country have not. In view of this situation, and in order to decrease reel maintenance problems, BUORD has procured a quantity of clamps that are being issued to utility squadrons, including Marines, and the NAOTC *Marauder* Unit. Additional clamps may be obtained by activities using power-driven antiaircraft target reels by requisition to BUORD, using this nomenclature:

GRIP, "CHICAGO" (CABLE CLAMP FOR AA TARGET REELS) KLEIN 1613-30B, STOCK NO. 3-G-1066.



CABLE CLAMP REDUCES STRAIN ON REEL

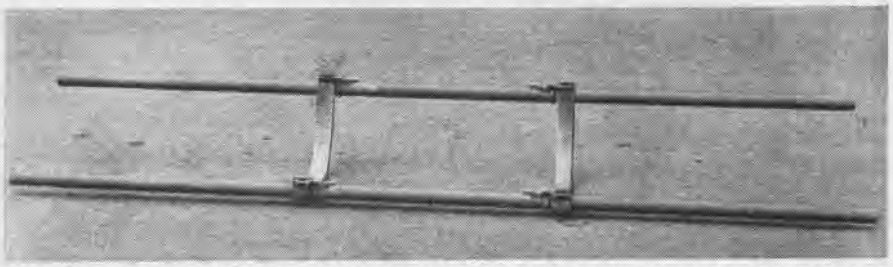
These grips have bronze-lined jaws, a maximum opening of 0.22", are designed for a safe load of 1500 lbs. and weigh approximately one and one-half lbs. each.

Bomb Carrier for Local Manufacture

Recent tests at NPG DAHLGREN have produced a simple cradle type of bomb carrier that BUORD considers suitable for local manufacture. It is useful in loading the wing racks of any aircraft with 250-500 lb. bombs, including depth bombs, provided these racks can be reached conveniently from the loading surface or platform.

Although a carrier of this type was included among other suggestions on bomb handling equipment in NAVORD OTI V32-43, and similar items have been designed and manufactured independently, it is believed that certain features of this carrier will be of interest to activities constructing new units.

Readily assembled, the carrier consists of two sections of steel pipe approximately 2" in diameter and 7' long, which support two curved steel straps surfaced with brake lining on the concave side. Positioning of the straps is accomplished by four drilled lugs welded to the straps and connected by pins to four T-fittings welded to the pipes. Changes in strap settings to adapt for varying bomb lengths can be accomplished by use of these T-fittings. Four rings welded on the pipes prevent the carrier from sliding forward when it is used with a Bomb Skid MARK 1 MOD 1.



BOMB CARRIER PRODUCED AT NAVAL PROVING GROUND DRAWS COMMENT FROM BUORD

TN 60-45 Gives Data on IFF Use

Unsatisfactory IFF operation has been reported on carrier-based aircraft equipped with NEA-4 and NEA-5 generators. The unsatisfactory operation has been caused in part by poor voltage regulation of the AC power supply that is due to improper adjustment of the voltage regulators and to drift of the regulated voltage as regulator heats.

Complete, up-to-date information on adjusting AC voltage regulators for the most satisfactory operation of NEA generators is contained in TN 60-45, dated July 3, 1945. Test circuit, test conditions and adjustment procedure contained in the technical note should be followed even when they conflict with existing information and procedures published elsewhere. Strict compliance with procedure given in TN 60-45 will result in satisfactory operation of AC carbon-pile regulators.

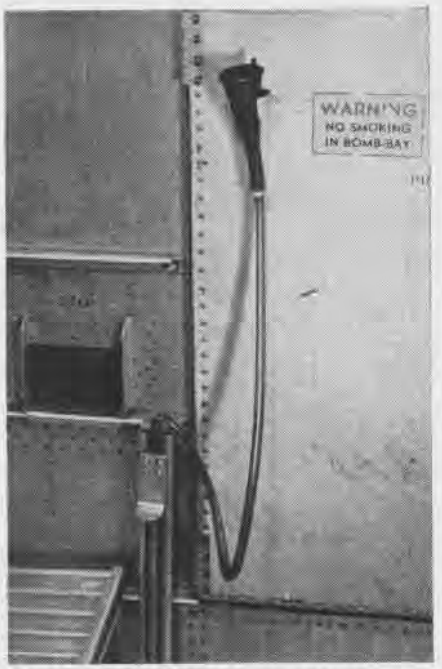
Issue NO. 14 of the *Airborne Electrical Maintenance Notes* contains a reprint of TN 60-45 as well as general information on AC aircraft electrical systems that will be helpful in understanding reasons for poor voltage regulation. Curves have been provided to show the generator field currents and regulated voltage for various conditions of operation of the Eclipse NEA-5 generator, the one on which regulation troubles have recently been reported, and of the General Electric NEA-5.

Privateers Will Get Relief Tubes

Production PB4Y-2 type airplanes now are being equipped with a newly designed extendable type relief tube that is BUAER's answer to complaints regarding the thankless task of emptying waste tanks or bags. Other reports had complained that venturi type waste outlets were creating serious maintenance problems owing to impingement of waste upon aircraft empennages causing subsequent contamination and corrosion.

The new extendable type relief consists of a tube suitably guided and supported that is free to extend through a hole provided in the skin of the aircraft. A relief horn and plastic tube are connected to the upper end of tube. By depressing a foot pedal, lower end of tube is extended 16″ beyond the hull of the aircraft, discharging waste in such a manner that impingement on aircraft empennage is precluded. Releasing foot pedal allows a spring to return the tube within the plane.

A technical note describing the extendable type relief tube in detail is being prepared for information of all activities. It is believed that supporting maintenance activities can fabricate and install units in service aircraft if they are desired by squadron co's.



RELIEF TUBE EXTENDS 16″ BELOW HULL

SOSU Uses Pilot's Radio Board

SOSU 3–A comprehensive pilot's radio instruction board, designed by an enlisted man, now is in use here.

Lights are placed over pictures of transmitters and receivers and are connected in series with switches on the control units that indicate transmitter or receiver in operation. Lights also are used to indicate channel and frequency the VHF is operating on.

No lights will light unless the master radio and battery switches are in the ON position. The ICS-radio switch, microphone and transmitting light are in series, and the light will not illuminate unless the ICS-radio switch is in the radio position and the microphone button pressed.

[DESIGNED BY J. E. PETERSON, ART2c]

Cowl Flap Actuator Is Designed

VR-1—Chronic malfunctioning of R5D cowl flaps led this squadron's engineering department to devise a form of cowl flap actuation not previously used on that type aircraft.

The hydraulic actuating strut on the after side of engine diaphragm was replaced with a *Lear* jack screw and power unit. The installation uses the same mounting points and requires virtually no rework of the present cowl flap mechanical linkage. The screw-jack actuator is driven through a chain of reduction gears that eliminates the possibility of cowl flap creep and affords accurate positioning of flaps.

Since cowl flap actuators are electrically operated, they no longer depend on the hydraulic system. Individual three-position switches afford control of the flaps, and a quadruple indicator dial located adjacent to the cylinder head temperature gauge on the overhead instrument panel shows the exact position of each flap.

Power units are equipped with limit switches that automatically stop travel of the cowl flaps in either FULL OPEN or FULL CLOSED position. With the cockpit switch in OFF position, cowl flaps may be locked at any intermediate point between these two extremes. The standard cowl flap actuator permits only three flap positions: TRAILED, OPENED, CLOSED.

Accurate positioning of flaps for precise regulation of head temperatures is impossible with the standard cowl flap actuator, and tendencies toward creeping, hydraulic line leaks and broken lines make constant attention to cowl flaps a necessity.

To date only one prototype installation has been made in an R5D. The installation is still considered experimental, and the squadron will accumulate more operating and maintenance experience before a formal recommendation can be submitted to BUAER for a service change.

Immediately after the prototype installation was completed, the R5D was taken on a special flight across the continent under command of the system's designer. While the aircraft was on the West Coast, Douglas representatives inspected the installation and were much interested in the future possibilities.

FIRE FIGHTERS DROWN OUT BLAZE

Long before Jap Kamikazes *entered the picture the Navy had recognized inherent fire hazards of carriers and had acted accordingly. When fires break out, men in a burning plane must be rescued, the blaze extinguished and decks cleared for incoming planes. It is split-second work, but there are trained men at hand to handle such emergencies. Damage control crews are on the job when Fire Call sounds, hose lines are always racked, and trained fire fighters in asbestos suits stand by when planes take off or land. How they handle an emergency is shown in a carrier deck fire, pictured on the opposite page. In this instance, no* Kamikaze *was near. Planes were coming in for a landing when a belly tank flew loose from one and exploded, scattering fire over the deck. Ship fire fighters went into action immediately, bringing the fire under control in matter of minutes.*

AERIAL CAMERA FOCUSING

K-20 and K-25 Now Can be Focused for Close-up Type of Operations

NEW FOCUSING ATTACHMENT CONVERTS THE STURDY K-20 FOR CLOSEUP WORK ON GROUND

A FOCUSING attachment for K-20 and K-25 aerial cameras, both widely used throughout the Navy, now is being issued to photographic activities. The favorite action cameras of many Navy photographers have become more versatile and more useful to the service than ever before.

The K-20 is a small, hand-held aerial camera that uses roll film and produces 4x5-inch negatives. Easy to carry and simple to operate, it provides a rapid and dependable source for aerial oblique photographs. It has been found valuable in search and rescue work and also as an auxiliary to larger cameras on reconnaissance missions.

Navy photographers have discovered many other uses for the camera and have not confined it strictly to aerial photography. Because of its speed in operation, it has been used to cover flight-deck operations, attacks by enemy planes, and other combat action. It has been particularly useful whenever a rapid sequence of pictures was needed. The K-20 is faster in operation than any standard hand-held camera and provides greater film capacity, 50 exposures being the usual standard load.

With development of the Model N-2 Focusing Attachment, the K-20 now becomes a highly important ground camera in addition to its aerial use. It will undoubtedly find still wider acceptance for recording combat action both ashore and aboard ship.

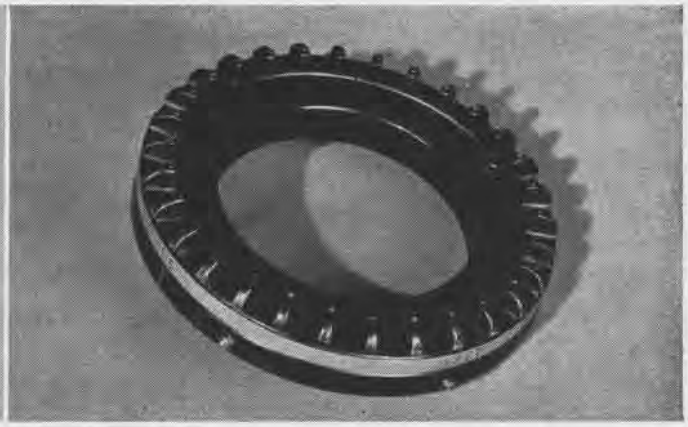
THE K-20, with its original fixed-focus, could not record a sharp image within a distance of 188 feet with the lens wide open at f/4.5 or within 75 feet with the lens stopped down to f/11. Installation of the focusing device now makes it possible to focus the lens at any point from 15 feet to infinity and produce sharp pictures over the entire range.

The K-25 aerial camera is an electrically-operated adaptation of the K-20. It was developed primarily to record bombing runs on submarines during the Battle of the Atlantic. Since that time, it has found a variety of other uses in reconnaissance, bomb-damage assessment, and combat-recording photography.

Until recently, the camera has been used exclusively as an aircraft installation. A few months ago, a hand-held conversion kit was developed and procured, and the K-25 now has been put to general use, limited only by length of the electrical connecting cords, battery arrangement, and fixed focus of the lens.

WITH ITS electrical controls and trigger action, it far surpasses the K-20 in speed of operation, being capable of making five exposures every two seconds. Since it has been converted to hand-held operation, the K-25 is being used to cover a variety of photographic assignments similar to

FOCUSING RING ON K-25 WITH HAND GRIP AND TRIGGER ACTION



BRONZE FOCUSING RING FASTENS ONTO LENS MOUNT OF CAMERAS

those of the K-20. With addition of the focusing attachment, it will have still greater versatility.

THE MODEL N-2 focusing attachment is a comparatively simple device that readily can be installed and calibrated on shipboard or at advanced base laboratories. Only ordinary shop facilities are necessary to make the installation.

A focusing ring fits over the nose of the camera and, by a simple thread arrangement, moves the lens mount in and out of the cone. New adjustable wind and trip rods were designed that will lengthen or shorten to correspond to movement of the lens mount. Instructions for installation and operation are furnished with each attachment.

Idea and specifications for the focusing attachment were developed by a photographer's mate aboard an escort carrier doing anti-submarine patrol in the Atlantic. No change was made in the basic design of the camera.. The device was completely fabricated with materials available aboard ship and forwarded to BUAER for disposition.

It was referred to the Photography Division for test and evaluation. Only minor refinements to the attachment were necessary, and specifications were made available to a manufacturer for production of the prototype model. Upon acceptance of the prototype, a contract was awarded for production of the focusing attachment. It is a story of coordinated development, illustrative of the growth of naval photography during the war.

The photographer's mate who originated the idea has been commended by Chief, BUAER and Commander Air Force, Atlantic Fleet, for "his initiative and ingenuity in developing such a valuable improvement aboard ship, under conditions which could not have been ideal for experimentation."

THE FOCUSING attachment now is stocked at photographic supply points and ready for issue to operating units. It is carried under Standard Stock No. 18-F-41430-20. A handbook of installation instructions (NavAer 10-1-525) has been distributed to all photographic activities. Additional copies may be requested from BUAER, Publications Branch.

It has been found that the fast recycling of the K-25 is not entirely suitable for hand-held operation of the camera. A reduction gear that slows the re-wind mechanism to a one-second interval has been procured. It now is in stock at all supply points and may be requisitioned under Standard Stock No. 18-G-391-5.

[FOCUSING ATTACHMENT DEVELOPED BY HACKETHORN, EARL J., PHOM1C]

SCREEN NEWS

Eye Muscles

MN-3483 *Action of the Extra-Ocular Muscles* Unclassified, 7 min.

Knowledge of structure and function of the extra-ocular muscles is needed in diagnosis of typical muscle defects such as paresis and paralysis. Diagrams present architecture of the eye, and color animation illustrates contraction of muscles and movement of the eyeball.

Fear Outfaced The world of the subconscious, still a dark and mysterious realm, is beginning to see the light of modern medical science. In this barely scratched pioneer field, war has pushed the clock ahead and fostered successes that would not have been thought possible ten years ago. Particularly spectacular in results is the application of mental therapy to cases of combat fatigue, one type of which is covered in:

MN-3428c *Combat Fatigue — Irritability.* Restricted, 35 min.

The patient in this case has reached a state of emotional unbalance brought about by a combination of fear and frustration. Fireman aboard a warship, his task during combat is to adjust valves. He resents this lowly task and has no outlet for tensions that build up in him as he pictures the sea battle going on far above him. He feels trapped and frustrated. When his ship is torpedoed, he is at first glad to be released from his situation, then tortured by feelings of guilt for feeling that way.

On leave, the mental malady of combat fatigue shows itself in symptoms of extreme irritability. He becomes sensitive and jumpy, losing himself in violent fits of temper out of all proportion to the little things that cause the outbursts.

Finally, in the understanding hands of a Navy specialist, the victim gradually is led out of his neurosis. The doctor keeps probing the patient's subconscious feelings until he hits upon the dangerously buried thoughts causing all the trouble. Once convinced that a sure way to beat fear and other submerged feelings is to face them and understand them, the patient begins to improve and finally recovers with the aid of occupational therapy and intensive physical training.

As the explosive patient, Gene Kelly of Hollywood handles a tough assignment in 4-star style.

Eavesdropping by Film Even with Germany smashed, disarmed and occupied, interest in Nazis' war equipment lingers on. Radar personnel will find profitable "eavesdropping" in the form of a captured Nazi motion picture:

MF-5131b *Captured German Training Film—Duppel (Window)* Restricted, 8 min.

The film explains the purpose of "duppel" and tells how to recognize it on the scope. Animated sequences show how "duppel" interferes with radar reception. Information is given on how to distinguish between "duppel" and the plane which drops it.

The motion picture provides a source of post-VE-Day satisfaction in the knowledge that Allied interference bothered the Nazis to such an extent that they produced a film to combat our jam sessions.

All Bugs Keep Out!

MN-1511f *Care of the Sick and Injured by Hospital Corpsmen—The Chain of Asepsis*—Unclassified, 28 min.

Spotlights the absolute need for following the sterile technique to the letter, in order to avoid letting bacteria enter any open gate of the body during an operation. Emphasizes the importance of sterile linens and illustrates pre-operative preparation of the patient, scrubbing technique, getting the operating room ready and maintaining the chain of asepsis during an operation.

Combat Cat.

MN-2596ad *Aircraft Recognition—F7F "Tigercat"*—Restricted, 7 min.

Another *"cat"* in an already famous family gets its portrait painted for recognition purposes. Identifying features of the Navy's first twin-engine fighter are pointed up by the use of animation, stop motion and model photogrpahy.

Other Films Being Shipped:

MN-1059y *Instrument Flight Control—Radio Navigation — Part 2 Bracketing an Unknown Beam.* Unclassified, 10 min.

MN-1059z *Instrument Flight Control—Orientation—the 90 Degree System.* Unclassified, 10 min.

MN-1059aa *Instrument Flight Control—Orientation—The True Fade System.* Restricted, 10 min.

MN-1059ab *Instrument Flight Control—Orientation—Fade Parallel System and the Close In Procedure.* Unclassified, 10 min.

MN-5027a *Basic Hydraulics.* Unclassified, 9 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, (F)42
CASU ComDet., Port Hueneme
ComAirPac
AirPacSubComFwd
Hedrons 2
NAB Seattle
NAC Navy #3149
NAMC Philadelphia
NAOTC Jacksonville
NAS Alameda
NAS Atlanta
NAS Clinton
NAS Grosse Ile
NAS Kodiak
NAS Moffett
NAS New York
NAS Norfolk
NAS Patuxent
NAS San Diego
NAS Quonset
NAS Navy #115
NAS Navy #117
NAS Navy #720
NATB Pensacola
NATB Corpus Christi
NATEC Lakehurst
Navy #3233
TAL Navy #116

Marine

MCAD Miramar
MCAS Cherry Point
MCAS Eagle Mt. Lake
MCAS El Centro
MCAS El Toro
MCAS Mojave
MCAS Navy #61
MCAS Parris Island
MCAS Quantico
MCAS Santa Barbara
4th MAW

LATEST BULLETINS ENGINE, AUXILIARY POWER PLANT, ACCESSORY, PROPELLER 19 July 1945

ENGINE	BULLETIN	DATE	SUBJECT	EXPLANATION
PRATT & WHITNEY				
R-985	188	6-18-45	*Crankcase Through Volt Washer*	To prevent interference between outside edge of subject washer and spot face fillet
R-1340	210	7-2-45	*Lifting Links*	New, heavier link and of the possibility of interference at link mounting pads
R-1830	316 Supp. 2	7-6-45	*Master Rod Bearings—Inspection and Rework of*	Latest information on master rod bearing fit
	400	6-5-45	*Rings—Clutch Cone Oil Seal*	Installation instructions for the newest type clutch Cone Oil Seal Rings
	402	6-14-45	*Bushing Impeller Intermediate Drive Gear Front—Prevention of Excessive Wear of*	Drawing of sleeve and to enable local manufacture where required
	411	5-29-45	*Gaskets between Intermediate Rear and Rear Cases*	New gasket to be used between intermediate rear and rear cases
	414	6-19-45	*Front Main Crankcase*	To establish a limit for amount of material which may be safely removed from front face of bore of front main crankcase in cleaning up the surface
	416	6-16-45	*Screen Assembly—Oil Reinforcing of*	Reinforcing the oil screen assemblies, P&W Part No. 24701 to prevent collapsing
	417	6-28-45	*Rust Pitting of Master Rods and Link Rod Assemblies—Acceptable Limits for*	Rust pitting limits and salvage procedure for rust pitted master and link rods
	418	6-9-45	*High and Low Ratio Clutch Sludge Separator Rings*	To permit positive seating of securing screws against sludge separator ring
	419	6-2-45	*Vacuum Pump Adapter Dowel Hole*	Incorporation of a dowel hole in rear case and in vacuum pump drive gear housing to permit use of latest type of AN vacuum pump adapter
R-1830	420	6-22-45	*Generator Retaining Studs*	To prevent interference between the generator and ends of retaining studs
	422	7-6-45	*Gaskets Between Blower and Intermediate Rear Cases*	To reduce possibility of oil leakage between oil passages bosses of the blower and intermediate rear cases
	423	7-4-45	*Vacuum Pump Adapter Assemblies*	To insure sufficient clearance between the vacuum pump drive gear and bearing
	424	6-11-45	*Gasket, Stromberg Part No. 399481—Replacement of*	To eliminate the possibility of leakage between the carburetor throttle body and adapter
	426	6-18-45	*Crankcase Through Bolt Washer*	To prevent interference between the outside edge of the subject washer and the spot face fillet
	427	7-2-45	*Lifting Links*	New heavier link and of the possibility of interference at the link mounting pads
R-2000	32 Supp. 2	7-6-45	*Master Rod Bearings—Inspection and Rework*	Latest information on the master rod bearing fit
	54 Supp. 1	6-29-45	*Piston Ring Arrangement and Clearances*	Information on piston ring arrangement and clearances for R-2000-9 engines, and to correct piston ring side clearance in original bulletin
	103	6-1-45	*Engine Differences between the R-2000-3 and R-2000-7 and -11 Engines*	Installation, parts and operational differences of the R-2000-3 -7 and -11
	107	6-16-45	*Screen Assembly, Oil—Reinforcing of*	Information for reinforcing the oil screen assemblies, P&W Part No. 24701, to prevent collapsing
	108	6-28-45	*Rust Pitting of Master Rods and Link Rod Assemblies—Acceptable Limits for*	Rust pitting limits and salvage procedure for rust pitted master and link rods
	109	6-9-45	*High and Low Ratio Clutch Sludge Separator Rings*	To permit positive seating of securing screws against sludge separator ring
	112	6-22-45	*Push Rod Spacers*	New thicker push rod spacers
	115	7-6-45	*Gaskets Between Blower and Intermediate Rear Cases*	To reduce possibility of oil leakage between oil passage bosses of blower and intermediate rear cases
R-2000	116	7-4-45	*Vacuum Pump Adapter Assemblies*	To insure sufficient clearance between the vacuum pump drive gear and bearing
	117	6-11-45	*Gasket, Stromberg Part No. 399481—Replacement of*	To eliminate the possibility of leakage between the carburetor throttle body and adapter
	119	6-18-45	*Crankcase Through Bolt Washer*	To prevent interference between outside edge of washer and spot face fillet
	120	7-2-45	*Lifting Links*	New heavier link and of possibility of interference at link mounting pads
R-2800	168 Rev. 1	6-15-45	*Covers—Hydraulic Couplings*	To consolidate and correct existing information for rework of subject covers and to inform overhaul activities of new shorter screws used at cover location
	170 Supp. 1	6-19-45	*Ignition Distributor Finger—Replacement of*	Additional information for timing the new Scintilla Finger, Part No. 10-28557
	196	6-11-45	*American Bosch Type DF18R U-1 Magnetos—Conversion of to Type DF18R U-2*	Information for conversion of American Bosch Type DF18 RU-1 magneto to type DF18RU-2
	215	6-28-45	*Rust Pitting of Master Rods and Link Rod Assemblies—Acceptable Limits for*	To give rust pitting limits and salvage procedure for rust pitted master and link rods
	216	6-26-45	*Exhaust Collector Flange Interference*	Location of a possible interference between exhaust collector flange and rear cylinder exhaust port, and to describe method of elimination
	218	6-22-45	*Push Rod Spacers*	New thicker push rod spacers
	219	6-20-45	*Front Cylinder Inter-Ear Deflector Assembly*	Reinforcing plate around the spark plug lead cut out in the front cylinder inter-ear deflector assembly of applicable engines
	221	7-4-45	*Hydraulic Coupling Selector Valve*	Restrictor now used in hydraulic coupling selector valve oil feed hole
	222	5-18-45	*Governor Oil Transfer Pipe Plug Gasket*	To minimize oil leakage around governor oil transfer pipe assembly
R-2800	225	6-16-45	*Bushing and Liner Assembly—Generator Drive Gear, Rear*	The new bushing is used to improve durability
	226	7-21-45	*Regulators—P&W Water Injection*	Effective method of retarding corrosion in subject regulators
	227	7-3-34	*Supercharger Intake Insert Rubber Seal*	To effect more positive sealing between supercharger intake insert and diffuser
WRIGHT				
R-1820	289 Supp. 1	7-4-45	*Pre-Oiling of Engines Being Started for the First Time After Installation or Overhaul*	To specify oil pressure used where pre-oiling R-1820 and R-2600 series engines
	366 Supp. 1	6-15-45	*Defective S KF Bearings, Wright Engine Parts Return of to Contractor*	Extension of provisions of original bulletin to cover bearings removed from engines
	382	6-22-45	*Guides, Cam—Rework of*	Simplified method of reworking the cam guides
	389	6-18-45	*Retainer, Plug Type Piston Pin—Installation of*	Installation instructions for plug type piston pin retainers
	390	6-29-45	*Silver Master Rod Bearings—Service Limits of Acceptability for*	Acceptable conditions of silver master rod bearings on engines received for overhaul
R-2600	39 Supp. 1	7-4-45	*Pre-Oiling of Engines Being Started for the First Time after Installation or Overhaul*	To specify oil pressure used when pre-oiling R-1820 and R-2600 series engines
	122 Supp. 1	6-21-45	*Replacement of Accessory Drive and Starter Shaft Oil Retaining Plug*	To modify "Detailed Instructions" for basic bulletin
	149 Supp. 1	4-22-45	*Exhaust Valve Guides, WAC Part No. 118583 and 114366—Replacement Procedure at Overhaul of*	Dimensions for flat plug gage WAC Tool No. 82664

(Continued on page 47)

NATechTraCom

Instructor Designs Gyro Training Aid

Recognizing need for an effective visual aid to instruction in gyro-operated instruments, J. D. Seay, AMM1C, designed one. Seay, until recently an instructor in the instruments course at NATECHTRACEN NORMAN, designed the device and with the assistance of other instructors at the activity constructed it.

Fundamental purpose of the training aid is to teach operation of gyro-operated instruments and how they react to different attitudes of an airplane in flight maneuvers.

A small wooden plane is mounted on a universal joint attached to the center of a large compass rose, leaving the plane free to pivot about the vertical axis. The plane has an instrument panel that mounts the gyro-operated turn and bank indicator, directional gyro, artificial horizon and suction gauge. Cowling is plexiglas, enclosing instruments and their connecting lines, so trainees may easily observe how they are hooked up.

Underneath the drop-leaf style compass rose is a 110-volt electric motor attached to

TRAINEES CAN WATCH INSTRUMENT WORK

a vacuum pump of the rotary sliding vane type that runs in a constant bath of oil supplied by an oil reservoir. Vacuum lines run from the pump to the suction gauge on the instrument panel and then to the instruments.

Base of the compass rose table also mounts a 24-volt battery that energizes a remote indicating compass also on the instrument panel. This is part of the mock-up, though not gyro-operated.

A trainee sitting in the cockpit can maneuver the plane with stick and rudder pedals. He can dive, climb and bank, observing for himself how the various instruments record the plane's attitude.

When time allows, trainees are given a demonstration on how to compensate a compass on the ground, using the remote indicating compass of the mockup in relation to the compass rose on table.

Most materials for construction came from salvage. Use of the device has made it possible to teach all the gyro-operated instruments together. Trainees can better understand how and why these gyro-operated instruments work and their relation to each other. Use of the device has saved considerable teaching time at the NATTC.

(Continued from page 46)

ENGINE	BULLETIN	DATE	SUBJECT	EXPLANATION
	157 Supp. 1	7-2-45	*Carburetor, Stromberg PR-48A1 and PR-48A2 Reworking to Incorporate at Throttle Actuated Accelerating Pump*	Temporary modification of the diaphragm type accelerating pump prior to its replacement with a throttle actuated accelerating pump
R-2600	144 Supp. 1	6-15-45	*Defective SKF Bearings, Wright Engine Parts—Return of to Contractor*	Extension of provisions of original bulletin to cover bearings removed from engines
	168	6-18-45	*Oil Seal Ring, Gun Synchronizer in Supercharger Rear Housing Cover—Provisions for*	Instructions for reworking the supercharger rear housing cover at gun synchronizer locations
	171		*Carburetor Holley 1685 HB Setting Change*	Instructions for modification of Holley 1685HB carburetors to improve fuel consumption
	173	6-18-45	*Retainer, Plug-Type, Piston Pin—Installation of*	Installation instructions for plug-type piston pin retainers
	174	6-29-45	*Silver Master Rod Bearings—Service Limits of Acceptability for*	Acceptable conditions of silver master rod bearings on engines received for overhaul
	177	6-27-45	*Oil Pressure—Main Engine*	New and specific oil pressure limits for R-2600 engines
General Engine Bulletins				
	16 Supp. 1	6-12-45	*Overhaul and Maintenance Practices Acceptable to the Bureau of Aeronautics and Not Found in Other Publications*	To clarify meaning of bulletin
	8 Supp. 3	6-29-45	*Exhaust Valve, R-2800 Engine Part No. 44764—Rework Process of*	Information on rework process of subject valves
	26 Rev. 1	6-30-45	*Stromberg Injection Carburetors—Independent Vent Connection for Twin Vapor Vent Valves*	To eliminate confusion in the field due to misinterpretation of original bulletin
	24 Supp. 1	6-18-45	*Aircraft Engine Cylinders—Reconditioning of*	To alter procurement of all cylinder honing stones, heads and tools
	38 Supp. 1	6-22-45	*Preservation of Aircraft Engines*	Preservation instructions for Airborne Auxiliary Power Plants
	42 Rev. 1	7-3-45	*Ignition Shielding Harness—Conservation of Cadmium During Reconditioning of*	To conserve cadmium by limiting its use to only such surfaces where dissimilar metals (aluminum and brass) are fastened together and to clarify the original bulletin
	43 Rev. 2	7-6-45	*Oversize Piston Rings—Supply of*	Oversizes of piston rings to be stocked in the future
	73	6-29-45	*Overhaul of Engines—Designation of Overhaul Activity*	Naval activity overhauling an aircraft engine or auxiliary power unit
	74	6-19-45	*Ignition Harnesses, Cast Filled Type—Repair of*	Instructions for determining disposition of subject harnesses requiring repair
Power Plant Accessory Bulletins				
	28-45 Rev. 1	6-8-45	*Air System Accessories, e-8*	To change oil consumption from 100 cc and 300 cc to 100 cc/hour and 300 cc/hour
	35-45	6-15-45	*Oxygen System, g-9*	To eliminate oxygen leakage and corrosion which results from the drying out of the vellumoid gaskets now installed in certain type A-12 and AN 6004-1 oxygen regulators
	37-45	6-9-45	*Lubricating System Accessories, g-5*	Latest changes and procedures in cleaning and repairing oil cooler assemblies
	41-45	6-16-45	*Fuel Pumps, d-39*	Proper procedure to be used in testing engine driven fuel pumps
	42-45	6-12-45	*Hydraulic Pumps, h-17*	To eliminate stud stretch by rework of pump bodies and covers to permit installation of heavier studs
	43-45	6-18-45	*Hydraulic Pumps, h-18*	To eliminate stud stretch by rework of pump bodies and covers to permit installation of heavier studs
	44-45	6-16-45	*Turbo-Supercharger, t-5 WAC Model WT9-2 Turbo-Supercharger-Rework of Oil Pump Tachometer Shaft Bushing*	To incorporate an oil groove in the Oil Pump and Tachometer Drive Shaft Bushing, Part No. 110149, to provide increased lubrication to the tachometer drive gears
	45-45	6-18-45	*Fuel Pumps, d-30*	To incorporate a drive shaft seal arrangement that will be more suitable for low temperature operation
	46-45	6-25-45	*M-H Turbo Supercharge Regulator Waste Gate Motors Used on PB4Y-1, RY-1 and RY-2 Aircraft Replacement of Defective Reduction Gear Assembly In, t-6*	Necessary information to remove defective waste gate motors
Hamilton Standard Bulletins				
	28 Supp. 1	6-22-45	*Hamilton Standard Propeller Blades—Anodic Treatment and Inspection of*	To modify the "Detailed Information" of basic bulletin
	33	6-14-45	*Hamilton Standard Service Bulletin—Approval of*	To approve Hamilton Standard Service Bulletin No. 98

LETTERS

SIRS:

I hereby challenge Uncle Kim Tussie to a duel. Makes no difference as to weapons —squirrel rifles, chawing terbaccy or just plain 'rasslin'.

No man can talk that way about the *Mighty Mariner* and get away with it. I'll have you know there isn't a more beautiful, stately, yes even queenly, plane in the U.S. Navy.

Tell Uncle Kim to name the spot and weapons, and I'll be there.

VPB-98 LIEUTENANT USNR

¶ Uncle Kim, please note!

SIRS:

I was enlisted in the V-5 program as seaman second class July 11, 1942; went on active duty as aviation cadet November 11, 1942, and was commissioned ensign A-V(N) November 17, 1943.

Under the foregoing circumstances, will I be eligible for the accumulation of the bonus [$500 per annum bonus to naval aviators] when returned to inactive duty?

VRF-1 LIEUTENANT (JG) USNR

¶ The Naval Aviation Cadet Act of 1942, approved August 4, 1942, established the special enlisted grade of aviation cadet, USNR. All officers commissioned pursuant to this Act who attained aviation cadet status on or before September 3, 1942, either by direct enlistment as aviation cadet or by transfer to that grade, are eligible for the lump-sum payment provided for in Section 12 of the Act of $500 for each complete year of continuous commissioned service.

By Executive Order No. 9268 the President of the United States suspended the provisions for the lump-sum payment for the duration of the present war to officers who became aviation cadets on or after September 4, 1942. (*For complete text of Section 12 of the Naval Aviation Cadet Act of 1942 and Executive Order No. 9268, see Joint BuPers Circ. Ltr. No. 281-43 and Marine Corps Letter of Instruction No. 621, Navy Dept. Bul. Cum. Ed. 1943, p. 981*).

The Chief of Naval Personnel on August 7, 1942, promulgated dispatch 070649 to all activities having cognizance of flight students, on active duty or inactive duty, directing those activities to "transfer all seamen second class victor five Naval Reserve to the rating of aviation cadet victor five."

The officer submitting the foregoing inquiry states he enlisted as a seaman second class V-5 on July 11, 1942, and reported for active duty as an aviation cadet on November 11, 1942. He does not give the date on which he was transfered to the grade of aviation cadet; however, it is presumed he was transferred to the grade of aviation cadet on August 7, 1942, in accordance with provisions of the foregoing quoted dispatch, and that upon release from active duty he will be eligible for the lump-sum payment.

SIRS:

In the interest of correct photographic interpretation I would like to call your attention to a mistake made in the 1 July issue of NAVAL AVIATION NEWS. On page three there is an oblique photograph of the southwest tip of Dublon Island at Truk including the seaplane base and a portion of the anchorage.

The caption beneath the photograph states that two submarines are observed in the harbor, an observation that any of our search planes would be glad to make—

then attack. The object called "two submarines" is, in reality, a floating dry dock, which, although damaged, is still in commission.

Enclosed is a vertical photograph showing the dry dock in action.

Advanced Base D. C. MCMILLIN LIEUT. USNR

¶ NANEWS stands corrected by Reader McMillin.

SIRS:

Members of this Marine Air Group were pleased to read about the record set by the U.S.S. *Matanikau* on making 602 carrier landings. For your information, the ship was operating with pilots of one Marine fighter squadron and one torpedo bombing squadron, which comprise the carrier air group. The landing signal officers were Captain Robert H. Brumley, USMC, and Captain Hugh J. Curran, USMCR, who we believe deserve a lot of the credit, as this was accomplished without accident.

Letters have been written by Admiral A. E. Montgomery and Major General Claude A. Larkin, commending those concerned.

MCAS SANTA BARBARA CAPTAIN USMCR

¶ For security reasons, numbers of air group and squadrons were deleted from this Marine captain's welcome letter.

CONTENTS

ANSWERS TO QUIZZES

● PIX QUIZ (p. 30)

1.3 2.2 3.3 4.4 5.3 6.1

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

● BEST ANSWERS (p. 15)

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

● NAVIGATION PROBLEM (p. 20)

1. Antares 3. Canopus
2. Betelgeux 4. Procyon

● GRAMPAW'S QUIZ (p. 12)

1. Right. Ref.: CAR 60.3403
2. Day: Bend arm across forehead (weeping).
   Night: Fire red Very signal.
   Ref: *BuAer Manual*, Art. 6-119
3. a. For hydrometer or electric constant speed propeller, set at maximum cruising RPM.
   b. For electric propeller, set in "automatic" position.
   c. For counterweight constant speed propellers, set at full high pitch (decrease RPM). Ref: TO 111-44.
4. Ceiling 1000 feet and visibility three miles. However, a certified tower operator in a radio-equipped tower may authorize flight at 1000 feet or less when visibility is not less than one mile. Ref: CAR 60.440. Also see ACL 47-45.
5. Technical Orders. Ref: *BuAer Manual*, Art. 6-130. (Also, some *Pilot's Handbooks*)

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.

Sing a song of Tussie
So far up in the sky;

4 & 20 gunners,
Will he identify?

No, Tussie fails to do it
And shells begin to sing

His plane is just a mem'ry,

And Tussie's on the wing

Moral: IDENTIFY when approaching friendly ships

LANDINGS IN BORNEO

AMERICANS and Australians teamed up for the surprise landings in Borneo after enemy defenses had been softened up by devastating pre-invasion plane raids. By July 2, the third landing had been made and much of the important oil territory was dominated by the Allied forces.