

NAVAL AVIATION

# NEWS

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Ordnanceman: Fleet Air Arm

British Fleet Air  
Jap Pilot Material  
Grampaw Pettibone

Jan. 15, 1944  
RESTRICTED



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# JAP PILOT MATERIAL

FROM THE ATTACK on Pearl Harbor through the battle of Midway, Japanese naval pilots were described as almost uniformly good. Japan held the initiative and her air force personnel, trained to think in terms of attack, made the most of their opportunities.

They were seasoned and experienced products of a thorough training program extending over several years. They were a distinct credit to the Navy's long preparation for the Pacific war. Aggressive and resourceful, they knew capabilities and advantages of their own aircraft, and they flew them with skill and daring. They were quick to change their methods to meet new situations and to counter successfully the changes, modifications, and new designs of Allied aircraft.

After Midway, in the summer and fall of 1942, there was a noticeable deterioration in quality of Japanese naval pilots. In their over-all competence and their com-

bat proficiency, a markedly inferior brand of pilots appeared in the South and Southwest Pacific areas. They made glaring tactical mistakes, unnecessarily exposed themselves to gunfire, got separated and lost mutual support, and at times seemed completely bewildered.

OF COURSE, this represents only the general trend, to which there were exceptions. So far, all actions involving carrier pilots have borne out indications from other sources that they are the cream of Japanese naval air force. Before joining their carriers, they apparently are given a long period of advanced training and operational flights at naval air bases in the Empire, and they pile up a large total of flying hours before seeing action in a combat zone. One cannot assume that these pilots will be met only in the vicinity of carriers, for a group may at any time be shore-based for strategic reasons.

# HUSBANDING AIR STRENGTH GNAWS AT STAMINA OF JAP PILOT TRAINING

ABOUT THE FIRST of last year, Japanese Army pilots appeared in the Southwest Pacific. Combat reports indicated they were inferior to the naval personnel. The Army men, probably drawn from China, Manchuria, and the Empire, apparently lacked the combat experience of the naval pilots. On the quality of the latter, from January until about May, reports were mixed.

One flight of Japanese planes might show a considerable difference in ability among the individual pilots involved. There is evidence that a sub-flight leader is picked on the basis of combat experience regardless of rank. Undoubtedly, relative novices were being mixed in with older hands on many combat missions. Occasionally, attacks were pressed home, and the fliers showed great skill, but the over-all picture of comparatively poor quality remained much the same.

Many hypotheses, based on actual information, have been set forth to explain this diversity of quality exhibited by Japanese air personnel. There continue to be puzzling features in the situation, but the following general explanation is believed to be reasonably accurate. During the period up to Midway, the Japanese went "all out" to accomplish as many objectives as possible.

With respect to both planes and trained personnel, they had no adequate regard for economy of force. Reserves of both were limited, and production and procurement also were limited. In the early summer of 1942, Japan reached the limit of her expansion; by that time, it now seems apparent, her supply of excellent first-line pilots was largely exhausted.

Those who had survived were returned to the Empire for rest; in many cases they became instructors in various naval air schools. They were replaced by second-rate personnel. At the same time, following Midway, a further drain on front-line pilots resulted from Japan's realizing the value of night operations. Considerable time was needed for training night-flying pilots. (These have been appearing in increas-

ing strength through the summer of 1943.) Later in 1942, some of the better pilots, drawn probably from this group and from the early veterans, may have been withdrawn for special training in the new types of planes, both Army and Navy, that have in recent months appeared in forward areas. Arrival of these aircraft coincided to some extent with reports indicating improvement in flying personnel.

To explain the cases noted of great diversity in quality shown on the same day by different flights or even within the same flight, at least two points set forth above should be recalled. A flight or sub-flight leader may on occasion be the only pilot in his group with any extensive combat experience. Carrier pilots may appear at the same time as less highly trained, land-based personnel.

The total elapsed time from the beginning of the average pilot's training until his appearance in a combat zone is believed to have been shortened considerably.

It is believed that the shortage of trained aircraft crews is one of Japan's gravest handicaps. This is not to say she has no good pilots or that Allied fliers as individuals have reason for over-confidence. They are likely to meet just as efficient Japanese pilots as they ever have encountered, flying faster and more rugged aircraft with increased firepower.

THE SHORTAGE of good crews, it is believed, has resulted in a relative husbanding of air strength. This already has been a notable feature in the Southern Pacific combat zones in recent months in regard to bomber sorties. To what extent that comparative inactivity has been a result of personnel shortage is not known, but a correlation between them is believed to exist.

One final aspect of this subject should be noted. There is little evidence to support early war propaganda that Japanese airmen are suicidal fanatics. Some instances have been reported of pilots attempting to crash their planes into Allied ships, aircraft and land targets, but these have been comparatively few.

Lt. Gen. George C. Kenney, Allied air commander in the Southwest Pacific, declared recently: "The Japanese pilots we are meeting now are definitely second rate and they probably will stay that way. I am satisfied that the Japanese do not give their personnel nearly as much training as we do our boys." This may account for the deficiency.



## WHY QUALITY OF JAP PILOTS IS WEAKENED

- 1 LESS RIGID SELECTION ..... 
- 2 SPEED UP OF TRAINING ..... 
- 3 INADEQUATE GUNNERY, NAVIGATION, COMMUNICATION ..... 
- 4 LOWERING STANDARDS OF FLIGHT TESTS ..... 
- 5 CUTTING DOWN OPERATIONAL PRACTICE ..... 

NA News ANALYSIS

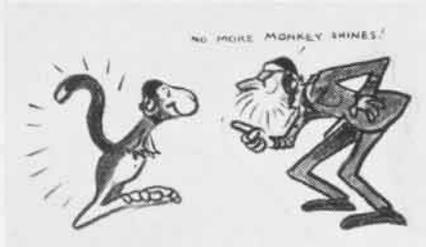


**INSTRUCTOR** explains air traffic regulations around training field to group of Japanese cadets diligently taking notes on procedure to be followed in landing



**PARACHUTE** adjustment is checked for proper fit by instructor before cadet takes first flight in trainer, similar to "Yellow Peril" used by U. S. naval cadets

# GRAMP AW PETTIBONE



## Dry Tank Plague

At the end of 1½ hours of touch-and-go landings in a TBM-1, the engine quit and a serious forced landing resulted. The fuel selector valve was found on center main which contained only one gallon of gas. Both wing tanks were full.

 *Grampaw Pettibone says:*

Torpedo plane pilots have no monopoly on this sort of carelessness. And mark you well, wherever found, it strongly indicates a single-track mind which is a dangerous failing in any aviator.

## Attention Instructors

Here is the flight history of a certain aviation cadet:

(a) He received six "NG" checks and was twice granted squadron board time in primary training.

(b) In the intermediate training he again received six down checks and twice more was given extra time by that squadron board.

(c) His record is studded with pages of remarks such as "very slow to react," "headwork weak," "poor coordination," "not safe for solo," "no aptitude," and similar comments.

(d) One day in operational training he made a tight turn during a division join-up at 1,500 feet and went into a spin. The plane came out of the spin very rapidly, but then pulled up and fell off into a second spin. Again a quick recovery was made, but for the second time the plane was pulled up radically and fell off into a third spin from which no recovery was made. The plane crashed into the water at high speed.

 *Grampaw Pettibone says:*

What do you think was the underlying cause of this progressive stall and spin? To me, it is a perfect example of what might be expected when a soft-

hearted board keeps giving a student extra time when his record definitely doesn't warrant it. This is just the reverse of kindness, and it is cases such as this which have made it necessary to definitely limit the amount of extra time that a board can give to any one student.

There seems to be a question of psychology involved in the joint action of a board as compared to that of a single individual. It is only natural that each person on a board feels less responsibility for the result of the board's action than if he had to make the final decision alone. It is, therefore, less strain on the conscience to give a student another chance.

A word to the instructors: No student will ever appear before a flight board unless you impartially discharge your duties and call your shots as you see them.

Hope none of you instructors and board members have bad dreams. Twenty years ago I stretched my conscience and gave a student an "OK" after an unsatisfactory check hop. Never again! I've felt a personal responsibility for his safety ever since. All these years I've kept my fingers crossed.

Upon coming to the Bureau, I got a chance to look up this officer's accident record and found that my worries were fully justified. He has had far more than his share of crashes and most of them are listed as "pilot error." Fortunately for both of us, none of them turned out very serious.

This officer should be an admiral soon now and I will be glad when he reaches retirement age, so I can breathe easy again.

## He Didn't Turn Back!

A careful bit of piloting, performed by a Marine lieutenant when the propeller on his F4F-4 went out, is reported as follows:

"The take-off was normal and the pilot had no indication that anything was wrong until he had reached an altitude of 200 feet. The landing gear was almost retracted and the pilot was preparing to join up with other planes in his division when the propeller went in to full high pitch.

"In spite of maximum throttle, the

air speed was dropping off when the altitude was maintained. The pilot let his landing gear down, used full flap, and prepared for an emergency landing in a farmer's field. Realizing that he was falling short of the field, the lieutenant dropped the nose of his plane, bounced the wheels on the ground and mushed over a 15' irrigation ditch into the field.

"Unfortunately, as the plane rolled to a stop, the soft ground caused it to nose up, bending the propeller, and as it fell back to a three-point attitude, the tail wheel assembly was damaged."

## Pilot Error Plus

Marine Base Defense Aircraft Group 42 submits the following report covering flying activities for one month:

"A TBF-1 taxied out, and its wing collided with another because the pilot had failed to notice the plane ahead had stopped. . . . Another pilot in an SNJ was taxiing out for a take-off. He



reached for the mike to ask the tower for take-off instructions, forgetting to watch where he was taxiing. The plane swerved to the right, hitting a parked truck. . . . A TBM-1 crashed because, according to the report, it was landing

too fast, the interval was too close, and the brakes were used excessively. . . . A Corsair flew too low over the ocean. His prop dipped into a wave. The engine froze. The plane was lost at sea. . . . Three FM-1's groundlooped all because of 'pilot error.'

"More serious, however, was the crash in which a Wildcat pilot lost his life. He radioed the tower and said he was coming in for an emergency landing, and then added, 'there's no hurry.' He was cleared into the traffic pattern at 1,000 feet. He made a circle of the field above the pattern and then came in to land. He crashed a mile from the field on his downwind leg.

"Another pilot, in an SNJ-4, lost his life when, in bailing out at night, his pilot chute shroud lines became tangled, for some unexplained reason, about his legs. Failure to familiarize himself with

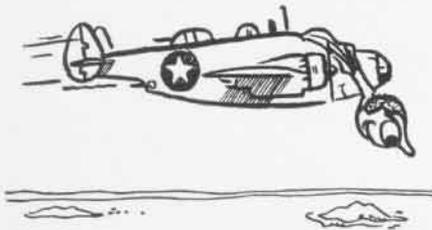
## HOW'S YOUR WIND?



the country around the field, although he had been here for several months, was largely responsible for the fact that he became lost on a night flight, and with the gas running low had to bail out. He became confused when he noticed the autos on the coastal highway making a 90-degree turn to the right. The 90-degree turn is only 20 miles away from the field and had he been familiar, he could have easily followed the coastal road to the station."

## Torpedo Chasing

While concentrating his attention on marking the position of an expended practice torpedo, the pilot of a PV-1



stalled his airplane in a steeply banked turn and crashed.

The report on the investigation of this accident recommended that this type airplane not be used in torpedo recovery operations or in similar operations that require steeply banked turns at low altitude.

**COMMENT**—Airplanes with high wing loadings are not as suitable for torpedo recovery work as other types. If it is essential that such planes be used for this work the pilot should be impressed with the danger involved.

While torpedo chasing is not considered dangerous, there is a tendency in this type of flying for a pilot to become so engrossed in watching the torpedo that he neglects to give sufficient attention to the control of his airplane. Most of the accidents occur as the result of loss of airspeed in a turn. It must be remembered that in a turn a plane has an increased acceleration and will therefore stall and spin at higher than normal speed. Planes must, therefore, be flown at increased speed in a turn, to compensate. The higher the wing loading, the more essential increased speed becomes.

## Solo Flight

A cadet pilot landed at an outlying field, retarded throttle, set parking brakes and left his N2S-4 unattended, while he walked over to chat with two other pilots. The little "yellow fighter" took in the situation and considered the time opportune to make a dash for freedom. Its throttle began to creep forward, the brakes became disengaged and the plane began to move. The cadet, observing the motion, ran to his plane

and grabbed a wing, but by this time speed had increased so that he was unable to do more than just hang on, causing the plane to commence a series of ever widening circles. Speed continued to build up and the cadet lost his hold, admitting defeat by turning tail and scampering over a fence to safety.

The other two students also joined the chase, *also leaving their planes with engines running, unattended.* The contest proved too much for these last two entrants and they were forced to return to their own planes and taxi them out of danger. By this time the renegade N2S was pretty mad, digging a wing into the ground now and then just to show its temper. At last the little "fighter" apparently became weary of the sport and decided to spread its wings. Speed was sufficient, so that when coming into the wind the last time the plane straightened out, took off, climbed normally until reaching an altitude of about 50 feet, at which time it apparently decided to make a steep turn and zoom the field downward. But like so many foolishly piloted planes before it, this trainer stalled in the turn and dived to earth.

 **Grampaw Pettibone says:**

Wasn't that funny! I smiled too, but the thing that wiped the smile off my face was the realization that an airplane was completely wiped out because a pilot deliberately disobeyed orders. The money value of this plane was approximately \$10,000, but money won't replace the loss of critical matériel and labor involved.

## Are Your Fittings Fastened?

Two primary trainer crashes have occurred recently as a result of baggage compartment doors coming open during aerobatics. Motor and cockpit covers spilled out and lodged in the tail section, blanking out controls.

Inspection after these crashes showed the baggage compartment rotary stud fasteners to be in perfect working order. Pilot and plane captain



were considered equally responsible ("carelessness") for not making careful pre-flight checks of these fittings to insure that they were properly secured.

The stations concerned are conducting drives to make all hands conscious of the importance of, and the necessity for, careful pre-flight checks.

 **Grampaw Pettibone says:**

And just to show they don't trust anybody, one station has ordered all covers removed from aircraft during local flights. That is sound aviation practice, however, on the principle that any hazard removed prior to flight cannot cause an accident.

## Final Warning

A list of names, recently posted on the bulletin board of a squadron at Harlingen (Tex.) Army Air Field, was accompanied by these terse instructions: "The following enlisted men will pick up their Good Conduct Medals at the supply room this afternoon. Failure to comply with this order will result in disciplinary action!" [Air Force.]

## For Comfort and Safety

**DEAR GRAMPAW PETTIBONE:**

In the December 1 issue of NANews you have a discussion regarding the neglect of pilots to wear shoulder harnesses. In this discussion you attribute the pilots' neglect to stupidity, false pride, and fatalistic ideas.

The shoulder harness in the F4U and F6F have always been most uncomfortable to me. I have found myself in the final approach to landing fighting frantically to keep the shoulder straps from slipping off my shoulders, like some woman having trouble with a various assortment of ill fitting straps, harnesses, etc.

In this squadron our parachute man has attached a strap which crosses the back of the shoulders and prevents the harness from slipping off the shoulders. This arrangement gives a snug, comfortable fit and is widely acclaimed by all our pilots, who, for a short time, flew with the unmodified harness in the F4U.

It is firmly believed that if shoulder harnesses were made, or as in our case, modified, with some thought of the pilot's comfort, a case of a pilot getting caught with his harness down would be a rare event.

EXECUTIVE OFFICER  
Marine Night Fighter Squadron 532

 **Grampaw Pettibone says:**

This connector strap IS a good idea and does make the shoulder harness more comfortable. The use of this strap was recommended in Technical Note 28-43.

The reason these straps are not tacked on at the factory is that shoulder harnesses are used under varying conditions and by different size pilots, thus necessitating considerable variation in adjustment.

# DID YOU KNOW?

## 'Mecs' Get Wrecked PB2Y Students Work on 'Coronado'

NATS, NEW YORK—Flight mechanics school at LaGuardia Field has secured a capsized PB2Y3R for use in training its cadets in reconstruction of aircraft.

Two complete 1200-hp engines were installed for use by the instruction staff, together with instruments necessary for running the power plants. Extra nacelles are used for training in engine installation.

While working engineering instruments are used in the ground trainer, flight instruments are dummies. The instruments were taken from the aircraft after it had capsized in salt water and were rebuilt by instrument shop technicians.

This is considered quite an accomplishment, for it was not known that aircraft instruments once submerged in salt water could be restored to top-

flight condition. The instrument shop men went aboard the flying boat as soon as it was clear of the water and removed the equipment, placing it in a solution of gasoline and oil to prevent corrosion by exposure to air.

►*BuAER COMMENT*—The use of gasoline-oil mixture is satisfactory for relatively short storage periods as protection against corrosion of instruments that have been submerged. However, the recommended method of handling submerged instruments is stated fully in Chapter 1 of the aircraft instruments handbook.

## Well Trained, Ergo Alive Cadets Calm Awaiting Rescue

NAAS, CORRY FIELD—Two aviation cadets here are alive today, thanks to cool headedness and application of self-preservation methods learned in Navy flight and ground training classes.

The cadets were rescued by naval personnel after being adrift in the Gulf

of Mexico—one for eight hours, the other for 27 hours. Both now believe the Mae West life jacket is just about the world's greatest invention.



CAREFUL TRAINING MAKES SMART SURVIVORS

The men were on a gunnery run in an SNJ when the engine cut out. The pilot advised his companion to bail out at about 2,000 feet, then left the plane himself at 1,000 feet. They were approximately 20 miles south by east of Perdido Bay. The Gulf was rough with a stiff east wind whipping up 12-foot swells with many whitecaps, making it practically impossible to locate survivors in the water.

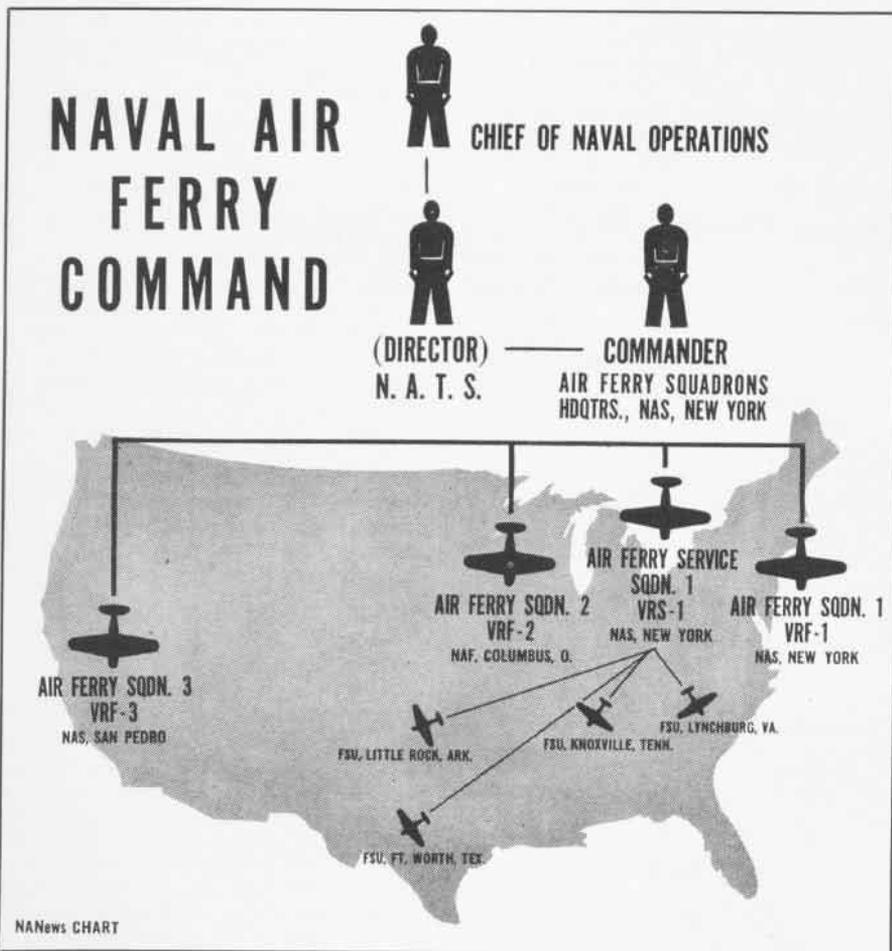
The pilot was picked up about 1900 the same day by a boat from Yardcraft. He had seen its lights in the dusk, yelled when it came near, and was heard. The other cadet was found the following afternoon, having drifted to a point near Mobile Bay. A PBV from Bronson Field rescued him after the navigator had spotted the yellow of his Mae West against the blue of the Gulf.

## Neither Suffered Physical Injuries

The pilot, considerably sunburned, was chafing to get back on duty. His companion stayed in the dispensary for a check-up, but likewise was anxious to return to duty, complaining he was being forced to goldbrick.

Both men said they were confident of being rescued. They could see planes out in force and knew the Navy was looking for them. One swam and thinks he made progress shoreward. The other drifted, and the wind and current, quartering slightly, had carried him near shore when rescued.

The pilot said the carbonic cartridges of his Mae West did not func-



tion. He inflated his jacket by blowing into tubes, after first having used his trousers as a buoy, a trick which he had learned at pre-flight school.

## New Record in Bond Drive Navy Remembers 'Pearl Harbor'

Navy personnel established a new one-day record in the purchase of War Bonds on Pearl Harbor Day, December 7, the total sales for the day reaching \$22,232,518. Original goal had been set at \$15,000,000. Total for December 7, 1942, was \$7,417,000. Results in 1943 represent 300 percent of those of 1942.

Pensacola headed the list of Naval Air Stations with a total of \$491,006; followed by Quonset Point with \$385,275, and Corpus Christi with \$367,819.

## New Maps Used at Corpus Flight Plan System Changed

NATC, CORPUS CHRISTI—The routine business of filing flight plans for cross-country trips has been modernized at this center, with a number of new devices at the air traffic control office aimed to promote better flying conditions.

A huge 8' x 12' airway map of the United States, with a miniature airplane located at Corpus Christi, gives the pilot his air mileage instantaneously. By moving the tiny aircraft anywhere over the map the number of miles from Corpus to the destination is auto-



matically registered by a metal pointer and scale at the bottom of the map.

Having determined air miles to be flown and filled out his flight plan on new, more legible forms now in use, the pilot may have to wait a short while for clearance or weather changes. This time is made entertaining by watching sound motion pictures from the Navy library. A compact juke-box type of projector and latest informative films have been supplied by the special devices department.

When clearance for the flight is granted, the pilot notices which runway to use on his take-off by a glance at an electrically operated runway board, kept in up-to-the-minute correctness. It simulates the actual field layout, including runway numbers, lights and markers, giving the pilot an exact picture of the field before he enters the cockpit.

Plans are under way to install a weather map with illuminated lucite indicators for airports in this vicinity. It will show at a glance whether any field is contact, instrument or closed. An hourly check, with special aerology reports, will be maintained at the field.

## VR-7 Does Hurry-Up Job

### Moves Men, Cargo in 5 Days

NAS, MIAMI—VR-7 squadron set a record for speedy action recently in transporting 170 personnel and 11,000 pounds of cargo from Trinidad to British Guiana in five days on short notice. The second day after the order was received the first shipment left Trinidad. After nine flights the job was completed, with the aid of two planes brought in as extra sections for the big moving job.

## BEST ANSWERS

### XIV—Flying Power

Pick the best choice to complete the statements below, then check your answers on page 40.

1. Reduction gearing is used to—

- a—allow engine to turn slower than propeller
- b—reduce speed of valve-operating mechanism
- c—allow crankshaft to turn faster than propeller
- d—allow propeller rpm to exceed engine rpm

2. The number of revolutions needed to fire all the cylinders of a seven-cylinder radial engine is—

- a—one
- b—seven
- c—two
- d—fourteen

3. In a twin-row fourteen-cylinder radial aircraft engine, there will be—

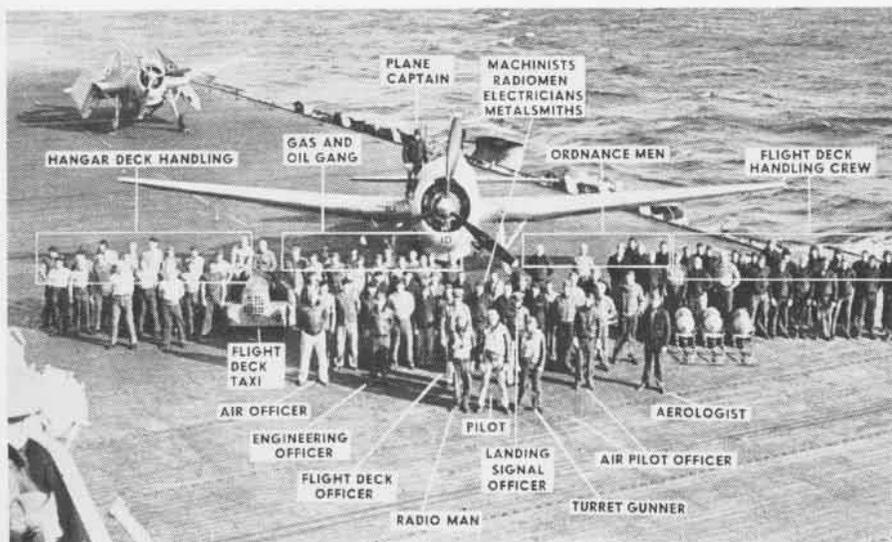
- a—seven exhaust valves and seven intake valves
- b—twenty-eight power strokes per cycle
- c—fourteen exhaust and fourteen intake valves
- d—fourteen power strokes per cycle

4. The exhaust valve of an aircraft engine operating at 2,400 rpm will open—

- a—2,400 times a minute
- b—40 times a second
- c—4,800 times a minute
- d—20 times a second

5. If the throw of the crankshaft of a radial engine is two and a half inches, the engine has a—

- a—bore of five in.
- b—stroke of two and a half in.
- c—stroke of five in.
- d—compression ratio of five to one



NINETY-SEVEN MEN are assembled in this photograph, taken aboard the U.S.S. Card somewhere in the Atlantic, demonstrating the sizable crew necessary to keep one B-24 Liberator operating against the enemy. The picture is one of the first made aboard a vessel converted into an aircraft carrier, the Card being an escort carrier. When the Lib takes off from a carrier's deck it has in it only the pilot, radio man and turret gunner, but a lot of others are "sweating it out" aboard ship till the plane returns to its flight deck again.



MECHANICAL "DILBERT DUNKER" IS PORTION OF PLANE FUSELAGE RIGGED UP TO SIMULATE WATER LANDING, TRAINING CREWS IN ESCAPE PROCEDURE

## ESCAPE FROM SINKING PLANE

Learning From Experience, Cadets Practice Ditching Without Usual Accompanying Danger

How to get out of a plane forced down at sea is as much a part of the cadet's pilot training as flying, according to instructors at the Naval Air Training Center, Corpus Christi.

Since sheer weight of the engine quickly submerges an airplane, pilots downed at sea have only seconds in which to escape with survival equip-

ment. So practice in the art of becoming quickly detached from the sinking craft is made a required step in earning Navy wings at the Texas center.

*Dilbert Dunker*, ingenious mechanical teacher employed to make escape practice real, is the cut-off fuselage of a plane hoisted by lines and pulley. When dropped into a tank of water

with its occupants, the plane steadily sinks below the surface, allowing pilot and crew twenty-five seconds in which to abandon it, salvage equipment, and inflate their Mae Wests.

Corpus has learned that self-preservation by practice is the surest way to instruct pilots and crews who may encounter the real thing in combat areas.



PILOT MUST WORK FAST AFTER CRASH LANDING



CREW HAS 25 SECONDS TO SALVAGE EQUIPMENT



PLANE SINKS AS CREW TAKES TO RUBBER RAFT

# LONELY LITTLE PACIFIC ISLAND

ONE OF THE war's strangest friendships has developed between natives of a tiny South Pacific Island and crews of the big Navy patrol bombers that fly over it daily in their search for Jap surface, sub, and air forces. The friendship is all the more remarkable because the parties have never met. It's strictly remote control.

Navy plane crews drop "bombs" of cigarettes, candy, food, and articles of clothing on this tiny speck of land nearly every time they fly over it, and they are rewarded by "Thank You" notes written in huge letters on the beach with stones and pieces of wood.

THE GREAT THANK TO OUR FRIEND THANKS YOU WE WILL

HELP YOU WHEN WE PRAYERS BECAUSE YOU HELPS VERY MUCH TO US, is a sample. Another message read: TO THOSE SENT HIS GIFTS TO US THANKS VERY MUCH GOOD IDEA AND GOOD LUCKS LOTS.

The notes are changed about once a week and are always on the same stretch of beach, not far from a typical thatched hut.

When planes first flew over the island, no natives were to be seen. Now, however, the natives have lost all timidity. They are in sight every time the planes zoom low, waving wildly and scrambling for gifts that are showered down. Once a plane flew lower than the pilot intended and the natives had to lie flat on the beach to avoid injury. But that didn't discourage them.

When they have nothing else to give away, enlisted men sometimes toss over old dungarees or "skivvie" shirts, articles of clothing the natives highly prize.

Once a note of tragedy crept in. A pilot was startled to read the cryptic message ONE OF US IS DEAD. The temptation to land and investigate was strong, but orders were orders and the pilot held to his course.

The Navy crews believe that a missionary is, or has been, among the natives, which would not be at all uncommon.



U. S. GOOD NEIGHBOR POLICY EXTENDS TO SOUTH PACIFIC AS PILOTS READ MESSAGES OF THANKS AND GOOD WISHES INSCRIBED ON SANDY BEACH



FRIENDSHIP GAINED IN EXCHANGE FOR SMALL GIFTS DROPPED BY PLANES MAY SOME DAY PAY DIVIDEND IN LIVES FOR AIRMEN FORCED DOWN NEARBY

# 25 YEARS AGO THIS MONTH

## Naval Aviation in January 1919

1919—Rear Admiral Hugh Rodman recommended to the House Committee on Naval Affairs construction of a new type of "mother" ship for launching seaplanes.

"The mother ship for airplanes certainly is vital to all future navies," said Admiral Rodman. "I have seen them operate and know they are a necessity. They are in the embryo stage at present, but it is essential that the American Navy should carry on experiments to develop such ships and that they should be made an additional complement to the fighting fleet."

Ideas of a turntable catapult which could be trained into the wind suggested by Comdr. Kenneth Whiting.

Jan. 24—First Marine Aeronautic Company, which operated an anti-submarine patrol station of 10 R-6 seaplanes, 2 N-9 seaplanes, and 6 HS-2L flying boats at Ponta Delgada, Azores, was ordered abandoned. This company was the first completely equipped American aviation unit to leave the United States for service in the war.



ADMIRAL RODMAN ABOARD NEW MEXICO IN 1921

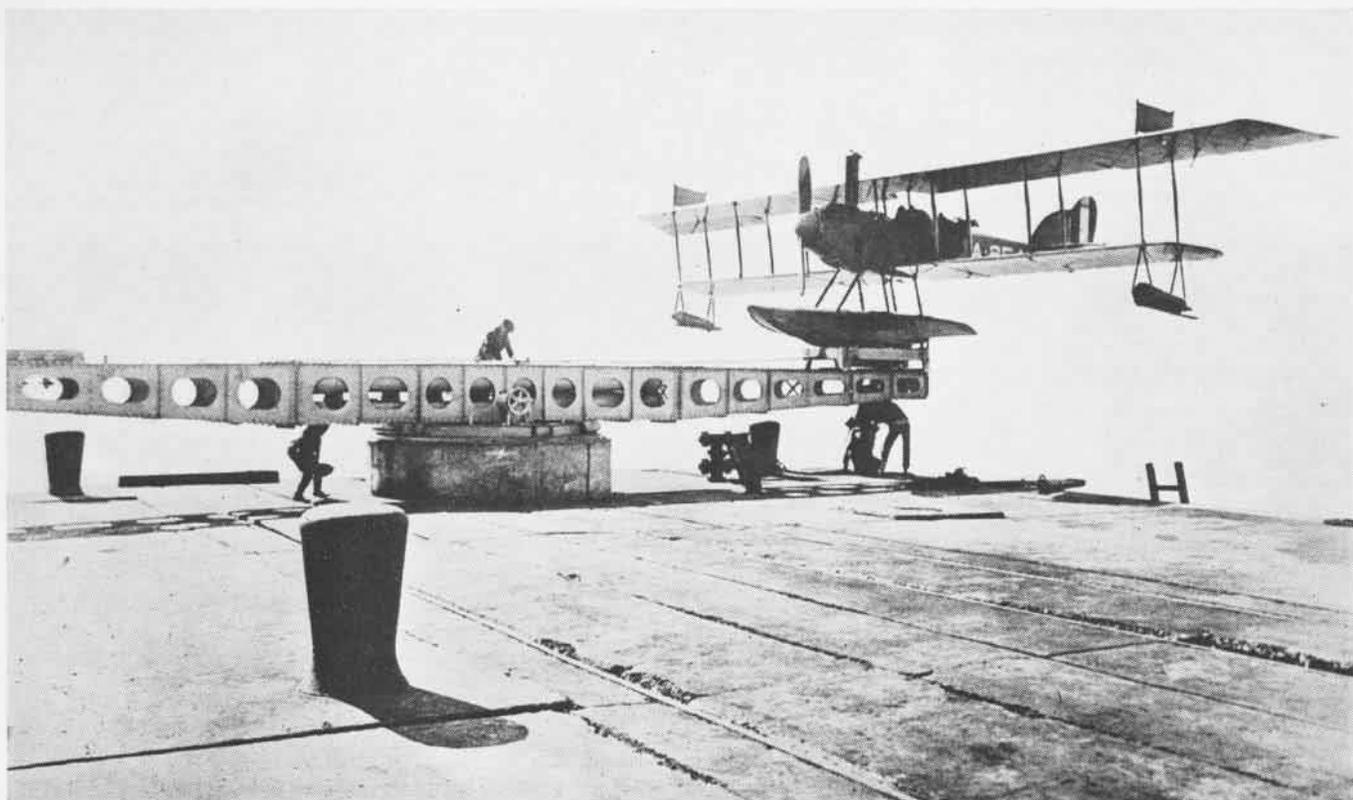
Jan. 29—ARMY LETTER: "The Navy Department has informally requested that hangar space, etc., be granted them at Hazelhurst Field for purpose of conducting preliminary flight tests with a small airplane designed for use in landing on naval vessels."

Jan. 31—Ship Plane Division joined

ships. Lt. Comdr. R. O. McDonnell, Lts. Palmer and Haviland aboard the U.S.S. *Texas* and Lt. Hammond aboard the U.S.S. *Mississippi*. Lts. Wardell, Wagner and Blotner joined the latter unit later that month in Guantanamo. *Texas* erected platform on No. 2 turret and the *Mississippi* did likewise. Six flights were made from the platforms, three from *Texas* at anchor, and one each from each vessel under way. All were successful. Sopwith Strutter-and-a-half, Sopwith Camels, and SE-5's were used. McDonnell spotted by radio for the *Texas* at 20,000 yard range operating from the shore.

These planes and pilots were put ashore upon return of the Fleet in May, 1919, at Hampton Roads. Unit moved to Langley Field where it operated for about three months.

Other pilots joining the organization were: Carson, Biggs, Judson, Bailey, Finch, Brandenstein, Letzkus, Eliot, Conley, Rhodes, Hatdendorf, Wolfer, Grier, Curtiss, and Montgomery. In August, 1919, this unit disbanded. A nucleus remained at Hampton Roads: Lts. Haviland, Rhodes, Laverents.



NAVY'S FIRST TURNTABLE CATAPULT, FORERUNNER OF PRESENT-DAY TYPES, WAS CONSTRUCTED AND INSTALLED ON U.S.S. MARYLAND IN 1921

# MISSIONARY HUT IS LOST PILOT'S SHANGRI-LA

IT STARTED OUT as an ordinary day for the Marine fighter pilot. Sixteen F4U's were scheduled to escort a group of B-24's preparing to strike a Jap base. They took off with machine-like precision, and the rendezvous was made on schedule. Suddenly twenty Zeros spilled out of the clouds, and an exciting battle ensued. The Marine scored two of them, and headed for home believing his tangle with the Japs had been as close as possible. NANews quotes from the report of this aviator.

A ZERO came out of a cloud layer without warning, and made a run on my port bow with a full deflection shot. One 20 mm HE shell hit my throttle quadrant and completely shattered the throttle, prop pitch control, mixture control, and supercharger control. Big fragments of the shell hit my left wrist. The engine sputtered for a few seconds, and then went dead.

Didn't want to bail out. Knew damned well he would shoot me going down, so I dove to get more speed and make his shots difficult, but he peppered me all the same. The plane was a mass of holes, and I could hear the 20 mm splatter against the armor plate all the way down.

When I hit the water, both flaps and wheels were up, and the air speed showed 150 knots. We made one skip, then hit damned hard. My shoulder harness was on spring tension instead of locked position, so I was thrown forward, hitting the gun-sight, knocking out two teeth, breaking my nose and being completely stunned.

[  *Gram paw Pettibone says: See!* ]

I don't know how I got out of the plane. When I came to, I was in the water and my Mae West was inflated. I was hanging on to the rubber boat which was inflated, and my parachute was in the boat. The plane had sunk. The first thing I realized was a strafing pass being made at me by a Zero. I ducked under water and hung on to the rope of the raft, and after one try, he gave up and left.

I could see land in the distance, so I started out to paddle. The first day I got within four miles of shore but was too tired to carry on. By morning I had drifted out to sea again, so I spent the entire next day reaching land.

After a good night's sleep on shore, I headed south along the coast on native trails. I'd gone about two miles when I came to a ditch. I crossed it on a log bridge and suddenly I heard people talking. I stopped short. There, not

## MARINE CORPS REPORT

more than two feet away from me, was a camouflaged sand bagged outpost. There were two Japs in it. They were so close I could have easily reached out and touched them.

Fortunately I had on sneakers so they hadn't heard me approach. I stood perfectly still while they kept talking to each other. When I was very sure they hadn't seen me, I dropped down on my hands and knees—and BEAT IT!

That was enough of the south coast for me! I headed back up north where my boat was, and spent the rest of the day investigating the area around the place I had made shore. I cracked a couple of coconuts, drank the milk, and ate the meat. I slept in the boat at the place I had spent the previous night.

ploring around in the bush. About a mile inland I found a nice cold waterfall that I used for drinking water.

By the end of the week I knew I wasn't going to get anywhere hanging around there, so I decided to head north again along a big wide path. By that time I didn't care whether I met natives or Japs—just as long as I met someone! After traveling approximately five miles I came to another native village destroyed by the Japs. I investigated the huts and one of them seemed to have been occupied by a Methodist missionary. As I came out of the hut I saw three natives in the distance. Two turned and darted into the bush, but the third one stayed.

I opened my big mouth and shouted "AMERICAN!" He came toward me, spoke in English, and told me his name. Immediately we were great friends and it was through his help that I got back.



THE FOLLOWING MORNING I headed north along the coast about half a mile when I came to a fair sized river. I spent about half the day trying to figure out what was on the other side. Finally I took off my clothes and swam across, floating the clothes and my Mae West across on a piece of wood. The native trail was pretty well marked, and after continuing along it about another mile, I came to a native village that had been destroyed by the Japs.

The village had a lot of good fruit trees around it. There were plenty of pawpaws, bananas, and coconuts, so for the next three days I made my headquarters there, doing a little ex-

## Overseas Briefing Changed Review Takes Day and a Half

MAG, CAMP KEARNEY—Briefing schedules for overseas pilots and crews have undergone several changes. Condensations of some subjects and expansion or addition of others have resulted in a pointed, informative, and complete review given all pilots before moving out on missions. Briefing now requires a day and a half, with the schedule broken into one-hour periods. The complete program includes lectures and discussions on engineering, geography, air survival and medical intelligence.

# SURVIVAL HINTS

## Cool Head and Common Sense Are Biggest Aids When Downed and Lost in Unfamiliar Country

**I**N A world-wide war of movement, you may suddenly find yourself stranded in unfamiliar surroundings in the Arctic, on the ocean on a coral island, or in the jungle or desert. You may tend to magnify the hazards of these strange places because of this unfamiliarity. But if you are armed with knowledge acquired beforehand, you will be capable of coping with the new surroundings and returning to your base in good physical and mental trim.

Survival in strange surroundings depends largely on resourcefulness. Your chances of success will be greatly increased if you are physically fit, if you are dressed and equipped for an emergency, if you know fundamental woodcraft principles and can to some extent apply them, and if you have at least a limited skill in a number of outdoor techniques.

Well-considered preparation, made while you have time to prepare, will help you when an emergency comes. Every airman should have proper gear aboard his plane or on his person before he starts on a flight. The best kit is useless to a pilot who has crash-landed if the kit is on his bunk on the carrier or at the base 400 miles away. Planes *must* be checked before take-off to see that necessary items are aboard.

The following items in your pockets or attached to your belt at all times will be excellent insurance, regardless of whether or not you also are carrying emergency and first-aid kits:

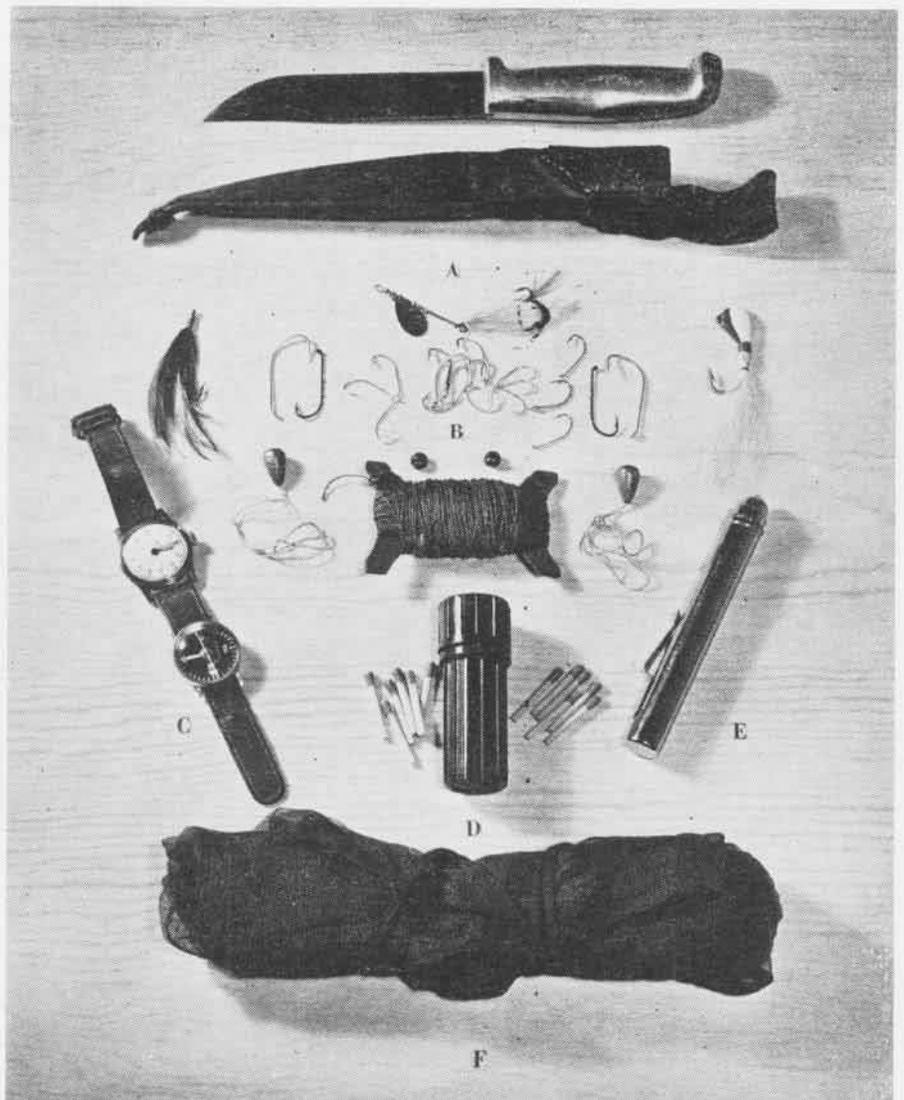
1. A strong pocket knife or sheath knife, preferably the latter.
2. Waterproof matches or matches in a waterproof container.
3. A small waterproof compass.
4. A pencil flashlight in a waterproof container.
5. A shirt-pocket fishing kit. This should consist of a dark light-weight fishing line, cadmium-plated hooks (especially small sizes, as most of the easily available food fish are small) and a small gold spinner with red and white streamer fly.
6. A mosquito head net is of great importance in jungle or arctic country, or wherever insect pests are numerous. Such a net will fold up no larger than a handkerchief.

When you are forced down on land in strange country, stick by your plane

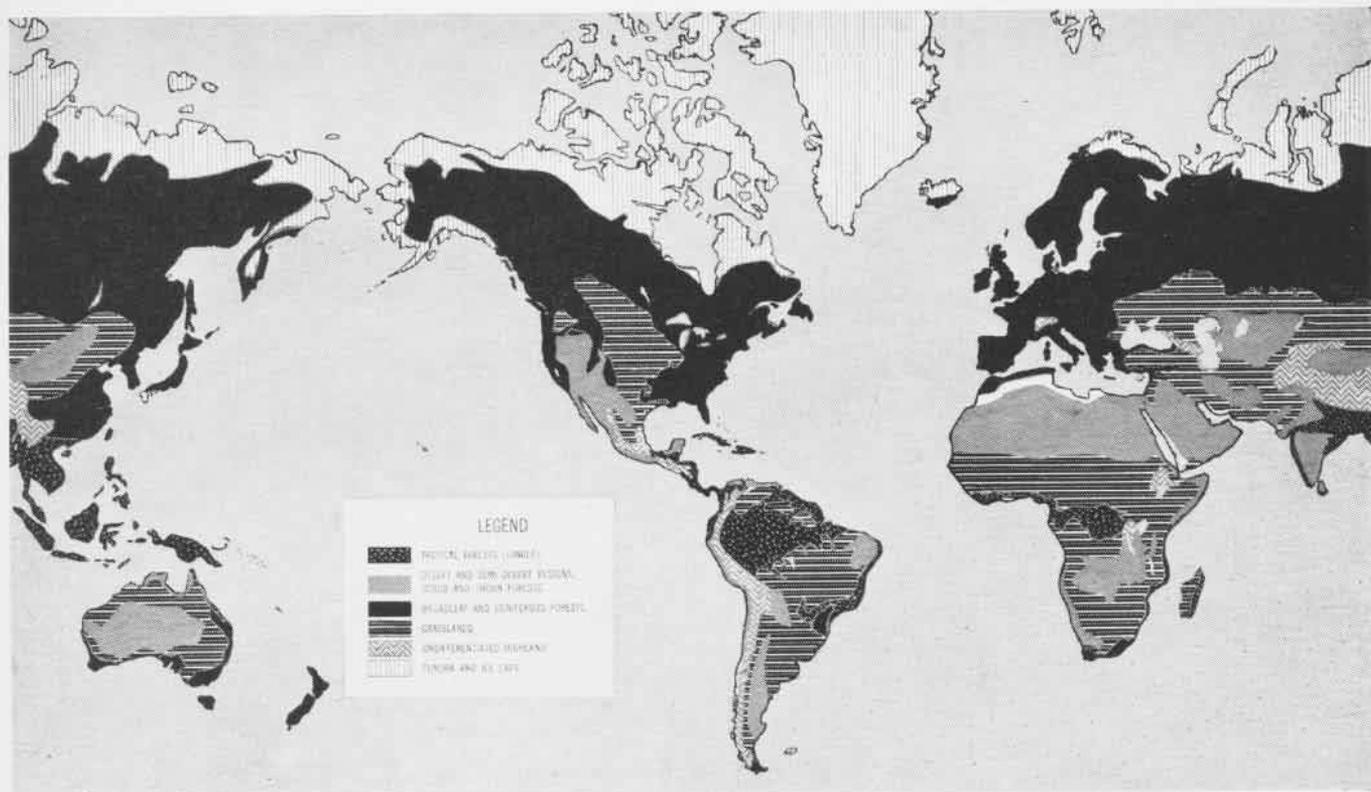
if there is a chance of rescue. It is easy to see, and may furnish a good shelter and base of operations. If you are in enemy territory, abandon the plane, first salvaging anything that can be of value to you in your trek to your own territory. Then sabotage the plane. Make a pack out of your parachute harness, cut a section of silk for a tent and hammock, save the shroud lines for a rope, and, if necessary, the rest of the silk for a blanket.

Over any considerable period you

must have food, but if water is available, if the body is not overexerted, and if the climate is warm, you can live off your muscle and fat for weeks. Don't eat if you lack water as eating uses up the body's water reserves. Determine a course to follow, and travel slowly. Your first consideration must be to keep physically and mentally fit. Start looking for food and water before you become too tired or exhausted to do so effectively. Prepare a bed and sleep when you become tired. Con-



SURVIVAL EQUIPMENT INCLUDES SHEATH KNIFE, FISHING KIT, WRIST COMPASS, PENCIL FLASHLIGHT, WATERPROOF MATCHES AND CASE, AND MOSQUITO HEAD NET THAT FOLDS UP TO HANDKERCHIEF SIZE



DISTRIBUTION OF WORLD'S RESOURCES SIMPLIFIES SEARCH FOR FOOD; CHART ABOVE INDICATES LOCATION OF PRINCIPAL VEGETATIVE REGIONS

serve your strength, and observe and think so that you act intelligently.

**A**LL FOOD is either plant or animal, and is interrelated and distributed according to definite laws. There is order underlying the diversity in nature and this order will help you in searching for food. Animal life is usually scarce where plant life is scarce.

Climate is the greatest single factor affecting the abundance and distribution of plant and animal life. Certain vegetative regions may be found throughout the world in more than one zone (Arctic, Temperate, or Tropic), but wherever these regions occur they will have essentially the same appearance and will contain similar types of plants and animals.

Every climate and area will have some forms of life which are familiar, and some which are new but usable. Look for edible plants and animals in distant countries in the same type of places that you found them at home. If you hunted squirrels at home, you will know where to look for squirrel-like animals in other parts of the world.

More than half the task of obtaining food lies in knowing what to expect in a given area and where and how to look for it. You would not, for example, expect to find the coconut palm at high altitudes or in a dense forest, but in low, sandy, seashore areas or on river flood plains. In an emergency, you might not start out to look for a

particular type of food, but you will have a general idea of what to look for as you travel through different types of country, and can plan your course so as to enter areas where you can expect to find certain plants or animals.

**N**EVER eat large quantities of a strange food without first testing it. If other foods are not available, eat a little of the strange one, and then wait a while. A small quantity of even a poisonous food is not likely to prove fatal or even dangerous, whereas a large quantity may be. In general it is safe to try foods that you observe being eaten by birds and mammals, but there are some exceptions.

Food eaten by rodents, (mice, rats, rabbits, beavers, squirrels, muskrats) or by monkeys, baboons, bears, racoons, and various other omnivorous animals usually will be safe for you to try. Unknown plant foods with milky juices should be avoided. Any plant parts with an unusually bitter or otherwise disagreeable taste are not only unpleasant to eat but may be definitely harmful.

Plants, water or land, furnish edible

|        |         |        |
|--------|---------|--------|
| FRUITS | BUDS    | NUTS   |
| SEEDS  | LEAVES  | STEMS  |
| BARK   | FLOWERS | ROOTS  |
| TUBERS | SAP     | SHOOTS |
|        | PODS    |        |

Edible animals vary infinitely.

1. Land mammals are easily recognized by their covering of hair. All are edible.

2. All birds and birds' eggs can be eaten.

3. Amphibians and reptiles (frogs, salamanders, toads, snakes, lizards, and turtles) are good sources of edible meat.

4. Various other smaller forms of animal life may be the most available foods at a specific time and place. They include:

SHELLFISH • clams, mussels, snails.

CRUSTACEANS • crayfish, crabs, shrimp, prawn.

INSECTS • ants, termites, grasshoppers, locusts.

They are numerous and are world-wide in distribution.

5. Animal by-products include:

EGGS • of birds, turtles.

HONEY • It can be found during most of the year, and is made by various types of bees.

CACHES • Fruits, nuts, seeds, and roots are stored by mice, lemmings, squirrels, chipmunks.

#### IN THE NEXT ISSUE: FINDING YOUR WAY HOME



**N**A NEWS presents the first of a series of articles condensed from *How to Survive on Land and Sea*, a new U. S. Naval Institute book issued by the Aviation Training Division of CNO.



## A POWERFUL WEAPON COMES INTO ITS OWN

**B**BRITISH NAVAL AIR SERVICE originated during World War I. But it was not until comparatively recent times that its mission as an arm of Royal Navy was fully realized. This was due, generally, to the fact that it took World War II to reveal the terrific impact of aerial warfare. Before the Battle of Britain, the Royal Air Force was given highest priority in aircraft pro-

curement. Today British naval policy calls for a strong Fleet Air Arm to parallel the rôle carrier-borne naval aviation plays in overall strategy of the United States Fleet. While making rapid adjustments to growth, Fleet Air Arm has performed consistently and well in clearing sea lanes of U-boats and in providing umbrellas of protection for its own and for Allied ships.

# BRITISH FLEET AIR

## Brilliant Victories Mark the Record of British Navy Planes

SINCE THE OUTBREAK of the war Fleet Air Arm has increased in size and striking power. Naval aircraft have ranged the oceans in search of raiders and U-boats; they have guarded the paths of seaborne trade; they have protected the Fleet. They have attacked German and Italian warships—under steam and in defended harbors, and have sunk more than half a million tons of merchant shipping. They were the first aircraft in history to sink a warship by dive bombing, the first to sink a capital ship with torpedoes, and the first to defeat air attack on a fleet by the use of fighter defense.

BRITISH FLEET AIR ARM comprises all aircraft assigned to carriers, battleships or cruisers. Unlike the U. S. Navy, FAA has no shore-based planes, but is entirely seaborne. Its job is both defensive—to fight off aerial attacks on the fleet, scout for enemy surface or U-boat units—and offensive, to carry attacks against the enemy.

The story of FAA in World War II has written in large letters the important rôle aviation played in every major engagement—battles of Matapan and Taranto, sinking of the *Bismarck*, protection of Allied landings at Salerno. At Matapan, FAA's planes wiped out a large segment of the Italian Navy at sea, after it had sent torpedo-bearing planes into Taranto harbor and cut Italy's sea supremacy in the Mediterranean down to parity.

FAA planes played a part in hounding and sinking the German battle cruiser *Bismarck*, just as they did in tracking down the *Graf Spee*. FAA was handicapped throughout early years of the war by lack of fast, heavily armed planes. FAA turned to the United States and received several hundred Grumman *Wildcats* to augment the small supply of planes it had available for the vast job of protecting world-wide convoy lanes and the far-flung Royal Navy.

It was the Royal Navy which had the first escort carrier, built late in 1940 from a captured German merchantman and re-named *Audacity*. That ship with its six Grumman fighters pointed to the answer to the U-boat menace, its planes enabling the Allies to spot and sink submarines before they could contact convoys.

THE BIG PART fleet aircraft were to play in modern warfare was not appreciated by many until 16 British *Skuas*, carrying 500-pound bombs, flew from the Orkneys to bomb and sink the German cruiser *Koln* in Bergen harbor (Norway) in April, 1940. It marked the first time in history a major unit of any fleet had been sunk by air attack.

The story of Fleet Air Arm is studded with heroic feats of aircraft carriers like the *Audacity*, the *Illustrious*, the

*Ark Royal*, the *Hermes*, the *Eagle*, the *Formidable* and the *Victorious*. Aside from blockade, naval aircraft first made their power felt by minelaying activities early in 1940, and by support of ground forces in early days of the war. Dunkirk was followed by the Norwegian campaign, attacks on the low countries to forestall invasion, Mediterranean convoy problems, Crete, Malta, Libya and later Oran and Dakar. In all of these, FAA was active supporting fleet operations, destroying its share of enemy ships and equipment.

### BRITAIN'S FIRST ESCORT CARRIER



WAR'S IMPONDERABLES: Ironically enough, a German ship became the first escort aircraft carrier to operate against the Nazis' own wolfpack of U-boats.\*

The motorship *Hanover* was intercepted in March, 1940, by a British cruiser and towed, badly battered, into the harbor at Kingston, Jamaica. Nineteen months later she sailed from that harbor as Britain's *Audacity*, the first converted carrier, with a meager complement of six Grumman fighters on a sea-swept flight deck.

Only 400 ft. long and 60 ft. wide, the 5,000-ton carrier was torpedoed off Brest after 14 weeks of operational duty. But in that time the *Audacity* and her planes had made six convoy trips, strafing and sinking U-boats, shooting down Nazi planes and bolstering the security of convoy lanes.

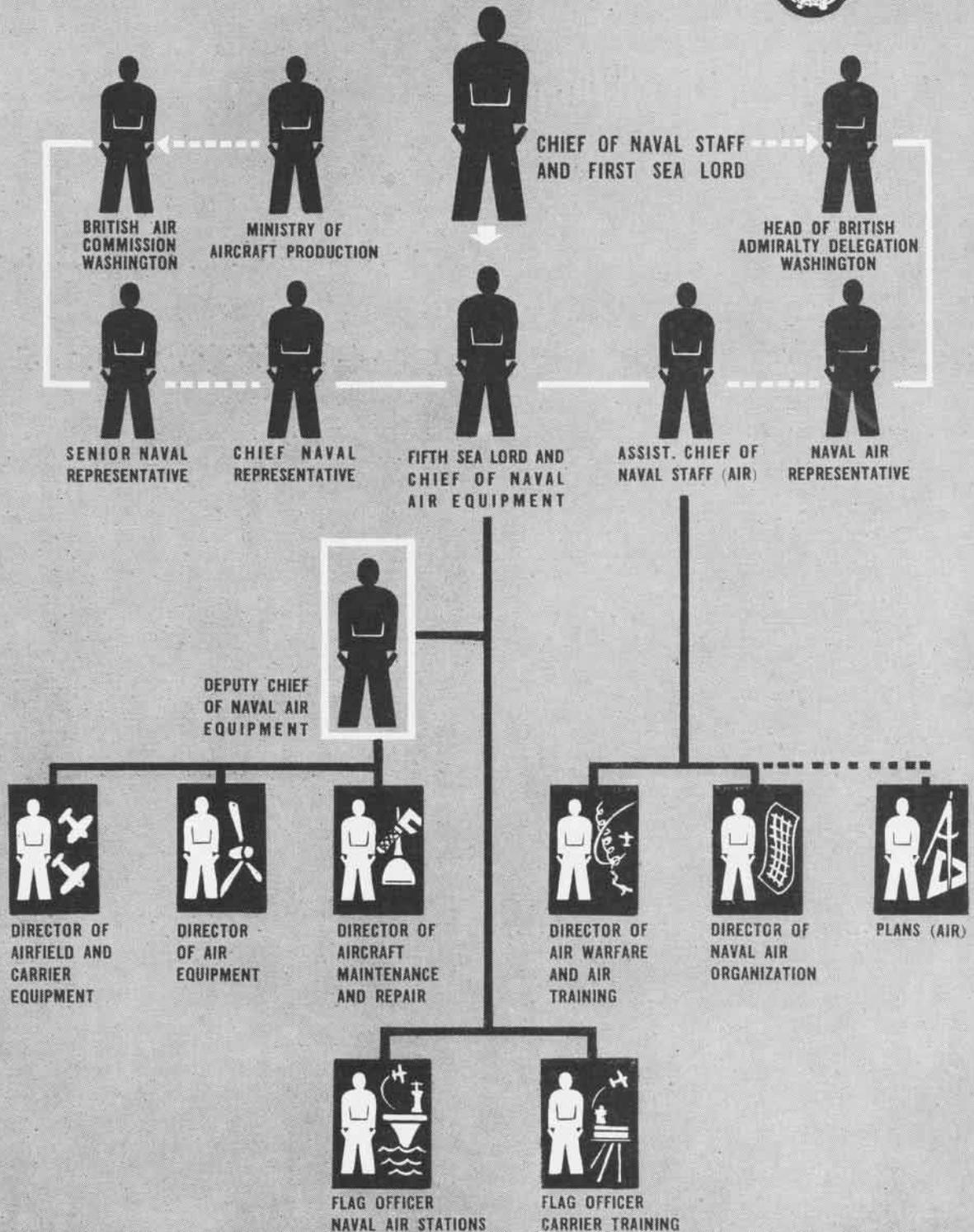
The *Audacity's* life span was short, but long enough to prove a new theory in naval warfare: that merchantmen converted into carriers could release large flat-tops for heavier duty.

\* In America, the collier *Jupiter* had been converted into an aircraft carrier and commissioned as the *Langley* in 1922. The *Long Island*, a freighter converted in about three months' time, began its first flight operations in June, 1941.—Ed.

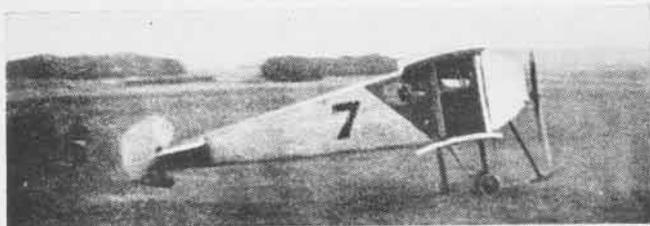
THE THIRD DUTY of the Royal Navy in war, that of co-operation with the two sister services, also involved use of FAA. In the Norwegian campaign the main air support was provided by aircraft from the *Ark Royal*, *Glorious* and *Furious*. At Dunkirk a squadron of naval planes carried out daily dive-bombing attacks on enemy troops and tanks near Calais. The next combined operation occurred during the Libyan campaign, when the eastern Mediterranean fleet bombarded Capuzzo, Bardia, Tripoli, and Genoa. Naval aircraft were used to provide diversionary bombing, air protection and gunnery observation.

Probably the best example of this type of work was given by FAA at the Oran and Algiers landings in 1942. For this large operation air cover was provided exclusively by naval aircraft of every type—*Seafires*, *Sea Hurricanes*, *Wildcats*, *Fulmars* and even a few *Swordfish* and *Walrus* plane models.

# Organization of BRITISH FLEET AIR



NAI:em: CHART



**ROYAL** Navy pilot, Lieut. Parke, flew this antiquated Avro biplane at 1912 British military trials; plane had 60-hp engine



**TINY** planes, such as this Avro, could take off and land from wing of new planes which United States is grooming for battle

## LACK OF PLANES HAMPERED AIR ARM

**T**HE IDEA of having airplanes attached to Royal Navy for scouting and observation work was born in pre-World War I days after the first military plane used in battle flew reconnaissance missions over lines in the Balkans. In 1912 Royal Flying Corps had a military and naval wing, but two years later Royal Naval Service was created, separate from RFC.

At the beginning of the war the service had one airship and three airplane and seaplane squadrons with a total of 93 machines. It was controlled by the Admiralty, while the Army controlled the military wing.

In 1914 the Admiralty recognized the part planes would some day play in warfare by building the first aircraft carrier, the *Ark Royal*, with cranes and a short "flying off" deck. Three other carriers were commissioned during the first winter of war and Navy planes were used for many land operations as well as sea patrols. They bombed Dusseldorf, attacked Zeppelin sheds at Friedrichshaven and Cuxhaven, fought in East Africa and Palestine and at the Dardanelles.

By 1918 RFC and RNAS ceased to exist as separate branches, and were merged in Royal Air Force. From 1918

to 1937 there was a system of "dual control" under which the administrative responsibility for Fleet Air Arm belonged to Air Ministry, while operational responsibility was Admiralty's. In 1937 it was decided to give Admiralty complete control, but the change-over took until May, 1939, when FAA actually became part of the Navy. Unlike the U. S. Navy, Admiralty did not assume responsibility for patrol boats, which remained in the form of Coastal Command, under Air Ministry.

**T**HE ADMIRALTY had provided 70 percent of the pilots, all observers and air gunners and ships. Air Ministry provided 30 percent of pilots, all ground crews, aircraft, air stations and basic training. That organization also retained control of development and production of aircraft to requirements laid down by Admiralty. This function was taken over by Ministry of Aircraft production early in 1940 as a common supplier to both Admiralty and Air Ministry.

When the German *Luftwaffe* started its blitz on Britain neither RAF nor Fleet Air Arm had sufficient planes to fill their needs. Since the major task of the hour was to turn back the German air armadas, RAF was given priority on all available fighter planes for some time. For this reason, FAA was limited to securing only such planes as it could from United States, plus what few it could procure from British aircraft manufacturers above the Royal Air Force quotas.

## THE ORGANIZATION OF FLEET AIR ARM

**C**ARRIERS operating with the fleets are operationally under the control of the Commanders-in-Chief concerned, and at their disposal. They are as much a part of the Navy as battleships and cruisers. They are manned by Royal Navy and the aircraft are flown by naval officers. Naval ratings are responsible for all maintenance work with the exception of that still undertaken by a group of RAF non-commissioned officers who are on loan. These RAF personnel are survivors of the old organization under which RAF cooperated in the flying side of the naval air arm, which terminated in May, 1939.

Management of FAA rests solely with Admiralty. The member of the Board responsible is the Fifth Sea Lord, under whom work directors of Airfields and Carrier Requirements, Director of Air Maintenance and Repair and Director of Aircraft Equipment.

On the staff side, Assistant Chief of Naval Staff (Air) deals with naval air policy, while Naval Air Warfare Division is responsible for tactics and training, together with types of aircraft and weapons to be used by air crews. Lastly, there is Director of Naval Air Organization. Departments under Second Sea Lord are responsible for personnel.

Under this general administration serve the senior officers administering RN air stations at home. Their responsibility is training, repair and maintenance. There are many naval air repair yards handling all work that cannot be done in the cramped space of an aircraft carrier's hangar. Naval air stations act much in the capacity of depot ships for first line squadrons which fly off carriers at sea and come in for refits.



**FLEET** Air Arm's development in second World War was retarded by fact RAF needed all planes to halt blitz on England

# WRENS PLAY LEADING RÔLE IN AIR ARM, KEEPING ITS PLANES FLYING



ROYAL NAVY has done an efficient job training women to replace men for Fleet Air Arm billets at sea. The British do not expect 10 girls to replace 10 men, but they do expect 12 girls to do it. These air mechanics are chosen from the large body of women serving in Royal Navy as WRENS (Women's Royal Naval Service) and sent to H.M.S. *Fledgling*, a training station, to be schooled in four aeronautical categories—Airframe (A), Engine (E), Electrician (L), and Ordnance (O).

Responsibilities of WRENS have broadened out and their duties now come under headings such as: air mechanic (electrical), air mechanic (engines), air mechanic (airframes), air mechanic armorer (ordnance), bomb range

marker, air synthetic trainer, cine gun assessor, fabric worker, meteorological worker, parachute packer, photographic assistant, strip camera operator, supply stores worker, vision tester, radio mechanic, air maintenance helper, steward, cook.

Basic training for each of the categories is virtually the same, with all branching out into intensive study in their own specialties. At first all study aircraft acquaintance, including talks and lectures on the history of flying, types of aircraft employed by Fleet Air Arm, airport and naval air station procedure and flight routine. Each student receives a tool box to use throughout her course and take along when she receives her assignment to duty.

▶ A's (airframe mechanics) begin with simple riveting, heat treatment, tapping, filing, etc. Further along the course they practice cable and line splicing, fabric repairs and dope schemes, rigging, hydraulics, pneumatics, metal repairs and allied subjects.

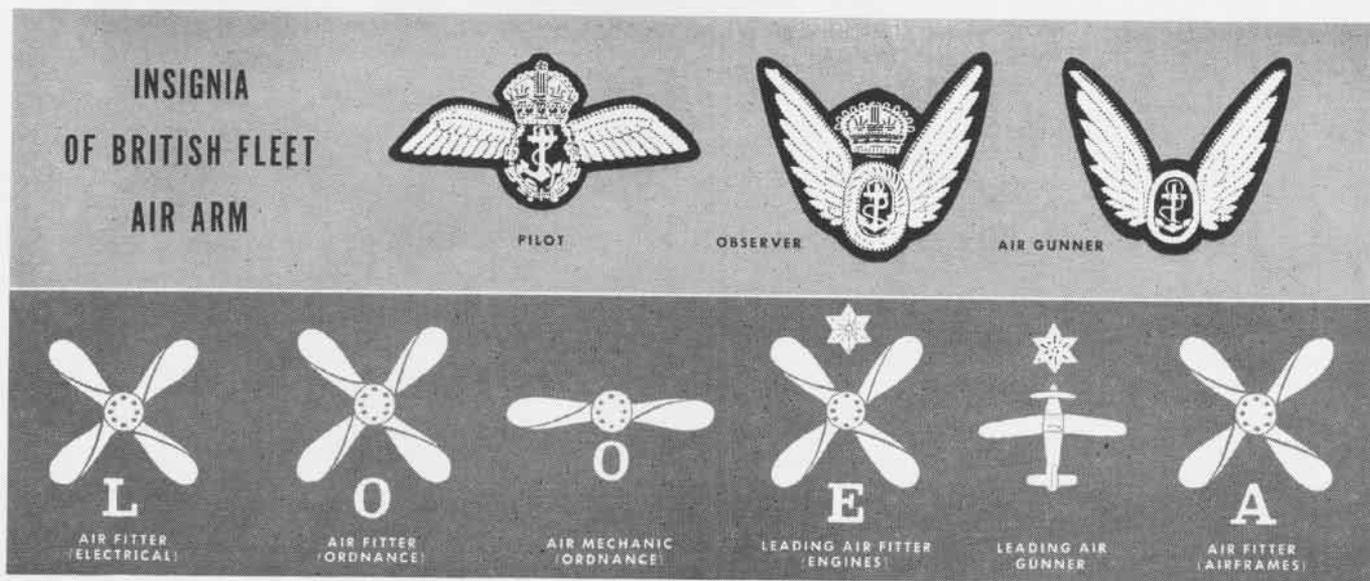
▶ E's (engine mechanics) learn the knack of filing, sawing, chipping, drilling, tapping, using spanners, removing tight-fitting studs and nuts. In advance school they are given combustion engines, magnetos and carburetors, as well as various types of aircraft engines.

▶ L's (electricians) are broken in on soldering, blow lamps and the peculiar tools of this trade. They probe the practical details of electricity, making clips and brackets, simple circuits, ignition and harness circuits, including bomb and torpedo release mechanisms. Theoretical study is dramatized by actual handling of circuits.

▶ O's (ordnance), after a brief introduction in aviation armament, embark on a highly practical course in machine guns, cannon and every aircraft weapon in service with Fleet Air Arm. They disassemble, repair, clean, reassemble. Later, they move on to types of bombs, bomb racks, bomb loading and miscellaneous explosives. "Bomb alley" is a small room containing dummy bombs of all types and old *Swordfish* mainplane in which WRENS do actual practice arming.

BEFORE WINDING UP their various courses, A's, E's, L's and O's are teamed up for operational practice, exactly as they will work together side by side on actual duty.

WRENS are attached to Fleet Air Arm at Roosevelt Field, Long Island, their work consisting mostly of checking aircraft delivered from American war plants, and supervising issue of supplies. Recently a number of American girls, mostly of English or Scottish descent, have been enrolled in the WRENS for Fleet Air Arm service in the United States.





↑ Deck landing officer on the H.M.S. *Illustrious* guiding pilot in for landing on the carrier, using illuminated "bats" as signal paddles to improve their visibility

Keeping supply lines open in Mediterranean was one of early tasks of Fleet Air Arm; photo taken from *Victorious* shows *Indomitable* and *Eagle* "in convoy" ↓





**A. V. ALEXANDER**  
FIRST LORD OF THE  
ADMIRALTY

When Mr. Alexander became First Lord of the Admiralty in 1940 he assumed duties already familiar, having previously served in this capacity from 1929 to 1931. He is a strong supporter of naval aviation and is its chief spokesman in the House of Commons



**SIR ANDREW  
CUNNINGHAM**

ADMIRAL, G.C.B., D.S.C., BART. Serving as Commander-in-Chief, Mediterranean, in the early stages of the war, Sir Andrew became Admiral of the Fleet, succeeding the late Sir Dudley Pound, and is now First Sea Lord. In 1942 he acted as head of British Admiralty Delegation in Washington, D. C.

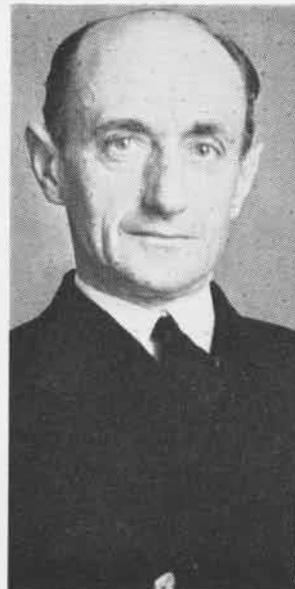


**DENNIS W. BOYD**  
REAR ADMIRAL, C.B., C.B.E.,  
D.S.C.

Fifth Sea Lord, Air Member of the Board of Admiralty and Chief of Naval Air Equipment, Admiral Boyd is head of FAA. He was formerly commander of the carrier fleet in the Mediterranean and then in the Indian Ocean after serving on the British plane carrier *Illustrious*

## RESPONSIBLE LEADERSHIP GUIDES FLEET

WHILE GREAT BRITAIN'S Royal Air Force was being expanded to meet the *Luftwaffe* and carry the air offensive to Germany, plans were being prepared and groundwork laid for similar development of the Fleet Air Arm of Royal Navy. Leaders long active in naval aviation were selected to develop and head this expansion program, working closely with naval aviation activities in the U. S. Fruit of this Allied cooperation is being felt by the Axis powers, as combined units of the two most powerful fleets in the world strike with deadly effect at the U-boat menace in the Atlantic and against Jap bases in the Pacific. The rapid growth and expansion of naval aviation has made possible the development of task force groups to use air and sea power to greatest advantage and to provide an air umbrella over Allied convoys. These innovations are making World War II history.



**REGINALD H. PORTAL**  
REAR ADMIRAL, D.S.C.

Admiral Portal, Assistant Chief of Naval Staff (Air) at the Admiralty, dates his aviation experience back to 1916, when as a midshipman he was attached to Royal Naval Air Service as an observer. When this activity merged with Royal Flying Corps to form RAF, he was attached to the new activity as a torpedo specialist. Returning to the fleet in 1926, he is now responsible for the operational organization and policy of FAA and for the training of combat air crews. He is a brother of Air Chief Marshal Sir Charles Portal.



**KING GEORGE VI**  
ADMIRAL OF THE FLEET

The King is the only monarch in the history of Great Britain who is also a qualified pilot, having won his Navy wings following World War I. During that conflict he served aboard the *Collingwood* in the Battle of Jutland and later on the *Malaya*, becoming the first English prince to take part in a naval battle since 1780. In 1917 he joined the RAF and went to France as an adjutant. His first-hand knowledge as a pilot and interest in naval aviation have proved valuable to King George in understanding the problems of the Fleet Air Arm during the present conflict.

**SIR PERCY L. H. NOBLE**  
ADMIRAL, G.B.E., K.C.B.,  
C.V.O., A.D.C.

Now heading the British Admiralty Delegation in Washington, Admiral Noble entered the Royal Navy at the age of 14, serving with the Grand Fleet in the first World War. He has acted as Director of Operations and Director of Naval Equipment at the Admiralty, commanded the Second Cruiser Squadron, served as Fourth Sea Lord and Chief of Supplies and Transport and Commander-in-Chief of the China station. As Commander-in-Chief of Western Approaches, he introduced the launching of airplanes from a merchant ship.



**SIR ARTHUR L. ST. G. LYSTER**

VICE ADMIRAL, K.C.B.,  
C.V.O., C.B.E., D.S.O.

Sir Arthur commanded the carrier *Glorious* before the war, taking command of carriers in the Mediterranean in the fall of 1940. In February, 1941, he accepted appointment as Fifth Sea Lord at the Admiralty during the period when the present FAA expansion was planned. In August, 1942, Sir Arthur was chosen to command the carrier division which accompanied the relief convoy to Malta. He is now charged with training newly formed squadrons and assigning them.



## AIR ARM ACTIVITIES

**MATTHEW SAUSSE**  
SLATTERY  
COMMODORE

Commodore Slattery is Chief Naval Representative at the Ministry of Aircraft Production, acting in a liaison capacity between the Admiralty and aircraft manufacturers to assure a constant supply of planes for FAA. Entering Royal Navy in 1916, he became a lieutenant in 1923, captain in 1938 and commodore first class in 1943. His first aircraft squadron command came in 1934 aboard the carrier *Courageous* when he took charge of Squadron 830. He has also held rank of Wing Commander in RAF.



**CASPAR JOHN**  
CAPTAIN

Captain John, Naval Air Attaché, British Embassy, and Naval Air Representative, British Admiralty Delegation, Washington, dates his naval service back to 1916. Since 1924 he has been associated with Fleet Air Arm, serving aboard the carriers *Hermes*, *Argus*, *Furious*, *Courageous* and *Glorious*. In 1941 Captain John became Director General of Naval Aircraft Development and Production with the Ministry of Aircraft Production, London, serving until he was appointed to his present position in Washington during the year 1943.

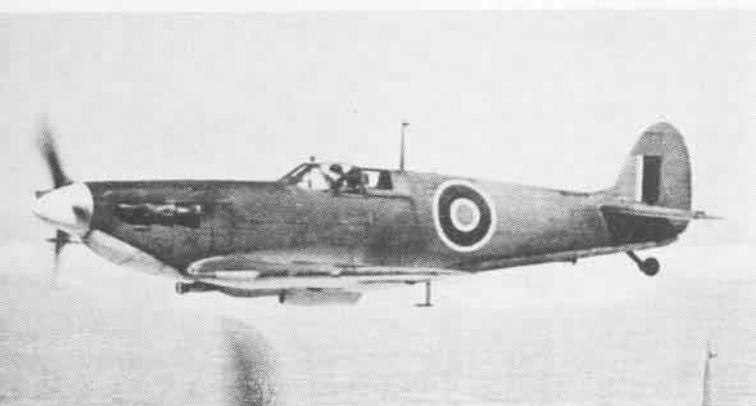


# FLEET AIR ARM FLIES BOTH BRITISH AND



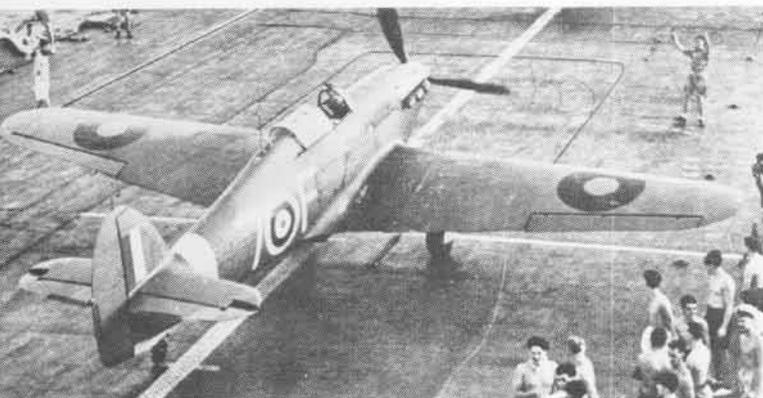
## SWORDFISH

Mainstay of Fleet Air Arm during early days of the war was this slow but sturdy *Swordfish* plane, affectionately called the *Stringbag*. It did all right for itself at Taranto, Matapan, in pursuit of the *Bismarck* and *Graf Spee*, and in the channel fight with the *Scharnhorst* and *Gneisenau*. Powered by a 9-cylinder, 690-hp radial engine, it is a three-seater biplane with one fixed gun firing through the propeller and one mounted in the rear cockpit. Maximum speed is 154 mph cruising at 131 mph. Carries 18" torpedo or bombs. Accounted for over half a million tons of enemy shipping since outbreak of war. Being slow, enemy anti-aircraft gunners had difficulty in fixing its speed. Light to handle and maneuverable, the *Swordfish* will turn quickly.



## SEAFIRE

This single-seated fighter needs little introduction to the aviation world, having distinguished itself as a land fighter before getting its sea legs. When Britain was able to spare *Spitfires* from its battle with the *Luftwaffe*, it allocated them to Fleet Air Arm, which promptly adapted them for carrier flying to replace the slow planes formerly used. To adapt it to life on a rolling carrier deck, it was provided with catapult spools, deck arrester hook and other specialized equipment, such as folding wings. Its wingspread is 36 ft. and length 29 ft. Its 12-cylinder liquid-cooled engine is a Rolls Royce Merlin, which carries it at 375 mph at 21,500 ft. .303 Browning machine guns and 20 mm. British Hispano cannon comprise its very formidable armament.

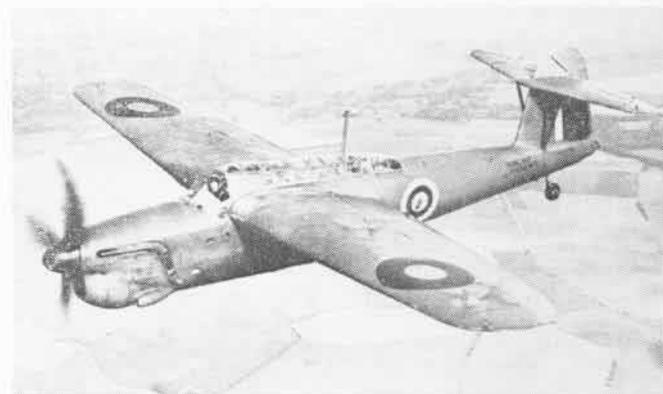


## SEA HURRICANE

A sister plane to the famed *Spitfire* in the Battle of Britain which also has been adapted to shipboard fighting for Fleet Air Arm. The *Hurricane* is credited with having downed more German planes than any other British aircraft in the titanic battle over England. It too has been equipped with arrester hook and other gear so that it can operate from carriers. Early in the U-boat fight single *Hurricanes* were catapulted from merchantmen in convoys and the pilot bailed out or headed for nearest land after he had fought off attacking German bombers or patrol planes. This plane is well known to both Allies and the Axis. It weighs 6,800 pounds, flies 302 mph at 16,400 ft. and can climb 2,000 feet a minute. Fighters carry 8 guns or cannon.

## BARRACUDA

The newest British torpedo plane is the Fairey *Barracuda*, a monoplane featured by its unusually high tail elevator surfaces riding almost at the top of the tail fin. It has a long low greenhouse and windows in the fuselage bottom for better visibility. The *Barracuda* is powered by a Rolls Royce Merlin engine, developing 1,260 hp. at 8,750 ft. It has a 49 ft. wingspread and is 39 ft. long, carries two or three men and a bomb load up to 2,000 lbs. It has a maximum speed of 245 mph at critical altitude. An earlier model has been supplanted by a newer model giving better performance ratings. The *Barracuda* replaced the slower and more vulnerable *Albacore* with its fixed landing gear and 1,065-hp engine and is giving an excellent account of itself.



# AMERICAN AIRCRAFT

FLEET AIR ARM started the war with a shortage of planes because all priorities had to be given to Royal Air Force to fight the German *Luftwaffe*. While the Battle of Britain was going on, FAA took what it could in the way of planes already on hand, bought some from the United States and turned out a sterling job on all sea fronts—Atlantic, Mediterranean and North Sea.

The antiquated old planes with which it had to do its work in opening years of the war now have been replaced by faster, more deadly craft. Four of these are adaptations of the best the U. S. Navy has to offer—*Corsair*, *Hellcat*, *Wildcat* and *Avenger*. Men to fly these are sent to United States and trained at Squantum, Grosse Ile, Quonset Point, Pensacola, New York and other naval air stations. FAA also has a strong fleet of carriers which participates in all vital sea actions.

## UNITED STATES TURNED OVER THESE FOUR PLANES TO BRITISH



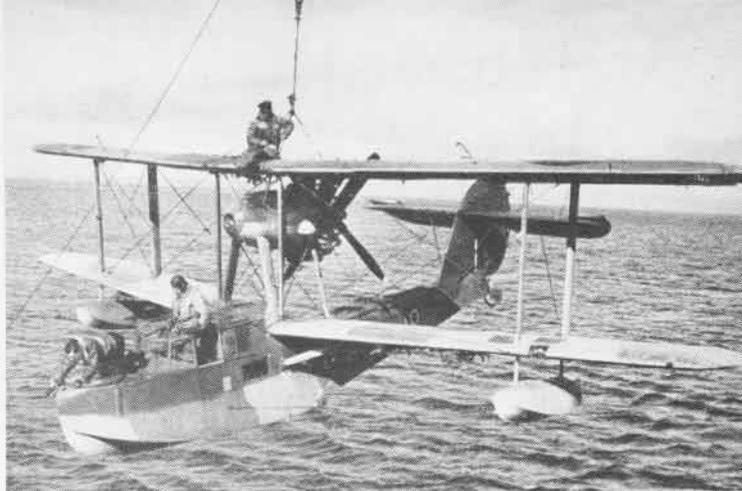
### CORSAIR

Wearing the bull's-eye insignia of Fleet Air Arm, the well-known *Corsair* is used by squadrons trained in this country to fly this speedy and deadly plane. Bigger and more powerful than anything FAA has used heretofore, the gull-winged fighter is expected to see extensive service as the war at sea progresses. Since FAA operates shipboard planes only, it is destined to fly from decks of British carriers.



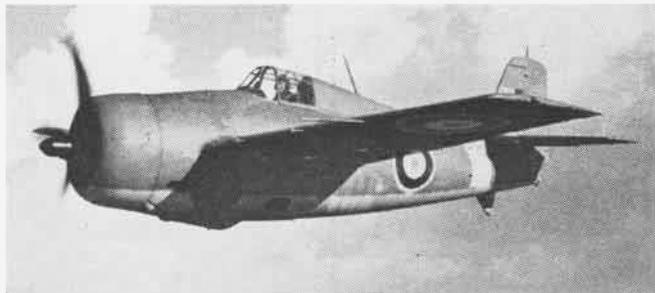
### HELLCAT

When the new Grumman *Hellcat* came out a number were transferred to the British under lend-lease, and men training in this country under the banner of the Union Jack are using this fine carrier-based plane along with other American types. In the South Pacific the F6F has proved bad news wherever it has been used against the Japanese, being heavier armed and faster than the battle-tryed F4F.



### WALRUS

This Supermarine *Walrus* amphibian single-engine flying boat was used early in the war for reconnaissance from battleships and cruisers. It was equipped with a flat-sided, single step hull and folding wings. Its 9-cylinder Bristol Pegasus radial air-cooled engine drove a four-blade pusher propeller developing about 700 hp and a cruising speed of 90 knots, with a maximum speed of approximately 130 knots, which is slow judged from today's speed standards.



### WILDCAT

First American plane to be put to extensive use by Fleet Air Arm was the Grumman F4F. Because of armament and speed, the British dubbed it "the only barrel the *Luftwaffe* did not like to see rolled out." Its Wright *Cyclone* radial engine with 1,200 hp gives it a speed of 330 mph at 19,500 ft. The *Wildcat* came to the British under lend-lease and soon proved itself successful in meeting Axis land-based airplanes.



### AVENGER

Originally the British named the TBF the *Tarpon* to avoid confusion with their carrier called *Avenger*, but have now adopted the U. S. version. Since the TBF is probably the world's best torpedo plane, the British have been glad to add numbers to their carrier forces. The big aircraft also can be used as a bomber, scout and for sub patrol from land bases. It has a 54-foot wingspread, 270-mph speed.

# ROYAL NAVY FLIERS TRAIN IN THE U.S.

## BRITISH LEARN TO FLY AMERICAN AIRCRAFT AT TRAINING STATIONS

LARGE NUMBERS of Royal Navy fliers are trained alongside their American counterparts at U. S. naval air stations. Following a disciplinary and indoctrination period in the United Kingdom as naval airmen, second class, they are sent to RAF Personnel Depot, Moncton, New Brunswick, to await transfer to the United States.

As acting leading airmen, Royal Navy trainees undergo primary instruction at NAS, Grosse Ile. On completion of this three-month period, they move to NATC, Pensacola, for intermediate training. They spend approximately four months in formation, instrument and advanced training, changing from one satellite station of NATC to another for different phases of instruction.

As they enter advanced training, all qualifying students are commissioned in the ranks of temporary midshipmen (A) RNVR, temporary acting sub-lieutenant (A) RNVR, or temporary sub-lieutenant (A) RNVR, depending on age. Students who are suitable pilot but unsuitable officer material are returned to the United Kingdom to complete pilot training.

Students are selected for specialized fighter, torpedo or dive bomber training, according to pilot requirements for

each type and individual suitability of students. Torpedo trainees go to NAS, Ft. Lauderdale, dive bombers to NAS, Vero Beach, and fighters to NAS, Miami. These phases complete the training under U. S. Navy supervision. Pilots then go to No. 738 RN Air Squadron, located at NAS, Lewiston. This squadron is staffed by RN instructors and manned by RN personnel. Here pilots receive a course designed to teach them any differences that may exist between RN and USN flight procedure.

This terminates the individual training, all of which has been carried out in U. S. type aircraft. Pilots then may go to the United Kingdom to squadrons forming there with U. S. type aircraft; to No. 732 RN Air Squadron, an operational training unit which trains fighter pilots as reserves for first line squadrons equipped with U. S. type aircraft, or to RN fighter, torpedo or dive bomber squadrons forming in the United States for service in aircraft carriers of the fleet.

Squadrons undergo a three-month period of unit training, commonly known as "working-up." Fighter and dive-bomber squadrons work-up at NAS, Brunswick, and torpedo squadrons at NAS, Squantum. After this working-up period squadrons are fully operational and return to the United Kingdom in CVE's built in the U. S.

Royal Navy students in primary, intermediate and operational training in the United States are, for purposes of internal administration, discipline and instruction, entirely under the U. S. Navy commanding officer of the station and his staff. A senior British officer serves in an advisory capacity.



IN OPERATIONAL TRAINING, ROYAL NAVY FLIERS SPECIALIZE IN FIGHTER, TORPEDO AND DIVE BOMBER TACTICS AT U. S. NAVAL AIR STATIONS

# NATIONS COOPERATE IN TRAINING



FLEET Air Arm students take their work—and play—seriously. It's a toss-up as to which group is concentrating harder, the navigators or the bridge players



AFTER a year's training in this country, Royal Navy fliers return to United Kingdom with thorough knowledge of U. S. type aircraft and U. S. Navy flying procedure



WHILE training at naval air stations in the United States, Royal Navy flying students come under exactly the same cadet organization as fledgling naval aviators



ONE of the most important aspects of naval flying is accurate navigation from a moving base. Personnel training in the U. S. give full attention to this vital subject

# SHORE STATIONS

► **MCAS, EL CENTRO**—Pluto, the fire house dog, lays claim to being the saltiest canine on the station. Personnel claim he has seen duty here nine months and was originally the property of a corporal who shanghaied him just outside the north gate. He is an inveterate passenger on the fire truck and attends mess regularly at a base mess hall with the rest of the chow hounds.



► **NATC, CORPUS CHRISTI**—The Alice, Tex., airport has "joined" the Navy for the duration and six months. The city leased its \$800,000 airport to the Navy for that period of time. NATC will use the airport as an auxiliary landing field.

► **NWTS, WEST LAFAYETTE**—Purdue's Navy-WTS Flight Instructor School boasts an outstanding safety record. Statistics from January 1 through October 22 show a total of 25,703 hours flown with no injury to personnel. For statistical reasons, the CAA requires that all damage to aircraft, however slight, be reported as an accident. Thus, brushed ailerons and dragged wings account for the total of 13 mishaps which ordinarily would be classed as "incidents" at naval air stations.

The weatherman was exceptionally good to Purdue's budding aviators through the summer and fall months. The record shows every day was "flyable" from May 19 through October 28. While on a few occasions flight at Purdue was grounded, no day was called unfit for some sort of flying under CAA standards.

► **NPFS, St. MARY'S**—The post office has finally given up on a letter written last December by a cadet stationed here. After chasing the addressee, also in the service, all over the world, postal authorities concluded that 19 forwarding addresses were enough.

Now that the letter has been returned here, the post office must start looking for the writer, who went from here to Livermore and is probably a commissioned officer by now.

► **NAS, PASCO**—Now in operation here is a badge system which seeks to keep the flight line clear of unauthorized personnel and visitors as well as providing better security for station matériel. The station has been divided into two areas, one of which is restricted to personnel having official duties there.

Badges of two different colors with photo identification, name, serial number, and department have been issued to all enlisted personnel. A yellow badge denotes

free access to the restricted areas, while the blue badge limits the movements of the wearers to non-flight line areas. Each department head is supplied with a small number of temporary badges of both colors which provide temporary admittance to the restricted area. The ood also has been provided two sets of visitors' badges to issue at his discretion.

Another advantage of this badge system is that personnel on commuted rations has identifying data in large clear letters upon the badge for easy check by the commissary department. All badges are required to be worn by all enlisted personnel at all times while on this station. They are not worn off the station nor do they act as a pass in or out the gate.

► **NAS, NORMAN**—A wooden structure 40' high, which will serve as a clay pigeon gun mount, has been erected on the station's rifle range. Beneath the tower a power driven turret mounts a single barrel 12-gauge shot gun for ordnance training. The training device, used frequently in free gunnery practice, will simulate actual combat conditions in which flight targets are the objective.

► **NAS, HUTCHINSON**—There is nothing bloodthirsty in the appearance of sailors at this station as they fiddle about the workbench with files and whetstones. But the article they are making is enough to send cold chills up the back of any Jap. It's a long-blade hunting knife, gleaming and razor sharp.

A score of men at the station have made their own sheath knives in spare time and others are following their example. Some use auto spring leaves for blades, while others prefer old files or butcher knife blades. The long knives have leather handles, with end plates fashioned from brass or cast aluminum which the sailors sort out of junk yards, in neighboring towns. The finished knife looks like a factory model.

Cold steel has its place in battle and NAS sailors, many of whom are expecting sea duty before long, are well aware of that fact. They also know a knife has a lot of more peaceable uses.



► **BLIMPRON 33, PACIFIC**—A blimp from this squadron has the remedy for a dangling line. While cruising along on a routine patrol, one of the long lines, without warning or apparent cause, came out of its holder and dangled its full length of 125'. There was immediate danger of the line entangling in the propellers so it

was necessary to pull the engines back to 1,000 rpm. The gunner was ordered to shoot at the line. The order was carried out, the line severed by gun fire, and the possibility of a serious accident was averted.

► **MCAS, CHERRY POINT**—There's more to music than meets the ear, for a change in selections completely upset an impressive formal inspection.

More than 1,000 Leathernecks were pressed, polished, and standing at rigid attention. Stirring chords of martial music filled the air as the colonel and his inspecting party started down the line. Salutes were rendered, heels were clicked. Right and left faces were maneuvered with snap and precision. Platoon after platoon received his official ok.

With all the glory of perfect military bearing, the colonel approached the Women Reserves. He returned a snappy salute, and started towards the platoon when suddenly he stopped. The music had gone completely berserk. Blatantly pouring out of the loud speaker came the rollicking strains of "Pistol Packin' Mama." The colonel struggled with his dignity. The Women Marines stifled their giggles. Needless to say, the wr's escaped inspection that day.



► **NAS, DALLAS**—Sentry dogs with the U. S. Coast Guard sentries are now being used to patrol a number of posts at this station with very satisfactory results. The dogs are particularly effective on posts which require the patrolling of areas in which there is only a small amount of pedestrian or vehicle traffic. Special training is being given the dogs so they may be used to attack. They were received from War Dog Reception & Training Centers at Fort Robinson, Nebraska, and San Carlos, California.

► **NATC, PENSACOLA**—If you have occasion to visit Whiting Field by air, take some good advice, park your plane well clear of the line, hide it in a pecan grove, and camouflage it. Unless you do, you're apt to walk home.

Recently a flight of planes left Saufley Field for the purpose of ferrying 12 SNV's to Squadron 3 at Whiting. Following delivery of the aircraft, the ferry pilots returned to their field while the flight commander, also in an SNV, remained over to transact official business. When he returned to the flight line, an hour later, he couldn't find his plane. A frantic search revealed to his dismay that an efficient Squadron 3 paint crew had obliterated his

plane's squadron number and painted on a Squadron 3 number.

But his worries weren't over. Which of the 13 SNV's was his? They all looked alike in their new paint job. Finally, by phoning his squadron and learning the Bureau number, he located his plane.

► **NAS, NEW YORK**—The stork, oldest and most reliable delivery service known to man, has a modern namesake at this station, that has stepped up deliveries for aircraft to almost unbelievable proportions.

"The Royal Order of the Streamlined Stork," first conceived at Floyd Bennett Field, is the honor society for the pilots of the station's Ferry Division. Its members have made safe delivery trips totaling 5,629,500 miles, which is more than 225 times around the world.

In the AFD ready room hangs the "Glory Board." At last count it listed the names of 146 men who have completed at least five safe deliveries of 2,700 miles each. Some of the pilots listed have ferried planes a distance of 67,500 miles.

To have his name and a set of golden wings entered on the "Glory Board," a pilot must have completed five units of undamaged delivery. A distance equal to that from New York to San Diego is considered a unit and five units total 13,500 miles.

For each additional five units of undamaged delivery, the pilot is awarded another set of wings. Upon completion of 25 units, a streamlined stork is placed on the "Glory Board" alongside the pilot's four sets of wings. This is repeated for additional units of delivery.

► **NAS, MEMPHIS**—As an experiment, asphalt circles have been installed on three grass fields to replace circles of lime spread on the turf. Under the present experiment the perimeter of the circle was laid with asphalt 2' wide and 2" deep, painted with white traffic paint, providing a permanent marking. Circles are visible from a greater distance, and results are so successful that other grass fields will be processed in the same manner.

► **NAS, PENSACOLA**—After considerable difficulty with landings after heavy rains that flooded the landing mat, a squadron at Corry Field evolved two solutions. First, a map of the landing mat was prepared showing flooded areas and indicating danger spots. After heavy rain the squadron duty officer inspects danger areas and ascertains advisability of re-opening the field.

The second solution was to advise all students to land with flaps up after a heavy deluge. With flaps down, sudden sprays of water against them tended to turn the airplane over on its back.

► **BLIMPRON 14, ATLANTIC**—Overalls have been uniform-of-the-day for another new class for officers of this command, with the pilots stripping a Pratt & Whitney R1340-AN-1 engine. *Best score to date:* the section which reassembled the engine and found only five parts left over. *Poorest score:* the section which reassembled it and left out the main bearing.

# TOKYO TALKS

## —TO THE PHILIPPINES

One of Japan's leading composers has completed as a "present" for the new "independent Philippine government an opera, *Madame Rosaio*, depicting the colorful life of a Filipino heroine." The composer, dissatisfied with the opera *Madame Butterfly*, composed the new opera to stress "the Asiatic racial spirit."

## —TO EAST ASIA

"Japanese admirals, calmly maintaining silence, are watching the enemy. Such American boasts as possessing over 800 combatant ships, if meant to weaken Japanese morale, are utterly futile. Such statements only serve to stimulate Japanese determination to crush the United States."

## —TO JAPAN

"The present war situation is very complicated. The enemy who was defeated at the beginning is, in fear of the richness of our conquered territory, trying to overwhelm our nation. The enemy is overcoming many difficulties and dangers and the war is growing in intensity."

## —TO ASIA

The Japanese lumber industry, particularly that part dealing with the processing of beech and birchwood, is to be given "access to all kinds of equipment and capital to meet the demand of the nation for the increased production of wooden aircraft."

## —TO NORTH AMERICA

The Allied High Command in the Pacific is now faced with the "dilemma" of choosing between "two equally dangerous" courses—to "abandon its military forces" on the remote Pacific islands or "come to their rescue." If the latter course is chosen, it is "inevitable that U. S. losses in the Pacific will be increased."

## —TO THE U. S.

The U. S. has suffered 277,000 and Britain 122,000 casualties during the past two years, as against Japanese losses of 159,000 killed and wounded, a Japanese communique reports. Tokyo also says that the Allies lost a total of 94 warships and transports in the waters off Bougainville in less than 40 days.

## —TO THE SOUTHWEST PACIFIC

Tokyo announces during its prisoners-of-war hour that "all prisoners whose names are mentioned on the 'Hinomaru hour' program are entitled to receive letters direct from their families, relatives, and friends, if addressed care of 'Hinomaru hour,' Radio Tokyo. As soon as such letters are received, the 'Hinomaru hour' will read replies from the prisoners to their families."

## —TO THE U. S.

"Japan, upon the unconditional surrender of the U. S., will strip her of all the territory she stole from the American Indians. However, Japan would be magnanimous enough to allow her the 13 original Colonies, the greater part of which were colonized for the purpose of enjoying religious freedom."

## —TO EAST ASIA

The government of Japan reports an increase in Japan's "splendid birth rate in the prolonged war" and exults that "the Japan of 20 years hence will easily possess undisclosed millions of able-bodied men. Such undisclosed millions, with the co-operation of the one billion of Greater East Asia, will have consolidated an invincible structure in manpower resources." The report said that in the Tokyo metropolitan area alone "there are tens of thousands of pregnant women who are awaiting the happy event." Of the decrease in infant deaths, the report said "we marvel at the strength of the Yamamoto race."

## SHOW ME THE WAY TO GO HOME

### Dead Reckoning Problem



At 1440 your OS2U is launched from the USS *San Juan* in Lat. 22°-30' N, Long. 29°-40' W, on course 130°, speed 20 k, to scout a geographic sector from 040° to 060° and return at 1700. Your true air speed is 125 k, wind is from 250°, force 22 k. Variation 6° E, pressure altitude 2,000 ft., temperature (+) 4° C.

#### Required:

- |   | 1st leg | 2nd leg | 3rd leg |
|---|---------|---------|---------|
| 1. Magnetic heading .....               |         |         |         |
| 2. Course .....                         |         |         |         |
| 3. Predicted ground speed .....         |         |         |         |
| 4. Miles on course .....                |         |         |         |
| 5. Minutes on leg .....                 |         |         |         |
| 6. Direction of relative movement ..... |         |         |         |

At 1625 submarine is sighted dead ahead, estimated 5 miles away.

What position should be reported?

7. Lat. ....  
Long. ....

(Answers on page 39)

# NAVAL AVIATION IS GLOBAL

**Hoist Allied Flags.** The U. S. and British flags were raised simultaneously over the Gilbert Islands following the fall of Tarawa, and Seabees are converting Jap landing strips into Allied bases.

The importance of this position is shown by the words of Admiral Chester W. Nimitz, Commander-in-Chief, Pacific Fleet, when he said the invasion of the Gilberts opened "another road to Tokyo."

Meanwhile, Mili, Jaluit and Maloelap and other targets in the Marshall Island group have been visited by Navy and Army fliers in a continuation of the aerial assaults against Jap positions. Powerful task forces blasted Kwajalein and Wotje atolls.

**Targets in Solomons.** Bougainville area continued to be the principal objective in the Solomons area with attacks by naval task forces at Mawaraka and Koiaris, east of the Empress Augusta Bay beachhead which is being slowly expanded. Other points on Bougainville came in for aerial treatment.

**Task Force Strikes.** During a daring raid that carried the offensive 400 miles west of the Gilberts, a naval task force struck at the island of Nauru. Carrier

planes blasted important enemy installations on the island, encountering only meager resistance.

**Invade New Britain.** Beachheads by Allied ground troops were made at Arawe on New Britain after preparatory bombardment by naval ships and aerial attacks along the west and south coast. Air action by Allied units continued softening-up tactics by heavy assaults on Rabaul and other important Jap position on New Britain.

**Eliminate Jap Ships.** The Navy announced the sinking of eight enemy vessels by submarine action in the Pacific and Far East. Included were two large transports, two large tankers, three medium freighters and one small freighter.

During the night of December 18, a Catalina search plane of Fleet Wing 2 bombed and set afire a large transport at Kwajalein.

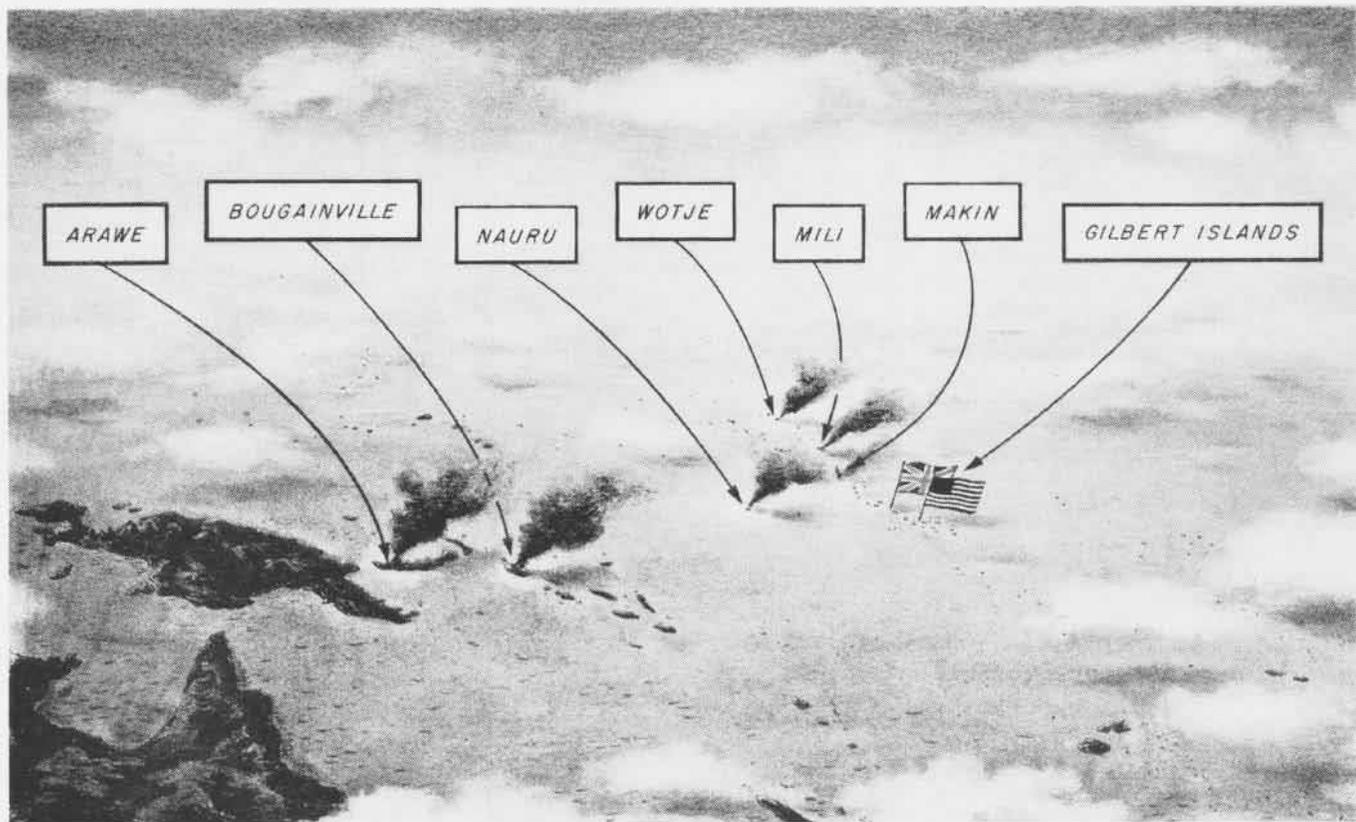
**Historic Flight.** The Navy's new giant cargo flying boat *Mars* made its first operational flight, shattering all existing records for cargo transportation and over-water flight with a 4,375-mile non-stop hop from Patuxent River, Md., to Natal, Brazil, and return trip to base.

Some of the records established by the *Mars* were: longest over-water flight, Patuxent-Natal; greatest air cargo, 35,000 lbs.; heaviest load ever lifted by a plane, 148,500 lbs. gross at take-off from Patuxent; longest non-stop cargo flight.

**Destroyer Lost.** An American destroyer was sunk and a small coastal transport damaged by Japanese bombs, December 26, as Marines were landed in the Cape Gloucester area on New Britain after task force aircraft and guns blasted enemy defense positions.

Meanwhile, carrier-based planes at Kavieng, New Ireland, attacked Jap shipping in the harbor, sinking a destroyer and two cargo vessels, damaging a second destroyer, a patrol boat and several small craft, in a Christmas morning raid. Navy *Catalinas* and *Liberators* had started fires and damaged a Jap gunboat in a Christmas eve attack on the harbor area.

**Scharnhorst Sunk.** Germany's 26,000-ton battleship *Scharnhorst* was sunk on December 26 in a day-long battle with H.M.S. *Duke of York* and a force of Royal Navy cruisers and destroyers in the Arctic Ocean when the Nazi raider came out of hiding to attack a convoy.





**DAMAGE** to Jap installations is indicated in this reconnaissance photo of Buka airfield which was battered in a carrier task force raid in November. A photo reconnaissance squadron made the annotations in the field. Note the PB4Y shown at upper right



**SEABEES** celebrated second anniversary on December 28. These 'fighting workers' build and rebuild bases on road to Tokyo



**ESSEX** class carriers with screening of fighting ships form hard hitting task force that struck Makin, the Marshalls and Nauru



ACI OFFICERS PREPARE MATERIAL FOR BRIEFING PILOTS AND CREW BEFORE MISSION; INTERVIEW THEM FOR COMBAT INFORMATION UPON RETURN

# BATTLE ECHOES AT QUONSET

## MINDS ARE GREASED TO MESH IN CATALOGUING COMBAT DOPE

TURNING OUT Air Combat Information officers at the rate of 125 every two months is the accomplishment of Navy's ACI School at Quonset Point. Its job is to train officers not merely to gather information, but to turn it competently into intelligence form and get it to the spot where it will do most good.

Every graduate is able to identify ships and planes (friend, foe, neutral) and to teach pilots and crews to recognize them instantly, accurately. He knows enough about their performance and tactics to give to commands explicit data on defects and possible improvements in our equipment, weakness and strength of enemy planes, information on tactical use.

ACI officers are strictly trained in reading and interpreting maps, charts, and aerial photographs. How clear the pilot's vision of his target is when he sets out depends primarily on how competent the ACI officer is in furnishing accurate, understandable information. Much of this is presented visually.

The ACI officer makes overlays that

leave no doubt in the pilot's mind and show his approach to the target, as well as probable opposition and the way back with best odds for safety. It is the ACI officer who sees that pilot and crew are properly instructed and equipped in survival intelligence.

To give the pilot what he needs and get from pilot and crew all hot information brought back from each mission, the ACI officer has brushed up on



FLASH QUIZ IS RECOGNITION TRAINING AID

the flier's normal language, radio frequencies, weather mysteries, plotting board's story of the day's navigation, commonplace things of plane routine.

ACI School draws students mainly from the indoctrination school at Quonset. It has in each class a group of Marine and naval officers selected from the service as being fitted for this special grooming. All have good Navy records.

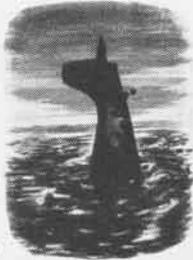
OVER 700 officers have been graduated from the school, which maintains a fund of information for visiting officers. It has made contributions in recognition, photographic interpretation, anti-submarine warfare. Its facilities have been made available to units permanently or temporarily stationed at Quonset and to graduates returning for refresher courses that may last two days or two months.

The school has its library with unrestricted books of general and specific interest, charts, maps and magazines; its vault with a fine collection of intelligence material, confidential and restricted; an exhibition and a war room.

# LIGHT HOUSEKEEPING ON A RAFT

THE FOLLOWING ACCOUNT of a pilot who went down and, after 20-odd days at sea, came back in surprisingly good condition, is extracted from a bulletin issued by Solomons Air Command:

I TIED my emergency kit and canteen to my chute straps, snapped my shoulder straps, opened the cockpit cover, turned on my landing lights and made a power landing with full flaps and wheels up. The tail hit and the plane nosed over. I released my safety belt and just sort of dropped out into the water. The plane sank in about ten seconds. I didn't think to turn the handle to open the turtle back hatch and let the raft out. It should have popped out when the plane sank, but it didn't.



In my jungle back pack I had three cans of pemmican, two chocolate bars, a canteen of water, and some vitamin tablets. In addition, I had the regular plane emergency kit of canteen, three cans of pemmican, one chocolate bar, and malted milk tablets. I had my own canteen on my belt, a .45, extra clip of ammunition, knife, and the rubber raft pack with chlorine tubes and sea marker powder.

I shot two birds. I tried to make a fish spear out of the birds' beaks, but I never finished it. The next day a Jap vb passed 500 feet overhead on course 120°. I saw a shark and it rained a little that day. An albatross came and sat on the edge of the boat for about four hours. I stroked his neck and talked to him, and he pecked at my hand.

It rained all that night and I filled all my canteens, using the sea anchor to catch the rain. Rain water, somehow, doesn't quench your thirst, however. If they would put some lemon crystals or something to give it a little flavor in the emergency rations, it would be better.

Several days later a half dozen big sharks were with me all day long. I shot another albatross that appeared, and speared a fish with my sheath knife. I got a couple of flying fish out of the albatross' gullet. The bird's juices had started to digest them but they still looked like fish all right; they were tender and pretty good. My canteen cup slipped out of my hand that day and I lost it. The night was chilly.

There were more sharks the next day. Shortly after dusk my boat capsized, but everything was well tied on so I

didn't lose anything and I managed to right the boat without any trouble. I thought that by this time I must have drifted near New Ireland. I found another coconut. It was no good, but I made a cup out of it for bailing and storing bird meat. The bird meat was more tender when kept a while.

ONE DAY at 0900, a New Zealand PBO on course 080° flew past at 800 feet, turned and circled me. I semaphored the word "EAT" to them with my paddles and they dropped a New Zealand life jacket about 30 feet away from me. It contained a waterproof flashlight, five Army emergency rations, 20 rounds of .45 caliber ammunition, a canteen of fresh water, a stainless steel mirror (my metal one was no good after a day or two on account of the corrosion), six tins of chocolate, and some cigarettes; also a Very's pistol, a map with my position marked on it, and the message "Good luck, will send help soon."

Two days passed and I began to lose hope, because I thought I must have drifted out of the position the PBO reported. About noon, however, I saw three PBY's approaching from the northwest. Two of them passed by. I shot my Very's pistol and the third one saw me. All three of them circled me for about an hour and a half dropping float lights. The waves were over ten feet high and I didn't think they could land.

Finally a PBY pilot landed his plane some distance away. He couldn't see me and I couldn't see him. The other

planes circled and he taxied towards me. As soon as I saw him I paddled like hell towards the plane, and they took me aboard. His crew was seasick, but the PBY pilot decided it was too rough to take off. They gave me grapefruit juice and fried two steaks for me with peas, and made coffee. I hugged the PBY crew. I couldn't get over how they risked all their lives to save me.

EXCEPT FOR WEAK LEGS and salt water sores, this airman, who spent more than 20 days in his raft, was found to be in excellent condition. In four days he was discharged from the hospital. He had avoided sunburn by keeping his clothes on and cutting strips from his chute which he put under his helmet so they hung over his face. He also used the grease from the albatross as sunburn ointment.

One of the most important reasons for his good survival was that he was thoroughly familiar with all his survival gear and had given a great deal of thought beforehand to what he would do if he ever went down. While in training his entire squadron unpacked and packed the chute pack and jungle pack. In addition, each member made up a supplementary kit, putting into it items he thought would be useful.

► **BuAER COMMENT**—The suggestion to furnish crystals that may be added to rain water appears to have merit. BuAer would be interested to find out from others with similar experience whether they consider such an addition to the kits desirable.



# TECHNICALLY SPEAKING

## Regulator Carbon Stacks To Correct Unstable Voltage

Some Eclipse type 1260 and type 1305 regulator units have been delivered with unsatisfactory carbon stacks which result in unstable voltage regulation. The manufacturer is taking action to replace the B-107845 stack with an improved stack B-128203. Use of B-128203 stack is necessary, and the cooperation of all activities concerned to expedite the incorporation of the B-128203 stack as soon as received in all type 1260 and type 1305 regulators is requested by Bureau of Aeronautics.

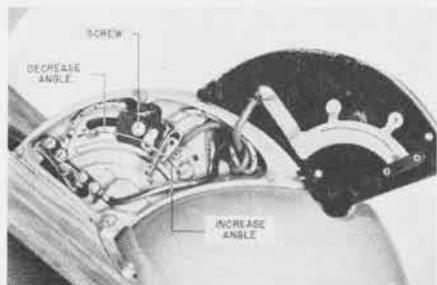
## Reinforce Engine Hoists Marines Devise Strengthen

MBDAG, EL TORO—Service Squadron is now in process of reinforcing Army Type A Frame Hoist to handle R-2800 engines or their equivalent weight.

This is done by reinforcing legs of A frame with two telescoping tubes 9' 11" long, thus preventing tendency to buckle when loads are hung on hoist. Rivets holding the internal bracket in intake air scoops of the SBD-5 have been pulling out from soft aluminum air intakes. Remedy is to reinforce air intake with 24ST aluminum, thus preventing rivets' pulling through scoop.

## Adjusting Landing Lights Operation Changes the Angle

Retractable landing lights are usually adjusted by the airplane contractor so that the landing light beam at the extended position is elevated in the direction best suited for landing the airplane. However, operating squadrons may find that this factory setting does not meet their requirements.



ADJUSTING LANDING LIGHTS SIMPLE OPERATION

To adjust the light, it first must be removed from the wing and the plug disconnected to prevent accidental short circuits. The control box cover is removed (see photo). The extension limit switch locking screw is loosened and the switch assembly moved in the directions shown to increase or decrease angle of elevation at extended position.



CARRIER CREW PERSONNEL WILL GET COVERALLS

## Carrier Crews' Coveralls

Requisitions May Now Be Made

Coveralls for carrier deck crew personnel are now being delivered to major supply points. The garment is of herringbone twill material, dyed to olive drab shade 7. CVL's and CVE's will be allowed 250 coveralls and CV's and CVB's 500. The following standard stock numbers may be used in requisitioning:

|         |               |            |               |
|---------|---------------|------------|---------------|
| 36 Long | R37-C-3101-36 | 36 Regular | R37-C-3102-36 |
| 38 "    | R37-C-3101-38 | 38 "       | R37-C-3102-38 |
| 40 "    | R37-C-3101-40 | 40 "       | R37-C-3102-40 |
| 42 "    | R37-C-3101-42 | 42 "       | R37-C-3102-42 |
| 44 "    | R37-C-3101-44 | 44 "       | R37-C-3102-44 |
| 46 "    | R37-C-3101-46 | 46 "       | R37-C-3102-46 |

## An Aerial Mapping Trainer Teaches 'Tilt,' 'Drift,' 'Crabbing'

NAS, PENSACOLA—An aerial mapping trainer in which Navy student photographers learn the techniques of aerial mapping without leaving the ground is one of the newest synthetic training devices now in use at the Naval Training School, Photography, NATC, Pensacola.

The new trainer is being used to give primary aerial work to all students undergoing the regular school course. It consists of three parts: 1, a cut-down plane fuselage suspended in an overhead platform in which is installed a mapping camera and vertical view finder; 2, a motion picture projector located on a platform below the fuselage which projects pictures of continuous terrain, representing a vertical strip map, on a screen located directly under the vertical view finder; and 3, a second platform on which the first rests, mounted on wheels and set in tracks on the floor.

Chief value of the trainer lies in its ability to give the student practical experience in the correction of "tilt," "drift," and "crabbing."

[PHOTOGRAPHER E. L. SHUFORD, USN]

► **BuAER COMMENT**—Photographer Shuford is commended for his ingenuity in designing this practical training device.

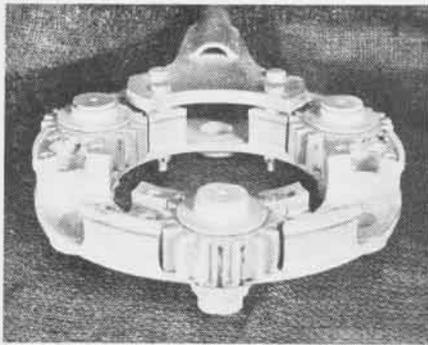
## Crankshaft Lock and Wrench Tool Adapted to Most Engines

NAS, JACKSONVILLE—A new type crankshaft lock and wrench developed here, having been widely approved, has been adapted for use on several models of Pratt & Whitney engines with 3:2 reduction gearing. Specifically, the device is a bell gear and crankshaft lock with wrench lock nut to crankshaft.

The operation heretofore was performed with cylinders removed, to pre-

HOW'S YOUR WIND?





CRANKSHAFT LOCK, WRENCH CUTS DOWN LABOR

vent crankshaft and bell gear from turning, and with a block of wood through power case as a lock. After cylinders were assembled to power case, jaws of a monkey wrench were clamped over bell gear teeth with a strap of sheet copper or other soft metal between wrench jaws and gear teeth.

The new wrench incorporates a threaded guide that allows tangs of wrench to be firmly inserted in slots of lock nut during removal and installation. Tool has been used on 1535-2-94-96 and 1830-72-76-82-86-90-92 engines and can be adapted to most other engines in operation.

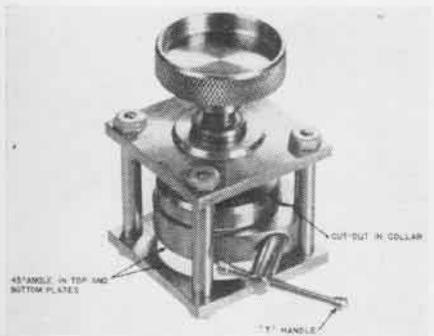
[DEVELOPED BY CHARLES S. SINKS]

## Stator Puller Is Modified Eases Handling of Pioneer Unit

MCAS, CHERRY POINT—A modification of the Pioneer stator puller has been developed here and is used for removal of stators for overhaul and repair of autosyn indicator and transmitter motors.

To ease handling of the Pioneer stator puller, an adjustable loose fitted T handle has been installed on the jig, thereby eliminating use of a screw driver. A 45° angle in both bottom plate and top prevents slipping when stator is being pulled, thus allowing a gripping of the entire surface of the stator. A cut-out has been provided on the collar to fit corner posts, to act as a guide, and to prevent collar turning during operation.

[DEVELOPED BY NICHOLAS SINHEL]

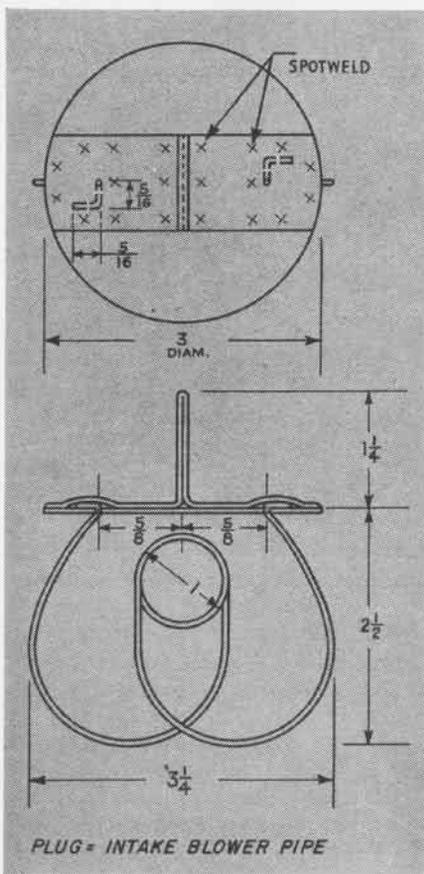


T HANDLE ELIMINATES USE OF SCREW DRIVER

## Blower Intake Pipe Plugs Also Fit Cylinder Assemblies

NAS, JACKSONVILLE—Pipe plugs for blower intake of Pratt & Whitney and Wright engines have been designed here as a safety precaution in the general building up of engines in the overhaul shop.

Easily and quickly inserted in blower intake pipe openings, the plugs also will fit a number of cylinder and valve assemblies, preventing foreign objects—cotter keys, nuts, bolts—from falling or entering engine during course of construction. Their use also is valu-



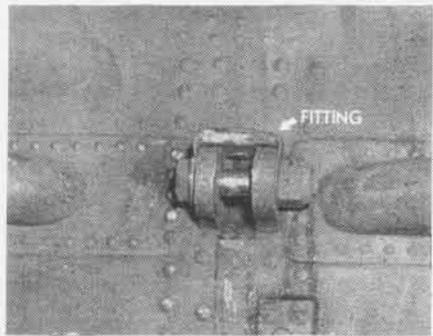
able on minor overhauls when above-mentioned openings are uncovered.

The some 450 plugs manufactured here from scrap pieces of punchings and small sheet metal have effected a distinct gain in time. Openings heretofore were covered with two-inch masking tape, a procedure in itself requiring some time.

[DEVELOPED BY JOSEPH M. COOPER]

## Helps OS2U Beaching Gear Strip of Steel Eases Its Launching

NAS, PENSACOLA—An irritating problem at this station has been solved by placing a small strip of heavy steel at the top of the fitting, permitting the beaching gear of an OS2U seaplane to



BEACHING GEAR REMOVAL AIDED BY FITTING

be pushed down and out as the wheels float up after launching, thus insuring an automatic removal of the gear.

Before this device was conceived, crewmen had to pull beaching gear free from the float when launching an OS2U. The wheels would not detach themselves after the plane was launched and releases pulled, but would float out and up, twisting the gear in the float fitting. During winter wading suits, men had to wear heavy wading suits, thus placing themselves in danger of drowning.

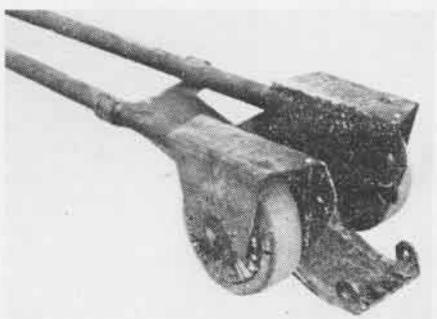
[DESIGNED BY W. G. BEERMAN, ACMM, USN]

## Tail Wheel Dolly For TBF-1's El Centro Perfects New Device

MCAS, EL CENTRO—A tail wheel dolly for handling aircraft of sizes up to TBF-1 has been constructed by this station's metal shop, and is especially helpful in towing aircraft with flat tires.

The dolly was made entirely from salvaged material and consists of two 10" x 4" solid tail wheels, an elliptical wheel well 8 3/4" deep x 14 1/2" long x 7" wide with drop leaf on the open end and supported in the "up" position by two hinged split pins. The tow bars are 10' 3" long, being 8' from axles to bend, with a 20° bend to clear the tail section and an 18" handle with 3" ring for towing.

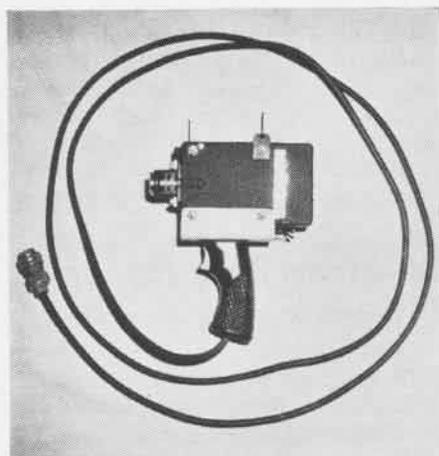
The bend is reinforced by two plates on each bar 9 1/2" long x 2 1/2" wide of 3/8" steel plate. The tow bars are 2" pipe, the handle 1 1/2" pipe, and the ring 1" rod bent and welded to handle. The wheel well is formed of 3/8" steel plate.



NEW TAIL WHEEL EQUIPMENT FOR FLAT TIRES



CHIEF THOMAS HOLDS CAMERA IN ONE HAND, BUT BUAER SUGGESTS THAT BEGINNERS USE TWO



VP 204 ADAPTS CAMERA FOR FAST ACTION SHOTS



DISASSEMBLED CAMERA SHOWS UNITS IN MAKE-UP

## 'Machine-Gun Camera' Used Good to Get Sub Action Photos

VP 204, ATLANTIC—All PBM squadrons that received aircraft last winter got G.S.A.P. cameras for use in hydraulic turrets. Turrets have since been removed, but cameras are still at all supply points.

The squadron has mounted its cameras on pistol-grip firing keys, thus converted them into hand-held motion picture cameras. They now may be used to photograph anti-submarine actions or other events shown more clearly by motion picture than by still shots. Pictures may be taken from bow station, pilot's cockpit, or either waist hatch.

The adapter is of simple construction. A right-angle metal plate is screwed on top of firing key where cover plate has been removed. Metal plate has a small hole drilled to allow connection of electrical leads of camera (removed from original socket in bottom) and leads in firing key. There are four threaded bolts on the camera's side for securing to turret structure. Bottom two are

used in this installation for securing camera to metal plate, while top two are for mounting simple bead sight.

[DEvised BY W. M. THOMAS, ACOM]

► **BuAER COMMENT**—It's a machine gun, not a pistol, so beginners had better use two hands if they wish their reputations for sobriety to remain unsullied. Looks OK otherwise.

## The Cross Pointer Indicator Reduces the Error of AN Ranges

NATC, CORPUS CHRISTI—The new "za" method of orientation and let-down now being taught at this center uses the Cross Pointer Indicator as its basic instrument. Mounted on the instrument panel, the indicator by means of two needles furnishes visual indications of the airplane's position in respect to landing area and glide path. Complete orientation and let-down through overcast to ground or water can be achieved without the familiar **A** and **N** signals in the pilot's ear-phones.

Any deviation from directional beam or glide path beam is shown. Thus,

the plane is positively and constantly guided, vertically and directionally, to landing area. Since all indications are visual, margin of error usually found in AN ranges is greatly reduced.

One of the advantages of the za range is adaptability, since the landing path can be directed into the wind or in a direction that will avoid obstruction. Another advantage is mobility, which permits operation of transmitting equipment on land or water.

## New Tube Cools Generator Bomb Group Perfects the Device

MCAS, CHERRY POINT—Dive Bomber Group has installed a flexible blast tube from carburetor air scoop to generator in SBD-4's to prevent NEA-2d Eclipse generators from "running hot" or, in some cases, burning out.

A hole was cut in the top of air scoop to pass the tube through. In order to increase air flow, a small air scoop was made and soldered to intake end of tube and fastened over the hole.

## Hydraulic Test Is Devised El Centro Uses Plane Power

MCAS, EL CENTRO—A portable hydraulic test panel has been devised allowing the system to be tested on the plane under the plane's power. The panel is 23" x 16" x 10" and weighs approximately 30 lbs. It consists of a simple hydraulic system including a selector valve, relief valve, gauges and several needle valves. Operation of the system may be changed to make different tests by opening and closing the needle valves.

► **BuAER COMMENT**—One of the primary reasons for providing hydraulic test equipment is to supply hydraulic pressure from an external source. It is not desirable to use airplane engine for testing.

## Damaged Aircraft Trailer Pearl Harbor Builds New Device

NAS, PEARL HARBOR—A trailer to speed and facilitate moving of damaged plane fuselages without further injury



TRAILER PERMITS MOVING OF WRECKED PLANES

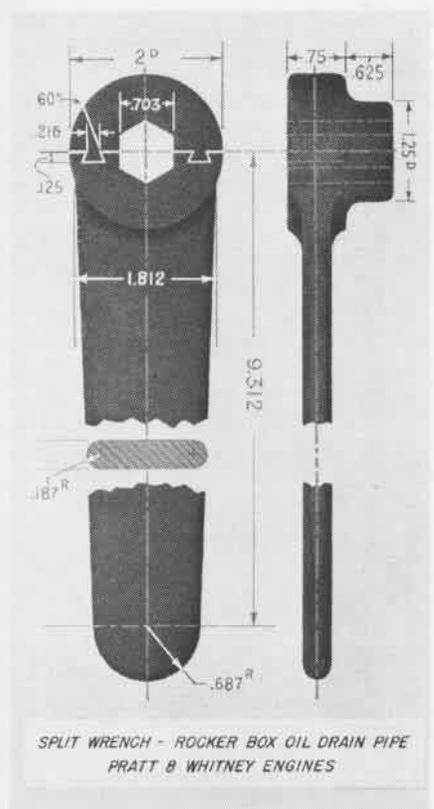
has been designed by an officer of this station's supply department.

Built on the station, each trailer, of low bed type, bears belly and tail cradle especially constructed to hold the particular design of plane. This alleviates stress or strain often resulting from transporting damaged planes on improvised vehicles.

At present the station is using three different variations of the trailer to handle F4F's and F6F's, TBF's and SBD's.

## New Hinged-Head Wrench Used on Cylinder Drain Pipes

NAS, PENSACOLA—A split wrench for removing and installing oil drain pipes of Pratt & Whitney engine cylinders



has grown out of difficulties experienced here in removing oil pipe fittings from rocker arm boxes. Using ordinary open-end wrenches, fittings sometimes twisted off. The newly designed wrench has a hinged head which clamps completely around hexagonal fitting, distributing load sufficiently to prevent failure.

[DEVELOPED BY MALCOLM A. GERI]

## Paint Mix More Durable New Lacquer Lacks "Pick Up"

MAG, CAMP KEARNEY—Transportation department of Service Squadron has devised a new paint mixture which lasts from 60 to 85 percent longer, re-

duces number of paint jobs, and cuts cleaning problem in half.

Non-specular dark olive-drab paint mixed with Spar varnish produces a hard finish and does not affect luster. This new synthetic lacquer eliminates the former porous finish which picked up dust, oil, and foreign matter.

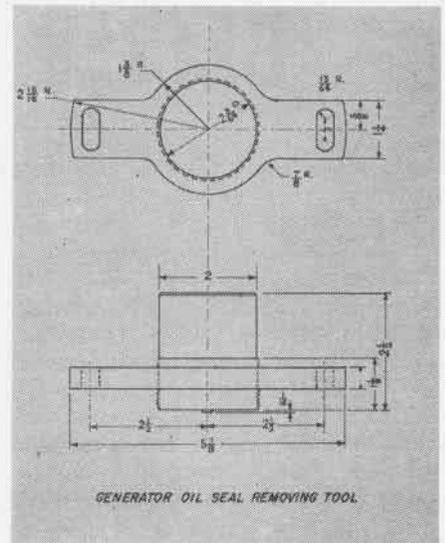
## Oil Seal Tool Gets Prize

### Design Cuts Down Man-Hours

NAS, CORPUS CHRISTI—An employee at this station has developed a generator oil seal removing tool which speeds up the job and eliminates danger of damage to engine.

Owing to tight fit of the oil seal in various models of R-1830 engines a great amount of difficulty has been experienced in their removal. In addition to time loss involved, a number of rear cases have been damaged during removal of seal because of lack of adequate equipment.

Besides cutting down on damage to engines, the tool saves an average of two-hours-an-engine overhaul in shop.



It works equally well in replacing oil seal while an engine is mounted in an aircraft, thereby making engine removal unnecessary. It is estimated that the tool is saving at least 100 man-hours a month at present.

[DESIGNED BY E. L. HOLIDAY]

(Succeeds list of November 15, 1943)

### LAST SERVICE AND OBSOLESCENT AIRPLANE BULLETINS AND CHANGES (CONTRACT CHANGES ARE NOT INCLUDED)

December 15, 1943

| Airplane | Bulletin | Date     | Change | Date     |
|----------|----------|----------|--------|----------|
| BD-2     | 7        | 12-1-43  | 24     | 10-23-43 |
| F4F-3    | 44       | 10-28-43 | 137    | 11-30-43 |
| F4F-3A   | 37       | 10-28-43 | 112    | 11-30-43 |
| F4F-4    | 40       | 11-6-43  | 98     | 11-8-43  |
| F4F-7    | 12       | 10-28-43 | 40     | 11-30-43 |
| F6F-3    | 18       | 11-19-43 | 41     | 11-14-43 |
| FM-1     | 21       | 11-6-43  | 40     | 11-8-43  |
| F4U-1    | 21       | 11-25-43 | 84     | 12-6-43  |
| GB-2     | 8        | 11-30-43 | 10     | 8-28-43  |
| GH-1     | 7        | 11-15-43 | 24     | 10-23-43 |
| N2S-5    | 2        | 9-16-43  | 3      | 9-14-43  |
| N2T-1    | 4        | 10-9-43  | 30     | 12-1-43  |
| OS2N-1   | 27       | 11-4-43  | 32     | 9-9-43   |
| OS2U-3   | 52       | 11-4-43  | 62     | 9-9-43   |
| PV-1     | 22       | 11-27-43 | 79     | 11-19-43 |
| PBM-3S   | 7        | 11-2-43  | 30     | 12-4-43  |
| PBY-5    | 37       | 10-17-43 | 141    | 11-29-43 |
| PBY-5A   | 42       | 10-17-43 | 130    | 11-29-43 |
| PB2Y-3   | 10       | 10-12-43 | 113    | 11-29-43 |
| PB2Y-3R  | 10       | 10-12-43 | 100    | 11-29-43 |
| PB4Y-1   | 30       | 11-30-43 | 54     | 11-19-43 |
| R4D-1    | 16       | 11-8-43  | 18     | 11-15-43 |
| R4D-5    | 8        | 11-8-43  | 1      | 8-6-43   |
| R5C-1    | 5        | 11-6-43  | 11     | 11-20-43 |
| R5D-1    | 8        | 11-8-43  | 53     | 12-4-43  |
| R5O5     | 5        | 11-19-43 | 7      | 11-16-43 |
| SBD-3    | 77       | 11-12-43 | 141    | 12-3-43  |
| SBD-3P   | 63       | 11-12-43 | 123    | 12-3-43  |
| SBD-4    | 32       | 10-16-43 | 48     | 11-27-43 |
| SBD-5    | 27       | 10-27-43 | 33     | 12-4-43  |
| SB2A-4   | 9        | 11-20-43 | 84     | 11-18-43 |
| SB2C-1   | 21       | 11-24-43 | 12     | 12-1-43  |
| SNV-1    | 12       | 12-4-43  | 42     | 11-29-43 |
| SO3C-1   | 27       | 11-2-43  | 60     | 10-5-43  |
| TBF-1    | 78       | 11-25-43 | 161    | 11-26-43 |

# BETTER ALTITUDE BREATHING

## Navy Improves on Workability of Its Aircraft Oxygen Apparatus for Economical, Easy Handling

SINCE aircraft equipment is constantly being modified and improved, BuAer has compiled information bringing up to date the status of aircraft service oxygen apparatus and other integrated items of equipment.

A number of innovations have been undertaken to improve oxygen, radio and flight gear so they will work simpler and easier when the pilot is busy flying his plane.

Some of the more important changes in aircraft oxygen equipment are as follows:

1. Adoption of diluter-demand oxygen regulator (currently Pioneer Part No.

2851-A1) as standard equipment for installation in all carrier-based aircraft; to be followed ultimately by diluter-demand regulator installations in all applicable naval aircraft.

2. Adoption and distribution of new type-14 demand oxygen masks to be issued as personal flight gear, instead of fixed with the plane.

3. Adoption of new breathing tube coupling (AN6002) to permit quick and convenient connecting and disconnecting of personal issue oxygen mask.

4. Adoption of new tube assembly-oxygen regulator to mask—AN6003 ( $\frac{3}{8}$ " I.D.) (Dayton Rubber Mfg. Co.).

5. Adoption of new oxygen flow indicator (Pioneer, Type DJ-1).

Additional general information on the above items follows:

The diluter-demand oxygen regulator has certain advantages over previously installed Navy oxygen equipment. These advantages may be summarized briefly by stating that the diluter-demand regulator is more economical of the oxygen supply than the straight demand regulator and more conveniently operated than the oxygen rebreather apparatus, which it approaches on a weight-economy basis at relative low oxygen altitudes.

A typical single-place diluter-demand regulator assembly with the most up-to-date oxygen equipment is illustrated by NANews. It will be noted that the new oxygen flow indicator has been incorporated in the regulator to give visual indication of the positive flow of oxygen.

In a number of aircraft installations the flow indicator will be separated from the regulator and remotely installed to give improved visibility.

### MASK WILL HAVE COUPLING INSTALLED UPON DELIVERY

SHORTLY the type-14 mask will be delivered by the manufacturer complete with male-half of the breathing tube coupling properly installed. Likewise, the new tube assembly-oxygen regulator to mask (AN6003) will include female-half of breathing tube coupling. Thus, shortly after February, naval aircraft installations will consist of the required assortment of cylinders, piping, diluter-demand regulator complete, and tube assembly including one-half of disconnect coupling. The individual pilot then will be able to connect his personal issue oxygen mask with disconnect coupling to complete the system.

Since all of the component parts of the new diluter-demand regulator assembly are not and will not be available simultaneously, certain transitional adaptations may have to be accomplished as follows:

1. To use the diluter-demand regulator with none of the other new equipment available: In this case, the type "D" (demand) oxygen mask assembly as formerly used with the straight demand regulator will serve. Merely secure hand-tight the type "D" mask and breathing tube threaded connection to the diluter-demand



INTEGRATED items of up-to-date service oxygen apparatus include new mask, helmet, goggles, microphone, tube assembly, and breathing tube coupling simplify pilot's work

regulator threaded outlet, and use mask as heretofore.

2. To use type-14 mask with the diluter-demand regulator without new tube assembly-oxygen regulator to mask ( $\frac{3}{8}$ " I.D.). A type "D" mask normally includes a corrugated mask tubing, plain wire-inserted tubing and threaded coupling connection. Separate corrugated tubing from plain tubing at their junction where the clip chain is attached. Insert breathing tube coupling (Bastian-Blessing Co. No. 4388) in accordance with instructions furnished each coupling to make proper disconnect feature between mask and regulator. No. 4388 ( $\frac{3}{8}$ " I.D.) coupling is provided separately to accomplish the above transitional change.

3. To use the diluter-demand regulator with new tube assembly-oxygen regulator to mask ( $\frac{3}{8}$ " I.D.). In this case it is assumed that the procedure outlined in (2) above has been previously accomplished, and that the tube assembly-oxygen regulator to mask (AN6003), and diluter-

demand regulator outlet non-threaded elbow (Pioneer Part No. PC50819-1) have subsequently become available. Remove regulator elbow (Pioneer Part No. PB52101-1) and replace with elbow (Pioneer Part No. PC50819-1).

#### PROPER COUPLING OF MASK, CONNECTOR HOSE IMPORTANT

Attach proper end of tube assembly-oxygen regulator to mask (AN6003) to elbow and secure by means of fastener provided. Remove male-half of  $\frac{3}{8}$ " I.D. breathing tube coupling (Bastian-Blessing Co. No. 4388) from mask tubing and replace with male-half of  $\frac{3}{8}$ " I.D. coupling and secure tightly in place. The tube assembly-oxygen regulator to mask (AN6003) is being procured in two lengths and may be distinguished by the appropriate dash numbers as follows: AN6003-3 is a three-foot length and AN6003-4 is a four-foot length of tubing. The new breathing tube coupling (AN6002) has been standardized

with Army Air Forces and is the latest improved version of a type that has had extensive combat service.

In radio the ANB-M-C1 mask microphone offers a distinct improvement over previous oxygen mask microphones according to all service reports received. The installation of this microphone in a type-14 oxygen mask is readily accomplished by following the instructions contained in the pamphlet supplied with the mask.

The ANB-M-C1 microphone is the oxygen mask microphone for both the Navy and the Army. When it was standardized the use of the PL-291 disconnect plug and the JK-48 disconnect jack were adopted. The microphone is in large quantity production but its distribution is scheduled with the necessary extension cords, deliveries of which are behind due to the rubber shortage.

### New Indicator

Incorporated in

Regulator Gives Sign

That Positive Flow of

Oxygen Is in Process



**1 IMPROVED** breathing tube coupling allows quick connecting, disconnecting



**2 NORMAL** position of mask prior to use of oxygen shows microphone in front



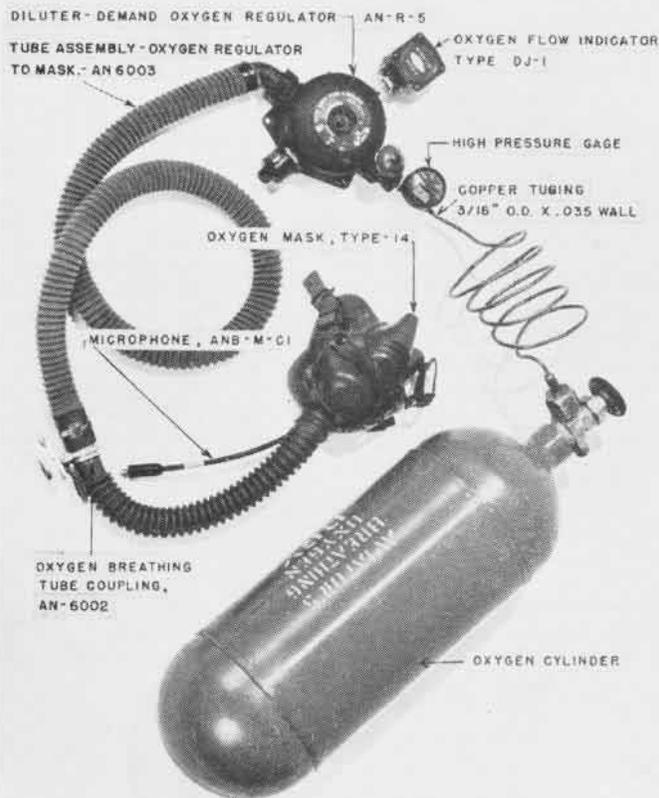
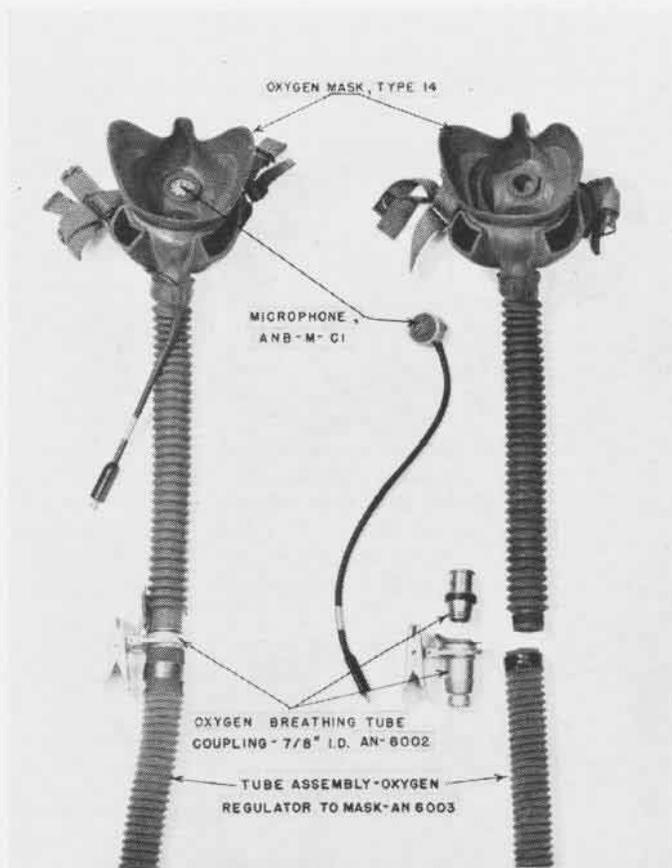
**3 ONE-HAND** method of attachment is big advantage afforded by new mask



**4 PROPERLY** fitted mask provides reasonable comfort, is easier to operate



**5 SUITABLE** clearance between bridge of nose and mask is boon to wearer



INSTALLATION OF MICROPHONE IN TYPE-14 MASK IS READILY ACHIEVED DILUTER-DEMAND REGULATOR ASSEMBLY WILL BE AVAILABLE SHORTLY

## MASK MICROPHONE REPLACES THROAT TYPE

THE EXTENSION cord and switch illustrated in this article is similar to an Army CD-318 A cord. The Navy equivalent uses a switch similar to that used in old throat microphone cords and is called a CX-41/AR cord. Both cords are an interim measure as all microphone cords eventually will be supplied without switches.

The switches then will be remotely located on throttles or wheels, in gun grips, camera grips, and other convenient locations where the need of removing the hands for communications can be eliminated. Furthermore, new radio systems now in production will have the required extension cords built in as a part of the jack boxes.

Headphones illustrated in photographs on previous pages are the new ANB-H-1 instruments which are part of the H-1/AR headset assembly. This new assembly is completely described in BuAer Technical Note No. 69-43. New components of the oxygen system, as they become available, may be requisitioned from major supply depots.

### Panel Check-off List Works

#### Easily Seen on Instrument Panel

NAS, CORPUS CHRISTI—A squadron at Cabaniss Field has devised an excellent manner of mounting a check-off list on the instrument panel in the front seat of SNV-1's.

Approximately 75 percent of the squadron airplanes do not have directional gyros or artificial horizons mounted in the space provided on the instrument panel immediately under the fuel warning signal. Plywood panels 3/8 inch thick, 5 by 10 inches in size, were fitted in this space, conforming to the curve of the cockpit cowling, and fastened to the instrument panel. Check-off list, consisting of all operations for take-off and landing, as well as radio tower, radio range

frequencies, radio range in-bound headings, and certain nearby station identification call letters, was glued on the board with neoprene cement.

A sheet of transparent cellulose acetate, same shape as the board, 1/8 inch thick, protects the printed sheet, but is easily removed for corrections or changes by loosening the three screws holding the panel in place. The check-off list in this position thus is



immediately in front of student's eyes and removes any possibility of forgetting various operations necessary in take-off and landing. He does not have to look for it in some out-of-the-way corner of the instrument panel.

### Cover for Chute Opening

#### Must Be Removed Before Flight

VF17—This squadron has developed a cover to fit over the ejected case chute opening on the lower surface of outer wing panels of F4U-1's. The cover keeps moisture from entering the gun through this opening and greatly reduces maintenance work required to keep the guns free from rust, especially when wings are folded. It is necessary to remove covers before flight, however. Other squadrons may obtain details by writing BuAer.

## Unit Speeds Photo Record Prints Ready After Plane Lands

VD-2—Complete photographic records of aerial gunnery runs, ready for study within a few minutes after the plane touches the ground, are now possible as a result of portable quick-developing equipment designed by the Atlantic Fleet's aerial photographic squadron, VD Two.

The apparatus is a plexiglass 16-mm. film developing rack, intended for use at outlying fields where squadrons participating in gunnery training are based.

Formerly several days were required to bring exposed gun camera film to the nearest air station laboratory, process it, and return it to the squadron. As a result pilots lost much of the benefit of their training because they were unable to see their mistakes as they made them.

This difficulty is being overcome by equipping outlying fields with the developing rack and its accessories, so that film may be processed on the spot immediately after exposure. Under normal conditions, by using such equipment the film can be ready for study by pilots 20 minutes after the film is turned over to the photographer for processing.

► **BuAER COMMENT**—Instructions for building such a processing rack in any A&R Shop are being issued to all photographic units in the form of a photography technical bulletin. This will include full instructions for both negative and reversal processing of gun camera film.

## Protecting Hydraulic Line Tape, Shellac Are the Coverings

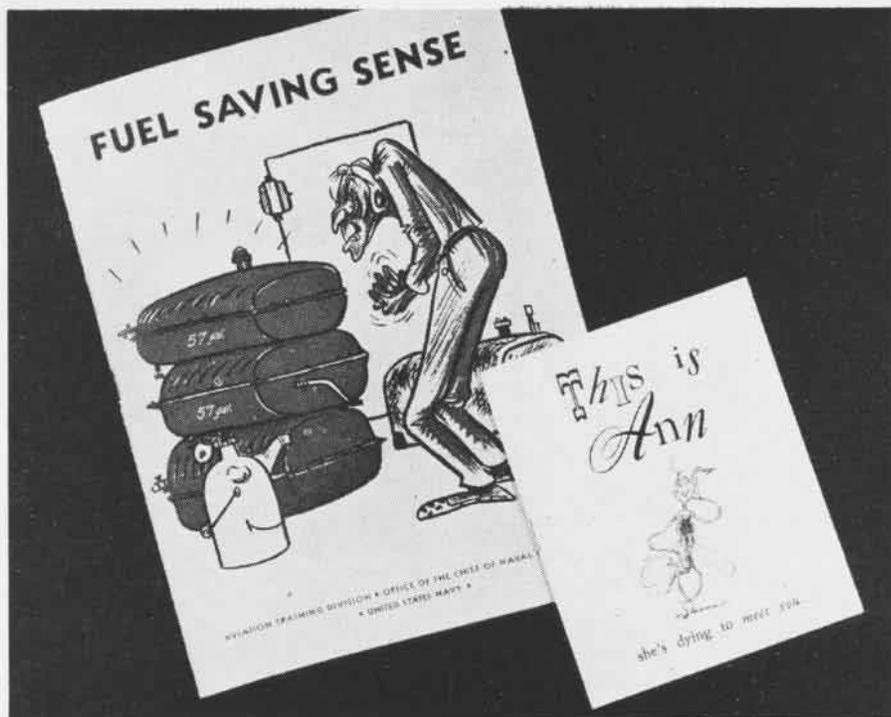
MCAS, CHERRY POINT—A method of combating loss of flexibility in aircraft hydraulic lines has been worked out by a Third Wing service squadron. The lines are first covered with friction tapes, then coated with shellac. This process is reported to give both added flexibility and double protection.

### ANSWERS TO DEAD RECKONING PROBLEM

|    |                 |        |        |
|----|-----------------|--------|--------|
| 1. | 029°            | 143.5° | 217.5° |
| 2. | 040°            | 140°   | 218°   |
| 3. | 144 k           | 131 k  | 106 k  |
| 4. | 125             | 42.5   | 121    |
| 5. | 52              | 19.5   | 68.5   |
| 6. |                 |        | 229°   |
| 7. | Lat. 22°—46' N  |        |        |
|    | Long. 28°—23' W |        |        |

Note: Tolerances of two or three miles or two or three degrees from the answers are considered correct.

(See page 27)



## TWO INFORMATION PAMPHLETS

**T**WO NEW instructional booklets—*Fuel Saving Sense* and *This Is Ann*—are receiving initial distribution by CNO's Aviation Training Division. *Fuel Saving Sense* is a product of the Aviation Training Division; *This Is Ann* was prepared by the War Department and has been made available for Navy use.

**FUEL SAVING SENSE**—There are just two kinds of aviators—the fueled and the fooled. The first arrive by plane. The second kind arrive by parachute, raft, stretcher or other conveyance. Occasionally they don't arrive at all. Maybe you prefer the more picturesque vehicle, but the Navy has a prejudice in favor of your arriving in what

you started out in—the plane. Don't use full power more than is necessary. It's never too early to begin to study your plane and engine, to work out your fuel consumption and to know the right way to fly. And saving fuel is the right way to fly . . . say those who know!

**THIS IS ANN**—Ann's full name is *Anopheles Mosquito* and her trade is dishing out malaria. Never give her a break. She can make you feel like a combination of a forest fire, a January blizzard, and an old dish mop. Some places are lousy with fat little Anns sitting around waiting for you with their bellies full of germs. You can keep from getting malaria if you follow the directions given in this booklet.

### USE THIS FORM TO ORDER PAMPHLETS

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

FROM: \_\_\_\_\_  
(Unit commander)

TO: Chief of Naval Operations

SUBJECT: Pamphlets—Request for.

It is requested that copies of new pamphlets be sent as indicated to this activity.

COPIES

\_\_\_\_\_

\_\_\_\_\_

PAMPHLET

Fuel Saving Sense

This Is Ann

SIGNED: \_\_\_\_\_

Delivery \_\_\_\_\_

Address: \_\_\_\_\_

Cut here



# LETTERS

SIRS:

It is requested that A-2 Division, Headquarters Army Air Forces Central Flying Training Command, Randolph Field, Texas, be placed on your mailing list to receive 300 copies of NANews for distribution to stations in this training command.

EXEC. ASST. CHIEF OF STAFF, A-2  
Hq. AAF Central Flying  
Training Command

Randolph Field, Texas



SIRS:

With the birth of a station newspaper, we find ourselves in need of material which can be termed "interesting and authentic." In talking to editors of other publications in and around this area, we have found that each one depends partially on NANews for this type of material.

If we might be added to your mailing list for the use of pertinent material, we will use the utmost discretion, realizing that all matter contained in your publication is restricted. Our executive officer is also the paper's censor, so added to an already discreet staff, we are sure the hazard of imparting restricted information is dispelled.

EDITOR, TARGET  
NTS, Fire Controlmen (R)

Ft. Lauderdale, Fla.

¶ The *Target* will be placed on the NANews mailing list with permission to use material cleared by censorship.



SIRS:

This station claims the distinction of having the only seaplane ramp to be used by lighter-than-aircraft.

During a recent early morning take-off, one of the short landing lines took a crack-the-whip half inch around the leg of a ground crewman as the blimp got underway with full throttle. Shouting called attention to the pilot that he had a stowaway dangling on the end of a landing line. The pilot cut his engines and turned the ship over to the co-pilot after heading over the Cooper River. The struggling man was dumped into the water as the ship settled down in the river to give all hands a thorough soaking. The pilot dived from the gondola window to rescue the injured stowaway who suffered frictional burns.

The airship was taken in tow to the nearby seaplane ramp and beached as a seaplane. This maneuver resulted in very little damage to the airship.

COMMANDING OFFICER  
NAS, Charleston

BEST ANSWERS  
to questions on page 7  
1.c 2.c 3.c 4.d 5.c

SIRS:

In August 15, 1943, issue of NAVAL AVIATION NEWS [then BUER NEWS], illustrations showed the proper method of carrying and wearing parachutes. Squadron 7, NAS, Pensacola, Fla., adopted the method shown for service seat type and encountered difficulty, necessitating the adoption of different methods.

Back pads fouled and many chutes were spilled due to tension on the rip cord with the D ring still in holster.

Over a two-month period, about 15 chutes were spilled while being carried by the main sling, while the safety seals were found broken on many other chutes.

This condition was especially prevalent in chutes with rip cord housing of flexible metal tubing, where strain of carrying is



NANews PAGE OF AUG. 15 UNDER DISCUSSION

taken up by the housing rather than the harness.

The experience of the squadron indicated that the best method for carrying is by the leg straps over the shoulder or by rolling up the chute and carrying it under the arm.

COMMANDING OFFICER  
NATC, Pensacola, Fla.

¶ The reported difficulty in carrying parachutes has been investigated by BuAer. It has been found that no strain is placed on the rip cord housing when parachutes are carried in this manner, provided the housing is properly adjusted. This leads to the assumption that the premature opening and rupturing of the safety seal as reported may be due to insufficient slack in the rip cord housing.

The existence of such condition, which will appear in the transporting

of parachutes, is a hazard in that the parachute may be released accidentally by a strain being placed on the rip cord housing when the pilot stands up.

The proper adjustment of the rip cord housing can be checked by complying with instructions in paragraph D-7 of Chapter V of the *BuAer Parachute Manual*. This will correct the difficulty encountered and also remove the potential hazard of a premature release during an actual emergency.

It is BuAer's desire to standardize on a single method for carrying parachutes. Although the parachute may be carried safely in a number of ways, the specifying of several acceptable ways may indicate that the method is not critical and may result in the adoption by individuals of incorrect and even dangerous practices.

Carrying the parachute by the leg straps has been used successfully by pilots for a number of years. Carrying the parachute on the back with a leg strap over each shoulder and holding a strap in each hand, as shown in the illustration, is considered an excellent practice. Wearing the parachute in normal position with chest strap buckled and leg straps unfastened also will permit use of the hands for other purposes.

The parachute should not be carried by the rip cord handle, rip cord housing, pack elastics, risers, or connector straps.

BuAer will appreciate receiving comments and recommendations from other stations relative to carrying parachutes.



SIRS:

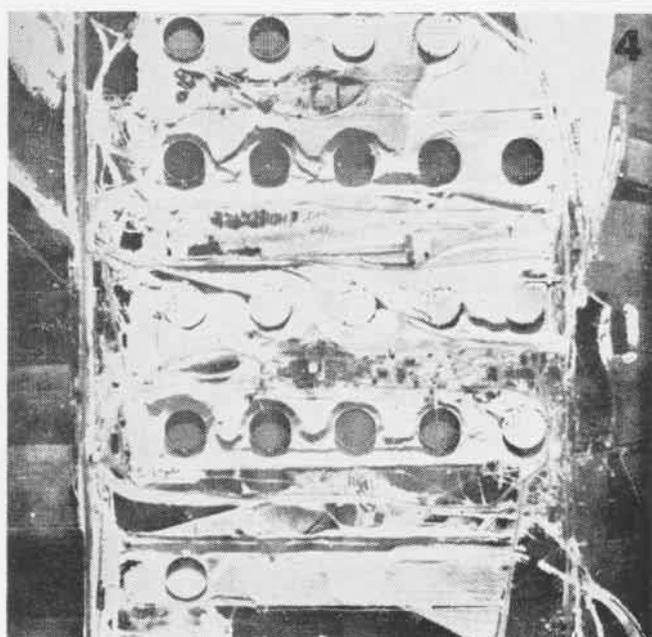
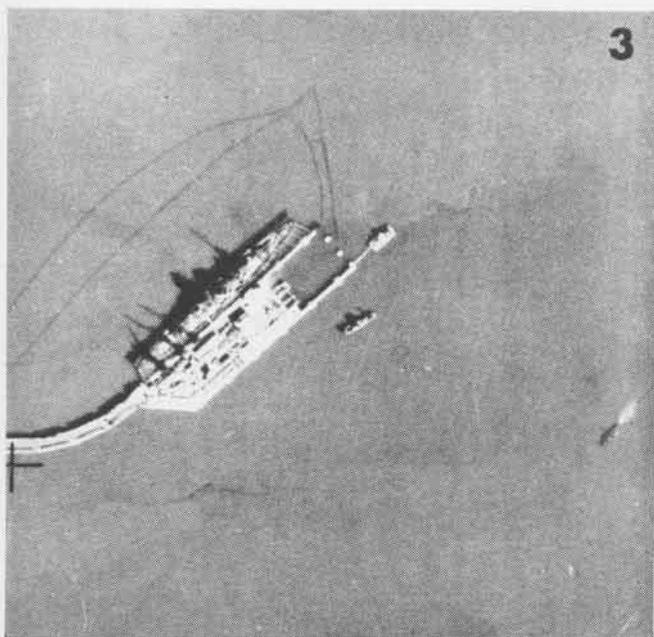
Major Al Williams recently demonstrated some fine points of airmanship at this station. Following an exhibition of precision flying in his famous F3F, the Major talked with the fliers and their ground crews. He pointed out the interdependence of the two groups, emphasizing the important rôle of the "mech."

COMMANDING OFFICER  
NAAS, Manteo, N. C.

HOW'S YOUR WIND?



# CAN YOU IDENTIFY THESE OBJECTS?



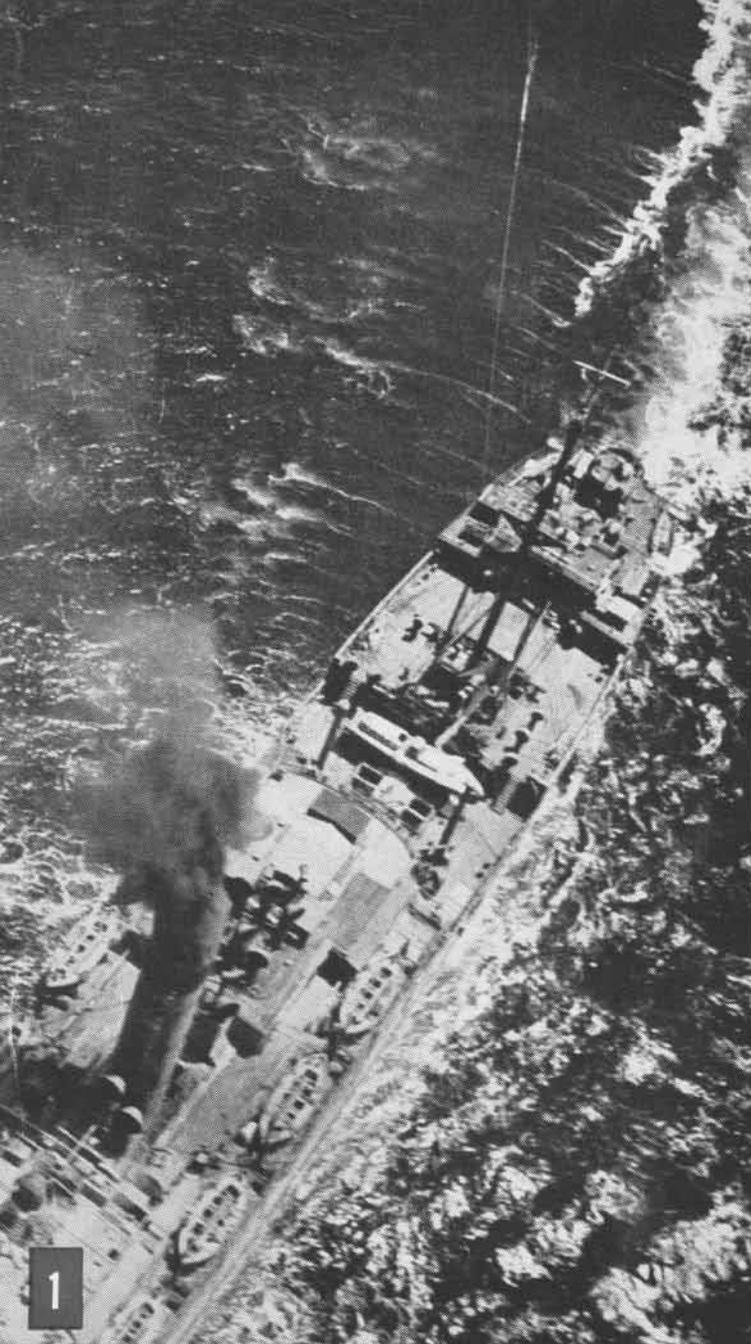
TO THE untrained eye, these pictures are more than a quiz—they border on the enigmatic. But to the educated eye of the photographic interpretation officer, they reveal valuable information that can be used against the enemy. However, don't let us discourage you. Try your luck before reading the copy below.

**1.** These close concentric patterns resemble giant fingerprints, but actually they represent Nazi efforts to slow the Allied advance in Libya. They plowed the ground to neutralize its landing field possibilities.

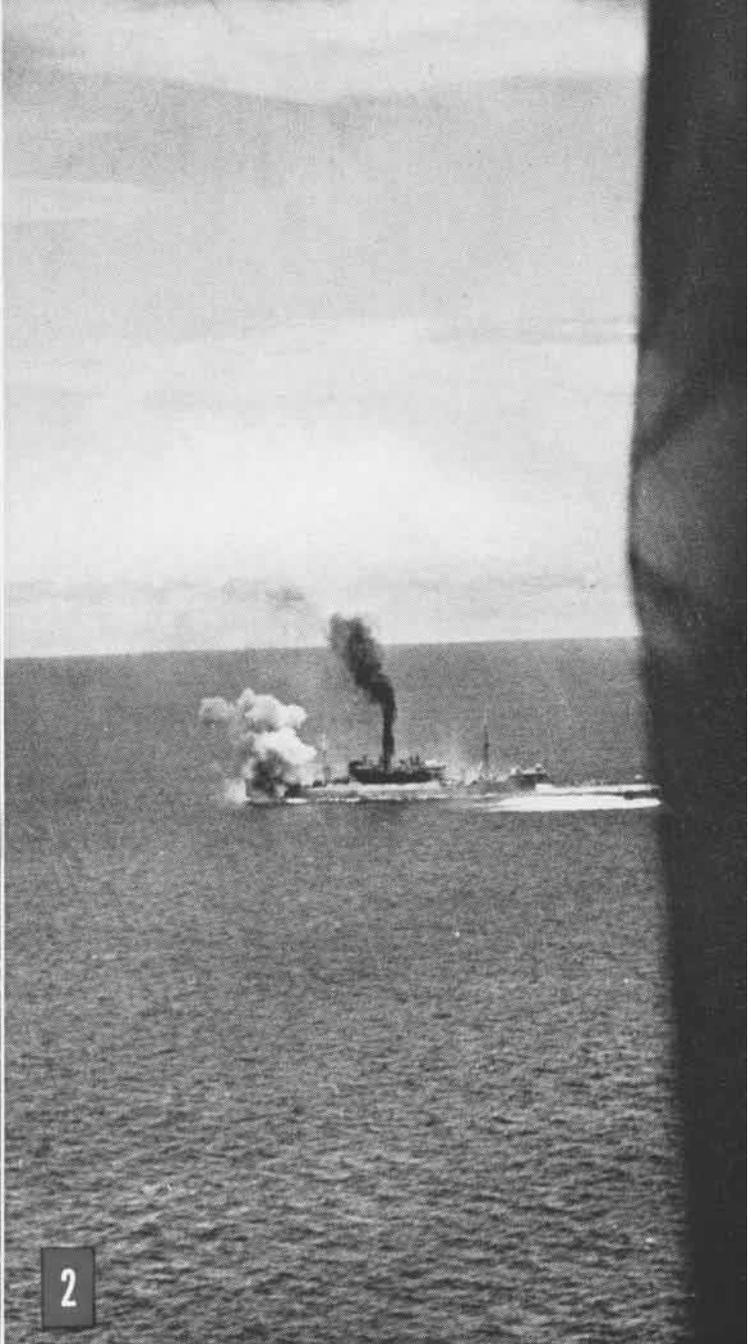
**2.** The little mounds look like the handiwork of doodlebugs. It's an ammunition dump at Wesermunde, Germany, containing Nazi high explosives.

**3.** Yes, it's a ship—the *Scharnhorst* anchored at La Pallice, France. RAF shot this picture prior to a heavy bombing attack. Anti-torpedo nets can be seen around ship, and an attempt has been made to camouflage it by laying nets across ship to dock. German efforts to disguise this mighty warship were all for naught, however, as units of the British home fleet sent her to the bottom the day after Christmas.

**4.** Soup bowls? No, tanks, but not the General Sherman type. They are oil storage tanks, 195 ft. in diameter, located at Farge, in the Schwanewede forest, 14 miles northwest of Bremen. Tanks are in various stages of construction, from shells to completed units.



FLYING AT MASTHEAD LEVEL, NAVY LIBERATOR DROPS LOAD ON FOC'SLE



BACKWARD GLANCE AT BURNING SHIP PROVES ACCURACY OF BOMB PATH

# NAVAL AVIATION IN ACTION

U. S. FLEET ACTION in the Pacific is making deep gashes in Jap ocean supply routes, choking off the stream of arms and matériel to their outlying bases. Attack by Navy *Liberators* on a Japanese ship in waters near Rabaul, shown in the pictures above, illustrates the mounting success of naval aviation in this important task. The ship, stalked by PB4Y's, took evasive action to escape the punishment hanging over her head. But a *Liberator*, swooping down to almost mast-head level, released its load with deadly accuracy, making a direct hit on the ship's foc'sle.