NAVAL AVIATION NEWS

Eyes of the Fleet
Japanese Railroads
Rescue Using Raft

Aug. 1, 1945
RESTRICTED

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He held a Bead on the Zero...

Radio-gunner Ed Cole grinned with satisfaction behind his twin 30s. The Nips had bitten. His SBD squadron was circling Ballale to come out of the sun at the Japs. No fighter opposition was coming up. The Japs on Ballale thought they were being by-passed for a more distant objective.

▸ Too late the Japs saw the squadron bank for the dive. Cole's pilot was flying wing on the flight leader.

▸ "They oughta' get a bang out of this" came the pilot's voice over the intercom as he put the SBD in a dive to drop his 1000 pound bomb.

▸ Over the side Ed's eye caught three specks running toward three *Zeros* at the head of the strip.

▸ "My meat!", he said to himself.

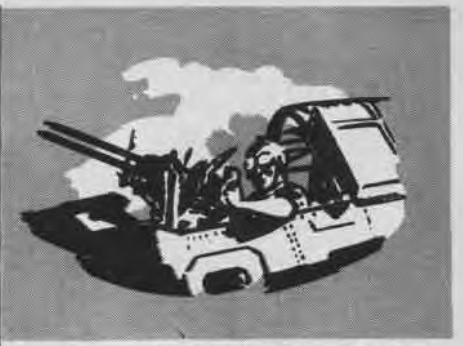
▸ As they pulled out of the dive Cole saw one of the *Zeros* taking off 100 feet below. He stood up behind to get his barrels up. The speed of his plane tore off Cole's helmet and goggles but he held a bead on the *Zero*. Now ack-ack was streaming up. A Jap bullet splattered past Cole to smash the IFF.

▸ Lethal lead poured out of his 30s. Smoke poured out of the *Zero's* engine—the pilot slumped. The *Zero* banked over and crashed on a hangar.

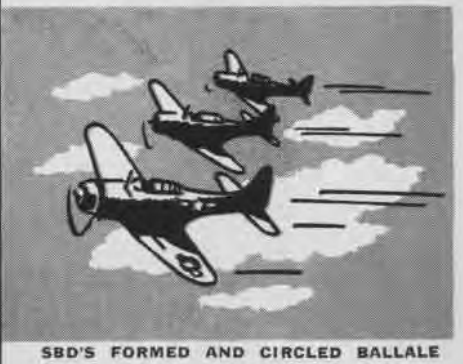
▸ Ed Cole was later awarded the Air Medal for his part in the action.

AIRCREWMEN HAVE WHAT IT TAKES

No. 27 of a series

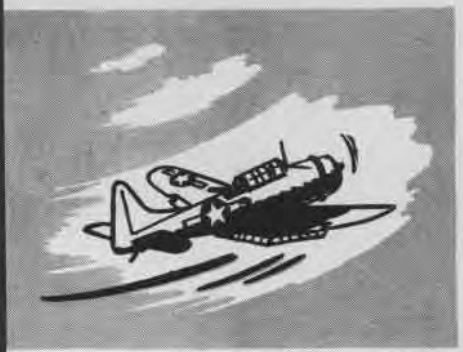


AIRCREWMAN COLE WAITED FOR ZEROS



SBD'S FORMED AND CIRCLED BALLALE

SWOOPING DOWN, THE BOMBS DROPPED



AS THEY PULLED OUT COLE SAW NIPS

"BARRELS UP" ED COLE HELD A BEAD

JAPANESE RAILROADS

PHOTOGRAPHIC INTELLIGENCE

JAPANESE railroads assume increased importance as U.S. airmen approach the home islands, not only because they are exposed to regular attacks but because a huge added transportation burden now rests on the enemy's rail lines as a result of Allied interference with Jap shipping. Formerly the biggest part of Japan's freight moved by sea.

Because of the mountainous character of interior Japan, most railroads hug the coastline, and on Honshu and Kyushu they completely encircle the islands. The majority of lines on the home islands are built on a narrow gauge (3'6"). About two-thirds of the total track mileage is on grades and nearly one-third is on curves. There are a great many bridges and tunnels. These conditions result in reduced speed for Jap trains. Thickest concentrations of rail lines are on Honshu's east coast in the Tokyo, Nagoya and Osaka regions. Some of these roads are electrified, but the majority throughout Japan are run by steam. Rail ferries connect the Jap home islands with each other and with Korea, and there is one notable tunnel, called the Kammon Tunnel, which connects Kyushu and Honshu between Moji and Shimonoseki. Cross-island rail lines are difficult to construct because of the mountains. Several have been built, however, and they are of special importance now because they carry vital raw materials originating on the Asiatic mainland across Japan to the east coast cities of Honshu.

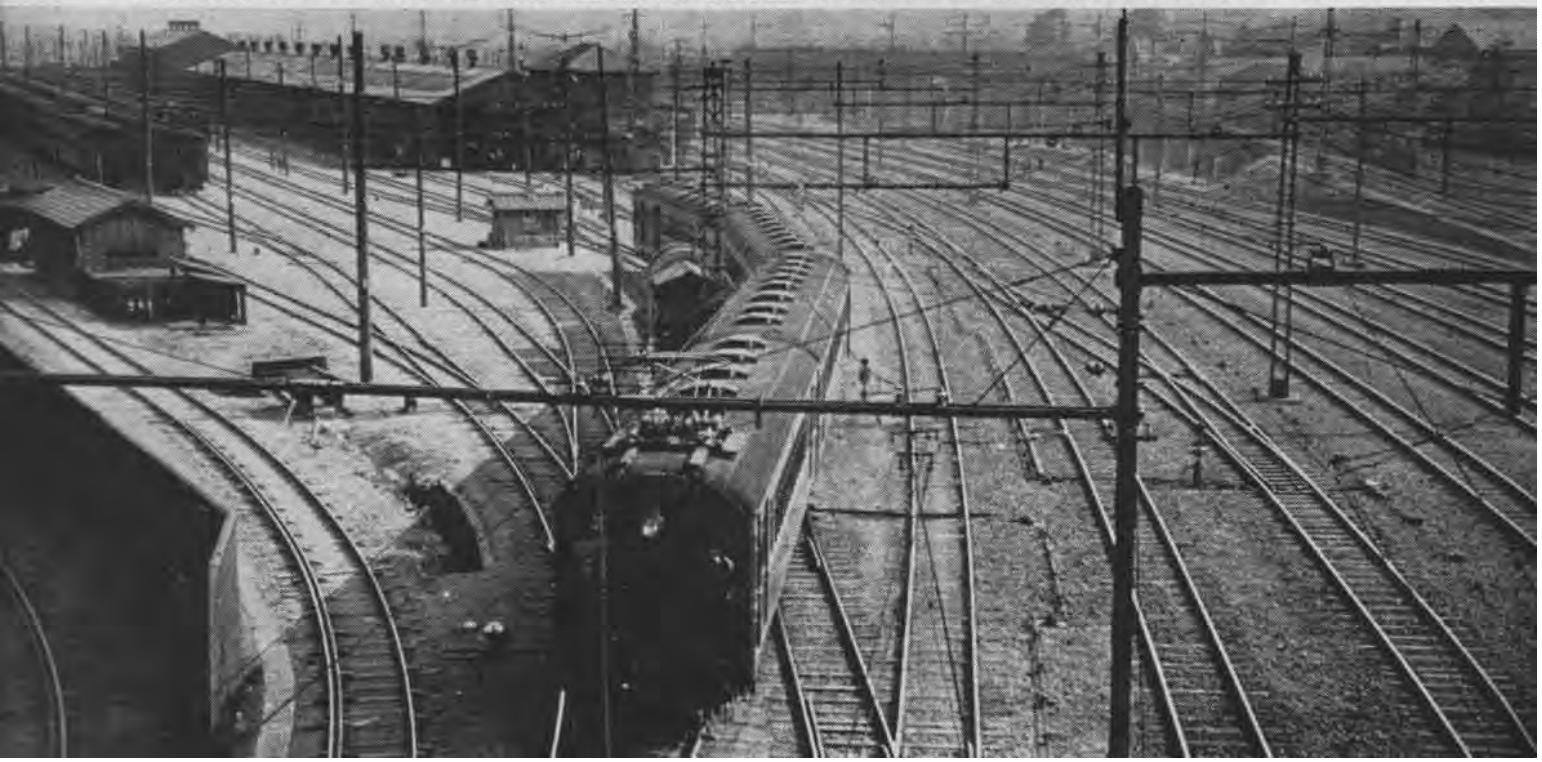
TOKYO, JAPS' BIGGEST RAILWAY CENTER, IS SERVED BY NUMEROUS ELECTRIFIED LINES. PHOTO SHOWS CENTRAL PASSENGER STATION

FOREIGN CAPITAL FINANCED RAILS

JAPAN'S first railway was started in 1869, financed by a British loan and built under the direction of British engineers. In that year a rice famine occurred in Kyushu, and many persons died because existing transportation facilities were not adequate to send sufficient food from Honshu for relief. The British ambassador seized this occasion to urge railway construction, and a loan was arranged in London, with interest reported at nine percent and the Japanese customs revenue as security. The first stretch of track, 18 miles long between Tokyo and Yokohama, was formally opened in 1872. There was much antagonism toward the first railroad, partly from rival transportation interests and partly from patriots who disliked the idea of a foreign loan. Military authorities refused to permit a survey to be made in suburban Tokyo, and the first line had to be laid on an embankment constructed in the sea. Since that time the importance of rail facilities has been appreciated.

Before the war Jap railways were fairly efficient. Freight delivery was guaranteed within a fixed period of time. If a shipment was delayed two days, 10 percent of the charges was rebated. If it was overdue beyond 10 days, 50 percent of the charges was returned. About 30 years ago the government, which operates all main lines, decided to install Westinghouse air brakes on the equipment. Axis-fashion, the officials ordered facilities for this work set up at repair depots along the lines. Then on a stated day, all rolling stock in Japan was brought to the shops, air brakes were installed, and all the trains put back in service exactly 48 hours later.

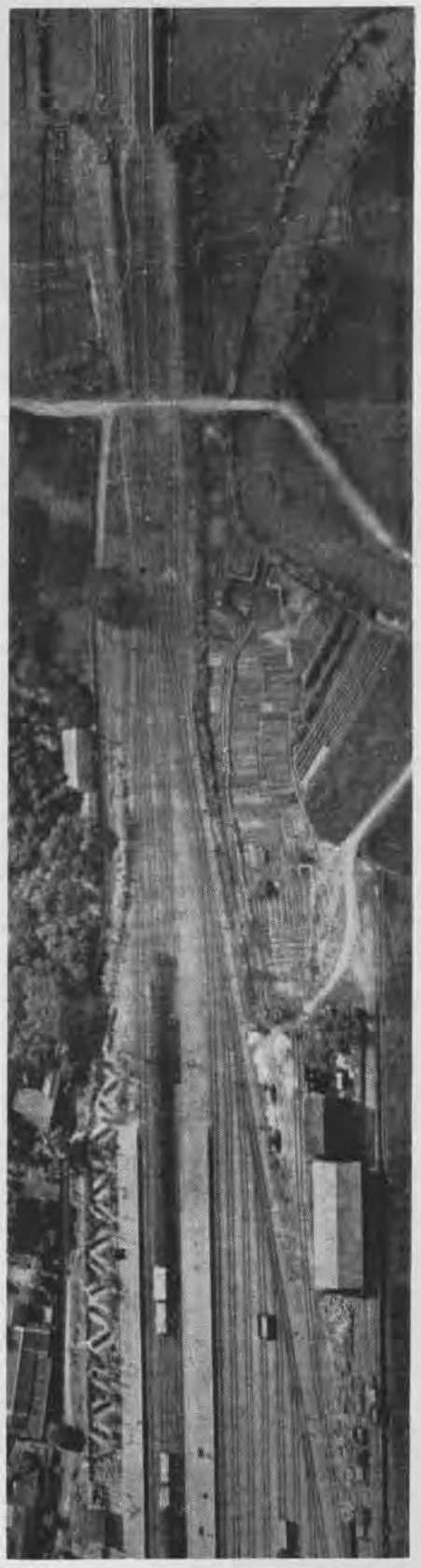
SHINAGAWA YARDS IN TOKYO ARE FULLY ELECTRIFIED. JAPANESE STANDARD RAILROAD GAUGE IS NARROWER THAN IN AMERICA



JAP RAIL SYSTEM IS VITAL AERIAL TARGET

Marshalling yard near Tokyo apparently is for motorized suburban cars. Almost all lines in Tokyo vicinity are electrified and double tracked. Power is from overhead.

Japanese railroad lines have many long bridges and numerous tunnels. Sharp curves and heavy grades reduce train speed. Most roundhouses are located close to each other.



Railway yard in Formosa as it looked from Navy carrier plane. Formosa's rail system, like Australia's, is handicapped by use of different gauges. It has some push-car lines.

IMPORTANT LINE JOINS BIG CITIES

PROBABLY the most vital railroad in Japan is the Tokaido-Sanyo line, which connects Tokyo, Yokohama, Nagoya, Kyoto, Osaka, and Kobe and extends southwest to Shimonoseki, where it passes through the Kammon Tunnel to Kyushu. The second most important Jap rail line is the Sanin, which runs from Kyoto to Shimonoseki via the west coast. It joins the cities of southwest Honshu to the east coast industrial plants. Two vital cross-island lines link the Tokyo and Osaka-Kobe areas with the west coast.

Kyushu has an encircling coastal rail line and other roads which are concentrated in the industrial northwest. Shikoku has less well equipped and maintained railroads. Before the war a rail ferry operated between Shikoku and Honshu, with terminals at Takamatsu and Uno. Hokkaido, the sparsely populated and rugged northernmost home island, has four trunk rail lines, mostly single-tracked, and is connected to Honshu by the Hakodate-Aomori rail ferry.

In northern Japan heavy snow creates a problem for railroading. Over-track sheds, tree screens, and avalanche embankments are used to combat snow. Every locomotive in this area formerly was required to have a pilot snow plow attached during the season from October to April, and there were electric avalanche alarms in over 100 exposed sections of Hokkaido and northern Honshu.

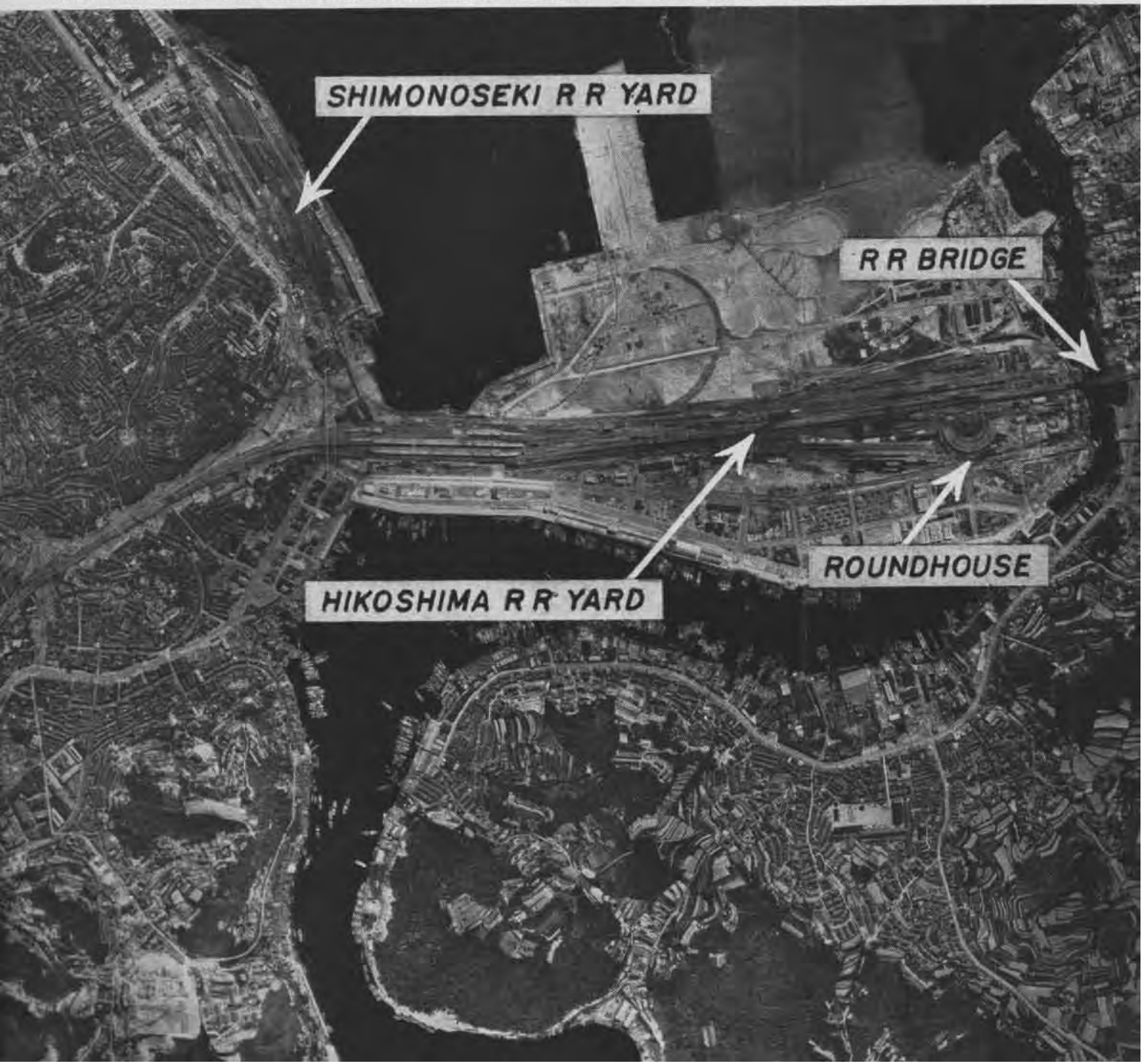
Considered of great value to the enemy are the rail lines of North China, Manchuria and Korea which carry Asiatic raw materials to the coast for transshipment to Japan. Aluminous shale, iron ore, pig iron, salt and coal travel over these roads in bulk. Karafuto also has railroad lines, and the Japs still are in possession of rail systems in Formosa, French Indo-China, and parts of central and south China.

ONE OF MOST VITAL POINTS IN ENTIRE JAPANESE RAILROAD SYSTEM IS KAMMON TUNNEL, WHICH CARRIES KYUSHU-HONSHU TRAFFIC

MOST CRITICAL *points in any railroad system are important junctions, stations, and marshalling yards, long or high bridges which carry heavy traffic, and places where deep cuts and numerous tunnels expose the track to especially serious damage. Japan's rail system has many spots where the tracks are threatened with landslides and earthquakes, and bridges, tunnels and road-beds are strengthened to withstand these shocks.*

No all-out attack on Jap railroads has been reported yet on a scale like that in Europe where in the final months of the war destruction of locomotives and rolling stock proceeded so fast that it was halted so that some framework of a rail system would be left to supply advancing Allied armies and liberated peoples.

ARMY PHOTO SHOWS THREE LARGE YARDS ON HONSHU END OF TUNNEL; COAL, OTHER MATERIALS POUR THROUGH THIS BOTTLENECK



LOCOMOTIVES CAPTURED ON SAIPAN WERE USED BY JAPS TO HAUL CANE TO SUGAR MILL. OKINAWA HAD 30 MILES OF RAILROAD

BEFORE THE WAR ALL JAPANESE RAIL CROSSINGS WERE GUARDED. REVENUE FROM PASSENGER TRAFFIC EXCEEDED THAT OF FREIGHT

CHARACTERISTICS AND EQUIPMENT

STANDARD gauge for Japanese railways is 3'6", which is considerably narrower than on most U.S. roads. To obtain increased carrying capacity, the Japs use freight cars built with a large overhang, which necessitates curtailed train speeds. Coal normally is hauled in greater volume than any other commodity; timber, ores, fertilizer and rice also are shipped in large quantities by rail. Locomotives are relatively small because of the narrow gauge. Most lines are believed to have automatic electric signalling equipment, which is essential to operation of single-track railroads.

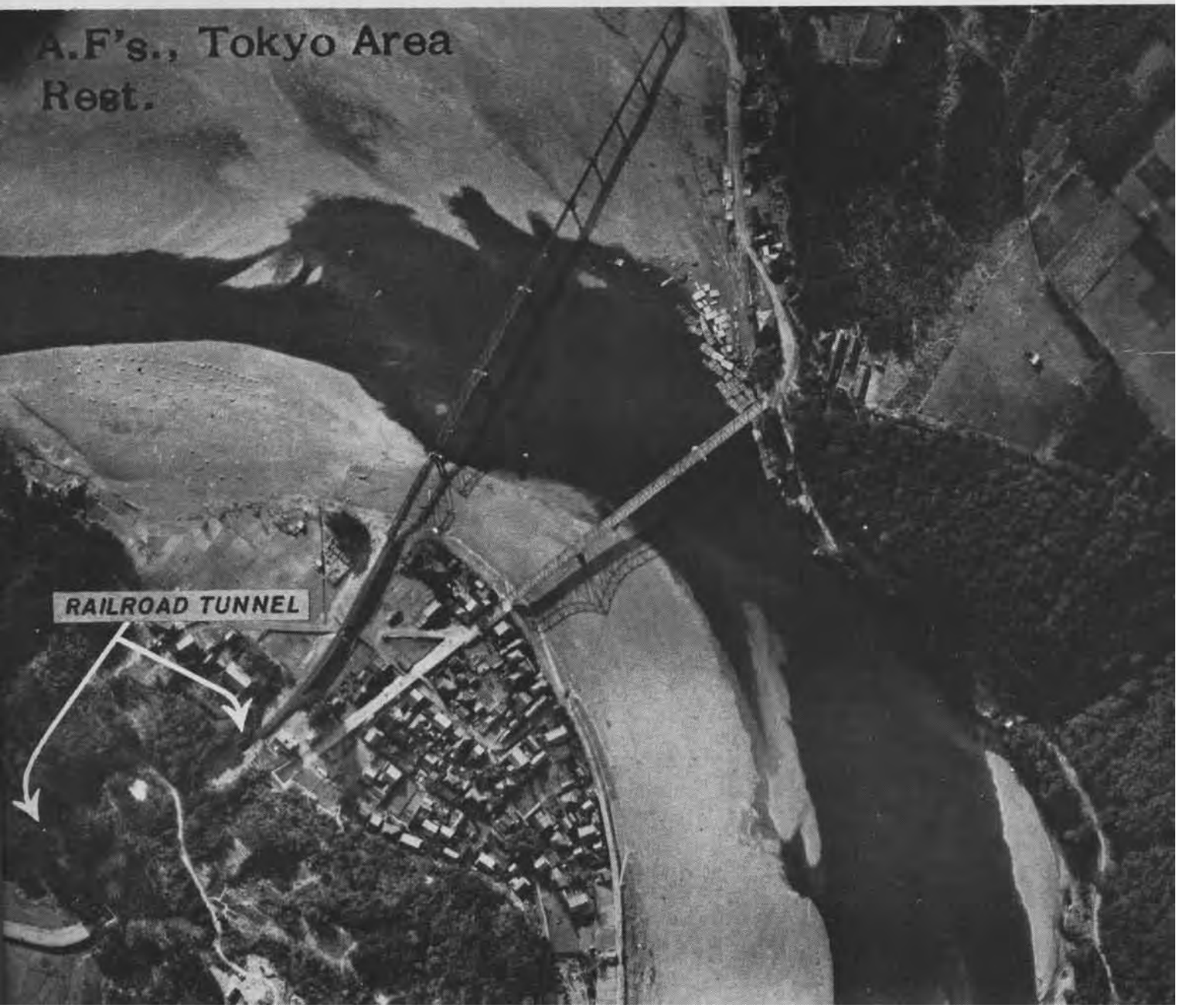
Before the war passenger traffic provided more annual revenue to the Jap rail lines than freight—a reversal of the situation in most other countries. Usually the Japs found it more economical to send freight by ship. Tokyo broadcasts have indicated that passenger travel has been reduced greatly in recent months, and it is possible that some passenger cars now carry freight. Pre-war passenger travel in Japan was very cheap. The railroads were used a great deal for short trips, and coaches were designed on the European system, with first, second and third class accommodations on most passenger trains.

Tokyo has several large passenger stations, which are connected by an electrified belt line, most of which is elevated. Two cross lines intersect opposite loops of this belt. Near Tokyo the government railways all have two or more tracks, the Tokaido-Sanyo line having four from Tokyo to Yokohama and from Kyoto to Kobe. In Tokyo and its suburbs the main lines are electrified. There is also considerable electrification around Nagoya and in the Kyoto-Osaka-Kobe region. Multiple-unit electric motor car trains handle local traffic in large Jap cities.

PASSENGER train speeds do not compare favorably with American limiteds. The express from Tokyo to Aomori, at the northern tip of Honshu, made the 456-mile run in 13 hours, an average of 35 miles per hour. The Tokyo-Okayama express covered a distance of 454 miles in about 39.5 miles per hour. Under normal conditions the principal double-track Japanese lines can accommodate well over 100 trains per day in each direction. Although by U.S. standards Jap track construction appears flimsy, this is possible because in general the motive power and rolling stock are much lighter.

PHOTO INTELLIGENCE GROUPS, INTENT ON DISCOVERING ENEMY SECRETS, GATHER EVIDENCE ON FILM TO FORM BASIS FOR STUDY

Coast-hugging Japanese railways cross rivers near their mouths and require long bridges, as this picture made during a Navy strike in Tokyo area shows. Rail and highway tunnels are visible at left. Before shipping was so badly impaired, Japs sent most freight by sea and used the rail lines more for passenger service. Now enemy railroads are forced to carry heaviest tonnage in their history



GRAMPAW PETTIBONE

How It's Done

After shooting down nine Jap planes on one flight, the Navy's leading ace had only two rounds of ammunition and six gallons of gas remaining when he returned to the carrier.

When asked how he managed to make his ammunition hold out, he replied, "Well, it looked like a long fight, so I nursed my ammunition. I waited until I'd get right on a Jap's tail; then I'd fire only short bursts."

When asked how he dared let his gas run so low, he answered, "I wasn't worried about my gas. I had drained that tank in flight a half-dozen times to make sure I had the readings on the gauge down pat."

Grampaw Pettibone says:

Not a bad day's work!

And don't get the idea that this was an accident. Results like this don't just happen; they are achieved only by thorough preparation. Think of the background of training, personal effort, self-discipline and intelligent attention to detail which went into making this record possible!

A word of warning to the inexperienced concerning the dangers involved in draining fuel tanks in flight. Before you try this, be sure that you have plenty of altitude, and that you know exactly how to regain suction. See Flight Safety Bulletins 7-44 and 25-44.

Faulty Procedure

One station recently had an epidemic of failures of hand crank gear box supports and pilot's distribution panels in FM-2 airplanes. Investigation disclosed they were caused by improper lowering of the gear by the pilots concerned. In order to obviate the necessity for cranking, pilots were releasing the handcrank and then overcoming the brake by pulling up or making a sharp turn. This allowed the gear to "run free" and caused the damage.

As a result of this investigation, the station issued an order that the landing gear would be lowered only when the plane was in normal flight.

Grampaw Pettibone says:

A sad commentary on this accident was the fact that most of the pilots interviewed were entirely unaware of the existence of F4F-FM Aircraft Bulletin dated 8 December 1944, subject: *Accidental Collapse of Landing Gear.* This bulletin warned of the troubles being experienced with the F4F-FM landing gear and directed that all pilots be given special instruction regarding its correct operation. How can you expect pilots to prevent accidents of this sort, if they don't get the word?

I know all about the plethora of TO's, TN's, bulletins, changes, et cetera and so on, but what are you going to do about it? Each one is issued to improve operating efficiency of aircraft and, what is more important, to save the lives of those who fly them. You can't just stop publishing this stuff and say, "Let 'em find out for themselves." If you did that, you would soon run out of aviators and planes.

How would you like to get a copy of all AAR's and RUDM's, like we used to do, and have to figure out everything for yourself? Now they all come in to the Department. The data you get represents the digested screening and analysis of the operational and accident experience of the entire service, prepared solely for your benefit—to try and help you avoid having similar troubles.

Granted some of this instructional material may not be too well prepared and some may be considered unnecessary; this still isn't any justification for damning all of it. It's up to operating units (as usual, the skipper holds the bag) to see that everybody concerned gets the word. No matter how much time and effort this takes, it saves a much larger number of man-hours which otherwise would have to be spent building new planes and repairing wrecks—not to mention the more important item of lives. *Knowledge is safety.*

Take-off Fiasco

A flight of six SB2C's taxied out to the take-off runway. Before the leader was ready for take-off, the tower called and changed the runway in use. The leader acknowledged and started for the new runway. Also at this time, five F6F's which were waiting to take off, began taxiing across the old runway toward the one newly designated.

In the meantime, the NO. 2 pilot in the SB2C group had aligned his plane on the old runway ready for take-off. He didn't receive the tower's signal on change of runway. When he saw his flight leader begin taxiing (to the new runway), he thought the leader was taking off. Approximately 25 seconds later, he started his take-off with full gun. He didn't see the planes taxiing in front of him until he got his tail up.

He sheared the starboard wing off his flight leader's plane, cut the vertical stabilizer off one of the F6F's and ended up in a sand dune with strike damage to his own plane. Miraculously, no one was injured!

This fiasco is an example of what can happen when standard operating procedures and safety precautions are ignored. The main errors made by this pilot were:

1. *Assumed* that this flight leader was taking off.
2. *Failed* to check the tower for a visual signal before taxiing into take-off position, as required by local flight rules.
3. *Neglected* to cock his plane around to make sure the runway was clear before he started his take-off.

Grampaw Pettibone says:

Under the circumstances, and not having gotten a clear signal from the tower or a take-off signalman, I feel that the last mistake was the worst because it showed the pilot lacked both common sense and a sense of responsibility.

An airplane is a lethal weapon; a weapon too dangerous to be entrusted to an irresponsible pilot. And dangerous not only to the pilot himself but, as in this case, to everyone else within range.

RESCUE AT SEA . . . *Two men from a destroyer assist the pilot of a U.S. Navy plane to safety after he was downed during action in the Western Pacific. The pilot, wearing a "Mae West", was spotted after ditching and rescue was not long in arriving. The crew members went over the side with a line to help the pilot aboard*

FM-2 Cockpit Confusion

After being given a wave-off during FCLP, an FM-2 pilot reached down to raise his flaps. Instead of turning the flap handle, however, he turned the fuel selector switch to the OFF position. Due to being at low altitude, there was insufficient time to regain suction when the engine cut out. Fortunately, the pilot was uninjured in the forced landing although the plane received major damage.

Grampaw Pettibone says:

Due to the difference in shape of these two controls, it is hard to find a good reason for making such as mistake. Proof that some pilots don't need a good reason, however, is evidenced by reports of four accidents from this cause during the past two months. This indicates the possibility of another epidemic such as that caused by the flaps-wheels confusion which was experienced in certain other aircraft.

The way to forestall such an epidemic is for all FM-2 pilots to be fully aware of the danger and then to spend enough time and effort to insure against making this error. It's worth the trouble—it may save your life!

Eternal Vigilance

Case 1. When his F4U slowed down in the landing turn, the pilot (700 hours) relaxed and turned his attention to other matters. Thereupon, the airplane went into a ground loop that wrecked the port wing. The following is taken from the CO's comments: "This pilot is an excellent flyer and a heads-up officer, but he neglected to *complete* this landing."

Case 2. Returning from a gunnery flight, an FM-2 *pilot* (1000 hours) failed to lower his wheels to the down-and-locked position. Although the pilot escaped unhurt, considerable damage to the airplane resulted. The pilot in this case had a novel alibi for his carelessness. He said it came about through his having flown too many hours without even having had a minor accident to remind him to remain alert.

Case 3. An SNJ pilot (500 hours) shifted fuel tanks to get ready for his landing. Instead of shifting to a full tank, however, he carelessly shifted his gas selector valve to the OFF position. This one careless slip cost him his life. When his engine quit, he hit the top of a tall tree, which caused him to strike the ground up-side-down.

Comment—**Over and over again, it is apparent that *carelessness* and *inattention* are solely responsible for a large percentage of our accidents. This lackadaisical attitude is especially pitiable in aviation where accidents all too often are fatal, and the personnel involved don't even get a chance to profit by their own mistakes.**

Like *liberty*, the price of aviation safety is *Vigilance*—continued and unrelenting.

Bulininity

At an altitude of 40 feet immediately after takeoff, an F6F pilot (550 hours) attempted a slow roll during which the airplane flew into the ground.

The investigating board assigned "poor technique" as 50 percent of the underlying case of this accident.

Grampaw Pettibone says:

Poor technique, my aunt! This accident was due 100 percent to disobedience of orders. If pilots were expected to be able to do a slow roll on takeoff, they would be trained in that maneuver—and there would be no regulation against it. Then if they failed to make it all the way around, it might be considered poor technique.

Some pilots react to flight regulations like a bull does to a red rag. *Bulininity*, I call it—since asininity means "having the qualities of an ass."

Snap out of it! Stop and think a moment before lowering your head to charge into one of these regs. It isn't there just to keep you from having fun, as you may think, but to protect you. It was issued as the result of hundreds of accidents and millions of hours of flight experience. It represents hindsight and foresight and is based on the known limitations of personnel and equipment. Unfortunately, disciplinary action isn't the only penalty dished out for such violations; all too often it is *death*.

Taxi-Accident Eradicator

An harassed Trouble Board recently designed a simple gadget for eliminating taxi accidents. As will be seen from the following report, this "Anti-Doze Device" is based on the principle of the Grampaw Pettibone "Automatic Stimulator" reported in the May 15, 1945 issue of NANEWS and should be equally effective.

"There are four known methods of preventing taxi accidents:

1. Ground all pilots—obviously impracticable if the war is to be won.
2. Salvage dumb pilots. They should be good for two quarts of Grade "B" blood plasma, plus some fair ingredients for "K" rations for the K-9 contingent.
3. A grafting operation (simple for any Navy doctor)—grafting an ostrich's neck and an owl's head on each pilot, enabling him to see everything. The only conceivable objection would be the proclivity of the neck to hide its head at the approach of danger, thus vitiating the usefulness of the owl's head.
4. Install a special "Anti-Doze Device" in each pilot's cockpit. This consists of a simple wiring of the pilot's seat with attached spark coil. This coil is activated by the plane's radar. When the obstruction is picked up at, say 150 feet, the spark coil snaps into action, mildly shocking the pilot with 12 volts at one ampere. As the radar's pip shows the target increasingly near, the charge is stepped up correspondingly—to 24 volts, 10 amps when close aboard. By this time, the pilot is practically standing up, which enables him clearly to see the danger. At this voltage, even a dimwit will have enough turn-over to register the situation, and sufficient juice will flow through his reflexes to stimulate them into corrective action."

GRAMPAW'S SAFETY QUIZ

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

1. **If faced with the need of additional power during takeoff, should water injection be used?**
2. **When the propeller is pulled through by hand, in which direction should it be rotated?**
3. **Aircraft not provided with oxygen equipment may be flown to 16,000 feet; true or false?**
4. **In the event of a fire any place in the airplane during flight, the pilot's windows of multi-engine planes should *not* be opened; true or false?**
5. **If, while flying CFR, you encounter weather below that required for CFR, what should you do if not currently qualified to proceed on instruments?**

Answers on page 48

Pregnant With Danger

The First Pilot was bringing in a PV for a landing. The landing check-off had been completed. On the base leg, a C-46 was observed in take-off position on the runway. The First Pilot, unobserved by the Patrol Plane Commander, retracted his landing gear, intending to go around again. The C-46 cleared the runway, however, and the PPC motioned his co-pilot to continue with his landing.

The wheels-up horn was still blowing after the plane came to a stop (probably not heard because of ear phones with large muffs and noise on the plane's radio).

The Commanding Officer commented as follows on this case:

"This accident emphasizes the danger incident to disruption of the normal routine and sequence of events in landing or taking off. When an incident such as this occurs, pilots and co-pilots must recognize that it creates a situation pregnant with danger and must of necessity discard the normal routine and *completely recheck* the plane for landing.

"Radiomen have been instructed to check position of landing gear lever on base leg and final leg and inform pilot if wheels are up after turning on base leg."

DID YOU KNOW?

Station Has Indoctrination Course

San Diego "Breaks in" New Officers

NAS SAN DIEGO—All officers reporting aboard for new assignments are directed to attend a 10-day course in station familiarization prior to taking up their specific duties.

Course includes:

1. Directed study periods on station orders, memoranda, Navy Management

COURSE PAYS DIVIDENDS IN TIME SAVED

statements of mission, tasks and objectives and station organization.

2. An over-all tour of the station.

3. Escorted tours through various departments during which their locations, functions and organization are explained.

4. A zone inspection under instruction, made with inspecting officers to observe the procedure used and to acquaint new officers with station's physical layout.

5. Standing of short watches under instruction.

On completion of the course, each officer is required to submit a memo giving his comments on the program.

MarFairWest Moves To Miramar

Headquarters Holds Wide Jurisdiction

Headquarters of Marine Fleet Air West Coast moved their base of operations June 1 from NAS SAN DIEGO to MCAD MIRAMAR.

This command has jurisdiction over all Marine aviation tactical training units operating on the West Coast. It directs activities of both carrier and replacement training, and serves also as a clearing house for personnel and supplies. This applies both to personnel and supplies departing for overseas, and returning from the combat theater.

Eligibility for Flight Training

Alnav Broadens Field for Applicants

Seamen first class or equivalent rating of any branch of the Navy or Naval Reserve who have reached their twentieth birthday now are eligible to apply for flight training, according to ALNAV 127-45.

This ALNAV modifies BUPERS CIRCULAR LETTER 138-44, *Qualifications for Flight Training Leading to Designations as Naval Aviators and Aviation Pilots for Personnel on Active Duty in the Naval Service.*

In addition to established flight training quotas under BUPERS CIRCULAR LETTER 138-44, all unmarried seamen or equivalent rating on active duty in any branch of the Navy or Naval Reserve who will *not* have reached their twentieth birthday by 1 November 1945 now may apply for newly established naval aviation preparatory program. This provides approximately three terms of college training in rating of apprentice seaman class V-5 for younger and less experienced flight training candidates prior to transfer to Navy preflight schools as AVCADS. Eligible applicants must meet basic requirements subpars. 6(a), (b), and (d) of BUPERS CIRCULAR LETTER 99-45 and of enclosure (E) of BUPERS CIRCULAR LETTER 138-44 except as to age and rate. Flight physical and flight aptitude standards apply. Applications appropriately modified and including flight aptitude test scores shall be submitted as soon as possible to selecting commands in accordance with procedures outlined in BUPERS CIRCULAR LETTER 99-45.

Now Office of Public Information

Title of Public Relations Is Changed

The name of the Navy's Office of Public Relations was changed to the Office of Public Information by ALNAV 138 of 18 June 1945. The short title is PUBINFO. Head of the office now is known as the Director of Public Information.

All department, fleet and local activities involved are to make appropriate changes. MARCORPS Division of Public Relations becomes Division of Public Information, and Coast Guard Public Relations Office become Information Office. OPNAV LTR SERIAL 2(410509) of 9 May 1941 hereby is amended to extent of effecting this name change as are other current instructions where the previous title appears. ALNAV 138 neither sanctions nor implies responsibility, organization or personnel changes.

ONE OF THE *popular gathering places for Naval Aviators in squadrons located at* NAS SEATTLE *is the "zoomie" board in the personnel office of* FLEET AIR SEATTLE. *The board contains news stories about zoomies or aviators stationed in and around the Seattle area. Most of the clippings concern presentation of medals and citations to squadron personnel recently returned from combat. These zoomies have just spotted a friend*

Seattle Metalsmith Wins Award

Cops Prize in A&R Department Contest

NAS SEATTLE—An aviation metalsmith walked off with top honors in a

DESIGN WINS FOR SEATTLE ENLISTED MAN

contest conducted by the A&R department to get a suitable design for a stencil or decal to be used to mark aircraft and accessories overhauled here. A $25 war bond was the prize in the competition, which was open to all enlisted and civilian personnel in A&R.

[DESIGNED BY W. W. BRUCHNER, AM3c]

Civilian Workers Aid The Navy

Awards For Eight Men Total $5,900

Its civilian employes saved the Navy an estimated $30,000,000 during 1944 through their beneficial suggestions showing how materials needed for the war effort could be produced faster, cheaper, and better. For these suggestions, eight of the employes were awarded a total of $5,900, according to figures released by the Division of Shore Establishments and Civilian Personnel.

Ideas submitted ranged from new modifications of the elevation gear on an airplane turret, to better packing methods for overseas shipments. Among awards was one for a new method of removing reflection-reducing film from optical instruments, a change in the design of 40 mm gun carriages, and an award for a binocular prism edge-grinding machine.

The estimated $30,000,000 in savings is based on a total of 8,420 beneficial suggestions adopted during 1944. There were 48,460 ideas submitted by workers in shipyards, ammunition depots and other shore establishments.

Marine Corps Navigation Wings

Officers, Enlisted Men Now May Wear

Qualifications that Marine Corps officers and enlisted men must have to wear wings of Naval Aviation Observer (Navigation) or Enlisted Aviation Navigator were disseminated to all commanding officers in the Marine Corps by Letter of Instruction NO. 1053 dated 20 June 1945.

Commissioned and warrant officers and enlisted men on flying duty may wear the respective insignia if, prior to date of the Letter (20 June 1945), they graduated from one of these schools and are designated by the Commandant of the Marine Corps:

List 1 (a)

Naval Air Navigation School, Shawnee
Naval Air Navigation School, Hollywood
Marine Aircraft Group–15 Navigation School
Marine Aircraft Group–25 Navigation School
Marine Aircraft Group–35 Navigation School
Navigation School, Marine Corps Air Station, Cherry Point
Marine Operational Training Group–81 Navigation School
Navigator-Bombardier School, MCAS Quantico
VMR-252 Navigation School

They also may wear the wings if, subsequent to date of the Letter (20 June 1945), they graduated from one of these schools and are designated by the Commandant of the Marine Corps:

List 1 (b)

Marine Air Navigation School, Clinton
Marine Aircraft Group–15 Navigation School
Marine Aircraft Group–25 Navigation School
Marine Aircraft Group–35 Navigation School
Navigation School, Marine Corps Air Station, Cherry Point
Marine Operational Training Group–81 Navigation School

Officers and men who did not attend any school in either group, but who have assignments in flying involving navigation duties, must take the refresher course given in the schools under LIST 1(b) to be eligible for wings. This includes officers flying as technical observers while serving as non-pilot navigators or navigation instructors, and enlisted men on duty as navigators.

Ltr. of Instr. NO. 1053 attached a list of officers now on flying duty who had been designated as Naval Aviation Observers (Navigation), with the provision that any not listed who consider themselves qualified may submit a request to be designated. All enlisted men who consider themselves eligible as Enlisted Aviation Navigators were authorized by the Letter to submit a request via official channels to the Commandant of the Marine Corps.

Wings of Naval Aviation Observer (Navigation) may not be worn by Naval Aviators, Aircraft Intercept Observers and officers detailed as Technical Observers. The right to wear either officer's or enlisted men's wings may be revoked if the individual is found unfit for flight duties.

New Office in Navy Department

Admiral Heads Research and Inventions

A new Office of Research and Inventions to guide Navy research activities has been established by the Navy Department. It is under the direct supervision of the Secretary of the Navy.

The office was created by merging the Naval Research Laboratory, the Special Devices Division of BUAER, the Office of Research and Development and Office of Patents and Inventions.

Rear Admiral Harold G. Bowen, USN, who was director of the Office of Patents and Inventions, is head of the new office, and Captain Luis de Florez, USNR, who was director of BUAER's Special Devices Division, is assistant chief.

ANOTHER *of the long line of Grumman fighter planes joins the Navy's ranks—the* F8F. *This newest plane, called the* Bearcat, *incorporates improvements on two previous single-engine Grummans, the* F4F *and* F6F. *In size it is approximately between those two, but it has a four-bladed prop, bubble canopy for better vision and wing tips that fold upward rather than back. The* Bearcat *lacks chin scoops which made the* F6F *so easy to spot head-on. The tail fin fairing into the fat fuselage also has been changed*

Swimmer Is Safe When 5′ Under

Tests Show How Deep Bullets Will Go

How deep below the water must a man dive to escape being hit by strafing Jap planes? To find the answer to that question, tests were made by the NAVAL PROVING GROUND at Dahlgren at the request of the Air/Sea Rescue agency.

Although .30 and .50 cal. machine guns were used in the tests, results were considered valid for Jap 7.7 mm., 12.7 mm. and 13.2 mm. ammunition.

The angle at which the bullet entered the water governed somewhat the lethal travel. A .50 cal. fired at 90 degrees would be lethal at five feet below the surface. If fired at a 45-degree angle, a person more than two and eight-tenths feet below would be safe. At 30 degrees, depth would be two feet.

Ammunition from .30 cal. machine guns would be lethal two feet under if fired at a 90-degree angle, one and four-tenths feet at 45 degrees and one foot at 30 degrees. Figures should be of value to survival and swimming training. To be safe, a person should be able to dive quickly to five feet depth.

Waves Observe Third Birthday

There Are Now 85,795 In Navy Service

The third anniversary of the Women's Reserve, JULY 30, found 85,795 women serving their country as Navy WAVES in 900 shore activities throughout the continental United States and in Hawaii. They included 8,285 officers and 69,544 enlisted women of whom 100 had qualified as chief petty officers. The third anniversary also found 7,966 other women who were either in training to become WAVES or were awaiting call.

Tremendous strides both in the numbers of Women's Reserves and in the variety of duties they perform for the Navy, have been made during the three brief years the auxiliary has been in existence. WAVES now comprise 18 percent of all naval personnel assigned to shore establishments within the continental limits directly serving the Fleet and advanced bases.

Approximately 20,000 WAVES now serve in the Navy department and the Potomac River Naval Command. WAVES handle about 80 percent of work involved in administering and supervising Navy mail service to the Fleet and advanced bases. They comprise 70 percent of the complement in BUPERS. There are about 13,000 of them in the hospital corps and they now serve as flight orderlies on NATS flights. This year 80 WAVE officers were designated as naval air navigators.

While these thousands of American women back up the drive for victory at home, 350 WAVE officers and 3,659 enlisted women are stationed in Hawaii.

FLIGHT SAFETY

Colored Cockpit Enclosures

During recent months several fatal crashes have occurred while pilots were engaged in simulated instrument flight using colored cockpit enclosures with complimentary colored goggles. Although these pilots were accompanied by safety chase pilots, radio communications failed or inadequate safety procedures were employed.

Since instrument flying in an assigned type is a necessity, all pilots should be aware of the hazards involved when using colored enclosures with complimentary colored goggles on simulated instrument flights. The following typical case histories are brought to the attention of pilots as a reminder of what can and does go wrong.

Case I. The pilot was engaged in a routine instrument flight with another airplane accompanying him as chase pilot. The radio transmitter failed in the chase plane causing a loss of radio voice contact. The chase pilot did everything he could think of at the time to regain radio contact right up to the time the pilot under the hood crashed into a mountain. The airplane exploded upon impact with fatal injuries to the pilot.

Case II. Pilot was on an instrument flight at 6000 feet. After 40 minutes of flight the plane was seen to enter a steep left turn followed by a power-on spiral in the same direction. He was last seen by the chase pilot entering the overcast at 1500 feet. Eye witness reports from observers on the ground state that the airplane broke through the overcast at 800 feet pulling vapor trails from both wings. After leveling off at 200 feet the airplane, for reasons not ascertained, executed a half roll to the left and struck the ground inverted at about a 45 degree angle. The airplane was demolished with fatal injuries.

Case III. The pilot was engaged in a routine instrument flight accompanied by a chase pilot. While at 8000 feet the planes were doing wingovers. During the last wingover the chase pilot's gyro tumbled and he immediately called the instrument pilot to come out from under the hood. There was no answer and instrument plane entered a power spiral from which it never recovered. Planes had been in radio communication less than one minute prior to the beginning of the spiral.

Case IV. The pilot was conducting his first F6F instrument flight accompanied by a chase pilot. After ten minutes of straight and level flight he began doing instrument wingovers. His fifth wingover was steep and resulted in a power-on spiral at 5000 feet. The chase pilot tried to contact the instrument plane when the 5000-foot minimum altitude had been passed but there was no indication that the instrument pilot heard this warning as the plane continued spiral until it hit the ground.

THIS U. S. FLEET CARRIER *proved to be a Jonah for a lonesome whale which was cruising along through the warm waters of the Pacific, minding his own business, when disaster overtook him. Alert Navy photographers caught a picture of the Behemoth of the deep while he was still impaled on the bow of the ship. He was carried along for some time before a change in course dislodged him. Can you match this "whopper"?*

COAST GUARD HELICOPTER LANDS ON SNOW IN NORTH LABRADOR TO RESCUE CANADIANS; PLANE MADE 11 TRIPS TO FLY THEM OUT

HELICOPTER RESCUES 11 AIRMEN

THE HELICOPTER made its first large-scale rescue recently when the Coast Guard, Navy, Army Air Transport Command and Royal Canadian Air Force cooperated to rescue eleven Canadian airmen marooned in an isolated section of Labrador near Goose Bay.

The airmen were survivors of three separate airplane accidents and were stranded in the Arctic wastes two weeks before a Coast Guard helicopter, flown in dismantled by an Army transport, rescued them one-by-one. They were in a section of country where other planes could not land and where it would have taken weeks to send aid by foot.

The story started when an RCAF *Canso* (PBY-5A) crashed while en route from the Gulf of St. Lawrence to Goose Bay with nine men aboard. Radio communications had failed just after take-off. All available RCAF, RAFTC and ARMY AIR TRANSPORT COMMAND planes were sent out to search for the amphibian. Two four-engine planes located the scene of the crash, dropped

DISMANTLED HELICOPTER LOADED INTO FOUR-ENGINE TRANSPORT

CANVAS AT ADVANCED BASE PREVENTS STICKING TO THE SNOW

CANADIANS SPENT 12 DAYS AT THIS CAMP WAITING FOR RESCUE

RESCUE HELICOPTER RECEIVES SPECIAL INSIGNE FOR ITS FEAT

emergency food, parkas, blankets and radioed their bases the location of the men.

From RCAF Air Sea rescue headquarters two ski-equipped planes flew to the scene. One landed and flew out two badly-wounded survivors. The other crashed into trees while attempting to take off. The first plane came back but could not take off because of thawing snows, thus marooning three flight crews.

A call for help to the Coast Guard brought a dismantled training model helicopter, which was loaded into a C-54 plane and flown north from Floyd Bennett field. At Goose Bay it was reassembled and flown 150 miles to an isolated rescue outpost, averaging 50 miles an hour. The Coast Guard pilot flew 35 miles to the crash where he hovered his craft sometimes as low as six feet over the survivors.

One man climbed up a rope ladder lowered by the helicopter pilot and was returned to the rescue camp just before dark. The next morning a bitter cold set in, freezing the helicopter engines. A radio call brought a heater from Goose Bay and they were thawed out. Rescue operations continued that day.

On successive trips the survivors climbed aboard the helicopter and, after two days' work, the men all were evacuated. Flying conditions, as described by the pilot, were unusual. The helicopter had to make jump take-offs, with one man aboard each trip. It took an hour and a half to make each round-trip.

Meanwhile, the wind, low temperatures and sun burned the pilot's face.

TOKYO TALKS

—To the United States

Most of the enemy mines laid in waters near the Japanese mainland are either magnetic or sound mines. There is very little difficulty in disposing of the latter as it is possible to set off four or five of them simultaneously by using a method which creates sounds successively. Great patience is needed, however, to dispose of magnetic mines. The enemy sometimes uses a special type which explode by the force of increased water pressure. Countermeasures for these mines have been devised, however, and the enemy's desperate efforts to cut off Japanese sea communications have been greatly nullified.

—To Australia

Allegations as to the merciless treatment meted out to prisoners of war in Japanese prison camps are stories concocted by Anglo-American propagandists. Prisoners of war are being treated most humanely by the Japanese.

—To Japan

Unexpected and heated debates broke out in the recent session of the Diet over the Wartime Emergency Measures Bill. Diet members protest that passing of this bill would permit Premier Suzuki's government to issue orders or take steps without parliamentary approval in a wide range of fields connected with the war effort, and would result in the permanent abolition of the legislative body.

—To Japan and Empire

For three months our men fought with unprecendented violence for Okinawa. Finally, their ammunition exhausted and their swords broken, they were defeated. This is indeed very regrettable. Contrary to this, the enemy suffered heavy damages, and the psychological effect on him has been very important. From this viewpoint the result has been excellent and we have won a victory. To the people of Japan the situation is very serious, but if we devote our fullest efforts, we have nothing to fear from the enemy.

—To the United States

The people of Kyushu are definitely of the opinion that the enemy will surely attempt to land on their island, and are solidly determined to strike them with a special-attack spirit. Touched by the heroic fighting on the part of the People's Volunteer Corps of Okinawa, the entire people of Kyushu now anxiously await the chance to be converted into a combat unit to deal a crushing blow to the enemy invaders.

—To the United States

Combat units of the Civilian Volunteer Corps have been organized with the object of placing the entire Nation under the personal command of the Emperor as armed forces in the Imperial fighting services. In the event that the decisive battle is fought on our own soil, these units will be called to take part in the actual fighting and to carry out rear duties for the regular troops. Members of the Civilian Volunteer Corps combat units will not leave their assigned duties without orders however intense the fighting becomes. They have orders not to be taken prisoner alive or die dishonorably.

—To Japan and Empire

We, the Japanese people, are now standing at the crossroads of life or death, and if we arise and fight on the production line or give our lives for the defense of our Fatherland, we are certain to secure victory. In this war the whole Japanese people, with common responsibility, must defend their country. We must not be unnecessarily disappointed because of the grave crisis in the Okinawas. Our sole responsibility is to manifest greater spirit, surmount the national crisis and seize the occasion of the reverses on Okinawa as a turning point to victory.

—To Japan and Empire

The Army Fuel Headquarters is calling for personnel to fill essential assignments in Manchukuo in connection with the maintenance of aircraft fuel supplies.

—To Japan and Empire

The liberation and construction of East Asia can never be realized without the cooperation of the two great nations of the Orient, Japan and China. Generations to come will rue the day when the two nations did not cooperate to expel the Anglo-Americans. There is, of course, interference from Anglo-America, but the prime responsibility rests on Japan and China. The cause of our failure vis-a-vis China is due to the fact that we have been unable to make the Chinese understand us. Regrettable as it is, we have been unable to manifest fully our China policy.

—To Japan

The U.S. State Department has announced that 123 Japanese diplomatic and consular officials and their families, captured in Germany, have been transferred to the U.S. where they will be interned at Bedford Springs, Pa. They are expected to be detained until an exchange with American and other Allied nations diplomats and consular officials can be effected.

—To Japan

In order to promote morale and to keep all evacuees occupied, the government has decided to encourage a back-to-the-farm movement. One hundred thousand persons will be sent to the country districts throughout the various sectors of Japan in the first mass movement. Twenty thousand others will be returned to farms in the Hokkaido.

—To Japan

Our officers and men on the island of Bougainville are not only guarding against the enemy but are also making themselves self-sufficient. From the unit commander on down to the last private each is cultivating 130 kilos of jungle and are thus going full out for the increased production of foodstuffs. Those with agricultural experience are raising sweet potatoes and are also engaged in research on the cultivation of unhulled rice.

—To Japan

The ruined fortress of Taiwan (Formosa) is dauntlessly fighting on under violent enemy bombings. It was in the middle of January that the enemy began his systematic air attacks against Taiwan cities. Beginning with the cities on the southern coast and gradually shifting to the north, the enemy's tactic has been methodically and systematically to smash Taiwan's cities one by one.

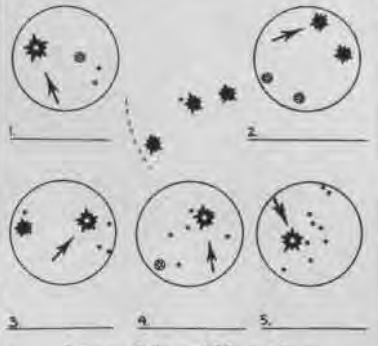
—To the United States

The Kanto and Shinetsu Munitions Superintendence office have worked out a program designed to secure self-sufficiency in foodstuffs among war-plant workers. According to this program, workers in war plants with more than 1000 employees will till the soil in their spare time to grow vegetables and other farm products.

—To the United States

The enemy has started indiscriminate attacks on our secondary cities, and while these air raids are described as attempts to reduce our fighting strength, they are also intended as a type of nerve war designed to weaken our morale. The enemy's indiscriminate air raids on civilians, destructive though they are, cannot break the heart of the Japanese nation which is more than ever determined to crush the enemy once and for all in the final battle to be fought on our own soil.

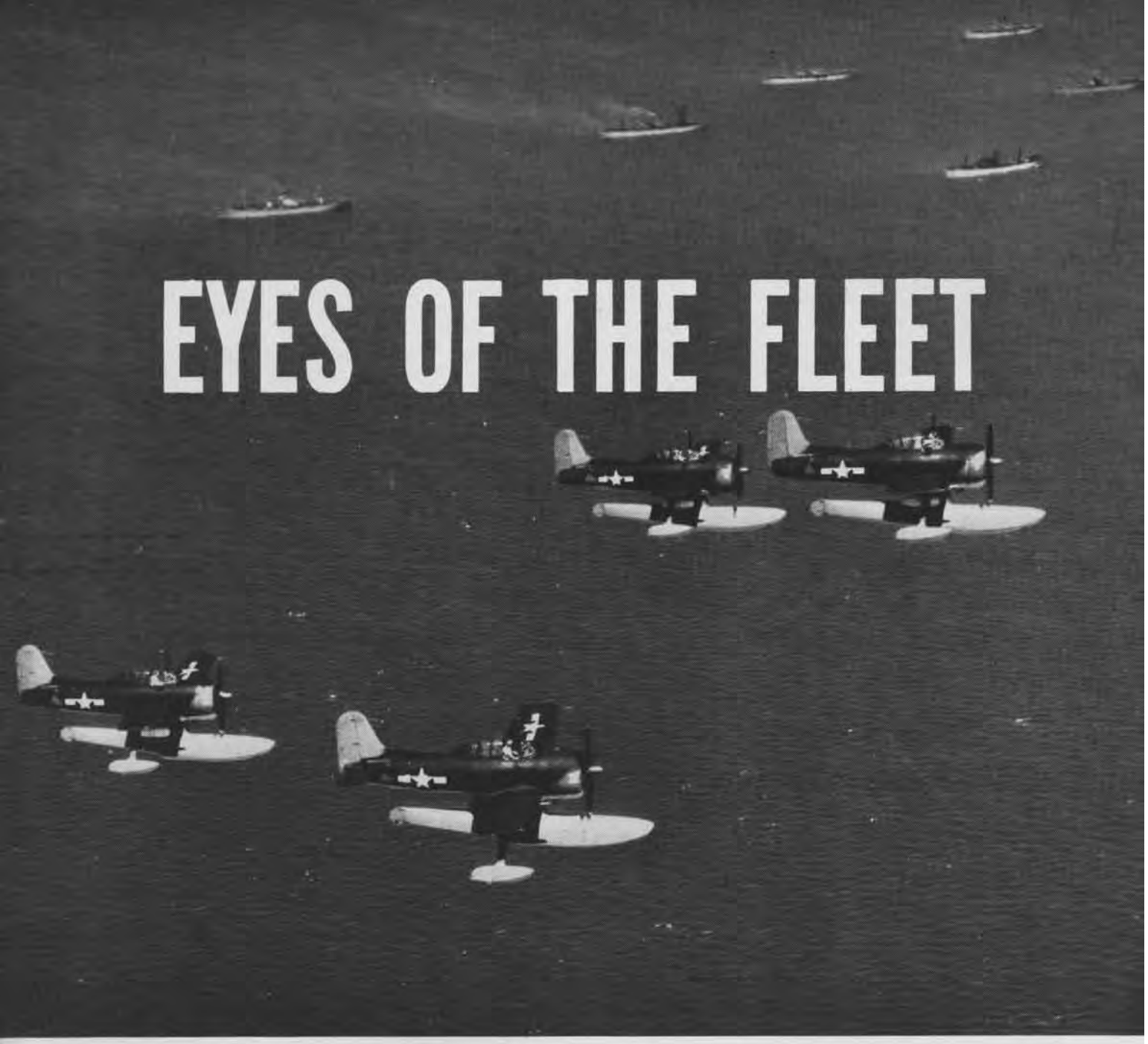
SHOW ME THE WAY TO GO HOME



Star Identification

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

(Answers on page 48)



EYES OF THE FLEET

As The Aerial Aid To Cruisers And Battleships, VO-VCS Men Direct Gunfire; Fly Rescue Missions

WHEN World War II passes into history and the feats of naval aviators at war are chronicled, a post of importance and honor will be reserved for the vo-vcs pilot, who flew the slowest, most vulnerable plane in the combat theater to save lives and win victories.

He was the man who went in ahead of the big Normandy push so that the heavy guns of the U. S. Navy could pound out enemy positions ashore and soften the way for the G. I. Joes. He dodged the ack-ack of the Japs over Tarawa, Saipan, and bloody Iwo Jima and out-maneuvered their fastest fighter planes to help lay down the battleship steel that saved the lives of Leathernecks by untold thousands.

He was the man who scouted for cruisers, who served as observer for battleships, who flew the best planes then available and who prayed for the better ones the Navy now is able to give him.

His battle decorations tell the story of the vo-vcs pilot and how he is performing today in the war theater, though they do not cover the long hours he is spending on lonely patrols over the Pacific hunting for survivors who often are brother-pilots from the Navy's flattops. Nor do ribbons tell of the hours he stands watch aboard ship. For the vo-vcs man is a seafaring pilot who is part of ship's company, serving under the ship's own gunnery officer and skipper.

He was not called by that name then, but first of all the Navy's pilots were scout observation men. They sat at the controls of flying boats. They were the first Navy fliers ever fired upon—at Vera Cruz in 1914. They flew the Navy photographer who made the first aerial map. They made history then; they still are making it.

PENSACOLA STARTS VOS TRAINING USING N3N'S

ALMA Mater of the VO-VCS pilot is NAS PENSACOLA, which receives him as a land-going member of the U. S. naval forces and transforms him into a seafaring pilot. Not all, but the bulk of the training that distinguishes cruiser or battleship pilots from all other naval aviators, is given at the big air station and its auxiliaries.

From three sources come all scout observation pilots. They are either aviation cadets, enlisted flight students, or non-pilot officers. About 70 per cent of them are cadets and not more than five per cent are officers.

Students have one thing in common. No matter whether they hold aviation rates, are cadets or are officers who requested flight training—all of them had finished their primary flight training before they reached Pensacola. All of them knew how to fly *Yellow Perils*, already.

With the exception of special students from the Fleet or shore stations who come in for refresher courses, every VO-VCS student gets the same training.

They begin their intermediate training at Squadron Two, which is at Ellyson Field, 12 miles northeast of Pensacola on Escambia Bay. This is a basic squadron and here, for the first time in the training program, they encounter a *single wing* airplane.

DURING the first four or five weeks of intermediate, they get basic flight principles and learn formation flying with an SNV. At the close of this basic period, they move to Squadron Three located at Whiting Field; another Pensacola auxiliary. This is an instrument squadron.

Here, for the first time in their Navy career, they climb into the cockpit of an advanced training plane—something a lot different from the plodding *Yellow Perils* they knew in primary training days. They fly SNJ's on instruments.

The course at Whiting Field lasts from three to four weeks and training is intensive. VO-VCS students get 17 hours of instrument instruction in planes and 20 more hours in a Link trainer. At the close of this training phase, they move in to the main Naval Air Station.

Squadron Seven at NAS gives them the rest of intermediate training, which occupies eight or nine weeks. The squadron's intermediate unit takes over and begins to teach them something about handling seaplanes.

When VO-VCS students look out over Pensacola Bay for the first time, a welcome sight meets their eyes. Riding buoyantly there is an old friend from primary training days —a sea-going version of the *Yellow Peril*. They know how to fly an N3N-3 already, but not one that has been equipped with a set of floats.

Training in flying their first seaplane starts out with a program of familiarization. With instructors at hand, they spend their first hours buzzing over the surface of the bay until they have acquired the new feel of the controls. Before long they are ready to abandon taxiing and make their first take-off. Practice water take-offs and landings occupy the next six or seven flight hours.

It is during this period that they get their first instruction in procedure by which they will be able to get a plane back aboard ship after going to sea. All of this is very elementary, this business of making buoy shots. But by landing and taxiing alongside a buoy riding at anchor in safe waters of Pensacola Bay, fledgling pilots develop a judgment of distance and the ability to maneuver their planes to any given point.

AT THE end of making buoy shots, they are given a solo check. After passing, they get three hours of solo. Six hours of N3N-3 formation flights follow. When this stint has been completed, budding seaplane pilots are ready for their first service type airplane, the OS2U or *Kingfisher*. From then on this "*Fantail Thunderbolt*" is the plane they will fly in intermediate training.

They start out with four hours of instruction designed to familiarize them with the OS2U. Next comes two solo hours, then there are service seaplane checks. Four hours of formation flying follow the seaplane checks, and, after this, the neophyte pilots are ready for the last six weeks of intermediate training at NAS PENSACOLA.

Up to this point schooling has been a preliminary to actual VO-VCS training. It has served the transitional purpose of introducing them to the technique of seaplane flying.

FIRST SEAPLANE to be flown by the VO-VCS pilots in training is the *Yellow Peril*. They learned to fly them as land planes in primary flight training. In early phases of intermediate training they fly SNV's and SNJ's but these planes are not equipped with floats

ACTUAL VO-VCS training, as introduced in the final phase of intermediate, lasts six weeks. During this period, as was true all during the preliminary stages, the students spend long hours in ground school. In fact 50 percent of their time is spent there; the rest in flying.

Trainees study virtually all the ground school subjects they knew in primary training, such as aerology, navigation, engineering, and others. But these are advanced courses of the subjects, which pick up where primary training left off.

To these subjects are added others peculiar to seaplane flying. They study procedure for water handling and beaching a plane. They even learn to sail one, taking advantage of the prevailing wind. They learn to estimate wind direction and force by observing the surface of the sea.

Voice procedure is studied. Much emphasis is placed on the technique of spotting and tracking. The men study codes and learn the procedure of glide and dive bombing so they can be most effective in offshore patrol for subs.

Nor is all of this training devoted to ground school. In the survival course the classes are taken across the bay to Santa Rosa island. They take no lunches along because they are expected to find their own food, digging for clams along the beaches, snaring small fish or crabs and cooking them in the open.

Ground school lectures are kept a step ahead of actual training performance, so that the theory still is fresh in their minds when the time arrives to fly out to the old U.S.S. *Massachusetts*, which was scuttled out in the Gulf in 1922. This derelict is a famous landmark now, and is used by the VO-VCS training program as a fixed point from which a student works out actual problems in navigation.

Such are the highlights of the intermediate training program which prepares future VO-VCS pilots for their operational schooling. At the end of intermediate, they not only are specialized in seaplanes but also they are qualified pilots. They have had a total of 229 hours of ground training and 98 flight hours.

Intermediate training is finished. And all of the students are presented with their hard-earned wings. Aviation cadets are commissioned ensigns. Many of the enlisted students apply for commissions, and those qualified become ensigns. Officer students also are designated as Naval Aviators. After a leave, students return to Pensacola for operational training.

DURING INTERMEDIATE training at Pensacola, student pilots depend on a giant crane. They are not yet ready for sea recovery

TRAINING of neophyte seaplane pilots divides the time during period between flight and ground school. Gunnery gets emphasis

ELEMENTARY training in handling seaplanes on water is given the pilots in intermediate. They taxi to points, anchor to floats

OPERATIONAL ADVANCES SKILL OF VOS PILOTS

OPERATIONAL training occupies eight weeks, during which the students, now flight officers or aviation pilots, get ground school and flight in equal mixtures. All in all, their flight hours mount up to a total of 120 in operational training. Of this total, 100 hours are pilot time and the balance covers different instruction.

From the 20 hours of non-pilot flight they get a four-hour hop in a PBY. One hour is flown as co-pilot. This gives them preliminary instruction on the automatic pilot they will use later flying the SC-1 or *Seahawk*. For another hour they serve as navigators and for the remaining two hours of PBY time they work radar of the same type they will use in *Seahawks*.

Free gunnery takes up part of the additional 20 hours of flight training. They get this in a *Kingfisher*, perforating a sleeve out over the Gulf. Part of the time the students work in teams. They make instrument hops with one under the hood and the other acting as safety pilot. They also act as rear seat men for each other on navigation flights and send test radio messages.

Flying begins the third day they return from leave. Back to the old *Kingfisher*, they go for a check-out and familiarization. Then, navigation flights follow for a total of 12 hours. Half this time, they act as radioman making repeated flights out over the waters of the Gulf on problems involving search, both relative sector and geographic. This is the basis of the training which one day will equip them for the important part VO-VCS plays in air/sea rescue, as well as in patrol and observation missions.

During five hours of free gunnery flights they learn how to make standard runs on a tow target, and what is more important, they learn how the rear seat man operates. This is a forerunner to the day when pilots reach the combat theater where fast enemy fighter planes operate, with an aircrewman backing them. In this phase they even make a couple of hops as tow-plane pilots. Another eight hours of time is spent in fixed-gunnery flights and, here again, the tow sleeve suffers.

Glide and dive bombing receive 20 hours of the student's time next, for the technique developed during this period might well account for an enemy submarine one day. Both mobile and stationary targets are used.

In shallow water along the Gulf, 100-foot circles of stakes are driven protruding above the surface to serve as fixed targets. Trainees make both gliding and diving runs on these with miniature bombs. These pop like a shotgun shell and give out enough smoke to mark the hit. Another type of stationary target is created by dropping a bronze slick in the water.

For mobile gunnery training, a small boat is brought into play. It is used to tow a spar at a speed of about six knots. This creates a wake that simulates the periscope of a submarine. Time after time, the students come in low at a 45° angle for glide-bombing runs or make 80° runs from a higher altitude to drop their miniature depth bombs.

During the dive bombing phase of training, students get two hours of formation bombing. This is in keeping with the over-all policy that VO-VCS pilots be thoroughly trained in every phase of flying.

ALL THIS practice in gunnery and bombing supplements the training these pilots were given while they were still in the intermediate stage. The same situation holds true in catapulting. During intermediate, they had two dayshots as cadets. Now that they are in operational, they get two more flights from the catapult. But something new is added. One of these is a night hop.

Operational also gives them training in night flying. They fly two night patrol hops solo, and spend an hour-and-a-half making night landings by instruments.

Defensive tactics that hold an important position on the flight syllabus are built around two characteristics of the seaplanes used from the days of the old SOC down through the *Seagull* and *Kingfisher*. These are its slowness and its high maneuverability.

An elaborate game of make-believe is played out over the Gulf during this training period. A pilot in an SNJ goes out with one, two or four VO-VCS pilots, in seaplanes, and makes fighter runs on them. They soon learn to evade him.

MUCH PRACTISE in glide and dive bombing is given pilots during the operational phase. Mobile and stationary targets are employed

OPERATOR of shore bombardment mock-up sends up puffs of smoke which show whether trainees are directing accurate salvos

LONG HOURS of flying formations in *Kingfishers* over Gulf furnish a student pilot experience he will need when he ships out to sea. Aboard ship, VO-VCS units are made up of a senior aviator and three or more junior officers, who frequently fly wing on search

FROM defensive tactics, bombing and gunnery, VO-VCS students turn to advanced operational training flights. Practice flights usually take them 100 or 125 miles out over the Gulf. Here, as during intermediate days, the old U.S.S. *Massachusetts* is a friend in need.

Though her battered hull has been stripped for salvage, and has settled so much that little protrudes above water line but the turrets, the old battlewagon is a fixed landmark from which to navigate.

Instrument-flying under the hood, with a fellow student as safety pilot, and evasive tactics are among the final phases of flying. These flights, in common with all flying during the eight week operational period, tie in closely with ground school.

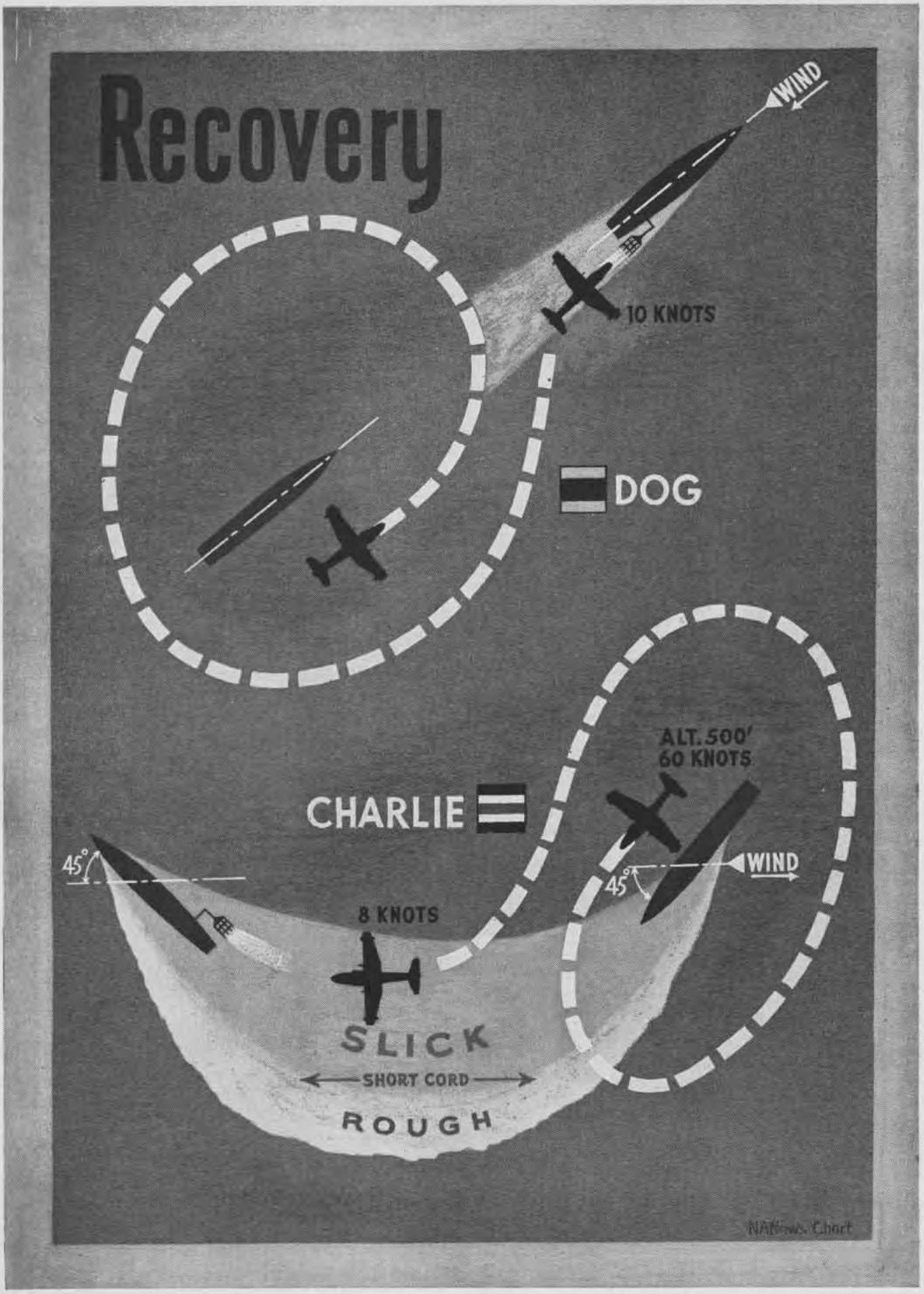
Every phase of ground-school training fits into the pattern of what they learned in primary and intermediate, representing a final stage of many subjects.

Typical is operational presentation of communications. Trainees spend ground-school time on such subjects as coding, contact and amplifying reports, and have many test periods both in sending and receiving. Ground school gives them a stiff course in both surface and shore gunspotting. In both courses, realistic mock-ups are used.

For surface gunfire spotting, a large flat mock-up which has a model ship mounted on a track is employed. Students are located on a balcony 18 feet above the mock-up, using both voice and key in directing gunfire. Instructors have controls that cause pegs to pop up out of the mock-up as splashes from salvos. The model ship moves about its track and the students direct gunfire. The shore bombardment spotting mock-up utilizes lights and puffs of smoke to show how far the VO observers are off the beam.

ALL ground school training is down-to-earth instruction that conditions VO-VCS pilots for the role they will play as mariner-pilots. Engineering, as an example, gives them enough technical understanding of their planes to work their way out of a tight spot in many cases, if forced down. From operational, their next step is to the U.S.S. *Absecon*.

NOT ALL of operational instruction takes place in the classroom. A student pilot learns much about radar by making flights in training planes with instructors. During four hours of PBY time they receive training in radar and automatic pilot, both features of sc


Recovery
WIND
10 KNOTS
DOG
ALT. 500'
60 KNOTS
CHARLIE
45°
WIND
45°
8 KNOTS
SLICK
SHORT CORD
ROUGH
NAVAER Chart

CORRECT TIMING of plane to ship's movement is the secret of Charlie recoveries. Here, a plane lands in slick, heads for the sled

PILOTS SHOULD taxi up wake of the sled until main float of plane is well up on net. Cutting engine causes sled to snag on the hook

ABSECON GIVES INITIAL TRAINING IN RECOVERY

THE U.S.S. *Absecon* operates under CNAOT, Jacksonville, but is on Pensacola's operational training syllabus. A seaplane tender equipped with catapult for training purposes, the *Absecon's* home port is on the Florida coast.

Completing their final check-outs in operational training at NAS PENSACOLA, students ship out for the *Absecon* to receive training in recovery procedure. This is a type of training that can be given by a ship at sea, although *Baker* recovery can be given at Pensacola. However, *Baker* recovery requires a ship to come to a dead stop broadside to the wind, creating calmer water in the lee for a landing. Because of danger to a ship, *Baker* landings are not used in war time.

The *Absecon* gives new VO-VCS pilots training in the two types of recovery used in war time, *Charlie* and *Dog*. A *Dog* recovery is fairly simple for them, since little timing is required. Students return to the seaplane tender from a flight, land astern and taxi up to overtake her. Then it is largely a matter of easing the seaplane up on the sled, cutting throttle, and letting the ship's forward movement pull the sled ahead until it snags a hook fastened to the lower surface of the main float, well forward. Sleds are no more than cargo nets over a sheet of canvas. As soon as the plane engages the sled, deck crews start a winch and pull in the sled until the plane is below a boom where it can be hoisted aboard.

Charlie recoveries, which are used in rough seas, are a lot more involved. In these, the seaplane approaches the *Absecon* and, after recognition is made and signal flags go to "two block" for a recovery, the plane begins circling.

The ship makes a 90° turn, which begins 45° out of the wind line, and finishes 45° inside the wind line. Meanwhile, speed of the *Absecon* has dropped from about 15 or 16 knots, at the beginning of the turn to about 10 knots.

This sharp turn has the effect of skidding the stern of the tender around and creating a slick behind her. Surface waves are knocked down by the ship, though ground swells will persist.

Pilots are trained to time the ship's maneuver so that plane and ship will be in the right positions to permit a landing across the longest diameter of the semi-circular slick. A plane overtakes the ship, engages the sled and comes aboard the tender.

Graduate pilots of Pensacola spend from six to eight days aboard the *Absecon*. During this period they not only learn recovery procedure but also become acquainted with life aboard ship.

From the *Absecon*, they go to COMAIRLANT or COMAIRPAC. If need arises, they may go direct to the Fleet. Otherwise, they probably will report at San Diego and thence to SOSU 1 or SOSU 3. Under ComAirLant orders they will probably turn toward the East Coast and report to SOSU 2 at Norfolk. Their training at a SOSU is in a sense a post-graduate course which equips them fully for a tour of duty at sea.

WINCH RIGGED over a boom hauls plane aboard, finishing successful Charlie recovery. In Dog recoveries, ship maintains course

SOSU ASSEMBLES UNITS AND GIVES THEM PLANES

PRIMARY duty of a SOSU is to supervise in the fitting out and training of aviation units for battleships, cruisers and destroyers. Secondarily, the SOSU also may furnish replacements to the Fleet. For the first time since their training began, VO-VCS pilots come under the direct command of the Fleet when they reach a SOSU. They are no longer part of a shore activity.

SOSU puts the finishing touches to their training. It gives them planes, furnishes them a complement of enlisted men to maintain the planes, commissions officers and men as an individual aviation unit and sends them off to their ship, not with a blessing, but with the best training and equipment the Navy can provide.

At Norfolk the program of SOSU 2 is typical of what is being done by Scout Observation Service Units elsewhere.

Approximately 50 percent of the new VO-VCS pilots who arrive at SOSU 2 come direct from Pensacola and the *Absecon*. The rest are from de-commissioned inshore patrol squadrons, from the Fleet or from shore activities. They spend approximately four months under the jurisdiction of SOSU 2.

There is much in the SOSU program that resembles the type of training they were given at Pensacola, but it is of a more advanced nature.

They start out with a refresher course in OS2U. This is done largely to build up their flight time because the training program is planned to send men out to combat with as much experience as possible. So the refresher piles up 53 more hours on their flight logs. They get 24 more hours of advanced gunnery, which includes a great deal of dive and glide bombing, camera gunnery and strafing. Their advanced navigation totals 15 hours. They do all types of searches, work out air/sea rescue problems, get four hours of night flying every two months, including landings, take-offs and formation, and take a refresher instrument course to supplement their earlier training.

All this occupies their first month at SOSU. Then they ship out to Fort Sill, Okla., on temporary duty. Two weeks are spent in actual observation flights.

Seaplane pilots climb into the cockpit of a *Cub* with an Army instructor and spend 10 hours in actual observation flight. Each VO-VCS officer flies out over the Army's artillery range and fires a minimum of 11 problems in observation. They circle over the artillery range, directing ground batteries on tactical targets, expending, during their two weeks, a total of 563 rounds of 105 mm. shells.

Along with actual observation work, they receive basic instruction in gunnery. The Army also gives them basic map reading, observed fire-procedure and trains them in the ground organization and tactics of troops.

From Fort Sill, SOSU 2 sends the seaplane pilots up to NAS, FLOYD BENNETT FIELD, N.Y., where the SOSU maintains its own training detachment. Pilots are there about six weeks on temporary duty.

Up until this point in the training program, the VO-VCS pilots have flown many types of planes, ranging from *Yellow Perils* through SNJ's to *"Fantail Thunderbolts"*. All these have probably acquainted them with the scout observation pilot's slogan: *"Fly low, fly slow, fly* VO."

But at Floyd Bennett something new is added. Their next plane will be the FM-2, originally designated as the F4F. The FM serves as a stepping-stone between *Kingfisher's* and the Navy's new *Seahawk*. Those who are responsible for the over-all administration of the VO-VCS training program saw the advisability of using a fast land plane to break in the pilots who soon would be flying fast, fighter-type seaplanes.

During their six weeks at Floyd Bennett the pilots are given 47 hours of flying the FM. They get seven hours of familiarization in the VOF program, 18 hours of formation flying, three more hours of advanced gunnery and 19 hours of advanced tactics. Then they are ready to return to SOSU 2 and shake hands with the Navy's new fighter-type *Seahawk*.

AT THIS MOMENT in the training of VO-VCS personnel, enlisted men and officers become an aviation unit. After they are commissioned as a unit for a specific ship, they are assigned office space in a hangar, hang out shingle. They board ship for commissioning

FAMILIARIZATION in the SC follows, and along with this they get a lot of ground training. SOSU 2 has training facilities of its own but in some subjects the facilities of NAS NORFOLK are used. For others, CASU 21 lends a hand and in still other phases of training, the pilots visit NAMT (A), SC-1. This is a mobile training unit with SC mock-ups.

Every phase of training pilots now receive is of a very advanced nature. If time permits, they get cross-country flights, and this ends their training program.

This is the point at which VO-VCS pilots acquire their "ground crew." From a COMAIRLANT pool, SOSU 2 draws them a complement of enlisted men headed by an ACMM. There will be five AMM's, including a first; an ARM3C, ART1C, ART3C; AM1C, AM3C, AOM1C, AOM3C, five Seaman firsts and five S2C's.

The new unit now is commissioned. Its officer complement will be a senior aviator who, in new units, is a lieutenant, a lieutenant (jg) and either two or three ensigns, depending on whether the unit boards a BB, CL, CA or DD.

SOSU 2's acceptance and transfer pool gets planes for the new aviation unit through the COMAIRLANT Supply Officer. The SOSU's engineering, electronics and ordnance divisions get busy. They pull landing gear off the new planes and install floats. They make Bureau changes and an acceptance check. Then the planes are turned over to the new unit. Its officers are assigned office space in the SOSU building and hang out their shingle bearing the name of the U.S.S. *Wanderlust*," their ship.

When the *Wanderlust* is ready for commissioning, her aviation unit goes aboard for ceremonies. Then the unit returns to SOSU busying itself with further readying of the planes and the equally important business of getting used to each other. By the time the *Wanderlust* is ready for her shake-down, she has a topnotch aviation unit.

They return aboard for the shake-down. At the end of her maiden voyage, the *Wanderlust* returns to port for resupplying and for such materials and maintenance as were indicated by the shake-down. And then the day arrives when her powerful screws churn peaceful harbor waters as the *Wanderlust* heads out for sea bearing, on her way to the Pacific war theaters, men who will serve as her eyes in battle.

AT FLOYD BENNETT field, pilots learn to fly FM's. This is prelude to flying Navy's new *Seahawk*. Returning to SOSU, they fly the SC

THROUGH Fleet Supply Officer, SOSU gives new units planes. All arrive with landing gear. Wheels are removed, floats installed

PILOTS GAIN experience in beaching during their training period. Crew clamps wheels to main pontoon, tractor hauls plane up ramp

SALTY PILOTS OF VOS MAKE COMBAT HISTORY

Exploits of the vo-vcs pilots in World War II are noteworthy. True, they have not bombed Tokyo. An os plane was never designed for bombing on such long-range missions. This fact, however, has not prevented the salty pilots of vo-vcs from hanging light bombs on the wings of their planes and laying them where they would do the most good during amphibious operations.

Global warfare has brought developments in "amphib" operations, both in the European theater and the Pacific, which military strategists of the first World War might never have dreamed of. And it is in such operations that scout observation plays a significant role as "Eyes of the Fleet".

Yet the float-plane pilots did far more than direct naval gunfire. They knocked out enemy gun positions and broke up tank attacks. They sank enemy pigboats. They had only floats for landing gear, but they flew reconnaissance missions over hostile territory 60 miles inland.

In support of landing operations, they clipped the treetops and strafed the enemy where they found him. They flew into the face of the enemy's shore artillery emplacements, strafing him with their puny armament to save their cruisers.

They even rounded up prisoners, raking their nests with machine gun fire and herding them like cattle down to American beachheads.

Mercy missions figure importantly in the exploits of seaplane pilots. With the tremendous increase in tempo of carrier air strikes against enemy territory in the Pacific, *Kingfishers* of the battleships and the cruisers were pressed into rescue duty.

They braved the teeth of coral reefs to drop into small lagoons and rescue downed American airmen under the noses of Jap positions ashore. Nor were their feats confined alone to the military.

Early in the Pacific offensive one vo-vcs pilot saved the life of a woman, wife of a resident Frenchman on a tiny Pacific islet. The appeal came that she was in a critical condition following childbirth. The vo-vcs pilot set his seaplane down in a small lagoon, placed the sick woman carefully in the rear seat, packed pillows around the gun position in the rear seat for her 12-hour-old baby and flew them back to the ship's doctor. On the basis of this exploit, that pilot claims a record for flying with the youngest rear seat man in history.

One of the most brilliant performances of vo-vcs occurred in the Sicilian campaign. Flying down the beach near Scoglitti on a spotting mission, a vo-vcs pilot saw men working on a gun position. Recognizing them as enemy troops, he attacked with two bombs and two 30 cal. machine guns. His first bomb did not explode, but scattered the gun crew. Then American troops appeared behind a cliff, pointing upward. They were trapped by an enemy gun position at the summit.

The vo-vcs pilot flew higher and his rear seat man began strafing the gun position. The enemy came out waving white flags. Flying lower, the pilot waved them in the direction of American positions. They failed to get the idea but caught on quickly when lead began spattering around them.

The vo-vcs plane circled and its gunner began peppering away at the heels of the prisoners, herding them on down the hill. Four entrenchments were ahead and the pilot flew low, waving for the enemy to come out and join the herd. Slow ones were stimulated with the seaplane's machine guns.

By the time the strange procession had reached an American patrol, there were 120 prisoners marching down the road, three abreast, with a seaplane circling low overhead. When the American patrol took over, the seaplane pilot returned to the cliff, flushed out 30 more of the enemy and herded them in.

The vo-vcs training program is predicated on the policy that a seaplane pilot should be able to do any type of flying. Early proof of this came in the Normandy invasion when a squadron of vo-vcs pilots was trained to fly British *Spitfires* as observers for Navy gunfire.

This squadron was assigned 20 *Spitfires* and went in over the French coast on D-Day as the eyes of the heavy rifles aboard ship. They flew numerous sorties with good effect. Four pilots were attacked by Me 109's and FW 190's, but used evasive action successfully. Six planes were lost to enemy fighters, but flak accounted for only one.

Experiences of the Sicilian campaign led to another occasion when vo-vcs pilots proved their versatility. This was in the invasion of South France when seven of them teamed up with the Army and learned to fly *Mustangs*. They had been flying the leisurely soc's and this was their first "hot" plane.

While the *Seventh* Army spread across South France, Navy vo-vcs pilots overhead flew 98 spotting missions for heavy artillery. Then they returned to their ships and their seaplanes and headed down the French and Italian Riviera to spot mines, human torpedoes and explosive boats.

Combat history has been made, too, by seaplane men flying over Jap-infested waters of the Pacific. There was the pilot who landed near a burning ship and, as the fire spread, towed swimmers with a light line to safety ahead of the flames.

These are only a few of the exploits of vo-vcs, and the full tale is not yet told. They are still out there today in the Pacific, birds of ill omen for the Japs, for they bring in their wake a hurricane of blistering fire and steel.

READY FOR FLIGHT at a moment's notice, this *Kingfisher* rides her catapult aboard the U.S.S. *New Mexico*. Although more and more of the Navy's new *Seahawks* are going out steadily to the Pacific war theater, not a few of the earlier OS2U's are still in service. On convoy duty, VO-VCS pilots have proved effective in submarine patrol and have rendered particularly valuable service in the rescue of personnel downed at sea. However, the primary duty of a VO-VCS pilot could be regarded as observation, and in the performance of this, seaplane pilots have been particularly effective in amphibious operations, directing Naval gunfire in advance of invasions

BEST ANSWERS

Borneo

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

1. Borneo lies at about the same latitude as—

- ☐ *a*–the Panama Canal
- ☐ *b*–the Amazon River
- ☐ *c*–Madagascar
- ☐ *d*–the Saragossa Sea

2. The area of Borneo is about the same as that of—

- ☐ *a*–England
- ☐ *b*–New Zealand
- ☐ *c*–Brazil
- ☐ *d*–Texas

3. The total pupulation of Borneo is about—

- ☐ *a*–50,000
- ☐ *b*–250,000
- ☐ *c*–1,000,000
- ☐ *d*–3,000,000

4. Native mammals found on Borneo include—

- ☐ *a*–leopards, flying lemurs, orangutangs
- ☐ *b*–tigers, anteaters, koalas
- ☐ *c*–foxes, kangaroos, hedgehogs
- ☐ *d*–tapirs, antelopes, wolves

5. Up to the present time, the chief means of transportation in Borneo has been—

- ☐ *a*–roads
- ☐ *b*–railroads
- ☐ *c*–waterways
- ☐ *d*–airlines

6. Borneo's highest point has an elevation of about—

- ☐ *a*–2250 ft. above sea level
- ☐ *b*–9200 ft. above sea level
- ☐ *c*–13,700 ft. above sea level
- ☐ *d*–19,300 ft. above sea level

7. The coast of Borneo, for the most part, is—

- ☐ *a*–hilly
- ☐ *b*–low and swampy
- ☐ *c*–abrupt and precipitous
- ☐ *d*–dry and sandy

8. The average depth of the South China Sea (to the west of North Borneo) is—

- ☐ *a*–250 ft.
- ☐ *b*–1000 ft.
- ☐ *c*–5000 ft.
- ☐ *d*–15,000 ft.

9. The average depth of the Celebes Sea (to the east of North Borneo) is—

- ☐ *a*–250 ft.
- ☐ *b*–1000 ft.
- ☐ *c*–5000 ft.
- ☐ *d*–15,000 ft.

OPEN-SEA RESCUE BY TENDER

PROPER *techniques of approach and use of lines were necessary for successful completion of an open-sea rescue made by* U.S.S. Norton Sound (AV-11) *of a* PBM *forced down 80 miles away from its base.*

THE SHIP proceeded to sea shortly after the downed plane was located. At this time one PBM was on the seaplane deck and, due to condition of its hull, it was impossible to put it in the water. The plane which had been forced down was reached by the ship in early hours of the morning.

At daylight, rescue operations were commenced. A relief flight crew was sent to the plane in a 25 ft. pneumatic barge powered with an outboard motor. This pneumatic barge proved itself most seaworthy and is undoubtedly the best type of craft to take along side a plane in the open sea.

No difficulty was experienced in returning the flight crew of 12 men to the ship by this barge. The original plan had been to refuel the plane and equip it with JATO for an open sea take-off. Due to the fresh wind and heavy swell, it was found impossible to attach the JATO units working from the rearming boat. During one attempt the rearming boat swung under the port wing tip float, hitting it and causing it to leak. Thus it became necessary to attempt hoisting the plane aboard.

The ship 'lay to' to windward of the plane, with the wind coming approximately over the port quarter. A hoisting sling had been delivered to the plane and while it was taxiing into position the hoisting sling was rigged. The plane approached the ship's starboard quarter on a line at right angles to the ship's keel, using only one engine. When about 100 yards from the ship, a line was passed from the waist hatch in the plane to a rearming boat which took station astern of the plane.

At a distance of 100 feet from the ship's side, the plane engine was cut and a line-throwing gun was used to pass a line to the plane. Three lines immediately were passed to the plane, a tow line and two wing lines. By means of these and the rearming boat, the plane was brought under the head of the crane. A line made fast to the point of the hook was passed through the hoisting sling and back through a block on the crane. As the hook was lowered, a constant strain was kept on this line, thus assuring a rapid and positive method of hooking on. As soon as the hook engaged the sling, the plane was hoisted clear of the water to prevent excessive snubbing on the crane as the plane rose and fell in the swell.

Due to motion of the ship, considerable difficulty was experienced in controlling severe oscillations of the plane during hoisting, and unfortunately the plexiglas nose turret was damaged. Difficulty was encountered, too, in attempting to control the plane by the handling lines while attaching beaching gear. This was overcome by having about 150 men lean against the hull to hold it from swinging.

▶ It is recommended that tenders of this class conduct in a calm lagoon exercises in hoisting a plane while not at anchor, to determine the best ship attitude in relation to the wind once the plane is clear of the water. It would emphasize need for speed in hooking on and in hoisting the plane before the ship's head fell off. Lying athwart wind and sea complicates action.

PRE-FLIGHT TRAINERS

FOUR synthetic devices are featured in the pre-flight training at NAS MEMPHIS to improve the quality of primary flight students. They are the contact trainer, a rudder trainer, "doodlebug" taxi trainer, and a "dodo" plane for ground training and advanced taxi instructions.

Particular emphasis is placed on the contact trainers, which are specialized adaptions of the Link trainer. This trainer is devised to form such basic habits as correct cockpit procedures; stick, rudder, and throttle coordination in elementary maneuvers, and various other phases of actual flight-type experience. Each student receives a twenty-minute period of training each day for 10 days of the course.

Class Reviews Earlier Errors

For the contact trainer course, half-hour lectures are given previewing the instruction period for the day and reviewing errors of the previous day which include demonstrations by instructors. Each student takes his instruction sitting in the contact trainer, operating regular airplane controls, and executing his flight conditions within a cyclorama which gives him proper impressions of attitude and horizon, and also requires him to keep his head "out of the cockpit," on the alert for other aircraft.

Similar instruction is conducted on the other three synthetic devices. The rudder trainer simulates airplane rudder use at the moment of take-off and landing and serves to break the cadet of the "bobsled" practice in turning.

An ingenious "doodlebug" taxi trainer, a small motor-driven vehicle, teaches proper use of brakes in turns, and stimulates the nose-over condition when both brakes are applied too sharply.

Final instruction in synthetic devices is conducted in the "dodo" plane which is an actual airplane stripped of wings. This is taxied as though it were a flyable airplane. To reduce power output the propeller has been shortened, and a nose-wheel has been added to permit nose-ups without damage.

This program was established at NAS MEMPHIS in September 1944 with the beginning of primary training for French cadets and was found so effective that it was continued with Navy cadets who did not get WTS instruction.

CONTACT TRAINER FAMILIARIZES PUPIL WITH CONTROLS, SIMULATING FLIGHT CONDITIONS

DOODLEBUG TAXI TRAINER TEACHES CADETS TO USE THEIR AIRCRAFT BRAKES PROPERLY

CADET LOSES HIS BOBSLED STEERING TOUCH WHEN HE USES THIS RUDDER TRAINER DEVICE

1 Tow victim to side of raft and hook farthest armpit to the clinging line around raft. Nearest hand of victim is placed on top of raft, over which rescuer places his hand. The other hand of rescuer grasps the seat for a good grip to assist in drawing himself into the craft. Although shown here with MK 4 raft, this system also can be used with MK 2 and MK 7 type rafts

RESCUE using raft

SHOULD the occasion ever arise when it is necessary to assist a wounded or exhausted man into a raft, a knowledge of the most efficient way to do so may directly affect the saving of that man's life. Brute strength alone will not suffice—on the small, easily-tipped pararaft it may do more harm than good. What's required is a definite technique that will work regardless of the comparative weights of the two men—will ensure security of the injured or exhausted man at all times—and permit the victim to be hauled aboard with a minimum expenditure of time and effort on the part of the rescuer.

Shown on this and the following two pages are a series of pictures from a chart recently developed by NAS ALAMEDA, based on suggestions by M. L. Rennert, CSP(A). Issued to all flying

2 The rescuer draws himself into the life raft, at the same time resting his hand on that of victim to hold it from slipping while he gets in. Calmness is essential to rescue success

3 Rescuer braces himself so that one knee is tightly hugging inner side of the craft and the other knee is elevated and also braced against the inner side. Grasp the victim under arms

4 With his knees braced against the raft, the rescuer then lifts the victim into the raft as he leans backward, drawing the man toward him. Rescuer should conserve his strength

5 Most of the victim's weight now is in the raft. This way of boarding life raft will work regardless of comparative weights of the two men. Never let raft drift away in the wind

personnel as a part of their training, the pictures clearly present the simple, basic procedure to be followed.

Naturally, methods vary between different sizes of rafts, although fundamental principles remain the same. Illustrated on these two pages is the procedure for assisting a wounded or exhausted man aboard an MK. 2, 4 OR 7 raft. On the following page, use of the pararaft PK-1 is described. While a one-man raft is just what it's supposed to be, necessity may demand that a wounded man be helped aboard the raft, and in this manner two lives could be saved.

Calmness is absolutely essential to success. The rescuer must keep his head; must work quickly and without lost motion to conserve his strength; and he must get the man into the raft on his first attempt or probably not at all. In a heavy sea and wind a raft will drift away faster than a man can swim, and even if in the raft, it will be difficult to row against the wind and sea to reach a floating man. The *rescuer* and *victim* in the pictures are, after instruction, trying rescue procedure for the first time. Weight of the rescuer is 150 lbs., that of victim, 200 lbs.

USE OF PARARAFT KIT ON NEXT PAGE

RESCUE using pararaft

Although the Pararaft (PK-1) is designed to accommodate one man, an occasion may arise when two men's lives depend on it. Pictures on page show its use.

1 Rescuer tows victim towards side of the raft nearest small end, drapes both arms over side. Grasping index finger of victim's hands, he moves to the other side

2 The rescuer is on the opposite side, still holding to fingers of both his hands. Raft now can be entered from side using victim's weight to help balance it on entry

3 The rescuer now is safely in the raft, still holding to the victim's fingers so that he will not sink or drift from raft during operation. His strength should be saved

4 Rescuer braces himself, kneeling on knee nearest victim, other foot extended. This insures greater balance preparatory to dragging the victim over side of the raft

5 Grasped by armpits, the victim is dragged till his stomach rests over the side. The rescuer leans back as this is done so the victim's body is in raft diagonally

6 It's easy to turn the victim about on his back and draw him further into the raft. In these pictures, rescuer weighed 150 lbs. and the victim weighed 200 lbs.

7 The rescuer now proceeds to draw victim closer, pulling his feet into the raft. Sitting low in the raft helps maintain equilibrium. Rescuer must keep his head

8 The victim is made as comfortable as possible in the cramped quarters. This system of rescue, utilizing pararaft, can save two lives if it is done correctly

SHORE STATIONS

▶NAS FORT LAUDERDALE—The barber shop has inaugurated a new system. Members of the crew can now go to the coiffure emporium and obtain a chit designating time and date for their appointments. Then if they appear at the proper time there's no waiting.

▶NAS JACKSONVILLE—Fubar, this station's pet duck who was used to being fed by practically all hands, considered any approach a friendly one, and was undoubtedly surprised quackless to find himself picked up and on his way into the luggage compartment of a car. A commander came upon the scene, recognized Fubar, and nipped an obvious case of duck-nabbing.

Fubar is still free to waddle about the green grass and beg for doughnuts. But anymore he has a suspicious gleam in his eye, no doubt, pondering the perfidy of man and the possible trip to the cooking pot he might have made to ease the meat shortage of a certain family.

▶NAS PATUXENT—Navy personnel were delighted to read in the *Patuxent Tester* this advertisement: "Are you anticipating a cruise this season? Is the Navy planning a government-sponsored tour for you to some foreign country—islands of the Pacific, the Philippines, or even Japan? If you are, learn the language and amaze the natives wherever you go!"

Many already have taken advantage of this offer by contacting the educational officer. They are discovering the easy way to learn foreign languages with the aid of recordings and self-teaching pamphlets and books.

▶NAS HONOLULU—An AEM on this station has so many women here and back in the homeland, he has been forced to develop a unique filing system, cataloguing each one by weight, complexion, height, married, single, likes and dislikes. He also has been compelled to develop a second filing system whereby he keeps a check-off list on his correspondence so he will not confuse Virginia with Subrina, Grace, Clara, Arabella, Elizabeth and others too numerous to mention.

▶CQTU GLENVIEW—An F6F was lined up on the catapult, ready to go. The pilot gave his ready signal, the fire signal was given, and the airplane started down the tracks. Everything went well for about 20 feet of its 160-foot run, then the tail hook started creeping out. The tail hook got all the way out by the time the catapult released the plane, which now was doing a comfortable 65 knots and was a foot or so off deck. Then the tail hook grabbed hold of the catapult launching cable, pulled it out 150 feet, recocked the catapult, refired the plane straight as a die down the deck, but now at an uncomfortable 60 knots heading backwards.

A hastily vacated fire truck, 200 feet aft of the catapult deck, intervened. After crushing the cab of the fire truck like an eggshell, and making a half turn, the plane with part of its tail assembly and most of one wing missing headed off the runway, and a rather bewildered pilot climbed out.

▶NAS HONOLULU—One of the original WAVES to arrive in Alohaland, weathered the seas from Frisco without a trace of *mal de mer*. Two weeks ago she went on a fishing trip to Diamond Head and became very, very sick.

After several hours of strikeless trolling, the party reeled in their lines. Attached to the receiving end of one line was an eighteen-inch garfish, identified as a watch-charm version of the swordfish. Although a far cry from the anticipated but unachieved sea monsters, it was a fish.

Crew members of the fishing party explain poor results this way: the fish are so well fed by passengers they don't bother biting at artificial lures.

▶NAS PATUXENT—We've often heard of a dog's devotion and sympathy for his master, but it remained for one of the flight test hounds on this base to go off the deep end. A seaman stepped into something like a gopher hole while playing softball and sprained his ankle. Next day, his dog, *Octane*, appeared with one paw bandaged and limping badly.

▶NAS HUTCHINSON—As an added means of recognizing ability in training, a plan has been inaugurated whereby the week's high gunnery score in turret firing will be rewarded with a merchandise order on Ship's Service Store.

▶NATTC MEMPHIS—A seaman, while mastering the art of making love by devoting extra time to study of a book entitled *Bedside Manners*, was unsuccessful in his Saturday night attempt to apply the newly-acquired knowledge practically.

After approaching a "Memphis Belle," and touring places of interest, including a movie balcony, he extended an invitation for the young Miss to accompany him to the fairgrounds on Sunday.

Her reply was: "My mother doesn't allow me to date sailors, but I will write you a letter."

▶NAS HONOLULU—At a recent party where a pool game was in progress, a WAVE lieutenant picked up a cue and knocked off the five high balls—11, 12, 13, 14 and 15 with the utmost precision. After showing the members of the party how to play pool, she nonchalantly laid down her cue and left the scene, while male members of the party gaped after her in wide-eyed amazement bordering on incredulity.

▶NAS NEW ORLEANS—An MM on this station had only been married two weeks, when his wife sold his motorcycle which was his most precious possession.

"Why did you sell my motorcycle without even letting me know it?" the MM asked his wife.

"I thought it was too dangerous for you to ride, honey," she said softly. "After all, you'll be able to get another motorcycle, but I'm not so sure that I can get another husband."

▶NAS SAN DIEGO—Two bluejackets upon meeting, immediately greeted each other with loud cries of recognition and shook hands with the ardor and enthusiasm that is always the case in the reunion of long-lost friends.

Then came the "weeding-out" process. A check of home towns revealed that they came from different parts of the country. Neither had gone to the same schools or colleges.

"Oh, I know!" said one triumphantly. "You were in my boot company at the training center."

"Nope," the other shook his head, "I went to Great Lakes."

They carefully checked over all previous bases where they'd been stationed but this provided no clue.

Suddenly one raised his puzzled eyes to the other. "Say, you couldn't be the guy that . . . . . ."

"Holy Smoke!" interrupted the other as complete recognition also dawned on him. "Well, I'll be . . .!" he exclaimed rather weakly as both their faces turned a bright hue of red.

They finally discovered why they knew each other so well because they were bunk-mates in the same barracks here on North Island!

"Isn't this a small station after all," one said, after they had recognized each other.

Not just another FORM

NavAer 2124 will help determine future duty of every officer assigned to duty involving flying

Won't hurt to give this matter a few moments' honest attention, as the new Aviation Personnel Report (NavAer 2124) you're sending in is the basis of a historical log on each individual, and will be used in carrying out the Navy's program of rotating *your* personnel. Get it in *early* each month! You may find some items on the form a trifle confusing, so here are a few suggestions that may help you to get your reports in promptly with information that is complete, accurate and usable.

STATUS Watch the coding of your "Status" carefully and follow Instruction 9 on back of the form. Try to give a true picture, e.g.: an NAS is non-Fleet unit, should never been listed "OS." In this case, "O" is proper.

COLUMN 6 Your Flight Surgeon has this information, if it's not at your finger tips. It's a good idea to verify the whole report with the Flight Surgeon before sending it in. *Note:* A-V (N), A-V(T), *etc.*, are terms now obsolete.

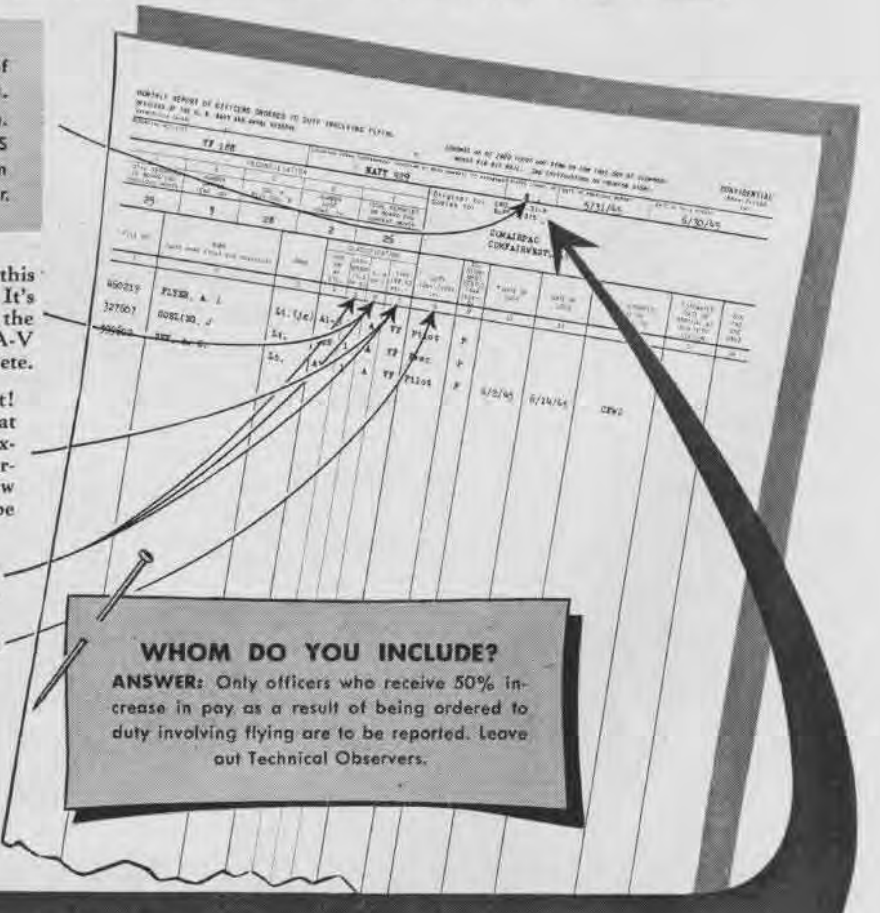
COLUMN 7 Information must be correct! If a pilot has checked out in various combat types, put down the type he's had *most* experience in. *Typical exception to this:* Former VB pilot recently assigned to and now flying permanently with a VF outfit would be listed as VF.

COLUMNS 5, 6, 7 Need not be filled out for non-pilots (Navigators, flight surgeons).

COLUMN 8 Do not list collateral duties. Primary duty such as X.O., L.S.O., Pilot or 1st Pilot, *etc.*, is all that is required.

GENERAL RULES

1—List personnel alphabetically; 2—Double-space typewritten reports *(Please!)*; 3—Use ditto marks and abbreviations, but include an abbreviation key!



WHOM DO YOU INCLUDE?

ANSWER: Only officers who receive 50% increase in pay as a result of being ordered to duty involving flying are to be reported. Leave out Technical Observers.

➡NOTE THIS IMPORTANT CHANGE IN ADDRESSEE!

Send original of NavAer 2124 to CNO, Op-03-4R, not to Op-31-R as printed on form itself, as there have been a few internal changes since it was printed.

PB4Y-2 Ditching Procedure Is 4.0

REPORTS on the first ditching of a PB4Y-2 in a combat zone indicate that careful attention to approved ditching procedure has resulted in a completely successful ditching in which no personnel were injured or lost.

After a long search in a forward area, a combination of communication troubles and other difficulties resulted in the PB4Y-2 becoming thoroughly lost. All attempts to obtain a fix failed, and with fuel running low, it was decided to ditch.

All three escape hatch doors were cut out and jettisoned, along with the ammunition and loose gear that would not be needed for survival. The crash deck in the after station was made ready. Ditching positions taken by the 13 men aboard were as follows: PILOT and CO-PILOT in their seats, with shoulder straps attached; NAVIGATOR standing between the navigator's table and the RCM rack, protected by parachutes; PLANE CAPTAIN and FIRST RADIOMAN sitting on the radioman's table, with similar protection; the remaining 8 men crowded in the safety crib on the command deck.

The plane was ditched at 1800, with enough fuel remaining to make a full-power stall landing and enough daylight to get out the rafts and secure the emergency gear before nightfall. The pilot approached the rough sea with half flaps at a speed of 100 to 105 knots; in the final stage full flaps were used and plane was slowed to 75 to 80 knots just before striking the water. Approaching into the wind, it was stalled completely with power on the face of a swell. The left wing dropped slightly into the water and caused a slight slewing, but impact was only moderate. There was no second impact.

The plane remained intact for about two minutes, until well after the rafts were manned. Partially due to the rough sea that was giving it a severe pounding, the fuselage broke between station 4.0 and 6.0. The 4.0 bulkhead was forced forward, almost pinning the first radioman, and apparently the bomb-bay doors were ripped off, for one bomb bay fuel tank was seen floating soon afterward. The bow also caved in and the bow turret dropped off about two minutes after impact. None of the other turrets broke loose, although the guns were still in them. The left wingtip snapped off, as did flaps and elevators. In spite of the damage to it, the plane remained afloat for some time; in fact, it still was afloat when last sighted by the men some 10 to 15 minutes after ditching.

None of the personnel was injured as a result of the ditching, and all got out without difficulty. PILOT and CO-PILOT went out the escape window in the cockpit; NAVIGATOR, FIRST RADIOMAN and PLANE CAPTAIN through the astro hatch; and the eight men in the after station through rear escape hatch.

The plane was equipped with two MK.7 life rafts. One was on the crash deck and was got out easily. The second was beside the navigator on the flight deck; it became partially inflated as a result of the impact and was pulled through the astro hatch with considerable difficulty.

The rafts were launched on the windward side of the plane, and some trouble was experienced in getting them away. As soon as possible they were lashed together by lines about 6 ft. in length; the distance apart should have been greater, but lack of sufficient line made this impossible. All gear was lashed securely to the rafts, and nothing was lost during the time spent adrift.

PUBLICATIONS

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

AVIATION CIRCULAR LETTERS

50-45 *Aeronautic Technical Publications: Distribution of.*
51-45 (Joint Ltr) *Overhaul Facilities for Aviation Ordnance Equipment—Designation of.*
52-45 *Procedure for Striking and Disposition of Naval Aircraft Within the Continental United States.*
53-45 *Obsolete Model Airplanes—Declaration of.*
54-45 *Aviation Safety.*
55-45 *Flight Priorities for Army and Navy Officers of Five Star Rank.*
56-45 *Airborne Radar Operators Log, Form NAVAER 2044.*
57-45 (Joint Ltr) *Bureau of Aeronautics Maintenance Representative—Relationship to the Bureau of Ordnance.*
58-45 *Scintilla Cast Filled Ignition Harness of the "Waterproof" Type for Pratt & Whitney R-1830, R-2000 and R-2800 Engines—Designation of Repair Activities for.*
59-45 *Aircraft Clocks—Shortage of.*
60-45 *Airport Seadrome Lighting, Standard Color Sequence.*
61-45 *JRC Aircraft—Maintenance Policy.*
62-45 *GB Aircraft Assigned to Activities within the Continental Limits—Maintenance and Disposition Policy.*
63-45 *Used and Excess New Aircraft Tires—Handling of.*
64-45 *Overhaul and Repair Facilities for Modified Gyro Horizon and Altimeter Components of the Model AN/ASG-10 Series Radar Equipment—Designation of.*
65-45 (Joint Ltr) *Vacuum Tubes for Radio/Radar, Special Training Devices, Electronic Test and Photographic Equipments—Designation of Supply Points for Naval Aviation Activities and Policy for Procurement of.*
66-45 *Airborne Electronic Equipment—Reconditioning Facilities—Designation of.*
67-45 *Unit Histories; Preparation and Submission of.*

TECHNICAL NOTES

42-45 *Model AN/ARC-4 Series (233-A) VHF Communication Equipment Replacement of Filter Condensers.*
43-45 *Means of Assembling an Emergency Seadrome Marker Light from Equipment on Board Most Activities.*
44-45 *Approved Method of Modifying Snap NAF Drawing No. 310336 for QAS Type Parachutes.*
45-45 *Nylon Fabric Clothing—Inflammability and Flash Resistance of.*
46-45 *Pilot's Seat—Parachute Retention.*
47-45 *Seadrome Lighting—Standard Layouts and Equipment Requirements for use at Advanced Bases and by Seaplane Tenders.*
48-45 *Periodical Publications on Airborne Electronic and Electrical Equipment, Availability of.*
49-45 *Standard Bullet Hole Patches—Use of.*
50-45 *Arresting Hook Installation—Hydraulic Shock Absorbers; Servicing of.*

TECHNICAL ORDERS

46-45 *Low Pressure Hose Assemblies—Resistoflex Corporation—Replacement of.*
47-45 *Model F4U-1, -4 Airplanes, Model FG-1 Airplanes, Model F3A-1 Airplanes, Restrictions and Permissible Maneuvers.*
48-45 *Application of Naval Air Transport Service Insignia.*
49-45 *Model TBF-1, TBM-1, -3 Airplanes—Restrictions and Permissible Maneuvers.*
50-45 *Model F8F-1 and XF8F-1 Airplanes Restrictions to be Observed in Operation.*
51-45 *Model PV-2 Airplanes Restrictions to be Observed in Operation.*

ACTION REPORT: Twelve enemy planes approached one of our airfields, skillfully dodging radar beams by using hill shadows. One of the fighters which went up to intercept made contact with one of the enemy. The pilot, however, was unable to distinguish the enemy plane from a friendly transport known to be airborne in the vicinity and consequently held his fire. The enemy inflicted extensive damage to our aircraft.

THIS aint no more'n what happened to us. Th' Van Horns couldn't git up Still Holler but they come over th' ridge and down behind us. When we heerd thar brogan shoes askinin the rocks, we sent our young Tussies up to git 'em. Our boys took keer of 'em all right but Nando, one of our best fighters, made a powerful mistake. He let a Van Horn slip right a-past 'im. And that Van Horn come right down the side of the mountain and put a bullet through our copper still. That's how we lost a night's run.

"Nando, thar's jist one word that caused this sad affair," I said as we gathered around our ruint still. "That word 's 're-cog-ni-tion'."

"That's a big word Uncle Kim," Nando said. "I don't exactly understand hit!"

"A lot o' folks don't understand it," I said. "But hit's as simple as yer A B Abs. Jist means yer a-bein able to tell a Van Horn frum a Tussie. And if ye'd a-done that we wouldn't be a-standin here a-cryin over our spilt herbs!"

EXCERPT FROM ACTION REPORT: "Friendly aircraft must continuously operate as friendly and avoid any maneuver that might possibly be interpreted as hostile. These rules should be observed:

1. Do not make any radical maneuvers that might be interpreted as a plane's making an unfriendly attack.

"Two *Thunderbolts* attempted to attract attention of LST's to a pilot in the water about two miles away. They made a dive at the man in the water and then headed toward the LST's, who took them under fire. Neither were shot down but they cleared the area quickly." —C.O. U.S.S. *Sonoma*

2. Operate in formation if possible, strays are subject to suspicion.

". . . I was careful to avoid flying over the naval craft in the bay so as not to attract their AA fire. I passed a lone U.S. destroyer some 800 yards away. It opened fire with machine guns and I was caught in a halo of tracers. I felt the impact of bullets hitting my aircraft. I broke away from the destroyer, heading toward ——— Islands. Immediately afterwards, a *Corsair* made a quarter stern attack on me. I saw tracers appear behind me and took exasive action. The *Corsair* broke off its attack. . . ."—New Zealand P-40 pilot

3. When approaching friendly surface craft, approach at a moderate altitude, approximately 1,000 feet, which is not too high or too low, present the side silhouette frequently.

". . . At 1,000, a formation of three single-engine fighter planes were observed approaching the ship from dead ahead at not more than 75 feet above the water. The captain asked me for identification, which I hesitated to do, but immediately advised him to open fire because of the nature of the approach. All forward automatic guns opened fire on the three planes. As soon as fire opened, the fighters took evasive action and, upon their giving us a better look, were immediately recognized as P-51's. Fortunately, none were shot down."—Recognition officer of DD

AFTER all these reports frum our ships, I'm hell fer surtain shore the best way fer fr'endly pilots to stay healthy in the neck of the woods around our ships is to act plenty fr'endly and to keep on actin' that way.

EXCERPT FROM ACTION REPORT: "While planes were identified as both *Bettys* and *Jills*, the consensus was that they were *Jills*."

YE'D better drap yer plowlines, fellar, and look to see if ye're a-plowin one mule or two. Th' *Betty* iz a big 2-injun airkraft. The *Jill* iz a 1-injun plane about half *Betty's* size. The rezimbelance ends with the meatball on the wing. Try out this re-cog-nition bizness. Ef ye don't, hit mite give you a date with a hippipotamus.

EXCERPT FROM ACTION REPORT:—"The practice of painting friendly fighters with a distinctive mark, such as the white ring on the cowl in these operations, should be continued. Returning strike groups found it particularly helpful in determining if they were being followed by "friendlies". This, however, should not be considered a substitute for recognition."

HIT WOOD be dangerous to think that all frendly airkraft wuz painted with a white ring on th' kowl sense thar wood be nothin to prevent the enemy frum a-doin the same thing and gain an advantage frum sicha disguise. Hit iz ginnerally realized that markings unfamiliar to part of our force may constitoot a danger overwaying eny lokal advantage gained fer whut iz strange iz offen feared and iz offen not re-cog-nized. Ye kain't tell a man frum the clothes he wares.

SUICIDE BOMB HAS ITS ENTIRE NOSE FILLED WITH EXPLOSIVE; NOTE RING SIGHT IN FRONT OF PILOT'S BUBBLE CANOPY

JAP BAKA BOMB

THE JAPS have placed a new weapon in the hands of their Kamikaze pilots in the form of a rocket-driven suicide bomb with a one-way ticket to oblivion. Called the *Baka* bomb from the Japanese word meaning "fool" or "crazy", the 4500-pound projectile does not give its pilot the chance to change his mind about a suicide plunge. It carries sufficient fuel only for about 50 miles of flight. Since it is nothing more than a flying torpedo with wings, it can attain speeds better than 500 miles an hour in level flight and considerably higher than that in a dive. Its entire nose section is filled with 1000 pounds of explosive. The *Baka* is launched from parent planes, usually a *Betty*. The best defense against it is to shoot down both before the Baka bomb can be released. Baka also could be carried by Peggy, Helen, Liz or Rita.

REAR VIEW OF BAKA BOMB SHOWS ROCKET EXHAUST CHUTES

STUBBY BOMB SLIGHTLY MANEUVERABLE, WITH RANGE AROUND 50 MILES AND SPEEDS UPWARDS OF 500 MILES AN HOUR

QUALITY OF STUDENT'S VOICE PROCEDURE IS DETERMINED BY "PLAYING BACK" A SAMPLE OF HIS SPEECH IN THE MICROPHONE

TECHNIQUE OF SPEECH

IN AN effort to improve the quality of voice procedure in aircraft intercommunications, special instruction in speech intelligibility is now given in the ground training curriculum at the NAVAL AIR TRAINING BASES CORPUS CHRISTI.

An outgrowth of experience in the Fleet, the course incorporates scientific developments in speech technique, and aims to produce voice qualities that will offset noises peculiar to aircraft operation.

Instruction is given to aviation flight students, as well as other personnel whose duties require use of various types of intercommunications systems.

Static and Noises Simulated

The course comprises six one-hour classroom sessions. Noise is generated in the classroom to simulate an airplane flight, with accompanying radio static. Standard naval aviation microphones, headphones, radio and intercommunication systems are employed, to further the realistic classroom approach.

During the first class session, a one-minute permanent check-in recording is made by each student. This speech sample indicates the particular speech factors which require special attention. Throughout the remaining sessions, the student makes several temporary recordings on magnetic tape recorders. The recordings are played back in the simulated static and airplane noise so the students progress may be gauged and the instructor may have a basis on which to offer suggestions for improvement.

Students are taught to use in flight what they learn on the ground. On training flights, airborne recordings of each student's speech are made on magnetic wire recorders attached to the plane's radio and intercommunications system. The student analyzes the quality of his speech, and receives further advice from the instructor.

Included among the varied group of personnel taking the training are British Royal Naval Cadets, two squadrons of French flight students, and two squadrons of Latin American students.

AIRPLANE NOISES AND STATIC IN CLASSROOM SIMULATE THOSE ENCOUNTERED IN FLIGHT

TECHNICALLY SPEAKING

Bulldozer Works As Fork Truck

NAS CLINTON—By means of a loading attachment of simple construction a bulldozer can be converted into a fork truck capable of lifting approximately seven tons. The loading attachment, designed under the Navy Employee's

ONE MAN CAN INSTALL LIFT ATTACHMENT

Suggestion Program, is readily mounted on and removed from the blade of a bulldozer.

The attachment consists of two ¾" steel arms, approximately 6" wide, tied together by two steel cross strips and hooked over at the top to fit over the bulldozer blade. One man can easily mount or dismount the attachment.

The bulldozer attachment is used principally for moving buildings or loading heavy material on trucks. Operations that were performed with considerable difficulty are now handled with comparative ease, and savings in man-hours has been effected.

[DESIGNED BY JAMES G. HARRIS]

Underwater Escape From Planes

On the basis of preliminary tests, BUAER has suggested a possible manner of self-rescue of personnel who must escape from below the water level of a ditched plane.

This manner of self-rescue is based on use of a standard Navy individual oxygen diluter demand unit, which was introduced for transport and utility airplanes to comply with TO 116-44, *Oxygen Equipment—Individual Diluter-Demand Units and Face Masks to be Provided for Passenger Use.*

The unit consists of one portable oxygen cylinder carrier, one oxygen cylinder, a diluter demand regulator, mask to regulator tubing, and an oxygen mask. Portability of the whole assembly is most important feature.

Here is a suggested outline for use:

1. Don oxygen mask
2. Turn oxygen cylinder on
3. Set air valve lever on regulator to the OFF or 100% oxygen position
4. Begin breathing 100% oxygen on demand
5. Open hatches and leave plane

Whole assembly becomes semi-buoyant in water. It can be held in position with one arm, leaving the other free for getting out of plane and swimming to surface. It is important to hold the regulator properly for maximum efficiency. The regulator diaphragm should be held on the same level as the exhalation valve of the mask. Preliminary tests showed that if regulator diaphragm is held approximately six inches or more below level of mask exhalation valve, a continuous flow of oxygen will result. If diaphragm is held four inches above mask exhalation valve, a restriction in flow will result, and as the diaphragm gets higher, flow will stop altogether. Regulator must be positioned properly, *i.e.*, held on the same level as the exhalation valve of the mask, if it is to function as a straight demand unit.

OXYGEN UNIT HELPS UNDERWATER ESCAPE

At 20 ft., using a 295 cu. in. cylinder at only 1475 psi, one diver got 12 minutes of oxygen. Another diver, using a 96 cu. in. cylinder filled to 1650 psi, got five minutes of oxygen. With a simulated pressure of 50 ft., a dive was made with a 295 cu. in. cylinder at 1390 psi. Oxygen lasted nine minutes.

After escaping from submerged aircraft, personnel should ascend slowly as possible, provided oxygen supply has not been exhausted. During ascent, respiration should continue at a normal depth and rate. Under no circumstances should breath be held during ascent. If oxygen supply becomes exhausted before or during ascent, escaping personnel should exhale slowly and continuously to prevent a sensation of fullness or distention of the lungs.

Though a full 295 cu. in. cylinder lasts approximately one hour at sea level under normal breathing conditions, the length of functional time under water is considerably less depending on water pressure, which increases with depth. This, together with abnormally large respiratory demands, accounts for the short durations obtained from the cylinders. Despite the relatively short endurance of the oxygen supply as shown above, it is believed sufficient to permit escape.

Watch Box Is Night Adapted

Aerial navigators can time the taking of sights during night operations without destroying their dark adaption through use of a specially modified aircraft navigational watch box suggested by FLEET AIR ALAMEDA.

Two uni-cells and two 1.1 volt lamps are connected in such a manner that the uni-cells can be changed when burned out. Circuit is paralleled so that both or either of lamps will burn. Both lamps should be illuminated although one lamp provides sufficient light.

A red filter is placed under the glass window on case so that illumination will not destroy navigator's dark adaption.

TWO LAMPS LIGHT FACE OF CHRONOMETER

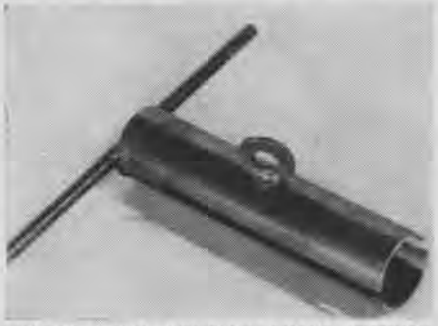
The light switch must be placed so it will not interfere with placing the box in the drawer of the navigator's table. Best location for the switch is under the box. Wiring lamps and cells must not touch the blocks that hold chronometer.

PHOTOGRAPHY

NAS Astoria's Filter-Removing Wrench

A simple clamp-type wrench for removing filters from the lens mount of gun cameras has been suggested by NAS ASTORIA. The wrench has been tested by the Photography Division of BuAer and found suitable for general Navy use.

The design of the wrench (*see cut*) is such that any photographic unit may con-



PHOTOGRAPHY DIVISION OKAYS WRENCH

struct it with materials at hand. Only a slight amount of shop work is necessary to construct and assemble the various parts.

A piece of metal tubing with a 1" inside diameter is slit for approximately three-fourths of its length and fitted with a thumb screw. A metal rod is welded across the unslit end of the tubing to form a handle. The inside of the open end of the tubing is burred so that it will engage the filter mount. When the tube is in place over the filter, the thumb screw is tightened. The filter then is removed by turning the wrench.

For additional information, see Photography Technical Bulletin 75 (NAVAER 10-1R-75), which has been distributed to all photographic units.

Aerial Camera Corrosion Corrected

Tendency for a white corrosion product to develop around the base of the shutter rod assembly in K-17, K-18, and F-56 aerial cameras has been the subject of a recent study to determine its cause and to provide a suitable remedy.

Corrosion is believed to have been caused by improper cleaning of the parts after electroplating. Remedy suggested: All corrosion products be removed by carefully wire brushing areas affected. Corroded parts then should be washed thoroughly with hot water. After parts have been dried, it is recommended they be greased (use AN-G-3 grease) to prevent further corrosion.

Type D-1 Flash Tube Unit Instructions

An operation and maintenance handbook (AN 10-1-137) covering the Type D-1 Photographic Flash Tube Unit has been forwarded to major photographic activities. This flash assembly is used in conjunction with the K-25 aerial camera for night photography. Additional copies of the handbook may be requested from Bureau of Aeronautics Publications Branch.

Fiber Bushing Improves Starter

NAS QUONSET POINT — Dissatisfied with the relatively short life of Kaufman Beach starters, a civilian mechanic at this activity, substituted a fiber bushing for the asbestos base plastic bushing. The change, submitted under the Navy Employees' Suggestion Program, makes many more startings of an engine possible between starter overhaul.

The substitution of fiber bushings for those of asbestos base plastic was adopted at this station after a successful trial. As an added measure the fiber bushing is firmly pressed in place. Dislodgement is made impossible by virtue of a countersunk effect in the hole in the starter body.

[DESIGNED BY HERBERT RYDBERG]

CASU 53's Desert Survival Kit

CASU-53—Members of the aviation equipment department of this unit have designed a desert kit, primarily as a

CASU 53 USES KIT IN DESERT OPERATIONS

replacement for pararafts of PK-1 kits when the latter are in for checks.

Material from which the kit is made includes two seat pads, two 24" zippers and one ¼" felt (size of seat pad). Contents of kit are:

1. Four cans of emergency drinking water; *2.* three cans of rations; *3.* one can of sunburn ointment; *4.* one first aid kit; *5.* one signaling mirror; *6.* one knife; *7.* one whistle; *8.* distress smoke hand signal (MK-1, MOD-0); *9.* one flashlight, one cell; *10.* one burning glass; *11.* one package of: *a.* adhesive tape, *b.* salt tablets, *c.* safety pins; *12.* one plastic drinking cup; *13.* one head net; *14.* one pyrotechnic kit; *15.* one map of area, and *16.* compass and matches.

Complete kit weighs 11 pounds. Members of the aviation equipment department consider the kit vital for survival and rescue on the desert.

▶ ***BuAer Comment*—This desert kit represents a well-planned idea. It is suggested that the kit include a Mk 2 signal paulin (Stock No. R83-P-92000) and a copy of TN 91-44, describing its use. Paulin also could be used for cover at night or rigged as a shade. Lines could be supplied by cutting shroud lines from parachute or obtained from aircraft parts, wires, etc.**

Oven Device Aids Marine Cooks

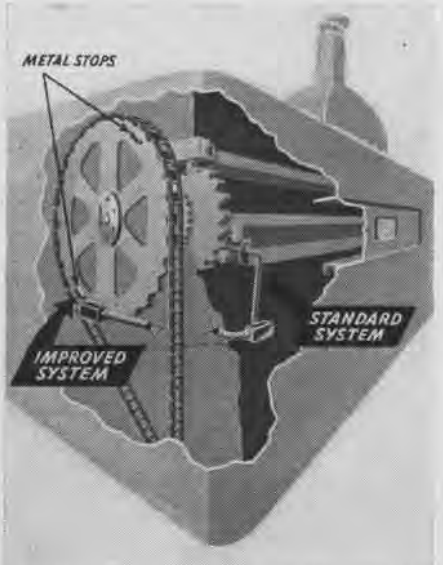
MCAS CHERRY POINT—A new automatic stopping system designed at this station saves time and repair work in operation of the Readco stabilized tray oven.

The standard automatic tray stopping equipment on the Readco oven operates by the action of the carrying wheels, located by each tray, striking a stopping arm switch which causes each tray to stop at the oven door long enough to allow unloading and reloading.

The fault of this system is that heat warping displaces the rollers from their exact positions often causing a tray either to stop past the oven door or to fail to stop at all. When it is necessary to reverse the movement to return a tray that has passed, time is lost and the automatic stopping arm is sometimes damaged or broken.

The trouble is eliminated by moving the automatic stopping switch to a position near the base of the main drive wheel and by fixing two small metal pieces on the side of the main drive wheel in such positions as to strike the stopping switch as the drive wheel revolves. A stopping arm is not used.

Each half revolution of the wheel causes one of the pieces to come into contact with the stopping switch, thereby stopping each tray at the oven door for the set length of time. The heavy



BAKING OVEN SWITCH IDEA STOPS TRAYS

composition of the main drive wheel is not susceptible to heat warping.

[DESIGNED BY SGT. FRANCIS E. BUXTON, USMC]

SEAPLANE BEACHING

A VARIATION of the seaplane beaching system now in use at most naval air stations is effectively used by HEDRON FAW-2. Developed when the regular system proved unsatisfactory for meeting the frequent beaching demands necessary to keep seaplanes shipshape for combat, the installation and equipment have proved successful in operations under all conditions.

In practice the airplane taxies to one of three buoys attached to the beaching pendant. The buoy bears a suitable eye splice that is passed over the plane's snubbing post. The tail line then is led out from the ramp by a boat and secured to the aircraft's tail fitting.

Plane Kept Centered Over Ramp

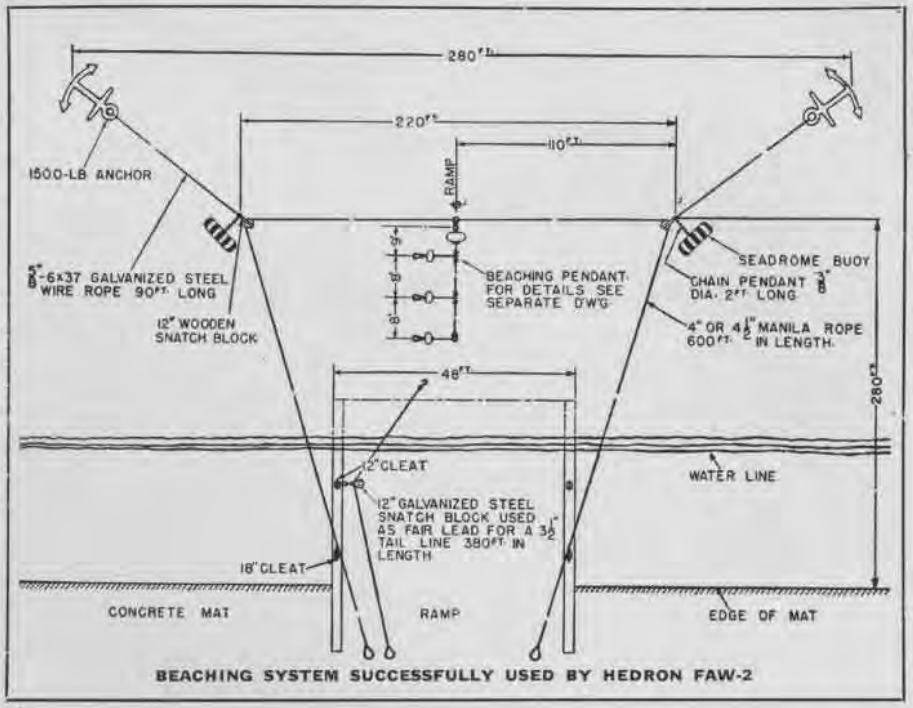
Beaching is effected by a shop mule mounting the tail line and the paying out, over cleats, of two bridle lines reeved through snatch blocks on seadrome buoys to the beaching pendant. Lateral movement of the bridle lines centers the beaching pendant and the airplane over the ramp regardless of wind and water effect.

In putting a seaplane over the side, the beaching procedure is reversed. A six-inch manila tail line, secured to a tractor, restrains the plane until beaching gear mounts are removed. The tail line then is disengaged. The airplane taxies out and casts off the pendant which in launching is secured to the snubbing post by a singling-up line. A shop mule or mules manning the bridle tauten these lines to centralize the beaching pendant off the ramp. Manning of the windward line of the bridle is necessary under on-shore cross wind conditions. Both lines are required under other wind conditions.

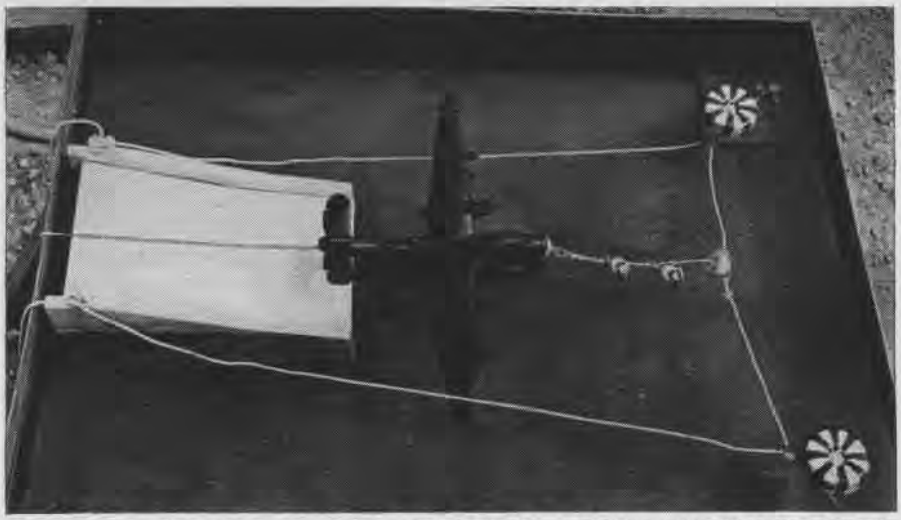
BuAer Recommends Consideration

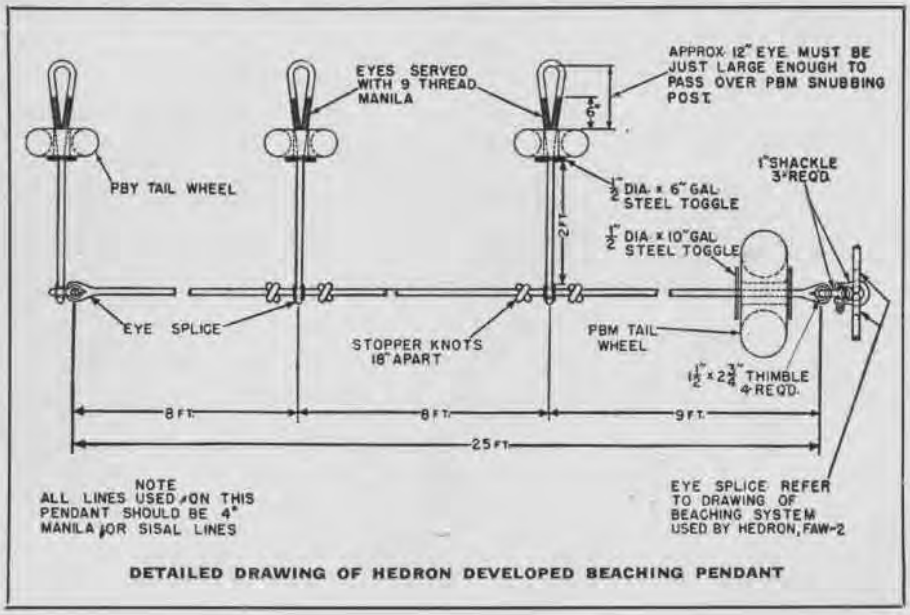
HEDRON FAW-2 recommends that pendant eye splices be water soaked until the desired rigidity is obtained. Shrinkage after splicing will eliminate any tendency of the eye to droop or cant.

Experienced seaplane personnel have tested the system and equipment under all conditions and have found it satisfactory. Ground Equipment Section of BUAER Maintenance Division suggests that naval air stations consider the installation for possible adoption since it is a variation of one now in general use.



BEACHING SYSTEM SUCCESSFULLY USED BY HEDRON FAW-2


MODEL SHOWS RIGGING OF BRIDLE SYSTEM USED FOR BEACHING OF A MARTIN MARINER



DETAILED DRAWING OF HEDRON DEVELOPED BEACHING PENDANT

Tool Speeds Defrosting Work

NAS San Diego — A combination scraper and air nozzle for defrosting the rivet compartment of electric refrigerators has resulted in a considerable saving of time at this station. The tool was designed by a civilian employee under the Navy Employees' Suggestion Program.

Under the new method the temperature change in rivets and refrigerators during defrosting is negligible. The necessity of bringing the temperature of refrigerator and rivets down to the working range, required with the general method of defrosting, is practically eliminated.

When in use the valve is connected to an air hose by means of ½" pipe nipple. The air valve is then opened slightly and the tool is used as an ordinary scraper. The air blast has the tendency to loosen ice ahead of the scraper.

[Designed by Harris W. Kimball]

Pilots Check On Rocket Firing

NAS Quonset Point — A synthetic training device has been developed for briefing pilots in steps to be taken in firing rockets. It enables them to check themselves out in the various things that have to be done before actual firing takes place.

The device can be adapted to check out in steps required in F6F, F4U, SB2C, TBF and TBM. Fleet Air Quonset has worked out lists of steps for those types of planes, whether wired in conventional manner, with training switch installed or wired to fire a single rocket on each station.

Steps outlined for the F6F wired in the conventional manner are:

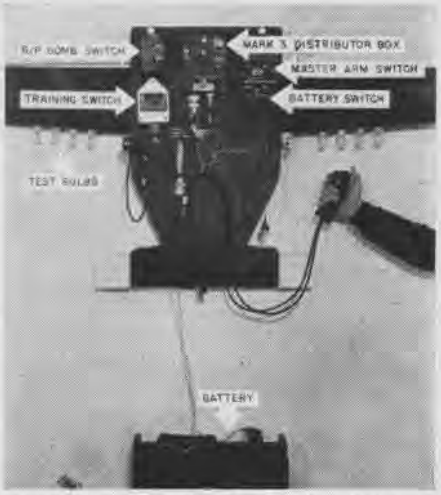
PRELIMINARY PREPARATIONS (to be made prior to demonstration): *1.* Plug training-switch plug into station distributor box. *2.* Plug bomb pickle into jack. *3.* Uncover bomb-r/p switch (switch on *bomb*). *4.* Cover training switch (switch *on*). *5.* Cover gun-r/p switch (switch *off*). *6.* Remove inboard test plug from each wing.

TO FIRE: *1.* Battery switch ON. *2.* Master arm switch ON. *3.* Station distributor switch ON. *4.* Bomb-R/P switch on R/P. Single-auto switch on SINGLE. *6.* Station selector on NO. 1 STATION. *7.* Safety plug in socket. *8.* Red light on distributor box should be lighted. *9.* Fire three times with bomb pickle, firing pairs.

▸ *BuAer Comment*—The device could be simplified to correspond to standard armament practice. While it is known that aircraft have been wired as shown, as well as in other ways, it is believed that aircraft should be rewired as soon as practicable in the following manner:

1. Eliminate R/P training switch and incorporate Armament Bulletin ‡26 and NavOrd OMI-V7-45.

2. Eliminate bomb-rocket and/or gun-rocket transfer switch and incorporate



MOCK-UP SHOWS ROCKET-FIRING CIRCUITS

3-switch stick control having separate firing switch for rockets.

Most aircraft in service at present are not modified in accordance with the above. However, various Fleet Commands are taking steps to make the changes, and any device constructed in the future for training should illustrate the standard system.

System Speeds Fly Ash Removal

NAS South Weymouth—A satisfactory fly ash disposal system for coal-fired boilers is now in operation at this station as the result of an idea submitted under the Navy Employees' Suggestion Program.

The original installation of the station's three 411 high pressure coal-fired water tube boilers included a Nuveyor system for disposal of ash pit residue. The Nuveyor operates on the steam hydraulic vacuum principle discharging from inlets in the floor near ash pits to an ash silo outside.

Vacuum is high and as far as the ash pit residue is concerned the system is efficient. The fly ash, however accumulated in the boiler and breeching hoppers and had to be removed by hand and carried away in wheel barrows. Fly ash in considerable amounts went up the stack and was deposited over areas adjacent to the power plant.

To reduce the amount of fly ash discharged through the stack and to simplify its removal from hoppers, additional piping was installed utilizing the high vacuum on the ash conveyor system. Fiber conduit, 4" in diameter, was installed in the preliminary experiments. Results were so satisfactory this fiber conduit was replaced with a permanent installation of 4" welded schedule 40 pipe with long sweep tube turns.

Ash trap and hopper on the induced draft fan are full width of the fan casing. Trap extends into casing just far enough to be cleared by fan blades and serves to intercept bulkier particles whirling around the casing causing them to drop into the trap hopper from which they are removed by vacuum.

To operate the fly ash system a floor plug is removed from ash conveyor and a tapered cast iron plug attached to end of the suction hose is inserted into the conveyor opening. Ash conveyor jet is first started, air valves in the line are cracked just enough to create a conveying air current and the hopper gates gradually opened. Adjustments of the standard screwed gate valves, used as air inlets, depend on their position in the line. Operators soon learn proper air valve openings for maximum ash movement. Sufficient vacuum is induced in the system to clear fan hoppers as well as boilers and uptake. The vacuum cleaner connection is one of several normally closed pipes running to the top of the boiler. A 2" suction hose may be connected to these to clean soot and fly ash from boilers and piping.

Fly ash is coarse, hard, and resembles carborundum under the microscope. A struck cubic foot weighs 100 pounds and cannot be ignited with a welding torch. Manual removal of fly ash as formerly practical was laborious and dusty. Removal operation now requires but a few minutes and is practically dustless.

Drawings and specifications are available on request from NAS South Weymouth.

[Designed by Patrick J. Barry]

▸ *BuAer Comment*—This system is only feasible for small installations, similar in character to that at South Weymouth.

SHADOWS OVERTAKE RISING SUN

As United States forces move in closer to the Japanese mainland, consolidating newly-won island outposts for advance bases of operation against the enemy, the shadow of coming events casts threatening patterns across the land of the Rising Sun and its sea empire. While Navy and Army Air Force planes reduce industry on the Jap mainland to smoking piles of rubble, far-ranging patrol planes continue their war against enemy shipping which serves as the lifeline of the empire. Many cargoes of critically needed raw materials have sailed toward the home islands, only to be sent smoking to the bottom by Navy patrol planes. This dramatic action photograph gives a glimpse of the present Japanese outlook. Here, a Navy Coronado *overhauled a Japanese vessel in Western Pacific action, May 9. The craft was loaded with bamboo, needed to rebuild cities.*

MOJAVE MARINES MAKE THEIR OWN FORGE

Forge Made From Practice Bomb

MCAS MOJAVE—Converting a 500 lb. practice bomb into a forge is the handiwork of an automotive machinist at this station.

The resourceful Marine cut the bomb into three sections, the center being cut away completely, the nose of the bomb serving as the hood and the fins and tail supplying a base for the forge.

The grate is made out of quarter-inch plate steel 10" in diameter with 10 one-sixteenth inch holes drilled through the center to act as air ducts. A 2" pipe nipple is brazed into the bottom of the grate, the side of the nipple tapped for a ½" pipe on the end of which is an air control valve to provide adjustment.

The air pressure is adjusted by means of a valve on the air line which controls the heat of the flame produced by a mixture of coke and wet powdered coal.

Tongs Save Labor Of Two Men

NAS MOFFETT FIELD—Through use of a pair of specially designed tongs developed by a sheetmetal worker at this station one mechanic can now install harness on tanks. Previously the operation required 40 minutes and three mechanics. One man now does the job in three minutes using tongs.

APPLYING THE TONGS

SPECIAL TONGS MAKE INSTALLATION EASY

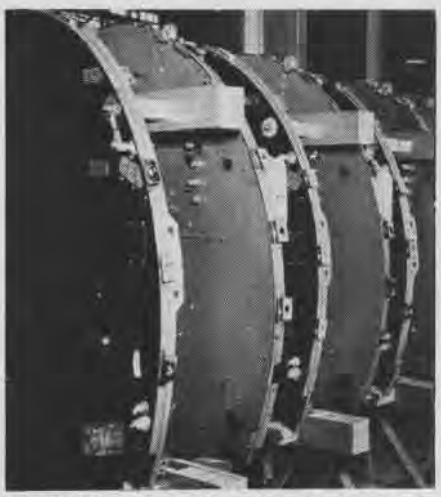
The device has jaws shaped to fit the tank strap fastenings and to receive the head of the securing bolt. A hole is provided in one jaw to permit insertion of the tool holding the nut. One mechanic, using this tool, is able to easily hold the strap in position with one hand while screwing on the nut with the other. While the tool was designed specifically for LTA tanks it may be adapted for tanks on heavier-than-air craft.

[DESGNED BY BENJAMIN LEWIS]

Fire Wall Storage Is Improved

NAS CORPUS CHRISTI—A new fire wall sub-assembly storage and delivery dolly has resulted in substantial savings in time, labor and floor space at this station. The idea for the dolly was submitted under the Navy Employees' Suggestion Program.

The rack occupies less floor space



ASSEMBLIES IN RACK EASY TO IDENTIFY

and each rack carries two fire walls in a position that permits ready identification, making possible efficient storeroom operation with a smaller number of attendants. The rack also eliminates damage to fire walls and makes identification easy.

Under the method formerly used fire wall sub-assemblies were stacked on a deck making identification difficult.

[DESIGNED BY CENA S. MORGAN]

Die Speeds Flash Tube Forming

NAS ALAMEDA—Labor and time required for the finishing of flash tubes are substantially reduced through use of a forming die developed by a civilian welder at this station. The die for forming armament barrels was developed under the Navy Employees' Suggestion Program.

In operation the flash tube is placed on a mandrel and then the die is placed over the tube. By applying pressure to the die, flash tube is formed to the desired shape. Prior to adoption of the die method it was general practice to place the flash tube over the mandrel and apply heat and hand hammer the tube to desired shape.

[DESIGNED BY GEORGE P. WRAY]

Succeeds List of 1 June 1945 — *3 July 1945*

LIST OF NUMBER AND DATE OF LATEST ISSUE OF AIRCRAFT SERVICE CHANGES AND BULLETINS

Airplane	Bulletin	Date	Change	Date
F6F	116	6–25–45	88	3–27–45
FM	48	6–15–45	58	6–16–45
F4U–F3A–FG	227	6–23–45	214	6–14–45
F7F	17	6–5–45	16	6–23–45
HNS	5	5–29–45	7	5–5–45
JM	36	4–14–45	45	5–21–45
JRB–SNB	34	6–26–45	27	3–20–45
J2F	19	5–14–45	0	0
JRC	7	6–25–45	5	7–19–44
PV	139	6–21–45	165	6–11–45
PBJ	57	6–18–45	69	4–16–45
PBM	129	6–20–45	163	6–13–45
PBY	113	6–16–45	188	6–21–45
PB2Y	69	6–15–45	153	1–3–45
PB4Y	157	6–18–45	160	6–16–45
R5C	47	6–22–45	123	6–16–45
R4D	42	5–24–45	38	6–16–45
R5D	60	6–22–45	112	6–19–45
RY	60	6–18–45	30	6–16–45
SB2C–SBF–SBW	204	6–27–45	144	6–21–45
SC	73	6–23–45	36	6–8–45
SNJ	35	6–19–45	0	0
TBF–TBM	194	6–19–45	236	6–7–45
TBY	7	5–30–45	0	0

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

Idea Increases Grinder's Use

WASHINGTON NAVY YARD—By the addition of simple brackets for mounting guide fingers the Kearney and Trecker *Milwaukee* face grinder has been made operative to the grinding of outside diameter of several types of milling cutters. The device, submitted under the Navy Employees' Suggestion Program, makes possible the grinding of outside diameters of staggered tooth and milling cutters on a cutter grinder not originally designed for that type of use.

The device can be used to advantage under conditions where cutters are transported from the manufacturing shop to the tool grinding shop for regrinding, eliminating possible work stoppage for tool dressing or maintenance of excessive tool inventories in the production shop.

[DESIGNED BY FRED C. TAYLOR]

Chart Gives Course and Miles

NATB CORPUS CHRISTI — Sturdy, facile, and sea-going, the mileage chart and flight course indicator recently installed at this activity has handy spokes that permit speedy manipulation. The device gives distance and bearing of 104 principal Navy, Army and municipal airports in the United States from the air station.

Data includes true course (direct) and statute miles (airways). The rotating disc, cut from ½" plywood, is framed with a 2" brace around outer edge to add strength and durability and to stabilize spokes. Hub of the disc was machined from salvaged portion of a landing gear and is provided with a grease cup to permit smooth rotation. The indicator was designed by air traffic control officers of NATB CORPUS CHRISTI.

PILOT FIGURES DISTANCE TO DESTINATION

SCREEN NEWS

Danger!--Here Comes McGillicuddy.

MN-2808c *Commandments for Health—Drinking Water.* Unclassified, 5 min.

Ole Mac does it again—wrong. He wastes his canteen of water on a long march and goes from bad to worse by drinking from an untested stream, ending up with a world's record of forced marches to the head. Out of the laughs emerge two serious warnings: *1.* use water sparingly and wisely and 2. avoid the possible pollution of water from streams.

5,000,000 a Day. Ever since stagecoach days, the legend that the mail must go through has been a cherished American tradition. The Navy, carrying on the idea with undiminished fervor, handles an average of five million pieces of mail each day, delivering at distances up to 15,000 miles. Nor

CVE PLANE HANDLERS RECEIVE MAIL AT SEA

rain nor storms at sea nor movements of the Fleet nor even battles stop the Navy mail. How this gigantic and complex operation is performed, and how the public can help the mail go through is the subject of:

MN-4373 *Here's Your Letter, Sailor*—Unclassified, 23 min.

SYNOPSIS: Navy personnel are shown receiving and reading letters. A father gets the word that "'Joanie took four steps today." A son hears from his mother that "things are going fine on the farm." A Casanova killer-diller learns that his showgirl friend is thrilled to have been chosen the "girl you want most to have painted on your bomber." All contribute to the upbuilding of morale, which accounts for the ranking of mail delivery on a level of importance with food, fuel and ammunition, from the Navy's viewpoint.

The need for proper addressing is shown by the fact that 107,000 letters have been returned to the sender. Chances for delivery of a letter addressed to J. J. Smith, for instance, are somewhat clouded by Navy statistics (of the 25,000 Smiths in the Navy, 2,500 are J. J. Smiths!).

BEST SEQUENCE: the life and travels of five sacks of mail from Pearl Harbor to a battlewagon somewhere in the Pacific, via the skygiant *Mars* to a Pacific base, then aboard a destroyer into combat, back to a repair base, then aboard a fuel ship and finally to destination—the mail goes through.

Air-Armed Land Strike. Un-secret but most potent Allied weapon is the integration of air power with ground forces. Chief ingredients in this formula for victory are two: *1.* preparing for the defeat of the enemy with air power by destroying his means to fight; 2. clinching his defeat by gaining air superiority, isolating his battlefield and using air force to support advances on the ground. Techniques of the strategy, as documented by the AAF, are illustrated in a one-hour motion picture which makes you glad you're not on the receiving end of the plan:

MA-5652 *Air Power and Armies*—Unclassified, 60 min.

SYNOPSIS: Birth of the strategy is shown at El Alamein where its first use started the drive that blew the Axis clear out of Africa. The fundamentals of the plan were applied in Sicily, Italy, France, Germany and are still being used in the Pacific.

Animated diagrams, interspersed with actual battle scenes, studio takes and shots from captured enemy films, show long-range bombers disintegrating industrial targets, and medium bombers cratering airbases into paralysis, and isolating the battlefield by smashing shipping and harbor facilities, railroads, bridges, truck convoys and supply dumps. After the enemy's mobility is snarled and slowed, the next targets are enemy ground positions and, as the infantry attack begins, air power works hand in hand with them. When the enemy withdraws, airborne ordnance turns its fury on the men and equipment jamming the roads, attempts to convert retreat into rout.

Other Films Shipped:

MN-3634 *Combat Information Center*—Confidential, 50 min.

MN-2477b *Eye Surgery—Removal of Intra-Ocular Foreign Bodies*—Unclassified, 20 min.

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

MC-4333 *Type G-1 Automatic Pilot* (Unclassified, 24 min.)

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

NAVAL

ABATU, NAS St. Louis
CASUs 2, 4, 23, 24, 31, 32, (F)42
CASU ComDet., Port Hueneme
ComAirPac
ComAirSubFwdArea
Hedrons 2, 4
NAB Seattle
NAC Navy #3149
NAMC Philadelphia
NAOTC Jacksonville
NAS Alameda
NAS Atlanta
NAS Brunswick
NAS Clinton
NAS Grosse Ile
NAS Kodiak
NAS Moffett
NAS New York
NAS Norfolk
NAS Patuxent
NAS Quonset
NAS San Diego
NAS Willow Grove
NAS Navy #115
NAS Navy #117
NAS Navy # 720
NATB Pensacola
NATB Corpus Christi
NATEC Lakehurst
Navy #3233
TAL Navy #116

MARINE

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

PIX QUIZ What do you know about AERIAL NAVIGATION?

LOCATING a carrier deck in the spaceless Pacific after being out a few hundred miles never is considered an *easy* task. But if the pilot is rusty on his aerial navigation, he's apt to be in a very unenviable spot. Try these questions, then turn to p. 48 for the answers.

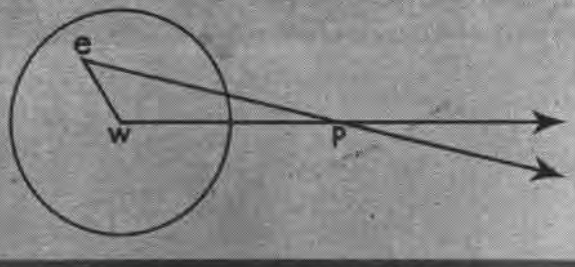
Write your answers here

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

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

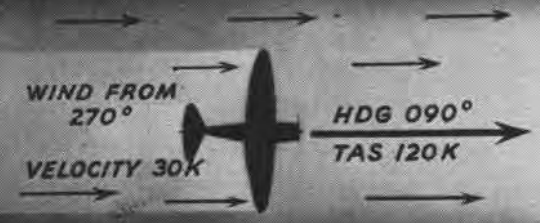
[QUESTIONS FROM SPECIAL DEVICES VISUAL QUIZZER FILM NO. 65, AERIAL NAVIGATION]

1 On this diagram, wp represents plane's:



1. Track
2. Heading
3. No-wind position
4. Radius of action

2 This plane's ground speed would be expressed as:



1. GS 90 k
2. GS 120 k
3. GS 150 k
4. GS 210 k

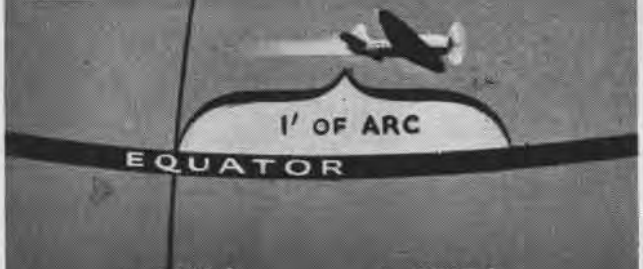
3 In nautical miles, this diameter is approximately:

1. 6,884 mi.
2. 9,727 mi.
3. 5,280 mi.
4. 3,141.6 mi.

4 Motion of sun in direction of arrow A is termed:

1. Mean
2. True
3. Diurnal
4. Apparent

5 This distance in nautical measurement is:



1. 5,280 ft.
2. 7,929 ft.
3. 9,727 ft.
4. 6,080.2 ft.

6 In this diagram the sun's image is projected on the:

1. Ecliptic
2. Great circle
3. Zero hour circle
4. Celestial equator

AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

Marines Develop Boresighting Device

A one-man, quick boresighting device for the CAL .50 BAM gun has been developed by MCAS EDENTON. It was developed to overcome the difficulty of boresighting guns in turrets and gun packages, which requires the services of two men—one to use the muzzle tool from the MK 1 boresight kit, the other to move the turret or gun package. Use of this quick boresight unit makes it possible for one man to do the job.

A standard backplate assembly and a boresight barrel reflector (STOCK NO. 1-R-1098), which formerly was included in the BAM-50, M-2, Tool and Accessory Set, are required. In addition, a buffer tube adapter must be fabricated. The backplate is modified by removal of the adjusting screw, discs and buffer plate and installation of the new adapter. The bolt and backplate of the gun to be boresighted are removed, the oil buffer and barrel are re-

BORESIGHTING DEVICE FITS IN BACKPLATE

turned to the forward position, the modified backplate is installed, and the barrel reflector is inserted therein. Then gun can be boresighted.

CASU 27 Flare Containers Are Modified

CASU 27 reports that a fire occurred recently while flares from the Aircraft Flare Container MARK 1 MOD 0 were being unloaded. The fire was caused *directly* by the firing lanyard of the flare becoming fouled and *indirectly* by the flares being on a setting other than "safe."

Construction of the flare container is such that after flares have been loaded into the containers, they are inaccessible for changing the fuze setting. This necessitates loading and unloading the flares while they are in the "armed" condition.

CASU 27 recommended that access holes in line with the loaded flares be cut through one of the bulkheads of the container (*see cut*). With such access openings, the fully-loaded container could be

SAFETY FACTOR DICTATED MODIFICATION

hung on the aircraft with the fuzes on "safe." After loading, the desired fuze settings could be made. Any unexpended flares also could be returned to "safe" prior to removing the container from the aircraft, and subsequently unloading the container.

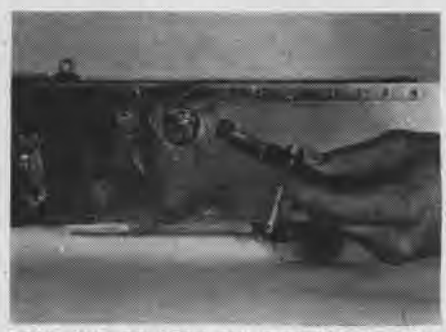
BUORD appreciates the recommendations made by CASU 27 and suggests that activities using the Aircraft Flare Container MARK 1, MOD 0 perform this modification locally, if desired.

Lock and Relatch Pin for Bomb Racks

Manual and electrical release of Bomb Racks MK 50 and MK 51 type may be readily ground-checked when loaded by inserting a special lock and relatch pin through holes properly located in the sides of the rack.

The 2½" x ⅝" pin is inserted flat side up, and acts as a safety pin in stopping downward movement of the release pawl before the hooks have opened. Rack is relatched by rotating pin with 2½" x ¼" handle attached to one end of pin.

When the lock and relatch pin is inserted in the loaded bomb rack, operation of the manual or electrical release controls



LOCK AND RELATCH PIN FITS MK 51 RACK

should cause the release pawl to unlatch and bear against lock pin. Then to relatch rack, rotate the lock and relatch pin until a definite click is heard.

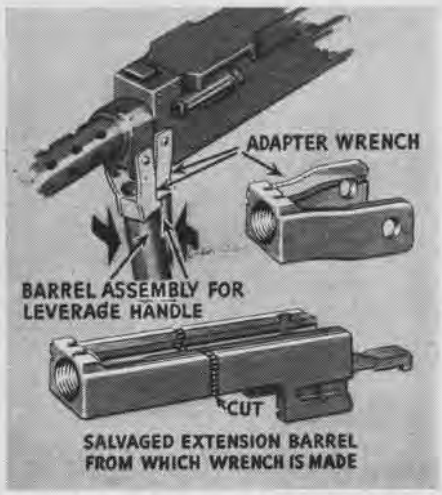
After racks have been checked and before the airplane takes off on a mission, make sure all bomb racks are relatched, then remove the lock and relatch pins. Pins *must be* removed otherwise racks will not release. A warning flag should be attached to each pin handle to be easily seen from below the rack and bomb.

These pins are being furnished with each MK 50 MOD 4 and 5 rack by the contractor and are available for distribution, under STOCK NO. 3-P-649-189, for activities desiring to use them on MK 51 Type racks. Change 1 to OP925 gives data on its use.

Machine Gun-Adapter Tool Saves Parts

This tool is specially designed to expedite removal of the trunnion adapter on a CAL .50 Browning machine gun. Removing the adapter has been a difficult job because of a seemingly freezing action of the adapter to the trunnion block. The adapter tool seems to have eliminated this, mainly because of its increased efficiency through application of sufficient leverage.

Quite a bit of time and labor is saved



TOOL SPEEDS TRUNNION ADAPTER REMOVAL

when this tool is used. Five adapters can be removed in 10 minutes without damage to adapter or barrel jacket and shim. The usual method of forcing and beating off adapter frequently damages these parts.

In its use, one adapter tool is bolted to the receiver with a ½" bolt, the other to the trunnion adapter in a similar manner. Particular attention should be taken so that the trunnion block lock is pulled back far enough to prevent possibility of adapter's being locked while pressure is being applied upon the adapter tool. For leverage handles, an old barrel assembly is screwed into each adapter tool.

The material used in making the tool consists of a part of a salvaged barrel extension. No new material is necessary and the tool can be made with about 1½ hours' labor. The tool, when completed, weighs about one pound.

Principal advantage of its use is that it results in a substantial saving of labor and parts which otherwise would be damaged.

LETTERS

SIRS:

Skyland Camp, located on scenic Lake Tahoe approximately 80 miles from Fallon, has been turned over to the station for the summer season by its owner, a San Francisco businessman.

Property consists of several square miles of pine forests. It is on a point extending

NAAS FALLON GETS "AUXILIARY" STATION

out into Lake Tahoe, with sandy beaches on either side. Buildings include a large mess hall and galley, several modern cottages and about 20 dormitory summer houses. There is a concrete tennis court and three concrete badminton courts, a soft ball field and plenty of space for hiking and horseback riding.

The camp will accommodate about 25 officers and 50 men at a time.

COMMANDING OFFICER
NAAS FALLON

SIRS:

At any cost, regardless, I'm requesting a copy of NAVAL AVIATION NEWS magazine. The May 1, 1945 issue.

I want it bad, because of the news on Patuxent Test. I'm stationed here at Patuxent. I'll pay any cost, regardless. I want it for my scrap book. Please.

PATUXENT RIVER — S1/C (AMM)

¶ All right, all right! Just remember NANews is a RESTRICTED publication.

SIRS:

Within the next three months the current CAG-6 will publish a 96-page book based upon three war cruises of CAG-6.

This book will include photos and stories of the major engagements in which squadrons of CAG-6 participated on the three cruises starting with the day Pearl Harbor was attacked. The greater part of it, however, will be devoted to the current cruise, its officers and men.

We thought officers and men formerly attached to CAG-6 on previous cruises would be interested in obtaining a copy of this book and that NANEWS through its *Letters* section could contact them.

The book will be mailed to any former member of CAG-6. Cost: $4. Money orders

BOOK IS BASED ON CAG-6 WAR CRUISES

will be accepted made payable to "CAG-6 BOOK."

I am enclosing a photo of the cover in the event that you may wish to publish it. This cover has already been approved for publication by the press censors at CINCPAC and is now releaseable. Orders should be mailed immediately to assure a copy.

VF-6, LIEUT. W. R. GERLER USNR
FPO SAN FRANCISCO EDITOR

SIRS:

In reference to the article which appeared on page 35 of the June 15 issue of NAVAL AVIATION NEWS titled: "Electronics Can Save Lives," the writer referred to the pilot in an SB2C-4E as using the radar for stormy weather navigation to and from targets and unfamiliar territory. In the SB2C-4E aircraft manual it shows there is no control of the radar in the pilot's cockpit. It is operated and interpreted by the aircrewman.

AIRCREWMAN

¶ Certain SB2C-4E aircraft have no pilot's scope; others do. In all installations the aircrewman operates the radar, but a pilot with a repeater scope in front of him can use it to advantage in storms or darkness, even though he does not actually control the set.

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5. *Aldebaran*

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

● GRAMPAW'S QUIZ (p. 10)

1. No. See FSB 32-44 for reason why.
2. Always in direction of normal rotation, to clear the oil from the intake pipes. Ref: *Pilot's Handbook.*
3. False. Such flights are not to exceed 15,000 ft. nor stay above 10,000 ft. for more than 2 hrs. Ref: TO 54-44 and FSB 24-44.
4. True. If opened, smoke and flames may be drawn into the cockpit. Ref: FSB 5-45.
5. Either continue flight by altering course so that the minimum weather for CFR will be met, or land at the nearest airport permitting contact flight. Ref: CAR 60.470.

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Tussie NO's the answers

Moral: Graduate! IDENTIFY when approaching friendly ships

AERIAL BOMBS BRACKET JAP DESTROYER ESCORT OFF KYUSHU

DIRECT HITS BLAST JAP DE

NAVY DIVEBOMBERS caught a Jap destroyer escort off the coast of Kyushu on a recent strike and plastered it with bombs, scoring many near-misses which shook the vessel but did not halt its flight. Finally a pilot planted his bomb where it would do the most good and the DE went skyward in a tremendous blast of smoke, flame and flying ammunition from the exploding magazine. U.S. carrier task forces roaming waters off Japan have made the western Pacific unhealthy for the Japanese Navy

JAP SHIP CIRCLES TO AVOID DIVEBOMBERS WHICH PRESS HOME ATTACKS

U.S. BOMB HITS MAGAZINE, BLASTING THE ENEMY SHIP OUT OF THE WATER