

NAVAL AVIATION

# NEWS



Hydrographic Maps  
Plane Recognition  
NavAer 00-75R-3

AUGUST, 1949



# SPEEDY JETS ON PARADE



*Wingtip tanks give more range to these swift fighters, one British and one Navy. Check your recognition with the answers on the last page.*





# AIR AGE MAPS

FOR 120 YEARS the Navy's Hydrographic Office has sent survey parties clambering over beaches in all parts of the world. Chart making was laborious and took many man-hours. Costs limited production.

The advent of aerial photography caused a revolution in this ancient art, and a new science came into being—photogrammetry. Converting photos into maps is now an important part of the Hydrographic Office's geographic activities all over the world.

There was a time when the charts of the past lying on the plotting table of a ship's navigator showed beach areas only—reefs, navigation lights, channels and prominent landmarks. The air age has changed that.

With ship fire control and amphibious landings in mind, charts now extend inland from 25 to 50 miles. They show every contour and detail of the land beyond the beach.

They have become chart-maps.

Chart-maps as such became popular during World War II when ships' skippers wanted to know what lay beyond the beach.

Now the Hydrographic Office is engaged in a large scale job of revising existing charts and making new chart-maps. Instead of doing the whole job, survey parties now have only to establish definite points geographically in an area. From there on the Navy's photographic squadrons take over and fill in detail with accurate cameras carried in their aircraft.

In many instances charts are based on information that was gathered all over the globe many years ago. A modernization program is keeping Hydro and squadrons busy.

Photogrammetry is a mysterious science to the uninitiated. It is based on a simple optical phenomenon—depth perception. The human eyes are the human equivalent of the cameras and instruments used.



ANCIENT HYDROGRAPHERS USED IMAGINATION

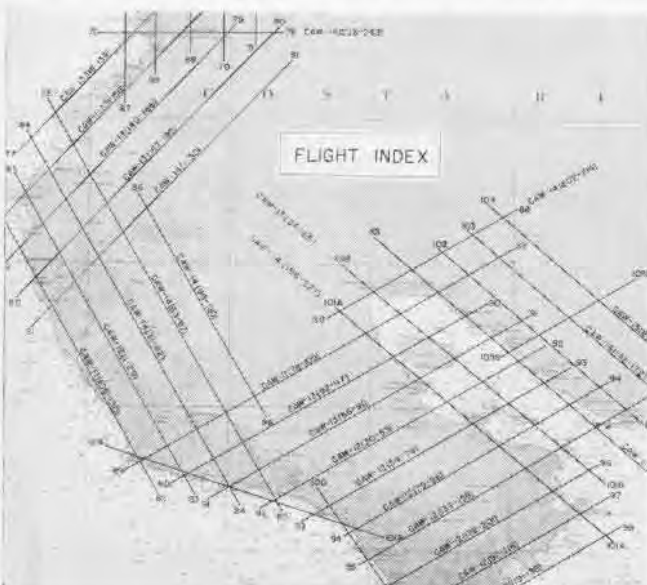




VP-61 LIBERATORS, NOW MAPPING FAR NORTH, FLY BY MT. HAYES



ALL OF THESE PUBLICATIONS AND MANY MORE ARE MADE AT HYDRO



MAPPING PHOTO PLANES MUST FOLLOW FLIGHT LINES AS SHOWN HERE

## Sea Skippers and Hot Pilots Alike Can't Do Without Hydro Chart-Maps

**I**F A MOTORIST loses his map all he has to do is ask his way or follow the signposts. The mariner or aviator in such a situation would be strictly in the soup.

Road maps deal in generalities and often give an inaccurate picture. Chart-maps of the sea and air, however, must be highly detailed to avoid disastrous consequences. They are the lifeblood of the two mediums. For the mariner there are channels to be followed, reefs to avoid and buoys to sight; for the aviator, mountains to fly over.

It was inevitable that when man began to fly he would carry cameras with him. With the development of aerial photography a new science came into being—photogrammetry. As an exact method of translating photographs into maps it utilizes many strange machines all based on optical phenomena. Some are so complicated that it is even difficult to explain what they do, let alone understand how they do it.

All of these super stereopticons are in use at the Navy's Hydrographic Office at Suitland, Maryland, where the challenge of the atomic age is met in producing chart-maps by the millions. It is the job of Hydro to bridge the gap between the aerial photographs and the finished product. Despite a postwar letdown it remains a busy place, modernizing chart-maps from information gleaned far and wide during the war. New projects are underway, too, utilizing the services of the Navy's two photographic squadrons and other units, such as utility squadrons and carrier photo planes.

It was in the early 1800's that it was realized that shoals, currents, locations of wrecks and navigation aids should be systematically plotted. Oldtime skippers avoided trouble by seamen's eye and even climbed the rigging to navigate in dangerous waters. When seagoing ships became more complicated, navigation methods changed and nowadays no self-respecting skipper is without a chart library.

When the United States emerged as a nation that would take an increasing part in world trade the U.S. Navy was given the responsibility of charting the trade routes. As a result the Hydrographic Office was established in December of 1830. Its first chief was Lt. L. M. Goldsborough.

### AERIAL MAPPING SAVES MAN-HOURS

When naval aviation came of age Hydro was pulled into the air map field as a natural consequence. The seaplane routes it mapped constituted only a small part of its work. Millions of charts are turned out each year for the fleet, naval aviation and the Merchant Marine in addition to such books and publications as Navigation Manuals, Notice to Mariners, Sailing Directions, Hydrographic Bulletins, Daily Memoranda, Memoranda for Aviation, Naval Air Pilots, Oceanographic Monographs, technical manuals, Approach and Landing Charts, Airways Route Manuals, Notice to Aviators, Radio Weather Aids, weather summaries and many others. The middle picture on page two shows some of them.

Until photos taken from the air were perfected it was necessary to send shore parties to all parts of the globe to survey beach areas which were to be charted. It was a long and laborious process. Many areas remained unsurveyed for years. With the coming of war it was found that charts made by other countries, and ours too, were inaccurate. New photo maps were made hastily as U.S. forces advanced.

Before any chart-map can be made it is necessary to establish definite landmarks in their true position on the face of the earth. This is done by shooting the sun and stars with highly accurate equipment which pinpoints a location. With one point determined many others in visual distance of the first one can be definitely located in relation to the first.

Prior to any aerial mapping a ground party must furnish some of these control points. These control points are the key to all chart-map making. The men in the picture at the top of page one are erecting a "survey signal" to mark a spot. It isn't always necessary to send a ground party because many of the projects now underway at Hydro are revisions of old charts and the control points are reliable.

After determining what area is to be mapped, the photogrammetric section of Hydro gets busy compiling information for the photographic squadron. If the job is in the Pacific area or the west coast of the Americas or Alaska, VP-61 gets the job. If it is Greenland, Labrador, the Atlantic or the east coast of the Americas, VP-62 gets the nod.

Until a project reaches the stage where a photo squadron takes over, a year may elapse. Existing charts must be gone over to see what new information must be obtained. In most cases a survey party must be sent to establish control points as described above.

Of prime importance is the laying out of flight lines. No plane can go blindly into an area and expect to take photos that are of any use. The chart reproduced at the bottom of page two shows how this is done. The *Liberators* currently in use in VP-61 and VP-62 must follow these lines as closely as possible. If that isn't done, the job will have to be reflight—and that has happened more than once. Flight lines must lie parallel and must allow the photos to overlap 35%. Photos along a line must overlap 60%.

### THREE DIMENSIONAL PHOTOS USED

This business of overlap is important. To make a map it is necessary to have stereoscopic vision. That means there must be a third dimension or depth perception. The only way human eyes can perceive in depth is by looking at one object from two different places, that is, with two eyes converging to a point. That's the only way you can gauge distance. Stereoscopy in aerial photography makes use of this phenomenon by taking photographs of the same area in two places as the plane moves along, like two eyes a mile apart. In the overlap area of any two photos of a strip three dimensional pictures will result. The old stereoscope in the living room was constructed on this principle, so the idea isn't new. Today's counterpart is the popular camera which takes two pictures at once, and its viewer with color transparencies mounted on a disc. On this bit of optical legerdemain rests the science of photogrammetry.

Head of the photogrammetry section at the Hydrographic Office is P. G. McCurdy. His organization is broken down into three parts; photo triangulation, stereo topography and edit and archives. These will be explained later. He has under him 60 civilians who, for the most part, hold "P" ratings in civil service. They are photogrammetrists and cartographers. A few who are new at the game hold a sort of apprentice "SP" rating. They must be familiar with one or more of the following fields—geophysics, geodetic control and evaluation, interpretation, computation and field practices. They are a lot of high sounding terms but they boil down to understanding what makes a map.

In flying flight lines a man is stationed in the nose of the plane at a special viewer or bombsight. He follows the flight lines on the index chart by sighting landmarks. His information is fed to the pilot by visual signals or interphone, or directly into the automatic pilot from the bombsight. Back in the bomb bay the photo mates are busy running their cameras. They must figure altitude, speed of the plane and drift and come up with a time interval for taking the pictures. That frequency is controlled by an intervalometer calibrated in seconds. Correction for drift, or crab, is made by turning the camera to the right or left the number of degrees indicated by the drift on the drift meter.



SURVEY PARTIES, TRAVELING FAR AND WIDE, STUDY AND CHART CONTOURS



PHOTOALIDADE GETS DIRECTION AND ELEVATION FROM OBLIQUE PHOTOS



SLOTTED TEMPLATES ARE USED TO LOCATE LANDMARKS ACCURATELY





TRIMETROGON CAMERAS WERE USED FOR MAPPING ANTARCTIC, 1946-7

## Slipshod Work Can't Be Tolerated In Map Making; Accuracy is the Byword

Accuracy is the byword. But no matter how careful the plane crew is there are errors that creep in. The camera may tilt and tip as the plane drops a wing or pitches. It is the job of the gadgets back at Hydro to detect those errors and make corrections, their specialty.

After the job is done in the air, the 50 and 100-foot rolls of film are processed and prints made. Then they are shipped to Hydro. When photogrammetry receives them they are checked to see that they are indexed as to where and when the runs were made.

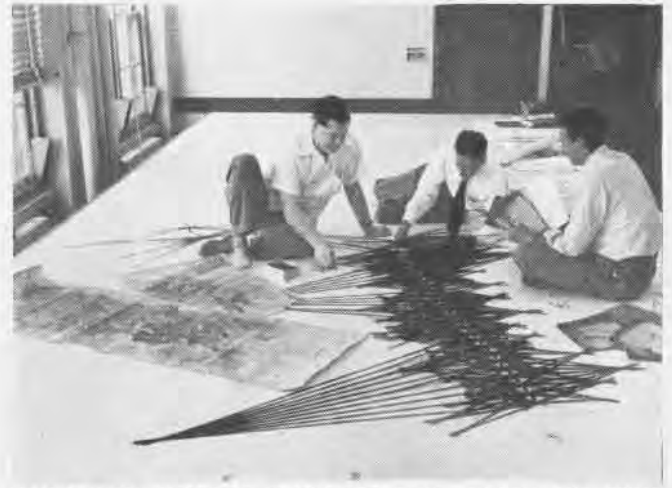
These photos are first laid out roughly to see that the area was covered properly. Such a photo map is called a mosaic. If there are any "holidays" the squadron re-flies.

Then the prints are triangulated. That isn't so simple. All the known landmarks that were located by the ground survey party are identified and marked. To establish their relationships to each other templates are used. One type of template is made by cutting slots in cardboard to fit over points marked by pins set out at surveyed bearings and distances from each other. This is illustrated in the photo on the bottom of page three. It is called the slotted template method. Another method makes use of metal slots radiating from one surveyed point. Those fellows in their stocking feet in the picture in the upper right hand corner of page four are laying metal templates.

With that done the photogrammetrists are ready to start



SALTZMAN PLOTS; McCURDY (HEAD), DILL, HOLL AND KOWALCZYK LOOK



LAYING METAL TEMPLATES IS FUN FOR DAVIS, BUENZLI AND CROSS

making their chart-map. Whatever they are, mountain peaks, points of land or chimneys, they are now in exact relationship to one another, on whatever scale is set for the chart.

You may ask, "Why not just use the photos and trace from them?" The answer is—inaccuracy. The plane may have tipped or tilted when the picture was taken; lower or higher terrain (further away or closer to the camera) may have changed the scale; the print paper may have stretched or shrunk; or a dozen other errors may have crept in. By using the photos for detail and the templates for accurate positioning we have the makings of a precise and scientific product.

The next job is tracing shorelines and plotting major geographic features. The Saltzman projector is used for this. Then the real magic comes into play.

The moment you wander inland from a coastline there is a rise in the terrain. There are irregularities in elevation and physical features. There is no longer the simple task of tracing a shoreline. *Contour* enters the picture. A topographical chart-map shows contour by lines that follow certain elevations. One contour line will be, for example, 10 feet above sea level. On the chart-map it will wind around everywhere it is 10 feet above sea level as will other lines at their respective elevations. Plotting these from photos is a real art. Some methods will be mentioned here.

Immediately the question arises, "But how can you tell elevation from flat photographs?" That's where our stereoscopic vision comes into use. There are several machines of varying complexity which make this possible.

First of all there is the KEK—which stands only for the first letters of the designers' last names. This machine is illustrated in the upper right corner of page five. With it the operator can trace contour lines by setting whatever elevation he wants to trace then simply keeping two dots fused in the viewer. Wherever they coincide he draws a line. Why it does this or how must remain the knowledge of optical scientists.

Much more complicated, and costing a young fortune, is the Bausch and Lomb Multiplex. Some idea of its partial appearance can be gained from the picture at the upper left of page five. Little projectors are lined on a rack and each projects a picture in complementary colors (red and blue-green) on the plotting table. Small diapositives (glass transparencies) have been made from all photos of a strip so that this can be done. They are set to overlap until three-dimensional vision can be had through colored spectacles. Each projector can make many corrections. As in the KEK, contour lines can be traced but instead of only two overlapping photos a whole strip can be worked on at once. Only two projectors show on page five instead of a dozen.



BAUSCH AND LOMB MULTIPLEX PROJECTOR PLOTS ELEVATED LAND

### GERMAN PLOTTING MACHINE COST \$75,000

By far the most impressive piece of machinery, however, is the Carl Zeiss Stereoplanigraph. For photogrammetry it does what the Disposall, electric dishwasher, electric refrigerator and electric range do for the kitchen. It cost a mere \$75,000 new, but happens to be one of 13 liberated in Germany at the end of the conflict there. Before the war there was only one in the U.S., owned by the Fairchild Aerial Survey Co. in Los Angeles, a commercial mapping firm. The Stereoplanigraph can do everything the other machines can do and adds a few fine touches. For instance, if a strip of photos runs way past where any ground party established control points it is capable of extending the accurate work into that area. It is a ponderous machine of heavy machined steel, watch-fine gear boxes and elevating parts. Diapositives are used with it as in the Multiplex except that they are the same size as the original photograph. One operator traces out the contour lines which are transmitted to an adjacent table where another operator checks on what a pantagraph pencil tracer puts on paper. Don't get that "pantagraph" mixed up with "pantograph" which is the trestle on top of an electric locomotive which contacts the overhead catenary wire.

Other aids in use at Hydro are too numerous to mention. The photoalidade pictured in the middle of page three does indoors with an oblique photograph what an outdoor alidade would do with the scenery au naturel.

One project of the photogrammetry section departs a little from the high degree of accuracy normally maintained. It concerns what mapping was done from planes of the Antarctic expedition of 1946-47. Ordinarily the area covered by a single camera pointing down is very narrow. Because of rugged flying conditions the expedition used trimetrogon cameras instead. The trimetrogon not only takes pictures vertically but obliquely on each side of the plane as well.

### TRIMETROGON CAMERA MAPPED ANTARCTICA

The oblique photos are useless as such for mapping. A vertical photo is required. Another magical piece of equipment steps in here and changes an oblique to a vertical. It is a printer made by Zeiss also. It tilts and contorts more than a yogi and does the trick. Liberated also, it cost \$50,000.

Charting the Antarctic wastes has been going on for two years under J. E. Buenzli. Hanging on the wall where he and his cohorts labor is a sign saying "Areas such as Antarctica, devoid of control, where long stretches of snow-bound terrain exist, present problems that serve as a challenge to the photogrammetrist." He displays a photo of windblown snow. "I've been looking at this sort of thing for two years," he says sorrowfully, "and by some miracle we have completed



LEAST EXPENSIVE MACHINE FOR PLOTTING CONTOURS IS THE KEK

six or seven hundred miles of coastline so far."

Some personnel of the photogrammetry section have traveled far and wide. It is now a practice to send one or two men on every survey ship that goes out. As representatives of the H.O. they determine the control points.

Glenn Krause and R. C. Holl went to the Antarctic from Nov. 1947 to April of 1948 on the Antarctic Development Project. The survey party covered half the shoreline of the southern continent. They landed in 11 places, spending two to five days at each place. A J2F amphibian and an HO3S helicopter were used for transportation and reconnaissance.

R. C. Stirling and A. C. Medin went north in the summertime and to Mexico in the winter.

The Hydrographic Office, with wartime peak personnel of 1,800, turned out 45,000,000 charts annually and kept up production on books and publications, all printed at Suitland. Each chart-map required different lithographic plates.

Whatever chart-map is used in the air or on the sea today is the product of a fine team—Hydro and naval aviation.



RAISED FLAG AT MT. SURIBACHI WAS FOLLOWED BY SURVEY SIGNAL



# GRAMP AW PETTIBONE

## Friday the Thirteenth

### Case #1

SNJ pilot landed on left side of runway at night and commenced a turn-off to right while taxiing slightly too fast. After a 15 degree turn the slipstream from the plane just ahead hit vertical tail surfaces of his plane and spun it around. Left brake was applied but the SNJ continued around 200 degrees at which point it came to a stop without any damage . . . so far.

However, at this moment a second SNJ was in the straightaway for a landing on the starboard side of the same runway. The runway duty officer flashed a red light at this plane. When the pilot did not take a wave-off he fired a red Very flare as the SNJ went by him at an altitude of about 50 feet. A signalman about 600 feet further up the runway fired two more red flares, but the pilot was "concentrating on a good approach" and didn't realize that the flares were intended for him.

He landed about 150 yards short of the SNJ that had ground-looped. The instructor in the first SNJ shoved the throttle forward as he saw the other plane coming towards them, but it was too late to avoid a collision. Impact speed was about 35 knots and both planes suffered major damage. Fortunately no one was hurt.

### Case #2

Pilot of an F4U-4 landed slightly fast and attempted a turn off at the center taxiway, which he mistook for the second taxiway. He was too fast to make this turn safely and groundlooped 90 degrees to the left dragging his starboard wing.

### Case #3

The pilot of an SNJ landed following a night cross country training flight. During his roll out and subsequent taxiing he concentrated his attention to the right. He saw one plane turn off on the taxiway and assumed that this was the plane which landed immediately ahead of him. Actually the plane immediately ahead had landed on the left side and was not seen by the pilot of the overtaking aircraft until the moment of the collision. Again the result was major damage to both planes.

### Case #4

The pilot of a TBM was taxiing out



of a tight spot under the direction of two taxi signalmen. When directed to make a turn to port the pilot hesitated but was given the all clear signal by the taxi director on the starboard side. He then turned and as he did so his starboard elevator went into the moving prop of a parked TBM.

### Case #5

The pilot of an F6F-5N was taxiing towards the warm-up ramp prior to take off. As he approached within about 300 yards of the ramp he saw three TBM's move out of the spot and take-off, and noticed that an SNB was warming up alongside the TBM's. However, he did not see the SNB move.

At this time the pilot of the F6F was taxiing on the inboard side of the runway and he started angling to the right in preparation for swinging around into the wind for warm-up. This slight turn headed him directly for the SNB. He did not zig-zag for the last 200 yards and simply assumed that the SNB had followed the TBM's out for take-off. The F6F crashed into the SNB with the impact swinging planes together nose to nose. The SNB requires a major overhaul and the F6F suffered major damage.

### Grampaw Pettibone says:

All these accidents occurred within the space of about 18 hours on Friday the 13th of May 1949. I'm not superstitious but this does seem to be an unusually large number of bonehead accidents for one day.

Any time you're in the straightaway for a landing and see a red flare, for gosh sakes take it around again. Maybe the flare is for the plane behind you, but it's better

to be safe than sorry.

Every one of these accidents could have been prevented by the use of common sense on the part of either the pilots, the taxi directors, or the control tower personnel.

Except in an emergency I see no use in permitting more than one plane on the landing runway at a time AT NIGHT. You may save a minute or two by a close interval landing but experience has proved over and over again that close interval landings at night will result in accidents of the type listed in Cases 1 and 3.

## Target Fascination

An Ensign piloting an AD-3 took off on a routine dive bombing flight in company with five other planes. After four individual practice dives the planes joined up. At an altitude of 10,500 feet the flight commenced a dive bombing attack from a high speed break up to the left.

The flight had been briefed to begin dive recoveries at 3000 feet and the first five planes made normal recoveries. The Ensign was flying the last plane in the formation. He appeared to have been slightly off the target, and late in his dive he was observed to make a correction. He delayed starting his pull-out until he reached approximately 1500 feet.

The AD-3 almost made it.

It was in a flat attitude, but mushing when it hit the trees beyond the target. There was a cloud of dirt and debris followed by flames as the plane ripped through the brush for about 5000 feet.

The pilot was instantly killed.

### Grampaw Pettibone says:

This type of accident has killed a good many pilots in past years, and it will probably result in fatalities in the future. Don't let it happen to you.

In older model dive bombers the rear seat man was usually instructed to count off the 1000-foot intervals during the dive. Now that the pilot is alone in the plane it is more important than ever that he pay particular attention to avoiding target fixation.

I understand that as a result of this accident the Bureau of Aeronautics and the Douglas Aircraft Company have conducted additional tests to determine the accuracy of the pressure altimeter in dives particularly with the dive brakes open. As soon as the results of these tests have been checked a Technical Note will be issued giving the exact amounts of altimeter lag that may be expected under varying conditions. In the meantime keep your errors on the high side.




## Untimely Turn

The flight consisted of five SNJ's piloted by students in basic training. They were on their third gunnery hop and had completed four high side runs while on a southbound heading. At this time the flight joined up in column and turned back towards the beach. The flight leader had just signalled for a right echelon, when the instructor in the tow plane told him that his starting position for the next run was too close. The flight leader immediately made a rather sharp turn to the right.

In the ensuing melee the plane in number four position overshot the number three plane passing below and ahead. Just as this was occurring the pilot in the number three plane pushed over to avoid over-running the number two plane. As he did so the propeller of his plane cut off the entire empennage of the number four plane which by this time was directly below and slightly ahead.

The pilot of the tailless SNJ attempted to regain control of his aircraft but found no pressure on the stick. In a diving attitude and with the nose of the SNJ starting to tuck under, he unfastened his safety belt and was thrown clear.

After a brief parachute ride he hit the water and freed himself from the chute. He floated in his life jacket until rescued some forty minutes later by the search and rescue helicopter.

 *Grampaw Pettibone says:*

All the hot fighter pilots that I've talked to about this accident tell me that the flight leader should not get the blame. They argue he should be free to turn in any direction at any time and that if the wingmen had maintained the proper interval and step-down the accident wouldn't have occurred.

I'm not convinced that this is entirely true. In the first place these SNJ's were piloted by relatively inexperienced students—not by seasoned fighter pilots. Secondly, the right turn was apparently made while the formation was still in the process of getting squared away in right echelon. Some of the pilots had just added throttle to get into position. This created a situation where each plane had tendency to over-run the plane ahead, and in my opinion set the stage for the mid-air collision which followed.

## False Economy

Recently a P2V-2 encountered severe back-firing during a let-down with the mixture control in the normal (lean) position. This resulted in an engine fire and extensive damage to the engine induction system.


Similar cases of back-firing during let-downs and landing approaches have been reported in several other type planes. The possibility of damage to

the engine induction system from back-fires far outweighs the minor savings in fuel consumption realized from use of the normal or auto-lean mixture control position during let-downs and landing approaches.

Technical Note No. 13-49 advises the use of RICH mixture control position during let-downs and landing approaches particularly at rates of descent or in climatic conditions which tend to overcool the engine.

The following types of aircraft have been reported susceptible to back-fires during let-downs in the normal or auto-lean mixture control position.

P2V	F7F	R5C	AD
PB4Y	F8F	R5D	AM
PBM	F4U	JRM	

 *Grampaw Pettibone says:*

Let's pass "THE WORD" on this in a hurry. It's certainly penny wise and pound foolish to risk damaging these engines and planes by using lean mixture during fast let-downs. It's doubly dangerous to get in the traffic pattern for a landing with the mixture control in lean, because you never know when the tower may direct you to take a wave-off. If this occurs you'll want plenty of power in a hurry, and that means you'll want your mixture control in "RICH".

## Weather Code Problems

How good are you at reading the teletype symbol weather reports? Try yourself out on these two . . . and check your answers on page 40. Watch that second one—it's tricky.

1. ORF W5@D21/2VR-H 177/7574←14/  
004 PRESRR VSBY VRBL 2 to 4

2. PHL 52 0808E 17@D10 10/E120@ 9@

## \$655,770 Mistake

*Problem #1:*

A skilled mechanic makes \$12.00 a day, works five days a week, eight hours a day, and 50 weeks per year. How long will it take him to make \$655,770?


*Answer:*

218 years, 29 weeks, 2 days, 4 hours.

*Problem #2:*

If the same mechanic is seated in the cockpit of a P2V during towing operations and no one has bothered to put the safety down locks on the landing gear, how long will it take him to spend \$655,770 if he starts to raise the flaps and hits the landing gear lever instead.

*Answer:* About two seconds.

 *Grampaw Pettibone says:*

Don't think that it didn't happen, because it did. There were two chief petty officers involved in this accident—the plane captain who failed to put on the safety down locks, and the second mech on the

crew who pulled up the wrong lever.

Sure, there was something else that contributed to the accident. The landing gear control lever down lock solenoid grounding cup had backed out of its retaining support about  $\frac{3}{8}$  of an inch. This little part is especially designed to prevent inadvertent retraction of the landing gear when the plane is on the ground. Had it been functioning properly the first two mistakes could have been made and the Navy would still have that particular P2V.

I see in the forwarding endorsement to the Administrative Report that appropriate disciplinary action has been taken. H'mm. Two hundred and eighteen years divided by two? Guess they'll take those leg irons off sometime in the year 2058.

## Attention IFR Pilots

Several recent cases have been reported where pilots on instrument flight plans have flown at the altitudes which they requested in their clearance sheets rather than the altitudes actually assigned by ATC. Remember ATC cannot always assign you the altitude that you request, because of conflicting traffic. Control tower operators can help remedy this situation by requiring pilots to repeat back their ATC clearances and by paying particular attention to see to it that the pilots understand the assigned altitude.


The Navy has also received word from the Civil Aeronautics Administration of certain changes in the voice procedure in connection with holding reports. Formerly the controllers included in all clearances the words "report leaving ——— feet." To avoid radio congestion this will be discontinued. The report of leaving a previously assigned altitude is mandatory and should be made automatically.

If such a report is not received in the expected length of time the controllers will ask for it, but you should remember that it is your responsibility to initiate the report even though you no longer hear the old request for it.

The new voice procedures are discussed more fully on page 101 of the Flight Information Manual (February 1949 issue).

## Real Cooperation

An SNJ became lost during a snow-storm between Whidbey Island and the Naval Air Station, Seattle. After hearing an aircraft which appeared to be in distress, citizens of Port Townsend proceeded to the local golf course and illuminated a fairway with the headlights of a number of automobiles. With this help the pilot was able to land safely.

 *Grampaw Pettibone says:*

How friendly can people be! I hope this pilot remembers to send the Port Townsend Chamber of Commerce a "thank-you" letter.

# JOHNSON SUPPORTS NAVY



'FIGHTINGEST CARRIER', ESSEX, DURING HER HEYDAY AS WAR HEROINE



TODAY THE ESSEX IS IN BREMERTON NAVY YARD BEING DE-MOTHBALLED

**A** STRONG Navy is absolutely vital to the security of the United States . . .

Because the naval air arm is a critical weapon in modern sea warfare, we could no more deny the fleet its carrier aircraft than we could deny ships their radar . . .

Author of these two statements is Secretary of Defense Louis Johnson, in an address to the graduating class at National War College, Washington, D. C. Aimed at critics of unification of the armed services, Mr. Johnson came out flatly for continuation of carrier aircraft and for the Marine Corps and its air arm.

Coincident with his speech, Mr. Johnson revealed he had the approval of President Truman on a project to modernize the famous battle carriers, the *Essex* and *Wasb*, both now in the mothball fleet. To do this, which will include stronger decks and operating mechanism to handle heavier carrier planes like the AJ-1, approximately \$70,000,000 will be spent. The *Wasb* is now in Brooklyn Navy Yard and the *Essex* at Bremerton. Both will have stronger flight decks and elevators, plus improved arresting gear and catapults.

The CV *Oriskany* which was partly constructed during the war also will be completed under the modernization program, with the same advanced design that is being built into the other two carriers.

Mr. Johnson's speech follows in full:

When the United States declared—first in the Truman Doctrine, then in the Marshall Plan, thereafter in the Atlantic Pact—that it would not, and indeed could not, abide the conquest of Western Europe, this government for the first time joined its economic, political, and military power in a barricade against aggression by treachery or by force.

Thus in company with free nations we have labored diligently to immunize them

against the economic paralysis that invites political conquest. And by identifying the security interests of the United States with the integrity of free peoples, we have forewarned any aggressor that he cannot trespass upon Western Europe without also trampling upon our toes.

## Communism Feeds on Poverty

With the produce of our farms and the substance of our cities, we have resisted the communist virus that feeds on economic despair, the conspiracy that prowls in political chaos. We have challenged the strategy of intimidation.

*In linking our security interests to those of the Atlantic community, we have lessened the likelihood of resort to armed defense against aggression. For where an aggressor is forewarned that his lawlessness must reckon with the judgment of the American people, he will not lightly challenge the combined resources of our free world.*

*On the other hand, this diminished possibility of armed aggression does not nullify—or even reduce—the need for powerful military forces in the United States. Rather it multiplies the long-term importance of ready combat forces in the Army, the Navy, the Air Force. And it magnifies the need for superior personnel, modern equipment, and continuing weapon research.*

For only if American armed strength stands constantly on the political horizon, can we hope to derive maximum value from our armed forces as a long-term deterrent to war. And only so long as constancy in American military policy reassures free peoples that our moral persuasions in behalf of peace are backed by military muscle, can we expect to hold the free world's front against armed intimidation.

This long-term requirement for American armed strength is not an admission that war is inevitable. Nor is it a denial of United Nations as a forum for negotiation. Instead, long-range military readiness is dictated by Soviet Russia's intransigent opposition to peaceful relationships with the free world.

We have no recourse but to provide for our self-preservation just so long as the attitudes of Soviet Russia are animated by concepts which assert:

—that sovereign and independent governments cannot live peaceably as neighbors;

—that peoples who do not concede the supremacy of the collectivist state are enemies of human progress;

—that collaboration cannot serve the interests of both the communist and non-communist worlds.

## Military Strength Is Insurance

*While our free world lies within the shadow of a power addicted to these incorrigible myths—a power hostile to its world environment, conspiratorial in its international conduct, despotic in its internal affairs—we have no choice but to maintain for an indeterminate part of our lifetimes military strength as a deterrent to armed aggression..*

*As a result the military has become a major factor in the fiscal life of our nation. It must continue in each successive Federal budget to compete for tax revenues with measures dedicated to the health, progress, and social welfare of the American people. Planes, ships, and tanks cannot be purchased on pay-as-you-go plan without substantial impact on our economy. This is part of the price we pay for self-preservation—part of the cost we must bear for the freedom we prize.*

Because of the weighty tax burden we represent to the American people, we in the armed forces must exert ourselves to provide honest value for the dollars we spend. The alternative to efficient and unified management of our armed forces is sacrifice by the American people of a share of their standard of living for waste, duplication, and competition among the services themselves.

This, I submit, they cannot afford in the years that lie ahead.

Prior to enactment of the National Security Act of 1947, each of the armed services was responsible for but a functional share of the nation's defense. That there was inadequate correlation and some duplication



was to be expected.

Today, responsibility for the nation's armed security has been joined with authority in the National Military Establishment.

And it is here, under the roof of this Establishment, that the military chiefs of all three services—as members of the Joint Chiefs of Staff—have been invested with indivisible responsibility for the nation's security—a responsibility greatly in excess of that devolving upon them as ranking officers of their respective forces.

### Joint Chiefs Role Is Leader

Thus in determining the forces that can be supported with funds available to the National Military Establishment, the Joint Chiefs incur responsibility not only for the combat competence of their separate services. But more important—individually and jointly—they become accountable for the sum total armed defense of the United States. For it is upon the considered military judgment of the Joint Chiefs of Staff that the Secretary of Defense must rely for guidance.

It can no longer be claimed that each service is entitled to exclusive judgment and autonomous control of the funds allocated for its role. Since the Joint Chiefs are mutually responsible for the Nation's whole defense, it is their duty to consider the major decisions of any service.

To those who contend that each service must be the sole arbiter of its own needs, I would reply that this nation can no longer tolerate the autonomous conduct of any single service. The unaudited conduct of its affairs by any single service is an open invitation to spendthrift defense. And the waste of our resources in spendthrift defense is an invitation to disaster.

### Honest Opinions May Differ

*The problem of resolving conflicts within the Armed Forces is not a simple task of knocking heads together. Its complexities extend into the intricate and technical operations of highly specialized endeavors. With the exception of a few unregenerate warriors of the old-school tie, the separate services have searched diligently to resolve their differences. These differences exist not so much in the acrimonious criticism of one service by another as they do in honest disagreement among earnest men formidably equipped with expert opinion. These men have been done a sad disservice by critics who ascribe to them service loyalties in excess of their duty to country.*

Despite the severely contested service disagreements that have handicapped the work of our Establishment, there exists today a readiness and defense potential superior to that of any previous period in our nation's peacetime history. Joint planners of the three services have fashioned strategic plans for the nation's defense far advanced beyond those of any previous peacetime year. I can truthfully report to you, Mr. President, and to the American people that their defenses have never been in as competent and promising a condition. Let these accomplishments be a monument to my predecessor—Jim Forrestal.

It has become our task to speed this unification of the armed forces into a military establishment that will not impair their separate capabilities—but one that will enlarge



DECKS OF WASP, ESSEX, ORISKANY STRENGTHENED TO HANDLE HEAVY CARRIER PLANES LIKE AJ-1

their constant opportunities for development. By freeing them from the burden of dispersal and duplication in effort, the National Military Establishment can help the several services better to concentrate on their primary roles, missions, and functions.

These tasks were defined first at Key West and thereafter at Newport where the Joint Chiefs of Staff met to delineate their service responsibilities in the united defense of the nation.

Those agreements exist today as a charter for the guidance of each service in its long-range planning. It is a charter sufficiently stable in its definition of roles, missions, and functions to curb uncertainty in our armed forces. At the same time it is a charter so flexible that it can be modified to acknowledge significant changes in world conditions or revolutionary developments in science and research.

### Depends on Leaders' Advice

As Secretary of Defense, I subscribe to that military charter of service roles and missions. I gladly defer to the professional military knowledge of our Joint Chiefs of Staff, and I shall not knowingly repudiate their judgment unless convinced their views are in conflict with other considerations beyond their province. For to exercise civilian control of our military institutions is not to abrogate military command but to guide it conscientiously in accord with the economic and political policies of this nation.

There exists in our present strategic concept of national defense an essential and honorable role for each of the Armed Forces. For security is a cooperative venture to be gained with cooperative effort by the Army, the Navy, and Air Force. It is not a competitive enterprise where one service can profit at the expense of another. It admits of neither preeminence nor first emphasis. To provide effectively for security, the National Military Establishment must adjudge impartially the representations of our armed forces in weighing the priorities of their needs.

### Secretary Cancels Big Carrier

*The cancellation of construction plans for a naval supercarrier has been twisted into a charge of persecution against the Navy. Some partisans of that service have exaggerated this action and have represented it as part of a conspiracy either to sink the Navy's air arm or to reduce the Navy to a second-class role.*

*In their campaign of terror against further unification of the armed forces, they have roused false issues without the substance of truth.*

*With the extension of American commitments overseas—both in Europe and in the Pacific—a strong Navy is absolutely vital to the security of the United States. Because the naval air arm is a critical weapon in modern sea warfare, we could no more deny the fleet its carrier aircraft than we could deny ships their radar.*

*That we may put an end to this charge of conspiracy, let me assure you that I am convinced of our continuing need for carrier aircraft.*

*At the same time I reaffirm the birthright of the United States Marine Corps and its air arm. The Marine Corps' role in the future is guaranteed not by sympathy for its historical tradition but by the proven necessity for equipping fleets with assault forces for the seizure or defense of naval bases essential to the conduct of naval campaigns.*

### Navy Protects Supply Lines

*It will be the duty of the Navy by prompt and sustained combat operations at sea to control vital sea areas, to deny ocean highways to an enemy, to guarantee the uninterrupted flow of vital strategic and war materials to ourselves and our allies, to transport overseas Army and Air Forces.*

Air warfare has passed through a period of adolescence to find maturity in a new concept of strategic air bombardment. Thus the threat of instant retaliation through an air offensive has become one of the greatest deterrents to war today.

Strategic air bombing has been chartered by the Joint Chiefs of Staff as the primary mission of the Air Force.

### Air Force Defends U.S.

At the same time, the Air Force is held responsible for air defense of the United States. And it is enjoined to provide tactical air support for the Army and for the Navy when required in sea actions.

Tactical air support has become especially crucial to land operations of the Army. For today no army can operate effectively in the field until tactical air operations are coupled with the maneuver of infantry and tanks on the ground.

Even in the combined employment of air,



naval, and ground arms—modern war presents a problem of priority and sequence in mounting an offensive against the aggressor's forces and the sources of his strength. In the event of war, the United States has no choice but to join the conflict with an attack of increasing violence, growing intensity, and widening global dimensions.

Since Hiroshima, to a great extent, the fortunes of air power have been linked to the fortunes of the atom bomb. For while the atom bomb may eventually admit of alternative delivery through pilotless rockets or submarines, the strategic bomber today derives its enormous security value from its prospective ability to deliver the bomb on distant land-mass targets.

*The long-term American advantage in atomic warfare lies not in exclusive possession of the atom bomb but in the quantity of its bomb production and in the speed and accuracy with which we might deliver these bombs on enemy objectives.*

*For within a few short years we may witness the end of this era of atomic secrecy—an era whose end will be signalled by the explosion of some other nation's bomb. From that day on, our advantage in strategic bombing will rest not in monopoly possession of the atom bomb but in our superior stockpile, our production capacity, and in the effectiveness and quantity of aircraft required to deliver those bombs.*

While the atom bomb has greatly multiplied the destructive force of air power, its effect upon war strategy and the length of war has not yet been completely explored. Certainly the atom bomb is not the absolute weapon. But neither is it just another piece of ordnance which has modified only slightly the strategy of war. The great significance of the atom bomb lies in the destructive and denial power that may be carried in a single aircraft.

#### Planes Only Aid Soldiers

Though air power has given promise of a speedier end to conflict, it has not supplanted the soldier who must finally defeat the enemy land forces. For ultimately war between nations is reduced to one man defending his land while another attempts to invade it.

Unlike the Air Force with its bombers on the ready line, unlike the Navy with its ships at sea, the Army must devote a greater share of its strength to nourish a later war potential rather than a large-scale force for instant combat. Nevertheless, it is essential to the security of this nation, vital to the conduct of war that the Army have a mobile striking force, combat trained and available for urgent dispatch anywhere in the world.

Because the United States could not—without grave distress to the civilized world—abandon Western Europe to enemy occupation with the later promise of liberation, our long-term strategy—in the event of war—must rest in the containment and thereafter in the defeat of an aggressor's land-army strength. To live in preparation for so onerous a wartime task, the Army must plan for the rapid mobilization of its mechanized manpower. And it must compensate for our numerical disadvantage both by the destructiveness of its firepower and the mobility of its maneuver.



NAVY SECRETARY MATTHEWS ABOARD CVB F.D.R.

#### Land Forces Are Necessary

The postwar military strength of Eurasia has been centered in a land-mass land-oriented power. To prevent this power from spilling over the borders of free nations, we have made it our policy to help those free peoples maintain their integrity and independence. By pledging our resources and their aid, we have identified our security with the security of a free and stable world. We have declared that freedom when threatened anywhere is freedom threatened everywhere. We shall no longer wait behind the seas for the fires of aggression to engulf us. For it is the intent of the American people that we prevent war by constructing such formidable barriers to the likelihood to success in war that no aggressor will chance the adventure.

*Thus the primary test of our American military institutions lies in its ability to exist indefinitely in peacetime as a forcible deterrent to war without militarizing the nation or bankrupting it in the ordeal. This we have sought to do by enlisting the resources of science. For in the increased destructiveness of new weapons lies our most promising prospect of achieving adequate defense without dislocation of our economy and waste of personnel in the non-productive pursuits of war.*

#### Services Plan For Defense

You gentlemen who graduate this day from the National War College have studied our security problems not from the abridged viewpoint of the service whose uniform you wear but from the wider range of our national interests. For this institution has fused into a unified concept of national security the most advanced thought of the Army, the Navy, the Air Force and the civilian agencies of our Federal government.

More than weapons national defense is essentially a business of people. In the last analysis the security of this nation rests upon the wisdom, the judgment, the integrity, and the professional ability of people like you. If you will lift up your eyes to contemplate the monumental tasks which you as officers of the National Military Establishment share in this nation's defense, and that of our allies, I am confident the American people can vest their good faith in you.

## BuAer Exhibit Joins Tour

### Larger Aviation Display to Midwest

Residents of the Middle West are getting a chance to see a traveling exhibit including naval aviation when the Navy's "land-going fleet" of trailers and vans visits their cities.

Composed of seven semi-trailers and vans, plus other vehicles, the mobile exhibit gives inland areas a chance to see and learn something about the fleet and its aviation component. BUAEER has two vans full of exhibits and a flatbed truck with a cut-away F4U Phantom jet so visitors can see how complex the inside of an aircraft is.

Included in the BUAEER exhibit are a model CVB with miniature planes on



ADMS. McCARTY, PRIDE VIEW BUAEER'S EXHIBIT

the deck, parachutes, a turret trainer, an aviation medicine display, antisubmarine warfare, atomic defense and a Marine island assault panorama. On three previous trips in 22 states, the Navy mobile exhibit has attracted half a million visitors. In charge of the exhibit is Cdr. J. J. Morgan with Lt. R. L. Peoples as operations officer.

Cities on the itinerary during August, September and October in chronological order are Davenport, Iowa; Peoria and Springfield, Ill.; Burlington, Cedar Rapids, Waterloo, Des Moines, Ft. Dodge, Sioux City, Ia.; Omaha, Nebr.; St. Joseph, Mo.; Kansas City, Kan.; Independence, Columbia, St. Louis, Mo.; Evansville, Ind.; and Frankfort, Ky.



Fred B. Clover, PK1 of VA-195 at Alameda, makes first parachute "jump" from a stationary AD-1 through a simulated prop wash into a bail-out trainer, a version of the tight-rope walker's net.



VA-54 HELLDIVER MAKES A LAST HOP OFF CV-45

## Helldiver Dives Its Last Last Fleet Squadron Gives Up SB2C's

Another of the Navy's famed wartime fighting aircraft has been "let out to pasture" and retired from the fleet—the SB2C *Helldiver*.

Successor to the battle-tryed Douglas *Dauntless* SBD, the bigger and heavier *Beast* entered the service in late 1943. Some 7,000 of the *Helldivers* were built in the U.S. and Canada. The dash-one SB2C, SBF or SBW *Helldivers* had three-bladed props and the third to fifth series four-bladed props. One XSB2C-2 was built, a twin-float seaplane. AD-1's and some AM-1's are replacements.

Claimant of the honor of having been the last fleet squadron to use SB2C's was VA-54, which flew its 15 *Helldivers* off the CV *Valley Forge* during their May operational readiness inspection.

Despite glowering weather, the squadron put on low level attacks on smoke lights, bombing of slicks and rearming drill. A badly pitching deck was at least partially responsible for two accidents in the *Helldiver's* swan song appearance.

SB2C's are still being flown by Reserve squadrons and a few are around for special jobs like drone flying, catapult testing and other research projects. The Navy recently took delivery on its 500th AD-1 *Skyraider* and one squadron of AM-1 *Maulers* is operational. The *Helldivers* soon will be out of the Reserve program, also.

VP-40—Ten pilots of this squadron, using two PBM's, made 52 practice GCA runs in less than four hours with only three wave-offs. Six different controllers with GCA Unit #30 controlled the runs.

### GCA BOX SCORE

May GCA Approaches.....	9,388
Actual GCA Landings.....	291
Grand Total Approaches.....	221,510
Total GCA Landings.....	10,212

## BOMBS, STORMS, TINY RAMPS

USS PINE ISLAND—Unexploded bombs, tiny Jap-built seaplane ramps and typhoons helped make life interesting for FASRON-122, which recently returned from a tour of duty operating the ramp at Twan Tao Point, Tsingtao, China.

The ramp was built by the Japanese, a small paved area on a narrow neck of land with steep sloping ramps approaching from either side. The Japanese planes must have been considerably lighter and of shallower draft than a PBM because two Cletracs were an absolute minimum for hauling in a PBM, and one of the ramps was out of the question for use because of the shallow water in the approach area. The other was usable only at high tide.

The seaplane ramp was owned by the Chinese Navy and Chinese Air Force also had a bomb dump occupying the adjoining parcel of land. The bomb dump was a heterogeneous mixture of Japanese, American and whatever else type of bombs the thrifty Chinese could

scrounge, piled unevenly into irregular pits and oozing exudate out of cracks and into the ground.

In the middle of November the inevitable happened. It is believed that some unfriendly member of the opposite party agitated the explosives and the ramp suddenly went out of commission for three months. The 30-hour checks being performed on two airplanes never were completed.

With the ramp out of commission, it was essential that at least one plane remain at the buoy continuously. When a trough of weather backed by a mighty Siberian high would suddenly sneak into Tsingtao area the harbor would be whipped up to a state where the plane watch had to subsist on cold cuts and letter writing for a few days.

The Australians and British think the Americans are touched in the head to keep a watch on board moored aircraft at all times and after several prolonged plane watches the squadron boys agreed with them.

## NAVY CARRIERS SHOW WARES

KEY CIVILIANS on both coasts are getting a better look at how the Navy operates and fights, as "tour parties" are taken aboard carriers for a day's demonstration of flight operations.

On the West Coast, 48 members of the American Ordnance Association went aboard the USS *Bairoko* from Long Beach and were given a full day's look at hunter-killer operations against "enemy" submarines.

Split into 12 units with officer guides, all of the group received first hand information on what was going on. The public address system carried a running commentary, as well. Eighteen planes of VC-21 were catapulted and the visitors watched the CIC team take over, vector and relay information to the planes seeking the "attacking" submarine.

Exercise torpedoes actually were fired by the sub and a display of evasive

action by the ship heightened realism of the action. A demonstration by *Boxer* aircraft of strafing and aircraft rocket firing at a towed spar was followed by antiaircraft firing against a drone target.

On the Atlantic Coast, the CVB *Midway* took a group of SecNav guests out for a four-day cruise to demonstrate carrier operations and later took the Armed Forces Staff College to sea for demonstrations.

On the SecNav cruise, the *Midway* took 18F's Marine *Corsairs*, F6F night fighters, a pair of P2V's and a Piasecki helicopter along to provide the air show, which gave the Congressmen a good look at how the Navy operates. The *Franklin D. Roosevelt* also took out the staff college for a three-day demonstration cruise. Later demonstrations were made for the Armed Forces Food Institute and the Armed Forces Industrial College.

AVUA, CHARLESTON, W. VA.—Agreement has been reached with the Kentucky Air National Guard at Louisville for unit pilots to use their Link trainers. An instrument instruction program is now being set up by a Volunteer who was a former Link operator.

VR-2, Alameda—Since closure of NAF HONOLULU, crews have been living at a nearby Marine base. This move makes VR-2 thoroughly "merged"—paid by the Navy, hauls for the Army, trains Coast Guard navigators and lives with the Marines.



WELL, SAILOR?





VR-2 SEAPLANES CARRIED 141 MEN AND 50 TONS OF GEAR TO KODIAK



CDR. DAVISON PLANS MAPPING WITH HIS HEAD MEN ON PHOTO SURVEY

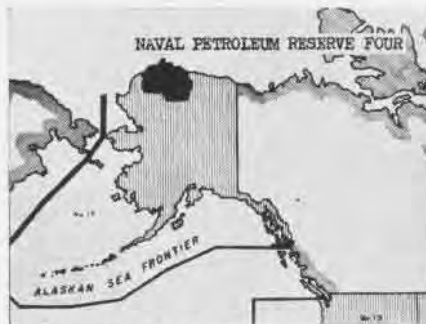
# NAVY MAPS ALASKA OIL

**P**ATROL Squadron 61, veteran photographic reconnaissance unit of the Pacific Fleet's Air Force is off on another jaunt to the top of the world, mapping Alaska oil reserves in the Point Barrow area.

Two detachments of naval airmen and photographers, totaling 37 officers and 175 men left San Diego by air for Nome and Umiat, Alaska in early May to resume aerial surveying of 35,000 square miles of Arctic Alaska. Six PB4Y-1's are based at Marks Air Force Base at Nome while four Beechcrafts each are at Umiat.

This year's survey is using a new-type aerial mapping camera, the CA-8 made by Fairchild Camera Corp. Named the Cartographic, it is receiving its first full-scale tryout. Several used last year proved they could take extremes in temperature and produce photographs which were accurate enough to satisfy the mapmakers of Hydrographic Office.

The 1949 operation, entirely above the Arctic Circle, is the second summer phase of a two to three year aerial mapping project of Navy Petroleum Reserve Four. The aerial surveyors are collaborating closely with the U. S. Geological Survey and the Bureau of Yards and Docks. Many of the aerial photographers, photo interpreters and pilots of VP-61 are World War II veter-



NAVY PHOTO PLANES MAPPING ALASKAN OIL

ans who helped make pre-invasion photo maps of Pacific islands and beaches.

During the 1948 survey, the squadron's eight planes recorded 28,000 miles of wilderness on vertical photographs from 10,000 feet altitude. In addition, 1,200 miles of the Colville river's unprospected valley bottoms and enclosing ridges were recorded on large K-18 oblique photos. This included sheer cliffs and high peaks of the Brooks range which stretched unbroken across Alaska north of the Yukon.

Last year's survey covered both northern Alaska and the heavily-timbered "panhandle" where data were sought on the quantity of pulp timber available and on potential sites of waterpower development.

The 1949 operation under Cdr. Wil-

liam H. Davison calls for use of six *Liberators* and four Beechcrafts adapted for photography. A main detachment of 30 officers and 150 men is at Nome. This group will carry the brunt of aerial surveying, using cartographic cameras from 10,000 feet and trimetrogon cameras from 20,000 feet. The verticals, to a scale of 1:20,000 will be used by the USGS for topographic maps while the trimetrogon obliques will aid petroleum geologists.

A sub-detachment of 8 officers and 20 men, with the Beechcrafts, is based at Umiat under LCdr. H. E. Speakman, Jr. This group will do low altitude oblique photos of surface geology of Colville river basin and unexplored portions of central Brooks range. In addition, the eastern portions of the reserve will be surveyed from 10,000 feet by the SNB-2P's. The maneuverable little planes will hedgehop over ridges and through narrow valleys at 300 feet shooting both color and black-and-white photos with K18's.

To get the men of VP-61 to the Arctic required a record-making airlift by Fleet Logistic Support Wings *Caroline Mars* and R5D's. VR-2 and VR-5 moved 100 tons and 141 men from the West Coast into the far north in a week's time. The *Caroline Mars* lifted 48 men and 20 tons of supplies across the Gulf of Alaska in a Seattle-Kodiak hop.

The U.S. Geological Survey has assigned W. T. Reagan, topographic engineer, to Nome base to assist in technical details of the precise survey work.

The Navy's 1949 photographic operation in Alaska will add a great amount of scientific knowledge to the Federal government's Alaskan development program. Furthermore, in addition to contributing to the mapping and geological exploration of the far north by the Department of Interior, the operation will provide valuable training for fleet photographic reconnaissance men.



VETERAN LIBERATOR PILOTS AND AERIAL PHOTOGRAPHERS WHO ARE MAPPING ALASKA THIS YEAR



## Calling All Lightning Pilots

### Navy Seeks Data on Striking Aircraft

Been hit by lightning while up in your flying machine lately?

If you have and you lived to tell about it, BUAER is interested in finding out more about what the electrical bolts did to you and your plane. So that better protective measures against lightning can be built into planes, the bureau needs more details on exactly what happened.

To get these needed facts, it distributed 12-page questionnaires to selected air stations and weather centrals at Miami, Norfolk, Guam, Quonset Point, Anacostia, Pensacola and Corpus Christi. Pilots who have a story to tell about their brush with lightning can find ample room to do it on these forms, which should be sent to BUAER electronics division for action.

## Basic Students Set Record

### Pile Up More Hours Than All of 1948

NAS PENSACOLA—Pilots of the Basic Training Command got in more flight time for the first five months of 1949 than they did in the whole of calendar year 1948.

On June 3 they passed the 246,246-hour mark set in 1948. During this year the Command had a sharp decline in the number of accidents, despite the heavier flight schedule. Last year, 309 accidents occurred, compared to 182 for the first five months of this year.

# Blood Flows In Panama

VP-3, PANAMA—First aid lectures conducted by the squadron paid off in dramatic manner during a recent training flight.

Lt. Tate, Ens. Van Landingham and Ens. Rivers took off in their P2V-2 on a bombing and gunnery flight. Over the target, Lt. Tate installed his Mk 8 gun-sight and proceeded to make his run. While maneuvering his plane on the target he struck his head against the sight.

Blood came pouring out. Ens. Van Landingham called for first aid Kits were broken out everywhere. In the meantime, the copilot and navigator theorized on the proper treatment. The copilot was sure he saw Lt. Tate's brain sticking out and thought sulfa appropriate and a tourniquet, if possible. The neck, for a tourniquet, was the only possible place and that, of course, was out of the question.

The combined efforts of both young

"medicos" finally resulted in a mass of iodine, merthiolate, boric acid ointment, aspirin, all compressed tightly against Lt. Tate's cerebrum by a combination of adhesive tape, cotton and some line.

One of the three managed to fly the plane back to base and alerted the sick bay to have a jeep to stand by to rush the bleeding pilot to the hospital. After landing, with as much dignity as he could muster, Lt. Tate, supported by his two "medicos" limply staggered to the jeep, in no small way resembling an Arab without a cloak, his bandage a perfect size nine turban.

Examination at the sick bay revealed the wound to be a slight scratch, leaving the two aspirants for a medical degree somewhat depressed but still not wanting in enthusiasm. They showed up at the first aid lecture appropriately scheduled the next day by their victim, Lt. Tate.

## Cabot To Be in ASW Work

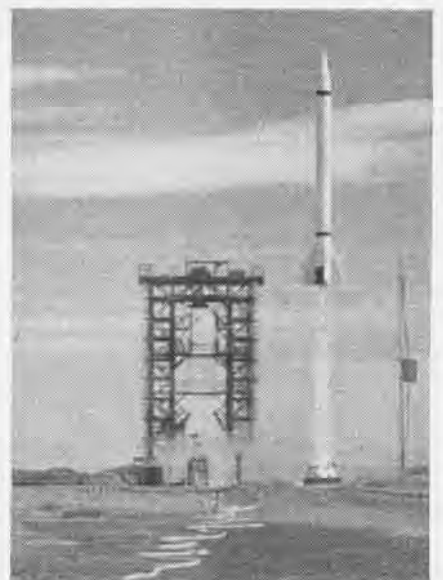
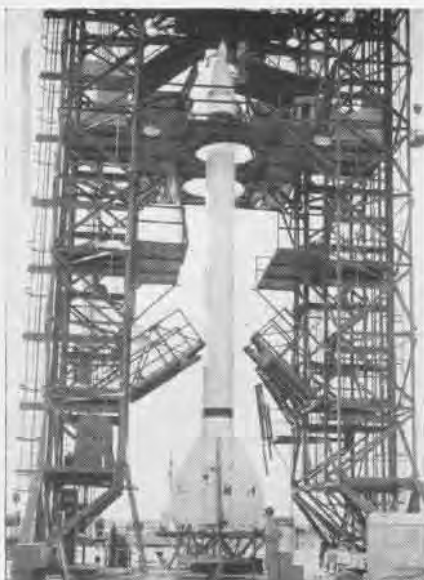
### Hofstra Sets 2 Records in One Day

USS CABOT—To Midn. E. J. Hofstra went the honor of making the 4,000th landing aboard this CVL since it was recommissioned. Later the same day, he made his sixth landing aboard, which was the 15,000th in the history of the ship.

In four months since resumption of

air operations and six months since post activation sea trials, the *Cabot* has had no major difficulties. The carrier is scheduled to be converted for antisubmarine warfare in the spring of 1950 at the San Francisco naval ship yard. The flight deck will be strengthened and the ship re-equipped to handle larger and heavier aircraft for ASW work.

The CVL *Bataan* also is being modified for this type of duty.



This series of three photographs shows the Navy Viking rocket, designed and built by Glenn L. Martin Co., as it made its first flight at White Sands Proving Ground in New Mexico. In this flight the research rocket reached 2,250 miles an hour and ascended up to 51½ miles. Subsequent flights are expected to reach 200 miles to gather information on cosmic rays, atmospheric composition, radio propagation,

photography and spectroscopy. No guidance other than stabilization is necessary for upper atmosphere flights; however, guidance systems now under development could be used on the Viking to make it a controlled missile if desired. The power plant was developed and manufactured by Reaction Motors, Inc., Dover, New Jersey. The Navy also had a hand in V-2 firing tests at White Sands.

# WORLD'S NEW JET PLANES



LONG-NOSED LOCKHEED PENETRATION FIGHTER, XF-90, HAS AFT-LOCATED TWIN JET ENGINES

THE PASSAGE of the last few years has brought little comfort to peace-loving nations, and our training for constant vigilance and readiness must not falter or fail. To this end, the Aviation Training branch of Chief of Naval Operations again emphasizes the need for recognition training of all naval aviation personnel.

In spite of the progress of high speed, high altitude types of aircraft, visual recognition will continue to play a vital role in any modern war. Pilots still must visually identify aircraft encountered. Even though the speeds are approaching sonic, it is doubly important for us to aim at a far higher standard than we ever did before. Immediate and accurate recognition is essential if some of those unfortunate mistakes of the early days of the last war are to be avoided in the future.

The interest in recognition is of importance to the efficient presentation of a recognition training assignment. It is obvious that much is expected of a recognition instructor. He must be intelligent, enthusiastic about his work, and an ingenious jack-of-all-trades. He must have personality and self-confidence to enable him to handle a classroom of students. He must adapt himself to both the type and amount

of knowledge they possess. The instructor who is not interested enough in his work to develop a general knowledge of aircraft and to go to the pains of keeping abreast of new developments never is going to be a good instructor.

The Aviation Training branch has disseminated information and equipment to naval aviation activities for use in recognition training. Among the equipment and publications made available to squadron and training command personnel are the following: Recognition slide sets, training films, models and recognition publications. In addition to keeping the above training media up to date, recognition study cards, bulletin board displays, automatic rater cards and a new aircraft recognition manual to be available the latter part of this year, are now in preparation.

Since recognition is a visual skill, all training media should be used and directed toward ultimate proficiency in recognizing aircraft and ships under combat conditions of distance and motion.

The achievement of complete familiarity with an aircraft is greatly aided by "glamorizing" it to the observer with interesting stories, background, and with much data as to performance, size and tactical uses.

These facts give the aircraft an individual personality while it is being learned, and a more positive character when it is recognized in operations. "Interest" material has become an important part in successful recognition training. Accordingly, the remainder of this article and future articles carried in NAVAL AVIATION NEWS and other publications can be used as source material.

This year has provided innumerable opportunities for aircraft recognition studies covering many of the world's new jet aircraft. Of current interest was the recent 18th Paris International Air Show, a medium through which French manufacturers were able to display results of their postwar projects. Included in the Paris display and later flown at Orly airfield was the Marcel Dassault MD 450 *Ouvagon* (*Hurricane*). The *Ouvagon*, a very promising naval jet fighter, was designed and built in less than 18 months. It was first flown in February 1949 and has since made numerous successful test flights with the result that it is generally



SWEDISH FIGHTER, SAAB J-29, IS COUNTRY'S FIRST ALL-JET DESIGN



HAWKER P.1052 INCORPORATES LATEST BRITISH JET FIGHTER DESIGNS



considered the best French jet fighter to date.

The wings are small and its performance at high altitudes is doubtful; however, the cockpit is pressurized. Power is provided in the form of a French-made Hispano-Nene, and unconfirmed reports indicate that it is capable of 525 knots. Shortly after the Paris Air Show, the Secretary of State of the French Air Force announced that production of the MD 450 had been authorized. Plans call for the equipping of two squadrons by the end of the year.

**T**HE SOVIET May Day parade provided another opportunity in the form of an impressive air display composed of their latest combat-type aircraft. Observed in formation, with slightly different configuration from last year's model, were a number of YAK-15's. This aircraft was developed from the preceding Yak series of fighter designs (more than 10,000 conventional engine YAK-1's, YAK-3's, YAK-7's and YAK-9's were produced during World War II) and it is thought to be one of the smallest operational jet fighters in the world. The original models had a conventional landing gear while newer versions, including those that flew in the parade, are equipped with a nose wheel.

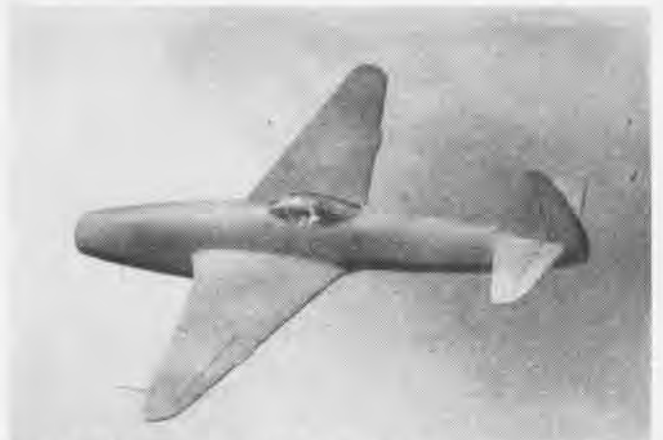
During the past month the Electric A.1, first English jet-propelled bomber, made its initial flight. The A.1 is a mid-wing, medium bomber with a two-man crew. In general configuration the designers have not attempted anything unorthodox, but have confined themselves to a straight-forward layout with exceptionally clean lines. Power is provided by two Rolls Royce *Avon* jet engines in nacelles mounted close to the fuselage. Unconfirmed reports indicate that the aircraft, which was designed and built by the English Electric Co., Ltd., has a maximum speed of about 500 knots.

On May 15, 1949, a new point-to-point speed record was established by the English Hawker P.1052, swept-wing jet fighter, while in flight from London to Paris where the aircraft later flew at the Orly air display. The distance flown was 184.1 nautical miles at an average of 528.6 knots with a center-to-center time of 20 minutes 37-1/5 seconds. Weather conditions at that time were far from favorable, and the Hawker company is reported stating that the performance is not the best that the 1052 will give.

The Swedish Air Force entered the jet field in 1947 at which time the Saab J-21R, a J-21 fitted with a jet unit, made its first flight. During the latter part of last year the Saab J-29, their first all-jet swept-wing fighter design, was completed and has since been undergoing flight tests. It is equipped with a pressurized cockpit, an ejector seat and a jettisonable canopy. A second prototype made its initial flight on February 28, 1949. Both prototypes are fitted with British-made De Havilland turbojet engines; and unconfirmed reports indicate that the J-29 tests have not proved altogether satisfactory. Thus, experimentation is being continued and a third prototype is reported underway.

**O**RIGINATING in South America from the Argentine Instituto Aerotecnico is the I.Ae 27 *Pulqui* (*Arrow*), the first jet-propelled aircraft to be designed and built south of our border. Designed by M. Emilo Dewoitine, whose name was well known in France before the war, the *Pulqui* flew for the first time on August 9, 1947. The fighter is fitted with a Rolls-Royce *Derwent 5* gas turbine engine built in Argentina under license and is estimated to have a top speed of 485 knots.

The latest entry in the transonic field is the USAF's Lockheed XF-90 twin-jet, swept-wing penetration fighter, with many familiar F-80 *Shooting Star* features. Its most prominent feature is a needle-nose that is analogous to its designed purpose. Actually the long nose acts as a balance to offset the very aft position of the two jet units.



YAK-15'S PILOT RIDES FARTHER BACK THAN MOST JET PLANE FLIERS



SMALL, HIGH TAIL, HOG-NOSE AIRSCOOP FEATURE ARGENTINE PULQUI



FRENCH MD 450 OURAGON FEATURES CLEAN DESIGN, HAS NENE ENGINE



LOW SWEEPING LINES GRACE NEW ENGLISH ELECTRIC A.1 JET BOMBER

The XF-90 has a very thin wing with a maximum thickness of only eight percent of the wing chord, the thinnest wing used in any but the supersonic Bell X-1 research aircraft. This narrow profile required extremely high-strength alloy steel spar construction, which is a major contribution to the prototype's current heavy weight of 25,000 lb., approximately that of an R4D. The XF-90 is currently undergoing test flights at the Muroc Air Force Base in the Mojave desert of California.

Other recent Air Force and Navy fighter types which are still in various flight test stages have been illustrated in past issues of NAVAL AVIATION NEWS. These include the McDonnell XF-88, the Northrop XF-89 *Scorpion*, the Republic XF-91, the Convair 7002 or XF-92 delta wing, the Douglas XF3D-1 and the Chance Vought F7U *Cutlass*.

Future recognition articles will try to illustrate the latest types of aircraft from the world's air forces, accompanied by pertinent information concerning them. A comprehensive issue of the *Recognition News Letter* is now being distributed to both regular and Reserve activities for study.



★ THIS IS the twentieth of a series of short sketches of squadrons in World War II. It is based on reports filed with Aviation History and Research in DCNO (AIR).

# VT 14



VT-14 PILOTS, SKIPPED BY LCDR. HOWARD ROBERTS SCORED HEAVILY AGAINST THE JAPANESE

WHEN TORPEDO SQUADRON FOURTEEN came to Majuro 8 May 1944 aboard the USS *Wasp*, it was slated to participate in the great all-out Pacific offensive. The *Wasp*, true to its name, ready and barbed, was prepared to attack the Japanese with fury.

Led by Lt. Cdr. Howard Stowe Roberts, a veteran of 16 months duty in the Atlantic aboard the USS *Bogue*, the pilots in their TBF-1C's had gone through months of intensive training. Now they were eager for battle in the Pacific.

As prelude to heavier action, VT-14 warmed up in the raids on Marcus and Wake May 19-23. The torpeckers then moved into the Marianas to soften up the islands and support the landings on Saipan. One day as a flight of four planes was returning to the carrier after an antisubmarine patrol, they bombed and strafed a convoy of seven Japanese luggers and sampans until all of them

were sunk or badly damaged. Lt. (jg) Julian Walker hit the bullseye when a depth charge he dropped blew one lugger out of the water and destroyed it.

On 19 June, the Japanese found the Task Force and, as they approached, the *Wasp* launched all planes then on flight deck including 11 torpedo planes, eight of which were loaded with bombs. Since our forces did not know the whereabouts of the enemy, they could not send a counterstrike against the Japanese carriers. But there was still something to do, and Lt. Cdr. Roberts—he was to receive the Air Medal for this strike—and other VT-14 planes did it. They went to Guam and bombed Orote Field, making it impossible for enemy planes to land and refuel after attacking our fleet.

Early the next morning, meager contact reports came in as to the position of the Japanese fleet, and in the after-

noon a strike against these forces 300 miles to the west was ordered. At 1545, seven torpedo planes under the command of Lt. W. H. House, each loaded with four 500-lb. bombs, were launched in company with bombers and fighters. Luckily a large force of enemy fleet tankers and destroyers was sighted just before sundown.

It was "lights out" and the bottom of the sea for two tankers destroyed by Lt. W. T. Williams, Lt. (jg) G. D. Wright and Ens. J. C. Cockran. Two other tankers were heavily damaged by near misses. All three officers received the Navy Cross for this feat. After the trip back in total darkness, only four planes were able to make landings aboard carriers, each of them with only enough gas left to taxi out of the arresting gear. Three VT-14 pilots had to make water landings, but none was the worse for the dunking.

AFTER participating in operations at Iwo Jima, the *Wasp* proceeded to Guam to take part in the softening up of that island. When the troops began landing on Guam, VT-14 was one of the units giving air support, work that was at once dangerous and meticulous.

After Guam, VT-14 offered a two-day program of destruction at Palau, making in all 58 sorties on the 26th and 27th of July.

Over a month later, after a rest from battle, the *Wasp* headed into action again, operating first against Palau on the 7th and 8th of September and beginning strikes on Mindanao on the 9th. Carrier attacks against the Philippines dramatically opened operations in that area after an absence of over two years.

Immediately after the strikes against Mindanao, VT-14 began a series of long, hazardous flights in the central Philippines—Cebu, Negros, Panay and Leyte



IT'S A HAPPY MOMENT AS ADDITIONS ARE MADE TO THE SCOREBOARD AFTER A RAID ON MANILA



THE MEN WHO MAINTAINED THE PLANES AND FLEW WITH VT-14 PILOTS PROVED THEIR VALOR IN SCORES OF OPERATIONS LAUNCHED FROM THE WASP

—encountering a considerable number of Japanese fighters, sometimes as many as 30 on one hop.

On 21 September, all the squadron's planes were loaded with torpedoes and assigned shipping targets in Manila Bay. For the first time, VT-14 used torpedoes and the success of the strikes was sensational. The 17 "fish" dropped on the first two strikes levied a terrific toll on the enemy. Although the Japanese spewed forth heavy AA fire and sent scores of fighters aloft to counter the attack, it did them no good. VT-14 sank one large oiler, 6 cargo ships, 7 luggers, and damaged an additional 22 ships. VT-14 continued the attack for several days, and then on the evening of 24 September, the *Wasp* withdrew.

ON 10 OCTOBER, the squadron began its last and most difficult period of operations. The general plan called for an offensive sweep close to the Japanese mainland, and then the carriers were to work south to the Philippines, destroying aircraft and shore facilities to prevent the enemy from staging in planes to oppose the amphibious operations planned for Leyte on the 20th of the month. Because of the proximity of the Japanese mainland and the increase in both quantity and quality of enemy fighter planes, the losses suffered by the squadron increased rapidly.

First target was the Nansei Shoto Islands, and concentrated strikes were made against the airfields on Okinawa. The enemy responded with determined opposition, damaging five of the VT-14 planes, but still Japanese air opposition received stunning blows.

On 12 October, the scene of action shifted to Formosa. Lt. (jg) F. S. McKeever, with his two crewmen, was shot down by AA fire while making a glide-bombing run on an airfield. The plane caught fire and crashed out of control. The next day the aircraft piloted by

Lt. W. A. Davidson, Jr., was last seen diving on an enemy airfield.

On the nights of both the 12th and 13th, the *Wasp* and other ships of the task force were subjected to repeated enemy air attacks, so that the ship was kept at "General Quarters" almost continuously. But despite the fatigue of battle and attack, the record from the 10th through the 14th shows that hundreds of Japanese aircraft were destroyed on the ground and in the air by Task Force 38.

By the 19th of October, our carrier forces had again reached Luzon and further strikes against Clark and Nielson Fields were made. The following day the amphibious landings on Leyte commenced and the buildup for the Battle for Leyte Gulf began. The Japanese were forced to bring their widely dispersed surface units together in an attempt to fight off invasion.

VT-14 took part in the initial landings on Leyte, but was withdrawn when the *Wasp* retired eastward for refueling. After a couple of days of inactivity, the task group to which the *Wasp* was attached was ordered to Ulithi to rearm. It had sailed about 400 miles eastward when reports of furious enemy resistance came in. On the morning of the 25th, the *Wasp*, was ordered back to the Philippines and preparations were made for another fleet action. An attack group was launched against an enemy force of four battleships, eight cruisers and 15 destroyers 330 miles away along the east coast of Samar. Lt. Cdr. Roberts led the flight of torpedo planes, and VT-14 damaged two battleships and a heavy cruiser. For this feat, Lt. Cdr. Roberts received the Navy Cross.

A PRE-DAWN strike of 12 VF, 12 VB and 8 VT was scheduled for the morning of the 26th, but because of other commitments, only 3 VB and 8

VT were launched. These planes joined up with flights from other carriers of the task group and began looking for the Japanese fleet which had retired through the San Bernardino Straits during the night. The flights from two of the carriers left the formation to attack isolated ships, and when a contact report was received from one of our search planes, only the *Wasp* group of 3 VB and 8 VT and the *Cowpens* group of 4 VF and 5 VT were available. These planes made a coordinated attack on the 3 battleships, 5 cruisers and 8-10 destroyers remaining of the enemy forces. VT-14 planes under the leadership of Lt. House succeeded in putting "fish" into two battleships—one of them the *Yamato*—and a CL.

After a short rest at Ulithi, the squadron undertook a two-day operation against central Luzon. VT-14 found enemy planes in rows on the airfields and placed their bombs where they would do the most good. Lt. A. W. Yarbrough destroyed at least five by one well-placed salvo of bombs.

On 10 November, VT-81 relieved VT-14 at Guam and the tour of combat duty was over. From 19 May 1944 to the end of the tour, VT-14 had taken part in 122 strikes against the enemy and rolled up formidable totals in destruction. The squadron had sunk 2 DD's, 2 large oilers, 7 cargo ships, 1 small oiler, and 15 luggers and sampans in addition to damaging 2 BB's, 2 CA's, 1 CL, 2 DD's, 1 DE, 3 large oilers, 7 cargo ships, 1 oiler and 18 luggers and sampans. More than 100 enemy aircraft were damaged or destroyed on the ground plus 11 damaged in the air. All this was in addition to heavy damage inflicted on enemy installations and troop concentrations. A great torpedo squadron had heavily diminished Japanese strength and added new glory to the annals of naval warfare in the Pacific.



# Reserves Get F8F's and Jets



DALLAS RESERVISTS ARM AN F6F DURING THEIR CRUISE ABOARD WRIGHT



THE BEARCAT—AN AGGRESSIVE NEWCOMER AT FOUR RESERVE STATIONS

**B**EARCATS! *Phantoms!* *Furies!* The hard hitting pilots of the Naval Air Reserve are going to fly these top Fleet fighters. By the end of this year, the Reserve Training Command will have 100 F8F's and, by 30 March 1950, it will have 36 jet FJ's and FH's. This is the Navy's answer to the question "What about new planes for the Reserves?"

The Regular Navy is also giving 14 groups on its Reserve team a first-line work-out aboard five Fleet carriers. This expanded program is giving a shot in the arm to the Reserve carrier requalification training, which is now being conducted with such success aboard the *Cabot*, the CVL assigned to the Naval Air Training Command.

CVEG-65 from NARTU ANACOSTIA was slated to take the first cruise with Fleet carriers aboard the *FDR* from 25 to 27 July.

Highlight of the new schedule is the cruise which Carrier Air Group 62 and the CV FASRON from NARTU NORFOLK is slated to take aboard the *Saipan* in August. This cruise is set up for a full two weeks of operations aboard the carrier with special emphasis on ASW tactics. Backed by its own FASRON, the Reserve air group expects to maintain the same degree of self-sufficiency as that achieved by a regular Fleet squadron. About 250 officer and enlisted Reservists are signed up for this cruise, which will have Bermuda as a port of call.

Also through the cooperation of Com-AirLant, the aviation tender, *Duxbury Bay*, is being assigned to support the two-weeks training cruise, which another NARTU NORFOLK squadron, VP-ML-64, is taking from 15 to 28 August. Reservists on this cruise will set up an

advanced base at NAS GUANTANAMO BAY and will undertake extensive patrol training operations in that area. FASRON members and supporting VP personnel, who cannot be flown down, will be given transportation to and from Guantanamo aboard the *Duxbury Bay*. The ship will also be available for joint operational exercises during the stay. About 185 officers and enlisted men from Norfolk are set for this cruise.

Reserve carrier requalification cruises aboard the *Cabot*, meanwhile, have been proceeding with their usual smoothness. So far this year, CVEG-71 and CVG-87 from NAS GLENVIEW, CVG-67 from NAS NEW YORK, CVLG-53 from NAS NEW ORLEANS and CVG-65 from NAS MINNEAPOLIS, as well as a composite group of type training officers from various Reserve stations, have piled up impressive records in their training cruises aboard the *Cabot*. Their operations have demonstrated conclusively that "Reserves Are Ready" and have not lost their wartime know-how.

The schedule shown below gives the line-up of future Reserve cruises.

On the new plane front, the breakdown indicates that 50 F8F's are to be in the Reserve program by 30 September. Twenty-five of these will go to NAS GLENVIEW and 25 to NAS OLATHE. Later, 26 *Bearcats* will be assigned to NAS SQUANTUM, and NAS ATLANTA will get the remaining 24. They will replace F6F planes now in use at those stations.

These *Bearcats*, which hold the world record for the fastest rate of climb from a standing start to 10,000 feet for any plane, will give Reserve pilots and maintenance men experience in flying and servicing one of the top planes used aboard Fleet carriers today.

**B**UT THE jet fighters are the ones that will give Reserve aviators a foretaste of aviation's streamlined future. By 30 September, NAS OAKLAND is scheduled to get two FJ *Furies*, and NAS NEW YORK and NAS WILLOW GROVE are to receive three FH *Phantoms*

## Carrier Requalification for Reserve Air Groups

Date	Activity	Home Station	Operates From	Carriers
3-5 Aug.	CVEG-56, VF-59-A, VA-95-A	Squantum New York	Floyd Bennett	FDR
12-18 Aug.	CVG-59	Grosse Ile	Pensacola	Cabot
21-27 Aug.	CVG-79	Willow Grove	Pensacola	Cabot
22-24 Aug.	CVEG-57	Squantum	Squantum	Wright
25-27 Aug.	VF-51-A VA-51-A	Anneostia	Atlantic City	Siboney
29 Aug.- 11 Sept.	CVEG-62	Norfolk	(Two weeks cruise)	Saipan
6-8 Sept.	CVLG-58	Squantum	Oceana	FDR
13-16 Sept.	CVLG-52, VF-52-A, VA-52-A	Jacksonville Anneostia	Oceana	FDR
18-24 Sept.	CVLG-57	Atlanta	Pensacola	Cabot
20-22 Sept.	CVLG-59	Willow Grove	Atlantic City	Siboney
14-20 Oct.	CVG-75	St. Louis	Pensacola	Cabot



each. By 31 December 1949, NARTU NORFOLK is slated to get six FH's and NAS LOS ALAMITOS six FJ's, while Oakland, New York and Willow Grove will receive four more jets of their same type apiece. By 31 March 1950, Norfolk, Willow Grove and New York will each have eight *Phantoms*.

Advance training of pilots and men who are to fly and maintain the new planes is already underway. Most Reserve pilots have not flown the F8F, since it was introduced only three years ago, but qualifying for this type will be only a matter of routine familiarization for F6F pilots. An F8F mobile trainer is slated to visit the selected stations to acquaint enlisted men with specific maintenance problems and techniques.

One pilot from Los Alamitos and one from Oakland already have had two-weeks transition training in F-80's with VF-52, followed by two-weeks familiarization training in FJ-type aircraft with VF-51. The maintenance officers of these stations also have taken two weeks maintenance indoctrination with VF-51, while four enlisted overhaul mechanics from each base have received in-service training in maintaining FJ-type planes.

Similar training is being set up for Reservists at those stations which will get FH-type aircraft.

These specially indoctrinated Reservists will then, in turn, provide training for the pilots and men at their respective stations.

Stations selected to receive the jets were those which were nearest the supporting supply points and which also had the best facilities for jet operations.

The infusion of the latest type fighter planes into the Reserve training picture, plus the new program of carrier requalification cruises aboard Fleet carriers, tells the story of the cooperation that



RESERVES WILL FLY FH PHANTOMS LIKE THESE

exists between Regular Navy and Reserve Commands. Integration of Reserve training with that offered to Fleet squadrons insures a powerful, combat-ready Reserve team.

#### Reserve ACI Officers Get the Word

From 17 to 30 July, some 50 Organized and Volunteer Reserve officers from all over the country attended an ACI basic training course at NARTU ANACOSTIA. This course was especially developed by the Naval Air Reserve for officers who have been currently filling ACI billets in an "in-training" status since their wartime experience was in different fields.

The course covered ACI fundamentals, such as maps and mapping and photo-interpretation, and outlined the duties of ACI officers. Instruction was given by specialists from such activities as ONI, the Naval Intelligence School and the Hydrographic Office as well as from the Naval Air Reserve and the Navy Department.

Present plans call for the course to be given each year not only for Organized Reserve officers in an "in-training" status but also for Volunteer officers on inactive duty who obtain commissions in the Reserve under *BuPers Procurement Directive 9-48*, which authorizes the procurement of 500 aviation specialists in various fields such as ACI or aerology. In this way, the Naval Air Reserve will insure a continual flow of new blood into its ACI program.

#### Flight Skins for Qualified O.R.'s

Qualified enlisted personnel as well as commissioned navigators and flight surgeons in the Organized Reserve are now eligible to draw flight pay for drills in accordance with Executive Order 10059 which amends the Pay Readjustment Act of 1942.

During one calendar month, personnel concerned must make four or more flights totaling at least 72 minutes, or be in the air a total of at least 96 minutes in order to qualify. Such flights may be made at ordered drills or duty of the organization to which the individual is attached or at other times in accordance with regulations which may be prescribed later by the Secretary of the Navy.

#### Station Round-Up

● **NAS GROSSE ILE**—By arrangement with the Detroit Naval Reservists who were taking their two-weeks cruise aboard the PC-180 in the Great Lakes, CVG-89 organized an attack problem against the PC. In addition to providing a moving target for the planes and an opportunity for evasive tactical practice for the PC, the combined maneuvers added zest to the training programs of both the Air Reserve and Surface units.

● **NAS GLENVIEW**—"Operation Cooperation" might well have been the name for a drop of paratroopers on the parade ground at Fort Sheridan, which took place on Memorial Day. Ten troopers from the Fifth Army's airborne training school made the jump from a Navy A-1 from this station, while Marine *Corsairs* provided fighter cover and a Coast Guard boat stood by on Lake Michigan to pick up any jumpers who missed the target.

Led by Lt. Col. Jack Shannon, the entire paratroop unit landed squarely on the jump site without incident. Veteran NATS pilot, Lt. W. A. Kinsley, USNR, flew the transport with Lt. John Naureckas, USNR, as copilot. Marine aircraft were led by Capt. Seth Wood, USMCR.

● **NARTU ANACOSTIA**—Among the Reservists who competed in the National Capital Model Meet which was held on 26 June at Andrews Field, Maryland, were G. S. Ross and A. Van de Griek. In the picture they are shown completing work on their models in the hobby shop, as L. W. L. Russell (1c) and Link trainer operator Veronica Lenox look on.

● **NARTU JACKSONVILLE**—This unit's best friend, Zack Mosley, creator of the aviation comic strip, "Smilin' Jack," has included an episode in the life of "Hot-Rod Happy," entangling him in the carrier operations of Naval Air Reserve pilots aboard the *Cabot*. Captain of the carrier is NARTU JAX's skipper who appears under his fictional pseudonym "Captain Freddyjax." Mosley got a first-hand look at Reserve operations aboard a carrier, when he was a guest of the NARTU on the *Wright* last year.



RESERVISTS FINISH MODELS FOR CAPITAL MEET



LT. (JG) LEARY AFTER 4.0 LANDING ON CABOT



Airplanes, office supplies and men of ComAirPac are loaded aboard the carrier *Valley Forge* at Pearl Harbor preparatory

to being transferred to NAS SAN DIEGO; wardrooms and cabins of carrier served as office space during the transfer east

## CARRIER SERVES AS OFFICE SPACE

COMAIRPAC moved from Pearl Harbor to NAS SAN DIEGO in May, but the big news of the transfer was that the staff set up offices aboard the CV *Valley Forge* and continued functioning all the way across the Pacific.

*Operation Moving Van* saw VAdm H. B. Sallada and his command picked up lock, stock and airplanes and set down at North Island after a 2,254-mile voyage. Ready rooms, bunk rooms, ward rooms and other spaces on the *Valley Forge* were made into impromptu offices and the business of running an aviation command went on without interruption.

ComAirPac had been based on Ford Island since its formation 1 September 1942. When it arrived in San Diego it took over duties of ComFairWestCoast, which then was decommissioned. NAS Pearl Harbor also was closed down.



VAdm. Sallada boards *Valley Forge*, followed by RAdm. Hoskins, chief of staff; Capt. Hedding, skipper, meets them



Cdr. Crumpacker, supply officer, and staff took over ready room #3 to work in on move from Hawaii to United States



Cdr. Roby, AirPac engineering officer, set up his office in his cabin, with help of his assistants, Chiefs Yarba, Wheat





**All AirPac** personnel had to pass agricultural inspection at San Diego; LCdr. Clifford checks seabag of Dracoules, TE1



**Communications** office took over carrier's engine maintenance space; Lt. (jg) Kalmbach directs Dougherty, Dracoules



**Administration** office got no mail but it kept busy during the trip to West Coast



**AirPac staff** duty officers stood duty on ship; LCdr. T. L. Andrews plots course



**Capt. Monroe**, Lt. Col. Mendenhall, Lt. Fitzgerald check incoming traffic



**LCdrs. Duncan**, May, and Oldfield take exams en route to coast as Lt. (jg) A. Serrell, exam board recorder, watches



**AirPac junior officers** get carrier operations refresher from Cdr. Murphy and LCdr. Melrose while move is being made

# P.G. COURSES FOR PILOTS



P.G. STUDENTS AT ANNAPOLIS DO THEIR FLYING IN JRF, SNJ AIRCRAFT



POSTGRADUATE CLASS SECTIONS USUALLY HAVE FROM 15 TO 20 STUDENTS

NAVAL aviators who are interested in increasing their technical knowledge and who consider themselves eligible for postgraduate training will find detailed information in *Bureau of Personnel Circular Letter No. 66-49* of 25 April 1949. The Navy's array of postgraduate courses provides for qualified officers the advantage of an outstanding education in a selected field of advanced study.

Courses open to naval aviators include the following:

- Aerological Engineering
- Aeronautical Armament
- Aeronautical Engineering
- Aeronautical Engineering (Electrical)
- Applied Communications
- Electronics Engineering
- Law
- Naval Intelligence
- Radiological Defense Engineering
- Advanced Science.

All of these fields are described in *Circular Letter 66-49*, which also gives the procedure and deadlines for application for the various courses (1 September in several instances for courses starting in July 1950). Further details on specific subjects covered in each curriculum can be found in the *U. S. Naval Postgraduate School Catalog*, available at all commands ashore and afloat.

Aviators applying for postgraduate education must have completed at least three years duty in flight training and flight operations before 1 July 1950. Signed agreements not to resign during the curriculum and to serve two years in the Navy for each year of postgraduate training after the completion of their studies must be submitted with the applications of officers applying for instruction. Thus, a three-year course, such as aeronautical engineering, carries with it an obligation for six years further naval

service on the part of the officer.

The decision to submit an application for this training should be entirely that of the officer concerned. Each individual is urged to make as thorough an investigation into all phases of the program as possible. If an officer considers himself eligible under the requirements of date of rank and months of duty in an aviation activity and wants thorough schooling along technical lines, he should consider the following questions:

1. What is the objective of this postgraduate training?
2. What specific field am I most interested in?
3. Am I still adaptable to study or have I been away from it for too long?
4. How much of my college or Naval Academy training have I retained?
5. What is my ability in mathematics if I select a technical engineering course?
6. Will my family status permit suitable home conditions for study?
7. What courses are included in the curriculum I intend to select?
8. Will I be satisfied to fly non-combat type aircraft during the major portion of my training period?
9. What effect on my naval career will completion of this training have?
10. What do I intend to do with this education upon completion?
11. Am I willing to return to school again?

Most of these questions can be answered only by the officer himself. The objectives of the various fields and curriculum can be found in the *Circular Letter* and *Postgraduate School Catalog*. Problems as to living conditions, study, flight facilities, and future value of this education can be investigated by getting opinions from officers who have completed a postgraduate course. Opinions on these subjects will vary, but the net result will indicate that few regret hav-

ing completed this training.

The "gripes" registered by officers in postgraduate training are largely the results of their own failure to investigate various phases of the duty they requested. In general they include objections to the amount of study required at home, full weekly class schedules, and lack of opportunity to fly all the latest jet and combat-type aircraft.

ANY OFFICER who considers applying for this training should recognize the fact that it will require considerable effort on his part. The Navy provides the instructors, the school, all books and supplies, laboratories and materials, but expects the student to understand that his primary duty during postgraduate training is constant and determined application to study.

An average work day during the school term begins at 0830. At least three classroom lectures of one hour each are conducted before lunch and a two or three hour laboratory period during the afternoon. The afternoon period ends at 1630 and a normal four hour period of home study is expected for an average student. The working week is five and one-half days. A period of at least one week of rest and relaxation is scheduled after each 10-week term. This schedule is somewhat different from normal sea or shore duty in that outside work is required during the school term. Student officers, however, have no other responsibilities or additional duties. Providing assigned study is completed, week-ends are free for other activities.

Flying for naval aviators also takes second place during the school year. Adequate facilities are available at the Severn River Naval Command Air Activity for all student pilots to obtain



their required 100 hours with 12 hours instrument time during the year. Grumman JRF amphibian airplanes are maintained at this activity primarily for Postgraduate School pilots. Combat type aircraft are not available.

**P**ILOTS who feel that their flight proficiency in jet fighters or other types is of highest priority are advised not to apply for postgraduate training unless they are confident of being able to maintain this special flight proficiency after three years in JRF and SNJ airplanes. Opportunities for familiarization flights in combat type aircraft may be possible during summer field work periods, but are rare during the school year.

Last year saw the innovation of a program designed to set a standard level of achievement in mathematics, physics and mechanics for all selectees for technical postgraduate courses. A refresher course in these subjects is mailed to all officers selected by the boards as soon as the results of selection are known. Completion of the refresher course is at the discretion of the officer concerned, but instruction at the Postgraduate School is based on the assumption that each new student has conscientiously completed the assignments.

The refresher course initiates students into habits of concentration and study so that the transition from previous fleet duties back to school work is not too abrupt. Completion of the correspondence course also gives each officer a good idea of what he is expected to know before beginning his training and lets him see what type of schooling to expect.

All the benefits that naval aviators can receive from a given curriculum are not, of course, detailed in *Circular Letter No. 66-49*. In this day of supersonic aircraft, gas turbine propulsion, television, atomic energy and guided missiles, the average naval aviator is hopelessly lost in a maze of technical terms such

as Mach numbers, Reynolds numbers, fission, V-G diagrams, shock waves, lift coefficients, and a host of other mysterious names, some of which did not even exist during his college years.

Basic understanding comes with technical training. Every naval aviator, for instance, knows the importance of weight reduction in an airplane, but very few realize the importance that mathematical formulae play in the design of a wing rib to obtain minimum weight with precise strength without going through a long and expensive process of trial and error. Every aviator is required to know how to fill in correctly his weight and balance form for the airplane he intends to fly, but very few fully understand the meaning of safe center of gravity location or the theoretical processes underlying CG calculations.

The complicated mechanisms, advance designs, increased performance and propulsion system advancements in the field of aeronautics have reached a point where safe flying and efficient operations require much wider technical knowledge on the part of every pilot. While it is not possible to provide a postgraduate course in a technical subject to all naval aviators, it is an additional objective of each course to provide officers to the fleet with sufficient education in a specific field to instruct other officers in fundamentals and basic theories.

The courses in aeronautical engineering, armament, and electricity are three years in length. The first two years are spent at the U. S. Naval Postgraduate School, Annapolis, Md. The school year normally begins about 26 July and ends 1 June. Between the first and second year at Annapolis six weeks are spent in the field at an aviation activity and two weeks on leave.

After completion of the two years at Annapolis, a period of about two and one-half months is spent either at

a civilian university or an industrial plant to obtain training in industrial management during the summer. This period will include three to four weeks leave, after which the students report to a civilian institution for their third and final year's work. During this third year the student may specialize in a particular field of aeronautical engineering, such as structures, compressibility, gas turbines, pilotless aircraft or general aeronautical engineering. The third year of the armament or electrical engineering courses specifically covers those fields only.

Other courses such as law, aerology, and electronics also provide opportunity to specialize in a particular phase of the general field. Applied communications is a one-year course conducted at the U. S. Postgraduate School.

**C**IVILIAN institutions selected for the third year work are considered among the best available in the United States. Schools participating in the postgraduate program include the following:

Aeronautical Engineering—California Institute of Technology, Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, University of Michigan, University of Minnesota.

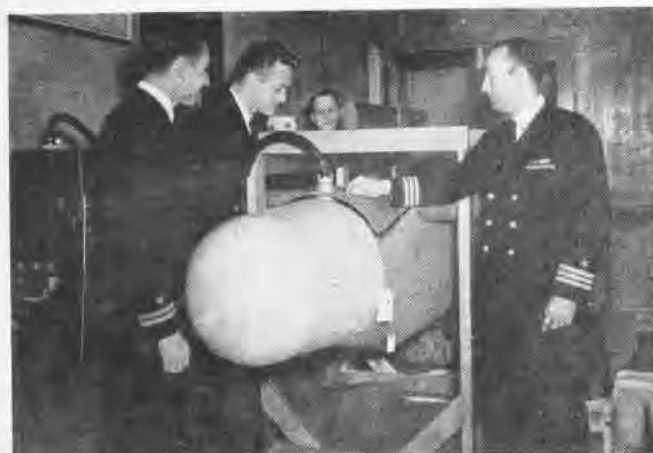
Aeronautical Armament—Massachusetts Institute of Technology.

Radiological Defense Engineering—University of California.

Law—George Washington University, Georgetown University, Catholic University.

Satisfactory completion of the course at any of these institutions leads to the award of a Master's Degree in the field pursued. The Navy's postgraduate program is a golden opportunity for men willing to make the needed adjustments.

The General Line Schools, convening at Monterey in February 1950 and at Newport in July 1950 for a 10-months course, require no applications, since the prospective candidates will be ordered from those officers who are available.



FUTURE TECHNICIANS CHECKING UP ON WHAT GUIDES A GUIDED MISSILE



AERONAUTICAL ENGINEERING STUDENTS LEARN WIND TUNNEL TECHNIQUE



# RESERVE CARRIER CRUISE

RESERVE PILOT FROM NAS NEW YORK SETS DOWN HIS CORSAIR DURING CVG-67 CRUISE TO CHALK UP 16,999TH LANDING ABOARD THE CABOT

CARRIER cruise! As soon as the word went around at Floyd Bennett Field that Carrier Air Group-67 was scheduled to go aboard the *Cabot* for carrier requalification training during their annual two-weeks cruise, Organized Reserve preparations at NAS NEW YORK were geared in high.

On 29 May, 62 officers and 167 men of CVG-67 took off for Pensacola on the first leg of what was to be a record-breaking cruise. The trip was accomplished without incident. The 37 *Avengers*, *Hellecats* and *Corsairs* from New York arrived right on schedule. Supporting personnel and necessary equipment were flown down in 10 R4D's in a well-planned and well-executed airlift with assistance provided by neighboring air stations.

Reservists immediately plunged into four days of intensive flying drills and practice for carrier operations.

Then another R4D, carrying two special passengers, Edward R. Murrow, world-renowned news commentator for CBS, and William Buckley, senior edi-

tor for Doubleday & Company, set out for Pensacola. Although commentator Murrow had "flown in just about everything that has wings," his previous association with the Navy had been somewhat limited, and the Reservists were determined to show him what they meant by a 4.0 job.

Pilot Lt. "Chris" Christine, with Lt. "Ham" Tahler flying "co", sighted Chevalier Field on the button, made a straight-in approach, and taxied the gleaming R4D up to the tower. There they were met by LCdrs. G. R. Crittenden, G. S. Kopshaw, and R. H. Kenton, CO's of the air group, the attack squadron and the fighter squadron respectively.

After the handshaking and back-slapping were over, the new arrivals settled down to getting the word. And the word was good. The boys had been working hard, really working with their hands and their heads and their hearts—not with their mouths.

Now the planes were ready to go. The pilots were ready. The feeling in

the air was "Let's go." And off they started.

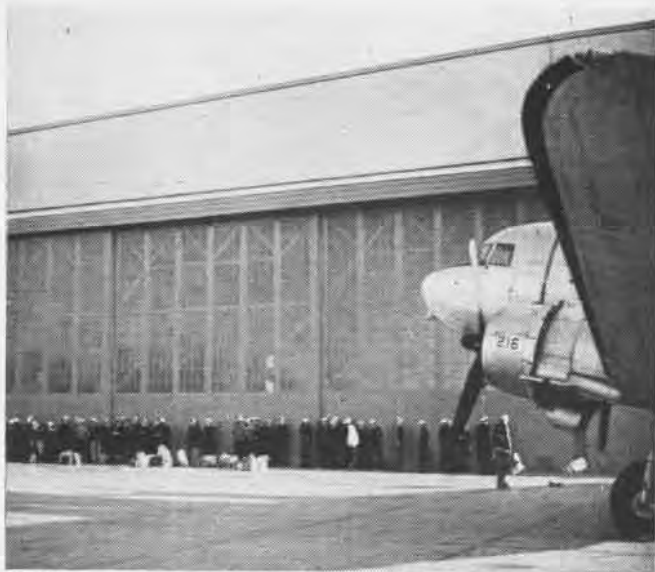
After a spot of lunch, Murrow and Buckley were properly accoutered, popped into the bays of two TBM's (Kopshaw and Anthony in control) and flown aboard the *Cabot*—smooth as silk. Describing it later, Murrow said, "They truss you up like a turkey, slide you down a board, and stop you with a wire. Bingo! Carrier landing..."

With the entire air group embarked by evening, the *Cabot* got underway for the Gulf. All hands set about familiarizing themselves with their new quarters. Some wrote letters, while others stretched full length on the flight deck to soak up the tropical moon, stars and breeze.

Early next morning, "Man flight quarters" reverberated throughout the ship. Then came—"Pilots man your planes"—the words that sent a thrill up America's spine during the war.

Engines were turned over, nerves were keyed up. The bridge was tense.





CPO's prepare to make the final check before the "Weekend Warriors" of CVG-67, NAS New York, board their transports



Reservists unload gear after landing at Pensacola and get set for four days of intensive practice for carrier operations



At Chevalier Field, A. Guerra AOU1 and E. Bloom AA, both of VF-68-A, stand security watch beside their planes



VA-68-A CO, LCdr. Kopshaw says "We're off to a 4.0 cruise" as he checks out for pre-Cabot training flight



Preparing to tie down their aircraft after a day of practice carrier landings, VF-68-A men push a Corsair into position



Up the gangplank of the Cabot go the CVG-67 enlisted men once aboard they did an all-out job keeping the planes ready



CBS COMMENTATOR E. MURROW GETS THE WORD IN CABOT WARDROOM



PILOTS OF VF-68-A RECEIVE FINAL BRIEFING BEFORE A GUNNERY HOP

This was *It*. This was not a drill. Plumbers and salesmen, accountants and jewelers who had not flown from a carrier deck in four years were about to prove that Naval Air Reserve training works, that it is practical and accomplishes its mission. Family men, whose families had not even been established when they flew in combat a few years ago, were about to demonstrate what the weekend warriors, the civilian sluggers, can do. And are prepared to do should the need arise.

**L**AUNCH aircraft!" . . . Off they went, roaring into the Caribbean sky.

Sled bombing, strafing, CIC interceptions, all were carried out with the touch of veterans. The feeling on the *Cabot's* bridge can best be summed up by a remark which Captain King, her genial, hardworking skipper, made to Captain Wilcox, CO of NAS NEW YORK, as they watched the boys pound the sled on their first runs.

"Don," he declared, "You must have had the boys practising up there at Floyd Bennett."

A few minutes later, when LCdr.

Anthony dropped a brace of bombs squarely on the target, he remarked, "We'll have to get a new sled after these boys are through."

It wasn't in the air alone that their spirit shone through. That night, the maintenance crews swung into action on the hangar deck. Their bronzed and sweating bodies gleaming in the vastness of the enclosure, they pulled props, changed tires, checked radios, and responded to the instructions of capable Chief Peccorino, with Lt. Rudy Martone's hoarse voice sounding everywhere in the background.

Under the spur of urgency, hidden talents were revealed. A parachute rigger worked on engines. A photographer's mate helped change tires. An aviation boss's mate became an assistant to the assistant PIO. The spirit was *Can-Do, Will-Do* . . . show us what is to be done. We'll do it.

And they did it. So completely in fact that Captain King, in a special dispatch to Floyd Bennett, said, "*Cabot* sends 'Well-Done' to your hard-working maintenance crews."

Because of inability to raise his radio monitor in Riverhead, Long Island,

CBS's Murrow had to abandon his plans to broadcast from the ship. The next day, therefore, he, Buckley, and Captain Wilcox were flown off the ship in three TBM's and then set down at NAS NEW ORLEANS.

Broadcasting that evening from New Orleans, Murrow paid the Naval Air Reserve one of its finest tributes. "These pilots," he said, "look as good as they were four or five years ago. I was particularly impressed with their glide-bombing, which equaled or surpassed that which I've seen done by some Regular Air Force squadrons. . . . The Naval Air Reserve Program is a form of insurance, insurance for peace . . . and it is a cheap form at that . . ."

During their four days of operations aboard the *Cabot*, Reserve Air Group 67 chalked up 39 catapult shots and 505 carrier landings—almost 150 more than had been recorded by any Reserve group on previous cruises—with only one barrier nip. Top man was LCdr. Crittenden, flying the only F6F aboard, who by making his turns short ended up by making almost twice as many landings as anyone else.



THE CORSAIRS AND THEIR PILOTS COME UP FROM THE HANGAR DECK



THE CABOT TIES UP AT GALVESTON, TEXAS, CRUISE PORT OF CALL



# LTA RESERVES ARE PART OF ASW TEAM

**T**HE NAVAL Air Reserve Training Unit at NAS LAKEHURST has a unique place in the Reserve line-up. Not only is it the only unit which provides lighter-than-air training for Organized Reservists but it is the first Reserve LTA unit ever to be set up either in this country or abroad.

Now that the Navy has been given antisubmarine warfare as a primary mission, the role that these LTA Reservists will be called upon to undertake assumes major proportions. In a future conflict they will be an integral part of the ASW team.

Ready to take their place on this team are the 59 pilots, 4 ground officers and 236 enlisted personnel in ZP-51, the Organized Reserve squadron at NARTU LAKEHURST, as well as the 13 pilot, 18 ground officer and 5 enlisted Reservists in an Associated Volunteer status.

Because of the somewhat isolated lo-



LIGHTER-THAN-AIR CRAFT FORM BACKGROUND AT NARTU LAKEHURST ANNUAL INSPECTION

cation of the NARTU officers travel an average of 85 miles and enlisted men an average of 70 miles to attend drills. Despite this fact, ZP-51 has always maintained almost 100% of its assigned complement. Many officers, indeed, come from such points as Washington, D. C., western Pennsylvania and the Boston, Massachusetts, area, making the drill trek add up to more than 600 miles. They usually drive to Lakehurst on Friday night to be on board for muster at 0800 Saturday morning.

In addition, Volunteer Air Reservists (LTA) from all over the country, who are interested enough in the program to pay their own travel costs or to hitchhike via government air, come to NARTU LAKEHURST for their two-weeks annual training. During the past two years between 300 and 400 Volunteers have taken these cruises.

So far this year, Organized pilots

have piled up a total of 3,000 flight hours, a sharp increase over last year's total of 1,000 hours.

Safety is stressed all along the line. It is significant that there have been no injuries to personnel, either flying or on the ground, and in fact no accidents during the whole period the NARTU has been a going concern.

Organized Reserve training is focused on antisubmarine warfare tactics.

The course for ZP-51 pilots is patterned after that for Fleet patrol squadrons and follows the lines of Fleet airship employment. Magnetic air detection, radar, navigation, communications, gunnery and bombing techniques are emphasized.

Two airships of the K-type have been assigned for use by Reserves. Training flights frequently last for some 12 hours, which means that Saturday drills frequently are not wound up until late in the evening. Cross country flights are often scheduled to such places as NAF WEEKSVILLE, North Carolina, or Weymouth, Massachusetts.

Present aim in training is to prepare Organized Reservists for future airship operations aboard carriers. During the recent *Vieques Exercises* in the Caribbean, the use of airships as a component of air/surface hunter-killer groups worked out most successfully. New procedures in airship-carrier operations, developed during these exercises, are now being adapted for use by Reserves.

Here, the close working relationship that exists between the NARTU and the Fleet Airship Unit, also based at Lakehurst, is paying off. Many Reserve officers were invited to participate in the Fleet carrier qualifications. In addition, Cdr. A. L. Cope, CO of FAZW-1, has briefed ZP-51 in the latest LTA techniques evolved during the exercises.



ZP-51'S QUINN, LEE, SEVERANCE, HAVENS, HENNESSEY CHECK DATA WITH LCDR. SCHUENEMAN



**NARTU** CO, Cdr. R. C. Gossom (c) plots training flight with ZP-51's CO, Cdr. J. D. Quinn and exec, LCdr. C. Severance

**R**ESERVISTS profit greatly all along the line from the backing and support given them by Regular Navy units at the naval air station. All the facilities, including the most modern equipment, of the Naval Airship Training School are made available for Reserve use on weekends. Reservists also get the latest word from such experts as Cdr. C. L. Bolam, officer-in-charge of the Training School, and from specialists who are conducting airship development experimental work at Lakehurst.

Training for enlisted personnel in ZP-51 represents a well-balanced mixture of classroom instruction and practical on-the-job experience in the various LTA fields. Of the two mechanics, radiomen and riggers, assigned on each airship training flight, one of each is usually a striker on an in-training status.

NARTU LAKEHURST has a streamlined course for seaman recruits, which follows the regular HTA outline, but which includes such features as basic safety instruction in ground handling of airships. As soon as the new recruits get the safety picture, they become members

of ground handling crews to aid in airship landings.

Another feature of the recruit course is an airship indoctrination flight, designed to quicken the enrollee's interest and make him feel that he is a regular member of the aviation team.

LCdr. Hohlman Lee of ZP-51, professor of science at Admiral Farragut Academy, heads the recruit program. The fact that 28 SR's were advanced to AA in May makes a good commentary on the effectiveness of the course.

The NARTU, which is notably proud of its record of never having to go out and recruit O-2's, since good prospects were always pounding on the door, is even prouder of the number who have been appointed to the Naval Academy. Last year eight enlisted men from the unit entered Annapolis and this year 14 more were selected. R. F. Harney AA stood #2 in the national examination competition and W. A. Ryan AA was #5.

NARTU LAKEHURST helps support one of the liveliest associated volunteer



With the huge hangars of NAS LAKEHURST looming in back of them, Organized Reservists of ZP-51 pass smartly in review

units in the country—AVUA (LTA)-4, Squantum, Massachusetts. This pioneer unit started out as a Volunteer Aviation Unit under the commandant with no flying privileges, but so great was the enthusiasm of its members and so many LTA personnel and new recruits were interested that a mast was erected at NAS SQUANTUM so that a Reserve airship could be moored there for flight training. On 25 June the AVUA (LTA) was commissioned and LCdr. Timothy J. Hennigan, who saw war duty in both the Atlantic and Pacific areas and who did much to build the unit, took over as CO.

**O**N THE community front, LTA Reservists have contributed their services in many ways—and usually in their free time. Assisting in memorial ceremonies, conducting photographic surveys, aiding in Regular Navy recruiting drives are practically regular routine. Searches for lost children have been made from the air and State authorities also have been assisted in hunts for fugitives and in traffic surveys.



**Chief** Crowell explains equipment to ZP-51's Emmon, Garriel, Finoler, Gregg, Woods and the Silverstein brothers (front)



ZP-51's fine choir—Smith, Bouk, Sherman, Mulford, Clawson, Keim, Walzer—sing at the NAS chapel on drill days





Cdr. Quinn presents commission to Ens. Kalmbacher, ex-ZP-51 ordnance chief



Free balloon is trucked to the take-off location for a regular training flight



Chief Carnaghi prepares flight rations for airship crew during training flight

**N**ARTU LAKEHURST was commissioned on 2 June 1947 with a personnel allowance of two officers and 10 enlisted men. It operated for more than a year with this small force; then an officer and 10 enlisted stationkeeper billets were added. During its two years of operations, the NARTU has had only seven changes among the enlisted stationkeepers (all in the non-rated group) and no officer turn-over. An important member of the staff is Mrs. Calhoun, the CO's secretary and the only civilian employee at the unit.

Commander Raymond C. Gossom, USNR, an HTA as well as an LTA pilot, is the commanding officer of NARTU LAKEHURST. A former officer in the U. S. Merchant Service who had command of several vessels, Cdr. Gossom was first commissioned in the Naval Reserve in 1936. After training with LTA Class 19 in 1942, he took over as exec of ZP-12 which was engaged in escort and patrol operations in the Atlantic. Later he served as CO of ZP-22 and

then of ZP-15 with additional duties as Commander, Fleet Air Detachment. In 1944 he was transferred to the amphibious forces in the Pacific area and after service as acting CO of the *American Legion* (APA-17), wound up as CO of the *War Hawk*. Called to help organize the NARTU in 1947, he has done much to build up today's streamlined program.

He is assisted by his exec, Lt. George Zeitler, USN, and such staff members as LCdr. W. R. Schueneman, the type training officer. After many tours of duty in the Navy during which he worked his way up to a warrant appointment, Lt. Zeitler was selected for the Officer's Airship Training School. During the war he served with ZP-12 which operated in the Caribbean area. LCdr. Schueneman also saw duty with ZP-12, as well as with ZP-32, ZP-14 and ZP-21.

Spark-plug of ZP-51 is its commanding officer, Organized Reservist Cdr. James D. Quinn, Jr. Coauthor of two

widely used aviation text books, Cdr. Quinn has had an outstanding career in commercial aviation, as flight mechanic, pilot and base manager, and as head of the largest public aviation school in the country devoted to aviation mechanic training. In 1939, after service as head of the Aviation National Defense Program for New York City, he was called to active duty from NRAB NEW YORK. During the war he served as CO of NAF FERNANDO DE NORONHA, and then as CO of NAS MACAO Brazil and of NAS RIO DE JANEIRO.

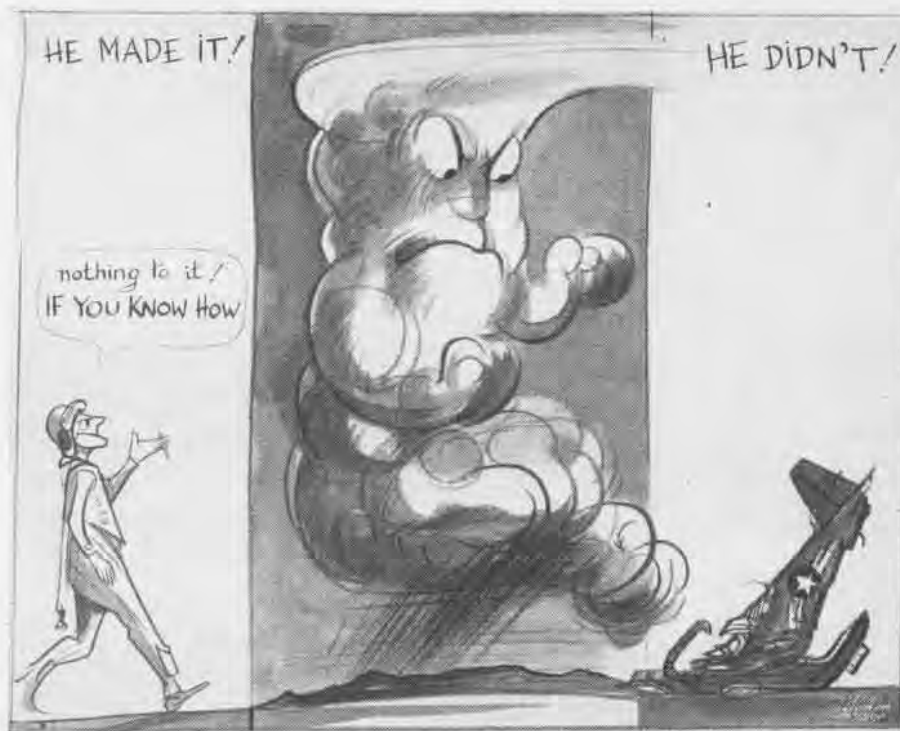
**W**ITH THE Organized and Associated Volunteer Air Reservists and NARTU personnel working as a team, the Reserve LTA training program at Lakehurst is now rolling along in high gear—so smoothly, in fact, that plans for next year call for an increase of O. R. billets. The LTA Reservists have proved their worth and have set their sights for even greater progress ahead.



Type training officer Schueneman briefs stationkeeper Kay who is about to check personnel in radio range procedures



Class in radio code practice—here Chief Van Ethen gives the word to Reservists Beers, Vasiliades, Karpoff and Phillips



# THUNDERSTORM FLYING

THE NEXT time you get caught without an umbrella or raincoat you can remark casually to a fellow sufferer—"We really ought to know better. After all there are 44,000 thunderstorms a day." If it's raining hard enough you probably won't have to explain where you picked up this magnificent figure, but if your listener doesn't believe you, just refer him to the Carnegie Institute of Terrestrial Magnetism.

Then you can add with an air of studied carelessness that the lightning alone in these thunderstorms represents a continuous transfer of energy equaling 268,000,000 horsepower. By this time you'll both be wet enough to drop the subject and head for cover.

If you're a naval aviator the chances are pretty good that sooner or later you'll run into a situation where you have to fly through a thunderstorm. Of course, if you're a smart aviator you'll first try to outmaneuver the enemy by flying around, under, or over. No one with the brains of a grasshopper will call you a sissy for flying around an isolated air mass thunderstorm.

Cold front thunderstorms generally stretch too far to fly around, but you should remember that the storm front is really a series of individual storms linked by intervening clouds. You may have to go through, but you don't have to pick a fight with the biggest and blackest cloud in the line-up. Try to fly between the storm centers or over the saddlebacks.

Before attempting to fly through any thunderstorm there are several questions you should ask yourself:

(a) First and most important—"Is this trip necessary?" If you've got enough gas to go back to Pea Ridge Air Station, and you really weren't so anxious to make the trip anyway, you won't have to read any further.

(b) "Are you on an instrument flight plan?" This often affords another fine excuse to turn around and wait for better weather.

(c) "Are you really sharp on instruments?" If that white ticket is getting a little ragged around the edges and it has been some little time since you were under the hood, you'd better not waste gas debating the issue. Just make that 180 degree turn.

But let's assume that you are on an instrument flight plan, that you've got to get to the other end of the line, and that you're just about the hottest thing this side of Instrument Flight Instructors School. With a good airplane and all this backing you've still got to do a little thinking and a little preparing before you start through.

## TAKE A SCHOLARLY ATTITUDE

Once you get into a severe thunderstorm you're going to be as busy as the proverbial one armed paper-hanger—just trying to keep your plane in a level attitude and on course. You won't have time to do a lot of things that you should have done before you started through.

## PREPARE YOUR PLANE TO PENETRATE THE STORM SAFELY

(a) Check your instruments and lights.

(b) Turn on pitot and carburetor heat.  
(c) Tighten your safety belt.  
(d) Increase your RPM for gyroscopic stability.

(e) Put your mixture control in RICH.

(f) Slow your airplane down to penetration speed. You may not run into exceptionally strong sharp-edge gusts, but it's best to be ready for the roughest kind.

(g) Uncage your gyro instruments and check for proper settings. Check vacuum pressure and make a mental note of where the pump switch is located.

(h) Turn off any radio equipment that is rendered useless by static. Usually your VHF equipment will not be affected. Make sure to reel in trailing antennae.

(i) At night, turn your cockpit lights on full bright to minimize the blinding effects of lightning.

(j) Decide on the altitude at which you wish to enter the storm. A good general rule of thumb is to stay as low as you can and yet safely clear all terrain obstacles.

(k) If possible, plan to go through the line of thunderstorms as nearly as possible at right angles to the path of the storm.

Now you've got your plane in shape and you've *planned* what you're going to do. You still have one very important



thing left to do. You've got to *get yourself ready mentally* for what lies ahead. You've got to expect turbulence, precipitation, and lightning and not allow them to cause you undue concern.

## KEEP COOL

One of the greatest hazards to safely flying through a thunderstorm is *pilot fear*. If you let yourself get into a panic it's going to be just about three times as hard. It might be a good idea to remind yourself that you're in a closed cockpit, all metal airplane. You are just about as likely to get hurt by lightning as you would be to win the Irish Sweepstakes on a single ticket. This may be a slight exaggeration, but it should make you feel better.

You can forget about the old bugaboo of a down-draft forcing you right into





the ground. They simply don't act that way. True, if you're at 10,000 feet you may lose as much as 2,000 feet or gain as much as 6,000 feet. But near the base of the storm the down drafts are not as violent.

Above all do your best to keep cool. Remember you're not the first Ace to fly through a thunderstorm. Recently the Air Force, Navy, Weather Bureau, and NACA conducted a project to determine the operational feasibility of flying through thunderstorms. The pilots assigned to this project deliberately flew through 1,300 thunderstorms without a major accident or fatality.

Once you start into the storm devote all your attention to flying your plane. Don't be too rough on the controls. Use elevator controls very lightly and don't worry too much about gaining or losing altitude. *Attempting to maintain a constant altitude in heavy drafts may easily be a pilot's first step down the road to serious trouble.*

**FLY ATTITUDE.** Keep your plane in a relatively level attitude with your gyro horizon as your primary reference. Don't chase airspeeds, particularly in high speed heavy aircraft. If you do, you're likely to get your plane into an excessively nose-high attitude or a steep dive. Move your throttle only when you approach the high or low speed limits for your plane. Remember heavy rain may slow down the indicated airspeed reading by as much as 70 mph because of partial blocking of the air entrance.

Keep your plane in a level attitude, hold your heading, and hang on to your hat. You'll come through all right, because you prepared yourself and your plane before you entered the storm.

**MCAS EL TORO**—To keep in condition, Capt. Patrick Harrison, VMF-311 engineering officer, rides his bicycle from Santa Ana to El Toro and return three times a week. Round-trip distance is 26 miles.

● **NAS OAKLAND**—With the combined teamwork of all hands, Reservists piled up more than 1000 pilot hours on 21-22 May to break all records for a single weekend.

## WHEELLESS JET LANDS ON CV

THE BRITISH Navy has made numerous carrier deck landings with a jet *Vampire* fighter plane without undercarriage, skidding the aircraft to a stop on a flexible deck made of a rubber material.

According to released information, the plane is catapulted from the carrier and lands on the special deck on its belly skids. The idea behind the new technique is that by cutting out undercarriage about 400 pounds of weight is saved, which can be devoted to carrying more gasoline, giving greater range and speed.

Use of a flexible deck first was proposed two years ago and an experimental model built and tested with a weighted glider. As the experiment showed promise, a flexible deck was fitted to the HMS *Warrior*, a 13,350-ton carrier. Further tests were made with a modified de Havilland *Vampire*, proving successful.

Pilot of the *Vampire* was LCdr. E. M. Brown, who made flying history in 1945 by piloting the first jet aircraft to land aboard an aircraft carrier, a *Vampire* aboard the HMS *Ocean*.

Possibilities of such an operation as landing wheelless planes aboard a carrier are multitude. Catapulting them would require some sort of cradle and also a method of hoisting them aboard it. Taxiing a wheelless plane around the deck would be something to behold. Pilots probably would need more padding in their seats than afforded by present-day parachute packs to withstand comfortably the landing jolt of a plane without resilient tires and oleo struts.

The rubber deck covering would have to be fire-resistant because of the hot jet exhaust. Details of the British tests are classified, although it was announced they were highly successful.

## PANAMA NIGHT HOP PANICS P2V

VP-3, COCO SOLO—Can you top this for a night's quota of trouble?

It all began during maneuvers when Lt. Tate climbed aboard his P2V-2 at 0300 intent on his mission for the day. A non-eventful take-off and flight to patrol station was made and all hands settled back to the routine.

About an hour passed. Suddenly, a violent backfire with resultant vibrations wracked the plane. All hands took a hitch in their safety belts. No more explosions, so the uneasy crew continued patrol.

A tranquil 30 minutes later, over the intercom was heard "Contact—enemy, 15 miles to starboard." The pilots responded with enthusiasm and wielded the *Neptune* over in a sharp diving bank. They saw the lights of the enemy. Purposefully, intently, they bored in.

The pilots mused, "Closing seems to be rather rapid." Indeed it was, for the lights practically were upon them. Realization dawned—another plane! Immediate action was taken in the cockpit. The PPC pulled, the co-pilot pushed!

Luckily the PPC lost sight of the plane and relinquished control to the co-pilot to end this neutral and passive condition. The plane went through many varied gyrations at this point and the so-called "enemy" was narrowly missed by some two feet (estimated).

Following this, another resounding backfire, accompanied by excessive vibrations of the starboard engine, echoed through the still night. Enough was enough! The pilot asked the navigator for a course back to his home base. The only sound was the heavy panting of the crew members.

At last the field was sighted and breathing was more or less resumed.

The pilot made a quick turn on base and lined up, the starboard engine still muttering. Over the fence and cut! At this point the co-pilot sighted a non-descript *Cub* lining up near their touchdown! All hands grabbed the throttles for a wave-off. The throttles would not budge.

There was only one thing to do, glide over the plane. Having settled this obvious and unalterable technicality both pilots became aware of a whining noise in their ears. Yes, the question was: "Are the wheels locked down?"

Well, there was nothing to be done now but clear the plane on the runway and be prepared for a wheels-up landing.

The plane was pulled over the *Cub* with the aid of the "Jesus" factor and some excess knots and finally settled on. At long last the familiar squeal of rubber on runway was heard, and all hands, it is believed, started wringing out their perspiration-laden clothes.

● **NAS DENVER**—On 8 May more than 500 *Flying Farmers* landed at Denver for a "Fly-In" breakfast and a quick look at operations of the Organized Reserve squadrons.

● **NAS BIRMINGHAM**—Squadron personnel now prepare their own payroll for presentation to the disbursing officer and also take care of their own monthly reports.

# LETTERS

SIRS:

Several years ago I had the unfortunate luck to have to ditch an aircraft. Since then I have heard of the "Goldfish" club, and I would like to know if you could tell me how to go about obtaining a membership.

JOHN BURNETT

LAWRENCE, KANSAS

During the war, Walter Kidde Co., Belleville, N.J., operated a "Sea Squatters" club for personnel who owed their lives to life rafts or Mae Wests made by that firm. We are advised the club still is operating and you could join by writing them for application blanks.



SIRS:

The accompanying cartoon pictures the reason why metalsmiths turn gray, get "coffee nerves" or just go "batty." Though the *Training and Competition Manual* doesn't mention it, there seems to have developed a new and interesting competition among the tractor drivers aboard carriers of the Pacific Fleet.

The apparent goal of the driver is to make like a *Kamikaze* with his little set of wheels every time a TBM-SW climbs on deck. The plane is equipped with two extra stabilizing fins that make a delightful target. In spite of the fact that no one will admit taking part in the competition, VC-11 suspects that some of the drivers have more "notches" on their tractors than Jesse James got on his trusty "six gun."

Since VC-11 has painted the tips of the extra fins white, the "bangar deck crash rate" and insanity among metalsmiths have taken a noticeable dip. In the past, the diligent and hard-working tractor drivers have been so used to driving under the tail of a TBM that they quite often didn't see the extra fins on the *Guppies*.

The new trend, much to the pleasure of all concerned, is a delightful improvement. In the future it is anticipated that VC-11 detachments can do away with the mythical Officer-in-Charge of hangar deck crashes and remove the straight-jacket from the required equipment of metalsmith tool kits.

PAUL E. EMERICK, CDR.

VC-11, PACIFIC.



## Answers to Weather Problems

#1

Norfolk, Ceiling indefinite 500 feet Overcast, lower scattered, visibility  $2\frac{1}{2}$  miles variable, light rain, haze, sea-level pressure 1017.7 millibars, temperature 75, dew point 74, wind from the East 14 knots, altimeter setting 30.04 pressure rising rapidly, visibility variable 2 to 4 miles.

#2

Philadelphia, Special number two, time 0808 EST, 1700 feet broken, with higher overcast, visibility 10 miles, wind from northeast 10 knots. Higher overcast estimated 12,000 feet, thin scattered at 900 feet.

SIRS:

Serving as a Marine pilot during the war and flying off the USS *Bunker Hill*, I feel quite proud of my experience with the Navy, but much more proud of my experience with the Marine Corps. I am not trying to take glory from the Navy and its heroes with whom my fellow Marines and I spent many anxious hours, but I am objecting to your squadron articles in which I have yet to read the saga of a Marine squadron.

I have in mind specifically, Marine Squadrons VMP-221, 214, 123 and 112 who served equally well on both land and sea. I am particularly partial to VMP-221, second high score squadron in the Marine Corps. However, my fellow Marines and I would be quite thankful to the NAVAL AVIATION NEWS for any honorable mention your magazine would toss our way.

WALTER GOEGGEL, JR., 1ST LT., USMCR.

Since Lt. Goeggel gave us no address, we are answering his letter in these columns. We would be delighted to run a Marine aviation squadron history, but we are defeated by the incompleteness of the narrative accounts filed with naval records.

Early in 1944, the Marine Corps decided to dispense with narratives, and the result is that we can start a history of a squadron but we can't complete it. If any Marines wish to help us by writing the complete story of their operations, we certainly will be interested in presenting it.

SIRS:

Don't bury us yet, sic page 12 of April NAVAL AVIATION NEWS! Far from being reduced to a standby status, the Naval Air Station, Barber's Point will remain in a full operational status, and already has rapidly expanded in squadrons attached, and on-board personnel.

In addition to FAWTUPac, the Pointers now support the staff of FAW-2, VU-7A, VR-21, VP-22, VP-25, VP-28, VMR-352, FASRON-117, the outlying seadrome facility for the *Mars*, the search and rescue detachment and the Coast Guard air detachment.

With the closing of MCAS EWA, this station has added all their quarters to help fill the needs of new personnel, and in addition, will utilize some of the quarters at NAS PEARL HARBOR.

W. E. BEALL

PIO, NAS BARBER'S POINT

Like a woman, the Navy reserves the right to change its mind. As of the day our story was written, BP was on its way out. The tide subsequently changed.

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### ● THE COVER

Since this month's feature article is on Hydrographic Office and its work preparing charts for naval aviators, the cover picture is of Lt. (jg) James Kistner, instrument flight check pilot at NAS Anacostia using one of its charts.

### ● RECOGNITION QUIZ

Top—DeHavilland Vampire, best known English jet fighter, equipped with two wing tanks for greater range. Boom tail helps make this plane easily identifiable from almost any angle. This is the first jet to land aboard an aircraft carrier, in 1945.

Lower: F2H Banshee, the Navy's carrier-based twin jet fighter which is replacing the earlier and slower FH-1 Phantoms, also by McDonnell.

### ● THE STAFF

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## SQUADRON INSIGNIA

MANY STYLES of art are represented in squadron insignia this month, all the way from Pt. Mugu's stylized pilotless missile to the macabre death's head and cobra of VA-155. Poised to attack, the snake typifies the sudden death mission of the attack squadron. Another fanciful insignie is that of VC-62. The shutter-bug standing on two carriers denotes a composite aerial squadron delivering photo services to several flattops. O&R's insignie from the big Marine air station at El Toro features civilian togs on the station bull.



O&R, El Toro



NAMTC Pt. Mugu



VC-62



VA-155



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