NAVAL AVIATION

NEWS

Coast Guard Aviation

Helicopter on Carrier

June 1947

RESTRICTED

SHARE THIS

SEA OR LAND PLANE?

If you were flying either, you could pay a call to these well-known air stations. The one pictured in infra-red above is on an island. Where are they? *Ans. Pg. 40.*

IN ANTARCTIC COAST GUARD AIRMEN OPERATED HELICOPTERS OFF ICE BREAKER TO GUIDE HIGH JUMP SHIPS THROUGH ICE PACK

THE FLYING COAST GUARD

No JOB is too different or too difficult for the men in Coast Guard aviation. They're the federal government's flying handymen. And every one of them wears Navy wings. Whether it's setting a P-boat down in rough seas to save survivors, spotting submarines, surveying seacoasts, or searching for stills in the Smoky Mountains, the flying Coast Guard does the job. Smallest and least publicized of America's military aviation services, the Coast Guard has been air-minded since 1916.

They're flying first cousins of the Navy in every respect. All Coast Guard airmen are Navy trained and most of them fly Navy procured equipment. In peacetime they are an adjunct of the U.S. Treasury Department but in war they transfer to the Navy and fight and fly alongside their Pensacola and Corpus Christi classmates under unified command.

It has been no accident that the Coast Guard pioneered in air-sea rescue. Traditionally America's life saving service, the Coast Guard was quick to see the opportunities in adapting aircraft to search and rescue work. Today its record is studded with stirring stories of rescue operations successfully carried out under every imaginable condition.

Under the impetus of war the Coast Guard cooperated closely with the Army and Navy in the now famous Air-Sea Rescue Agency established by the Joint Chiefs of Staff during World War II. More than one naval aviator has been hauled, dripping wet, to safety by the men of the flying Coast Guard.

Now with the world struggling to stay on a peacetime basis, the Coast Guard appears to be the logical choice to carry out America's share in an international civil aeronautical search and rescue organization.

THE FIRST COAST GUARD AIR GROUP POSED THIS PHOTOGRAPH AT PENSACOLA BACK IN 1917; THE AIRPLANE WAS AN EARLY CURTISS

Coast Guard Aviation Spans Thirty Years

CMDR. E. F. STONE

WHEN THE Coast Guard took up aviation back in 1915, most twentieth century Americans still were looking forward to seeing their first flying machine. It all started at Hampton Roads, Virginia, where three air-minded Coast Guard officers with imagination decided that disabled vessels could be located more quickly from an airplane than from the crow's-nest of a ship.

These men, one was Capt. B. M. Chiswell, skipper of the cutter *Onandaga*, borrowed a plane and pilot from nearby Curtiss Field and did some experimenting. What they learned sold them. Then they set out to sell the Coast Guard, and did.

One of those officers, Elmer F. Stone, was assigned to the Navy's then infant flight school at Pensacola. He was graduated as Naval Aviator Number 38 and Coast Guard Aviator Number One, thereby setting a training pattern still followed by his service. This same officer, the late Commander Stone, was co-pilot of the Navy's historic NC4 during its trans-Atlantic flight in 1920.

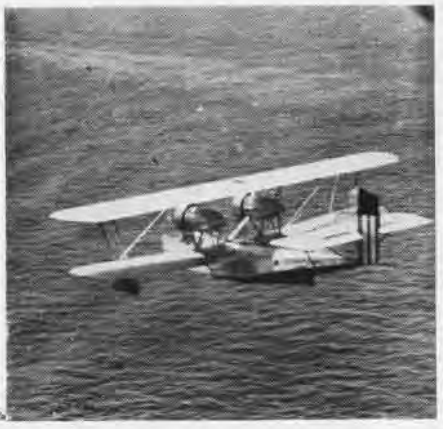
The third member of the air-minded Coast Guard triumvirate, Norman B. Hall, was assigned to the Curtiss Plane and Motor Company where he learned to build aircraft.

Five more Coast Guard officers soon followed Commander Stone through naval flight training. These men, all listed among the first 60 naval aviators, were: C. E. Sugden, R. Donahue, S. V. Parker, E. A. Coffin, and P. P. Eaton.

Congress confirmed the birth of aviation in the Coast Guard in August 1916 when it authorized the establishment of 10 air stations along the coastline of the United States. War intervened before any stations could be established and the Coast Guard, in its wartime role as a naval service, turned all attention to keeping sealanes open across the Atlantic. The handful of flying Coast Guardsmen flew with the Navy.

With World War I out of the way, the Coast Guard established its first air station at Morehead City, N. C. Limited budgets in the postwar period foredoomed Morehead City, and it was discontinued as an air station during the following year.

HALL FLYING BOATS WERE MILESTONES



CAPT. VON PAULSEN

PARADOXICALLY it was prohibition that gave Coast Guard flying its biggest boost during the tax-saving twenties. In an effort to curtail rum-runners along our Eastern seaboard the federal government gave the Coast Guard five new planes and air stations at Cape May, N. J., and Gloucester, Mass.

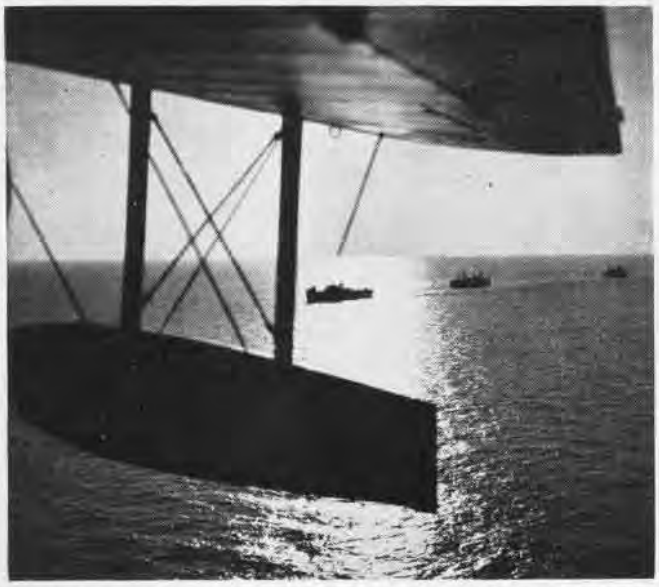
Prohibition's failure was no fault of the Coast Guard airmen who flew air patrols to flush big-time rum-runners along a then loosely-guarded Atlantic Coast.

Capt. C. C. Von Paulsen, who won his Navy wings in 1920, established the Gloucester station and was active in guiding Coast Guard aviation through that turbulent period.

In 1934 you could still count Coast Guard aviators on your fingers and toes but the service was expanding, slowly. The hitherto separated Customs Service aviation unit was turned over to the Coast Guard and the Navy added a few airplanes. Aviation was in the Coast Guard to stay.

Throughout that period the Navy's flight school at Pensacola continued to train selected Coast Guardsmen.

With war clouds sweeping in over the Atlantic the Coast Guard began stripping ship for war. The Flying Coast Guard, with its 50 planes, nine air stations, 91 aviators and 20 enlisted pilots became the fighting Coast Guard.



COAST GUARD AMPHIBS KEPT VIGIL OVER ATLANTIC CONVOYS

PLANES SCANNED THE ICEBOUND GREENLAND COASTS FOR NAZIS

War Found The Flying Coast Guard Small But Always Prepared; And It Is Today

COAST GUARD airmen had already logged two years of Atlantic neutrality patrols when President Roosevelt signed the executive order that made them part of America's wartime naval organization. That was just five weeks before Jap bombers blasted Pearl Harbor.

Two months earlier the Coast Guard had pinned Navy wings on its ninety-first aviator. Counting all its qualified enlisted pilots, the Flying Coast Guard when war came wouldn't have had enough aviators to man one carrier.

But what the organization lacked in numbers it made up in know-how. Familiarity with amphibious operations gained as the nation's number one air-sea rescue agency fitted the Coast Guard for anti-submarine patrols and life saving.

During the first 18 months of war Coast Guard airmen delivered 61 attacks on enemy subs and located more than 1000 survivors of torpedoed ships and ditched aircraft. Their air stations were tied into the inshore patrol network and later operated as units of the various sea frontier commands.

Only Coast Guard squadron in World War II was VPB-6, commissioned on 5 October 1943 as part of Navy Task Force 24. An all-Coast Guard unit, VPB-6 flew PBY-5A's out of Narsarssuak, Greenland, until the end of the war.

Their field at Narsarssuak had a single concrete runway built on a three percent grade. All take-offs were made downhill and all landings uphill. Crosswinds made no difference, terrain left no choice, the traffic pattern was up and down Tunugdliarfik Fjord.

VPB-6's *Catalinas* covered a million and a half square miles of Arctic waste in its anti-sub patrols, reconnaissance work, rescue searches and convoy coverage. Compass variations at times were as great as 50 degrees in the north Greenland region.

In September, October and November of 1944, VPB-6 *Catalinas* cooperated with four Coast Guard cutters in smashing a determined German effort to establish weather bases in Northern Greenland. Two *Cats* flying from an RAF base at Reykjavik, Iceland, provided the cover and reconnaissance.

In 60 flights these two planes logged 410 hours. Twenty percent was night flying and 15 percent more was on instruments. Most of the weather flying was in sleet, snow, rain and icing conditions. The job was completed with the roundup of the entire Nazi weather observation detachment.

War gave Coast Guard aviation procurement its greatest impetus. By 1945 Navy flight schools had trained 400 aviators and several enlisted pilots. During the peak manpower shortage, a number of Navy V-5 cadets were permitted to elect Coast Guard service on completing flight training.

WHILE Coast Guard air assignments in the Pacific were limited to air-sea rescue work and coastal patrols, its pilots served in liaison capacity on the staffs of most top Army, Navy and Marine Corps commands. Coast Guard pilots and Coast Guard techniques had an important part in air-sea rescue wherever ships and planes operated.

Though again separated in peace, Coast Guard and Naval aviation units maintain close liaison. Any emergency will find the Coast Guard prepared to fly and fight alongside the Navy in defense of America and America's interests.

BLEAK COASTLINES ARE FAMILIAR TERRAIN TO THE COAST GUARD

WOMAN INJURED IN BELGIAN AIRLINER CRASH IS EVACUATED

Most Rescue Stories Include These Words: 'Coast Guard Plane Picked Up Survivors'

LIKE THE LAST LINE in the Navy hymn, Coast Guard aviation is dedicated to those in peril on the sea. In peace or in war, saving lives is the Coast Guard's business.

Since its very beginning the aviation unit has been perfecting safety techniques and accumulating know-how in the field of air-sea rescue.

Today, using those skills and equipment developed during war, the aviators that operate out of nine strategically-located Coast Guard air stations, are key men in a well organized and integrated search and rescue system. Whenever a ship or plane in their area signals distress, Coast Guard airmen swing into immediate and effective action.

Only the most sensational rescues make national headlines. Yet month in and month out pilots fly their planes in all types of weather over treacherous coastal areas and stormy seas searching for survivors of aircraft or ships.

During fiscal 1946, Coast Guard aviators rescued 109 persons, transported 179 medical cases, and assisted 359 disabled vessels and 69 aircraft. Through the war years it is estimated they participated in the rescue of 3000 survivors.

Most spectacular rescue in recent Coast Guard history involved the evacuation of 18 survivors of a Belgian airliner from the frozen Newfoundland waste where it crashed.

Coast Guard helicopters dropped down on that otherwise inaccessible area and transported the survivors, many of them seriously injured, to waiting amphibious planes. These Coast Guard amphibians in turn carried survivors to Army Transport Command planes that flew them to hospitals.

The Gander rescue, involving as it did citizens of a foreign country, did much to further internationally an appreciation of the need for a world-wide civilian search and rescue agency.

Such an activity, the Provisional International Civil Aviation Organization, was first discussed and created in 1944. Since that time PICAO's 46 member states have been working for establishment of an international rescue agency.

COAST GUARD KEEPS AN UP TO MINUTE NORTH ATLANTIC PLOT

HELICOPTER PICK-UPS LIKE THIS SAVE MANY DITCHED PILOTS

THE INTERNATIONAL organization, recently it dropped the word "provisional" from its title, will be financed and staffed by member powers on the basis of size and economic wealth. Realizing that in this air-age more and more people will be traveling on international flights over great wastes of land and ocean, member states are mutually anxious to standardize communications, meteorology and search and rescue procedures in all parts of the world.

Because it has the busiest sea and air lanes in the world, the North Atlantic will provide a practical test area for ICAO. A net of direction finding stations, search aircraft equipped with droppable boats and survival gear, helicopters and coastal rescue vessels will service that area.

Today the Coast Guard at its coordination center in New York, keeps an up-to-the-minute ship and plane plot on a huge wall chart of the North Atlantic. Information on overseas flights of commercial and military aircraft are kept current by CAA, Navy and Army reports relayed to the Coast Guard's Eastern Area Command. A similar international organization is under discussion for the Pacific.

Every Coast Guard air station has its list of outstanding achievements. To effect these rescues they fly old Navy reliables like the *Mariner, Catalina, Duck, Widgeon, Privateer,* JRB, and JRF; Sikorsky helicopters; and a few B-17's supplied by the Army and rigged to carry the A-1 droppable lifeboat.

Saving lives is the Coast Guard pilot's business. And an ever lengthening list of survivors, including many naval aviators, gratefully acknowledge they know that business well.

There's No Peace For Airmen Who Fly The Coast Guard's Varied Peacetime Jobs

COAST GUARD pilots claim they're the only American aviation service that flies under fire today. And, if you press them hard enough, they will show you bullet holes in their planes to prove it.

Their airplanes collect those bullet holes flying Alcohol Tax Unit patrols in the "Kim Tussie" country of Southeastern United States. Coast Guard pilots use *Widgeons* or helicopters to fly federal alcohol tax collectors on the "moonshine patrol."

With the service back on a peacetime footing, aviation procurement is again limited to officers, qualified by two years of line duty at sea. Postwar training schedules send between 30 and 40 Coast Guardsmen a year through Navy flight schools. In fiscal 1947 the Coast Guard's aviation personnel added up like this: 331 aviators, 47 enlisted pilots, 968 aviation rated personnel and 226 planes.

The Coast Guard has only six aviation rates: machinist's mate, ordnanceman, radioman, parachute rigger, metalsmith, and electronics technician's mate. On a Coast Guard air station men with crows on their sleeves can't be just specialists. They know their own jobs and other jobs too. Nearly every man on an air station has flight skins because he's qualified to do any job that's required. Even steward's mates know how to man the beaching gear.

Aviation rated men in the Coast Guard usually are trained by Navy technical schools. All A&R work is now performed at the Elizabeth City station. Recently rotary wing experimentation and development work was moved there.

AIR-MINDED ACADEMY CADETS TAKE A LOOK AT THE HELICOPTER

FOR THE FIRST time in service history an aviator is commandant of cadets at the New London Academy. An aviation familiarization course has been added to the school's busy curriculum and there's usually a Coast Guard plane available for familiarization flights. Much smaller than its Navy and Army counterparts, the New London academy had wartime classes of 100. In peacetime it usually graduates 20 or 30 men a year.

While policing the sea and life saving are the Coast Guard's primary jobs, its aviation unit is at the beck and call of other governmental departments.

Two of its planes, one a B-17 and the other an SNB, now are mapping Alaskan coastlines with trimetrogon cameras for the U.S. Coast and Geodetic Survey.

Another Coast Guard Beechcraft, with pilot and crew chief, is presently assigned to the Geodetic Survey on a mapping mission to photograph all continental air fields. The Coast Guard supplies the plane and the flying skill, the Geodetic Survey provides the aerial cameras and photographers, and the maps go to the Civil Aeronautics Authority. It's a perfect example of inter-departmental cooperation.

One Coast Guard unit recently completed a crop dusting project for the Department of Agriculture. This test was unique in that a helicopter was used for the first time. The rotary wing proved ideal for the job, driving the spray directly down as the helicopter hovered over the field.

Other Coast Guard pilots get assigned to Fish and Wild Life Service on game census patrols. One pilot back from that duty described his job as "following a flock of geese while my Wild Life co-pilot counted webbed feet and divided by two."

On other occasions Coast Guard airmen have located schools of fish for commercial fishing fleets and cooperated with government agencies in finding seal rookeries. The Coast Guard doesn't worry about enforcing prohibition anymore but it still gets calls to catch the customs violators.

More than once Coast Guard pilots have transported sick or injured from ships at sea to mainland hospitals. In this work they cooperate closely with the U.S. Public Health Service. In fact, in peacetime, that service provides the Coast Guard's counterpart of Navy's BUMED.

In the North Atlantic Coast Guard planes, cooperating with cutters, still fly the International Ice Patrols that protect world shipping from floating bergs. Coast Guard pilots flew helicopters and a *Duck* with units of Admiral Byrd's fleet in Operation *High Jump* in the Antarctic.

The Loran navigation hookup, established during the war, today is still a Coast Guard responsibility. Pilots operating out of coastal and Alaskan stations fly regular calibration checks to be sure Loran gear is working correctly.

During the flood season a Coast Guard air detachment, equipped with amphibious planes, operates from St. Louis. When necessary its pilots set their planes down on inundated areas, pick up stranded survivors.

Today the Coast Guard operates nine air stations located at Salem, Mass.; Elizabeth City, N. C.; Brooklyn; St. Petersburg, Fla.; Miami; San Diego; San Francisco; Port Angeles, Wash.; and Traverse City, Mich.

STRATEGICALLY situated along America's coastline, these stations provide Coast Guard rescue and life saving services in areas where they are needed most. The Michigan air station gives the same service on the Great Lakes. Air facilities are maintained at Mayport, Fla., and Argentia.

Coast Guard air detachments operate out of Ketchikan, Alaska, San Juan, P.R., Honolulu, and Guam.

The Coast Guard's aviation organization, with its 226 airplanes, proves that service can't be measured by size alone. If Coast Guard airmen wear their Navy wings proudly, naval aviation can show equal pride for having trained them.

GRAMPAW PETTIBONE

Moonlight and Roses

Many and varied are the pilot statements attached to accident reports, but few wax so eloquent as this Ensign who became lost while flying from Norfolk to Washington, D. C. with an attractive WAVE in the rear seat of his SNJ:

"As will become apparent, I planned within too limited a range. First I should have been airborne from Norfolk earlier. (He had departed with only an hour and fifteen minutes of daylight remaining.) Considering my limited experience, it would have been wiser to have departed Norfolk at 1530. At 1655 the sun set to my port and twilight fell beneath the scattered clouds above us.

"I received my last beacon signal shortly thereafter . . . with but thirty miles remaining I radioed Anacostia—but received no reply, although I could hear them calling other aircraft. Needle-ball was my primary instrument reference from then until my planned ETA. During this time I first veered to the East and later to the Northwest, passing between Washington and Baltimore. By 1710 I knew that I was off plan and that total darkness would set in within a matter of minutes.

"My flight experience of the past six months had been highly irregular. Comparative isolation from consistent practice in flying had been my fate . . . for concentrated scientific endeavor cut me away from that feeling akin to day-by-day flying which every experienced pilot refers to. I know that my relatively limited experience did not justify the risk I felt for my passenger's life . . . were I to take any other course of action than that which I now describe. I had made a mistake. I feel a strong responsibility for the lives of those who fly with me . . . because I've seen others killed in training for a lack of this responsibility. So it was clear cut. There was no doubt in my mind. Everything that I did from 1710 to the time of contact with the deck was directed to the best of my ability towards the safe delivery of the one passenger entrusted to me. This was my trend after realizing that my initial mistake could definitely become dangerous to someone besides myself. The surrounding ridges convinced me.

"I had hopes of sighting lights on

Stevens Field (7 miles north of Frederick). When I did not sight this field, I turned South and picked a field which presented the best visible appearance. This was almost two minutes before blackness. After making one pass at an altitude of five feet and approximately 60 knots airspeed, I turned North and then to the East from whence I made a power-on approach. I had put wheels and flaps down and opened the canopy before dragging the area and the wing and tail lights were turned on at sunset. The reflections from the running lights and exhaust lit the scattered snow of this field and aided depth perception materially. Obstacles on the downwind end of the field required a high approach. A cattle fence of wood and wire ran crosswind to the landing path. I knew that I would hit it, but was sure that no one would be injured. The landing was normal in all respects until the fence was intercepted."

Grampaw Pettibone says:

And as the first soft rays of moonlight break through the evening clouds and illuminate the wreckage, we find our happy survivors trudging hand in hand across the snow covered meadow. The friendly lights of a nearby farmhouse beckon to them. She pauses for a moment and whispers softly: "I will always remember this night. Even if they put you in hack, you will still be my hero." CUT.

All kidding aside, son, you're a hero in Grampaw's eyes too,—because you didn't pile one mistake on top of another. That's the thing that kills a lot of pilots. When they first find that they are lost, there may be a dozen ways out, but they are overcome by panic and make a series of wrong decisions from there on out. I think you sized up the situation pretty well. Certainly, in view of your limited flight experience, you had little to gain from wandering around in the dark and a lot to lose. Your decision to land and your selection of an emergency field were good; however, you would have added one additional safety factor if you had landed wheels up.

Determined, That Is!

An Ensign was making his final approach after an hour of field carrier landing practice in an F4U-4B when he was given a wave-off by the landing singal officer. He took the wave-off came around again and made a normal approach and landing. During the landing roll-out, just prior to turning off the runway, he tried to move the landing gear control lever to the 'up' position. Being unable to do this, he engaged the manual emergency override switch, whereupon the tail wheel immediately retracted. At this point the pilot woke up, realized that he was on the ground and that it was flaps and not landing gear that he wanted to retract, and managed to get the landing gear control lever back in the 'down' position before the main wheels retracted.

Grampaw Pettibone says:

Sweet dreams of "Jeannie with the light brown hair" or was it a red head this time!

I notice from the Aircraft Accident Report that you have a total of 445 hours flying time with the last 150 in F4U's. That's just about the spot where a fellow begins to feel that it's all so easy. "Why she practically flies herself," they say until the rude awakening.

Those big leather chairs in the ready room are a mighty safe spot for daydreaming, but, son, when you climb into that F4U you've got to be on the ball all the time.

A Costly Error

Returning from a routine squadron training flight a PBM first pilot found that the conditions in the landing area were considerably rougher than at the time of takeoff. Swells were running 4 to 5 feet high and wind was 15 to 20 knots. The aircraft was cleared to land on the northeast course, and the approach was normal. The inexperienced pilot elected to attempt a normal power landing with 20 degrees of flap.

After a smooth initial impact, the co-pilot cut the throttles and a second later the plane hit a swell and bounced into the air. The plane next hit in a nose high attitude and on this bounce went about 30 to 40 feet in the air. The pilot tried to stall the plane back

onto the water but flying speed had been lost to such an extent that the elevators had little effect. The nose fell through and the PBM hit the water at a very steep angle—estimated by several witnesses to be as much as 30 degrees.

The bow was crushed and, although quick action on the part of the pilot and the crash boat personnel prevented the plane from sinking, it was buckled so badly that it will never be flown again.

Grampaw Pettibone says:

Well, son, that was a mighty costly error or series of errors. In the first place you should not have attempted a normal power landing with 20 degrees of flap in such rough sea conditions. A semi-stall or power stall landing with 30 degrees of flap would have been a much better choice. Secondly, when you bounced into the air, you should have added throttle for a waveoff, or at least enough to cushion your next landing. When a PBM gets too slow on the top of a bounce, the nose will fall through no matter how hard you pull back on the yoke—as you have learned from bitter experience. There simply wasn't sufficient air flowing across the elevators for them to be effective. However, if you had applied power in the early stage of that second bounce, the prop blast would have helped you maintain control of the plane and get the tail down.

All Set Up for Trouble

Here's one from Grampaw's mail bag on near accidents:

"Dear Grampaw Pettibone:

"I was making practice landings in an SNJ not long ago and rolling to a stop between each landing. As I taxied back after the fourth landing, I put the flap control lever in the up position *but forgot to depress the hydraulic lever.*

"After checking the mags and getting permission from the tower, I took off with the flaps down. As soon as I got in the air—and it was darn soon—I retracted the wheels and, of course, the flaps came up too as the flap control handle was still in the up position. This caused the plane to mush and even though I applied full power I came within a very few inches of crashing into the runway.

"I said to myself, 'That was a pretty dumb stunt, but after all, nobody will know about it, I hope, I hope, I hope.' Then I read your request for near accident stories and my conscience began to bother me—so here it is.

"Your loving grandson,
"ENS. JOHN DOE"

Grampaw Pettibone says:

Thanks, son. I hope your experience will serve as a warning to other pilots to use their check off lists.

Something Stinks

Two recent accidents indicate that Dilbert, Spoiler and several close relatives are enjoying their Spring vacation at a certain auxiliary air station in the sunny south.

Case No. 1. Night Field Carrier Landing Practice. Pilot forgot to lower wheels; spotter stationed to check wheels-down doesn't check; L.S.O. gives pilot a cut; crash truck driver proceeding to scene of belly landing fails to turn on truck headlights and runs into the plane destroying the entire tail section.

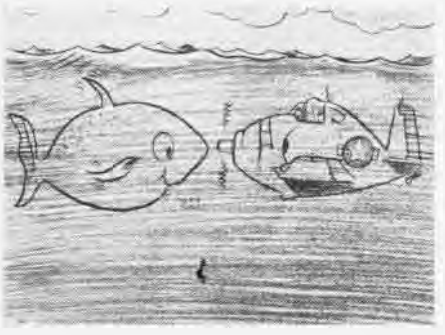
Case No. 2. Same location – three nights later. Pilot flew into the water on the up-wind turn of landing pattern due to relying too much on his pressure altimeter. Crash boat supposedly standing by but cannot be contacted by radio. Station crash boat is then towed to the water's edge on a trailer, but cannot be started.

Meanwhile the pilot who managed to get out of his F6F with quite an assortment of survival gear finds that his Mae West provides insufficient buoyancy and the snap fasteners will not hold, so he inflates his raft and climbs in. When the planes leave the traffic pattern and start searching for him, he fires a red flare. Then mistaking some searchlights on the beach for the crash boats, he fires three more flares at appropriate intervals. Finally deciding that no one is going to come out after him, he paddles towards the shore. Just before reaching the shore he sights a glow through the trees, whistles, and receives an answering hail. He paddles in and meets the Air Group Commander who gives him a ride back to the station in his jeep.

Grampaw Pettibone says:

Does anybody have a clothes-pin? I need it for my nose.

Frequent inspection of crash and rescue equipment and regular drills for personnel who man these facilities are the answer to preventing SNAFU operations like these two above. In the second instance the pilot might very easily have drowned if he had suffered only minor injuries. Fortunately he got out of his sinking plane, uninjured, and with enough gear to effect his own rescue.



Don't Try This Again

A student pilot in a TBM3E was entering his fifth dive in a syllabus glide bombing flight, when he realized that he had not lowered his landing gear. In his haste he inadvertently lowered the landing flaps instead of the landing gear. As he was applying forward pressure on the stick and forward tab he did not notice the lift effect of the flaps coming down, and continued in a 40 degree dive during which a speed of 200 knots was reached. Recovering from the dive (lucky chap), he tried to retract the wheels and realized his mistake. The ribs and skin of both right and left outboard flaps were buckled and numerous rivets were popped.

The pilot made a careful check in the air to determine that there was no loss of control or radical change in the flight characteristics of his plane and effected a successful landing without further incident.

Grampaw Pettibone says:

Come up and see my pictures some time and you'll realize just how fortunate you were. You exceeded the allowable speed limit for flaps down operation in the TBM by more than 70 knots, and you're mighty lucky that one or both did not collapse completely. Next time go over that bombing check-off list carefully before you go into your dive.

Vest Must Be Modified

After taking a wave-off an SB2C was observed to spin in while making a steep turn into the crosswind leg some 500 yards ahead of the carrier. The plane sank but the pilot was sighted floating face downward in the water. He was picked up six minutes after the crash but died due to drowning. His Mk-2 life vest had been inflated but the chest snap fasteners were undone. It is believed that the moderate injuries received by the pilot in the crash caused him to lose consciousness after freeing himself from the plane and inflating his life jacket. With the chest snap fasteners undone an unconscious man tends to float face downward in an inflated Mk-2 life vest.

Comment:

As a result of this tragic accident a new Technical Order No. 45-46 has been promulgated concerning the inspection and modification of the Mk-2 life vest. In tests it was discovered that the chest snap fasteners were often not strong enough to hold when the CO_2 toggles were pulled. As a result, it is now necessary that all Mk-2 life vests in service be modified to incorporate stronger fasteners. Instructions for the above modifications are now included in T.O. 45-46 and the supply department stocks the necessary material.

AERIAL GUNNER GETS 87% HITS

CHEUVRONT (FOURTH) AND FOUR OTHER ACAG-1 PILOTS WHO PUT 455 HOLES IN BANNER

So you think you are a hot-shot with the .50 cal.? So you can cut a jack of spades in half, edgewise, with a pistol, from 30 paces? Then listen to the gunnery story just reported to NAVAL AVIATION NEWS by Fighting Squadron Two Able at NAS KAHULUI, Maui.

Take notice of the gunnery feats of Lt. (jg) Harlan R. Cheuvront of Ardmore, Okla. During a three-weeks' period of aerial gunnery in F4U-4's, this veteran fighter pilot formerly with VBF-86 on the *Wasp*, fired 1,396 rounds and scored 670 hits on a towed banner target. His average was 48%. A good average for fixed gunnery is around 10%.

Cheuvront's individual fixed gunnery performance has consistently bordered on the phenomenal. Records of his last 10 firing hops give him an average of 47.3%, or 934 hits out of 1,996 rounds.

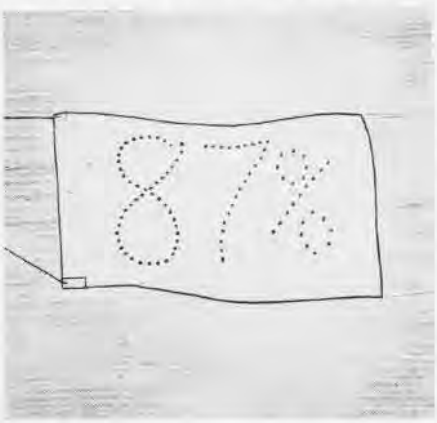
Remarkable as this performance has been, in a gunnery competition held between VF-2-A and VF-1-A, Cheuvront outdid all his previous efforts. Rules of procedure for the competition were drawn up and strictly adhered to by both squadrons. Twelve pilots from each squadron took part. They were sent out in groups of six, three from each squadron.

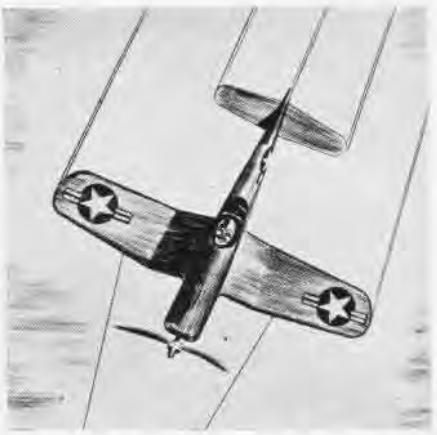
The inboard guns of their F4U-4's were loaded with 100 rounds apiece and the loading supervised by the rival squadron. A-6A banner targets towed horizontally at an indicated airspeed of 140 knots, at 6,000 feet, were used. The type of run was left up to the individual pilot, but the horizontal banner caused pilots to use only overhead or steep high side runs on the targets.

After the four sleeves were back and hits and rounds expended were counted and rechecked by both squadrons, VF-2-A was found to be the winner. It had 28% hits, 638 out of 2,278 rounds, with VF-1-A scoring 23.8% hits.

However, even these fine collective efforts were overshadowed by Cheuvront's terrific individual perfomance. When the banner at which he and five other pilots had fired was checked it was found to contain 455 hits. Of these 174 bore Cheuvront's color, red. *He had fired 200 rounds and hit the banner 174 times for the astounding average of 87%, and this in actual competition.*

Efforts of the other five pilots on this hop should not be overlooked in view of the fact that this banner was the most riddled tow target ever observed by any member of either of the competing squadrons. The average of the other five was more than 28%.





In the photograph at the top of the page, Cheuvront is fourth in line. Others in the picture are Lt. Cdr. G. S. Wiley, Lt. (jg) W. J. Koressel, Lt. (jg) W. H. Hargis, all of VF-1-A; Lt. (jg) H. P. Cauchon and ACOM Estes of VF-2-A. Also firing but not shown was Lt. (jg) R. H. Jester of VF-2-A.

IT IS EXPECTED that all these figures will raise many eyebrows, the squadron says, but all members of both squadrons are available for verification. Also for the benefit of some others, it might be added that neither squadron employs any but the standard method of counting—holes are only counted once and banners are marked on one side only.

While there may be those who can effectively search their memories to challenge Cheuvront's fixed gunnery mark, it must be remembered that it is modern high speed gunnery, utilizing wing guns, which is under consideration. So VF-2-A firmly believes Cheuvront is not only the Navy's top present day fixed gunner but challenges anybody to produce the equal of his competitive performance for any previous time.

The squadrons had spent weeks previously with the Pacific Fleet battle problem and had no time for any intensive fixed gunnery for some time. Practice hops were flown over a three-week period culminating on the last day in the gunnery competition between the two squadrons. Over the three weeks, all pilots of VF-2-A fired 14,614 rounds and got 2,844 hits, for an overall average of 19.5%. Only the two inboard guns were loaded. They were boresighted at 900 feet.

(*Editor's Note:* Can anyone recall any fixed gunnery records that can equal those listed in the above story? Let us hear from you on the subject.)

VR-5-SEATTLE—Anticipating arrival of our first radar-equipped "Klunk" from major overhaul, this squadron is busy bringing its pilots up-to-date on all possible aids to navigation and electronics.

LT. (JG) DOYLE, ASST. FLIGHT DECK OFFICER, SIGNALS FOR HELICOPTER PILOT TO LAND ON CARRIER DECK AS CREW LOOK ON

HELICOPTERS ON CARRIERS

THE NAVY gave the helicopter a thorough-going operational test on the *Franklin D. Roosevelt* (CVB-42) during its recent Caribbean maneuvers with the Atlantic fleet and the "windmill" came through with flying colors.

It was not the first time a helicopter had operated off a carrier deck. Four of the same S-51 Sikorsky aircraft were with the Byrd Antarctic expedition, which also used the smaller HO3S's. The latter also operated off the *Saidor* at Bikini. But the helicopter really proved its worth as a utility and rescue plane off the *F.D.R.*, a showing which may have an effect on fleet operations of the future.

The four-man S-51 aircraft was used for practically everything in the books. The carrier had hardly cleared the Norfolk harbor before it was put to its first use—transporting Captain Robert Holland of the Virginia Pilot's Association to the beach after he had taken the ship through Norfolk channel.

The helicopter's most spectacular feat was its rescue of six pilots who had to land in the water. One of them would have lost his life if a lifeguard destroyer had been the sole rescue means. The plane arrived immediately, just as he was going under the third time.

In addition, it flew guard mail to various ships and submarines of the Eighth Fleet in a fraction of the usual delivery time. Personnel were taken from ship to ship with a minimum of trouble and delay. The helicopter also proved valuable in coordinating submarine operations with the fleet, for radar calibration and for photographic missions.

Chief pilot for the test was D. D. (Jimmy) Viner, Sikorsky's head pilot, regarded as the outstanding helicopter pilot in the world with more than 1,000 hours in them. Jackson E. Beighle, assistant to Viner, and Lt. Joseph Rullo of UX-3, Lakehurst, Navy observer, also aided in the operation.

The S-51, with Viner and Rullo aboard, saved Lt. Cdr. George R. Stablein from certain death when his *Helldiver* stalled while coming in for a landing. Crewman August J. Rinella perished in the crash, but Stablein came to the surface, dazed and injured, his life jacket useless. As he sank for the third time, Viner put the S-51 so low its nose wheel was in the water. Stablein grasped the rescue cable frantically and held on.

After Viner lifted the plane to a safer distance above water, Rullo started the winch to hoist the 230-pound pilot aboard. Just as Rullo got hold of him the cable wound one of Stablein's thumbs onto the winch drum and he let go his hold, nearly dragging Rullo

FDR TRANSFERS STORES AND PERSONNEL TO U.S.S. GREENFISH VIA S-51 HELICOPTER SPECIAL PLATFORM ON SHIP OF ADM. CRUZEN'S TASK FORCE IN ANTARCTIC ENABLED HO3S TO HAVE AMPLE ROOM FOR OPERATION

out of the cabin. Viner tilted the helicopter sharply to starboard, tossing the pilot into the cabin on top of Rullo. The aircraft then hovered, trying to find the aircrewman. Failing in this, it landed Stablein on the carrier, less than five minutes after he had gone in.

The other rescues, one by Beighle, were routine pickups of men who made forced landings. Hovering near the plane guard destroyer, the helicopter demonstrated its value by getting to the men quicker than a ship could have maneuvered, with less danger to the men in the water. Transfer of the men back to their ships was a minor operation compared to the usual breeches buoy system.

The helicopter made 154 flights during the maneuvers, delivering 231 passengers to other ships or ashore, including Hon. John N. Brown, Assistant Secretary of the Navy for Air, Admiral Blandy and other high-ranking officers. It made 98 mail deliveries, 19 plane guard operations and logged 62 hours of flight time on 33 different days, during five of which all other fleet aircraft were grounded because of weather or rough seas. Rear Adm. J. H. Cassady, ComCarDivOne, and Capt. J. P. W. Vest, skipper of the *F.D.R.*, played a leading part in arranging to give the helicopter a thorough test under opera-

tional conditions aboard various ships.

The s-51 carries four passengers, including the pilot. It weighs 4,000 pounds, 5,000 with passengers and gasoline. Survival gear is stowed abaft the pilot. Its power plant is the same as in the SNJ. At present its rotors are nonfolding but it can be handled easily on the deck-edge elevator.

Probably the biggest problem encountered in the helicopter operations was turbulent air over the decks. All types of approaches were tested on the carrier. The *Missouri's* #2 turret was trained abeam and the s-51 landed on the #1 turret, bringing Mr. Brown to call on Vice Admiral Arthur W. Radford to observe gunnery. The operation was reminiscent of the first plane to take off from a ship back in 1911, when Eugene Ely flew off the turret of the U.S.S. *Pennsylvania*.

The aircraft also made deliveries and pickups to destroyers and submarines, the latter being particularly easy because of less top-hamper and turbulent air from stacks.

As in all new operations, minor troubles were encountered, such as unfamiliar crews who did not know just how to handle the transfer of personnel, mail or gear. Ship's guns pointing skyward were found to be a hazard to a hovering aircraft, as were jackstaffs.

Among the odd jobs the helicopter performed were delivery of a chaplain to other ships to hold religious services, flying the boxing team to another ship to hold matches and transportation of a doctor to make an emergency operation which probably saved a life.

Fleet commanders and leaders were able to meet for conferences during maneuvers, instead of having to depend on messages.

As a photographic plane, the helicopter has possibilities due to its ability to hover in one spot and hold low altitudes. Its vibration could be counteracted by higher camera shutter speeds. Used for radar calibration, the plane can hold station and altitude at any level while the ship's electronics experts check their instruments on it.

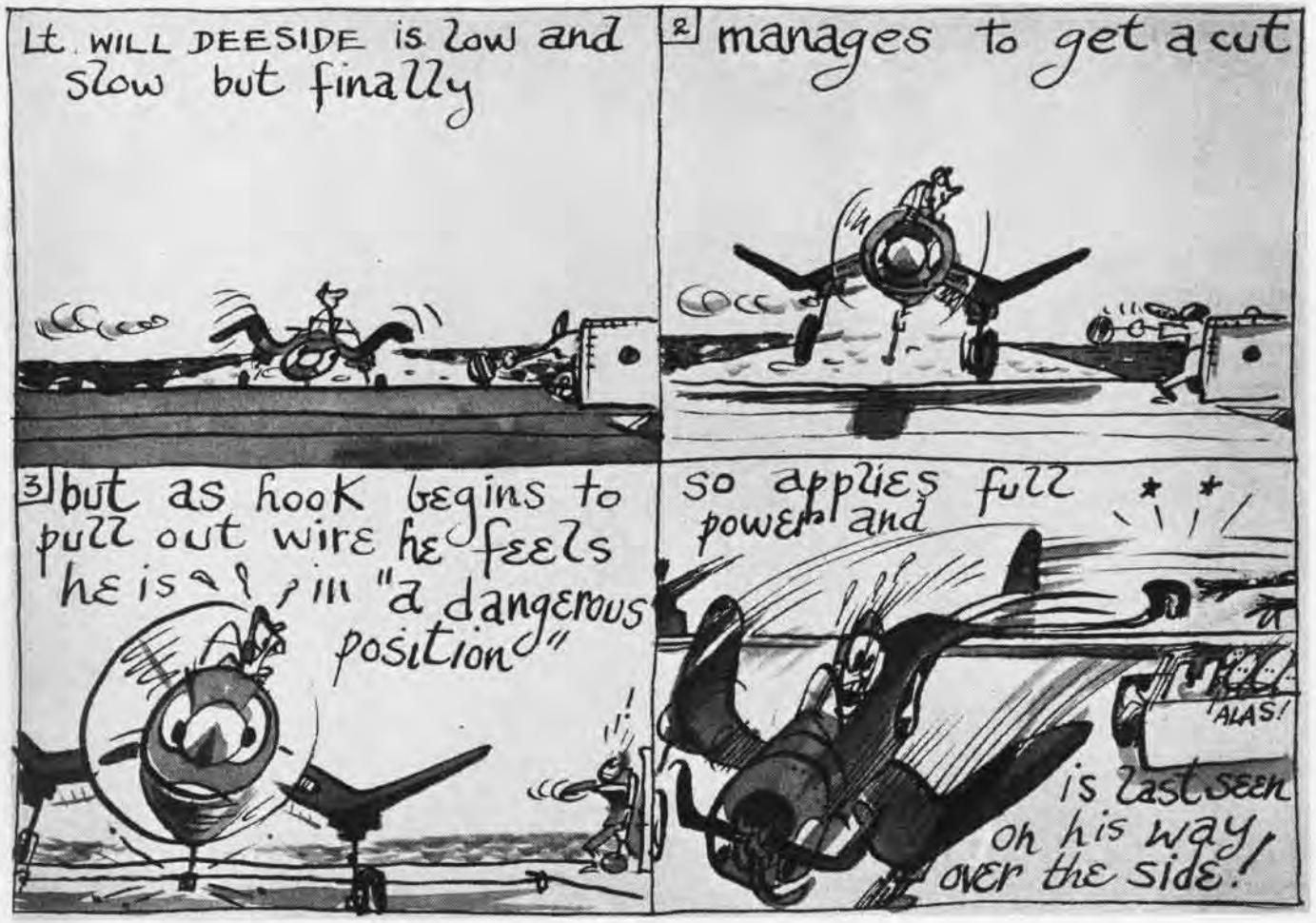
As a result of the carrier operations, some suggestions were made to improve its usefulness. A loud speaker was recommended as an aid in landing, to instruct the ground crew which pulled it down to the deck or disengaged gear or mail being delivered.

Operations were more successful if the ships slowed down to cut turbulence. Folding rotor blades, not present in the current model, would facilitate stowage and handling. A searchlight would aid in night operations and night flight instruments would be needed if it were used for that specialized work.

MEN ON DECK HAVE TO BEWARE REAR ROTOR AS S-51 WARMS UP

CENTER TRIO—VINER, RULLO AND BEIGHLE—CONDUCTED FDR TEST

HELICOPTER FLIES MR. BROWN AND AIDE TO VISIT THE MISSOURI



LT. WILL DEESIDE

Moral: "Cut" and "Wave-Off" Are Mandatory

DURING a carrier approach, the pilot has the privilege of pulling out and making another approach at any time. However, once he is in the groove and receives the *cut signal* its execution *is mandatory.* The cut signal demands immediate and complete retardation of the throttle and completion of the carrier landing. Never attempt a wave-off once you have executed a cut as this usually ends in disaster.

Wave-off's are normally given for unsatisfactory approaches, excessive movement of the ramp due to the rolling and pitching of the carrier, or the carrier or its gear not being in readiness to recover planes. In any case Execution of Wave-off is Mandatory. Wave-offs are normally made to the left and it is mandatory that they be made to the left *after the plane is in the groove.* However, a wave-off to the right is recommended, if the pilot's recovery technique from a dangerous attitude during the initial turn into the groove requires it.

CASE 1—An SB2C pilot made a carrier approach and received a cut while slightly to starboard of the center line of the ship. Taking his cut, the pilot dropped his right wing slightly bringing him still nearer the starboard side of the deck. This may have been caused by the turbulent air sometimes encountered just aft of the island structure. The plane appeared to be heading towards the after gun mount but while still a few feet off the deck the pilot added full power in an attempt to take a wave-off to the right. The plane failed to respond to the immediate application of power and the right wing and wheel struck the starboard edge of the flight deck shearing off the plane's ASH radar gear and one 20 mm gun mount. The plane cartwheeled and entered the water on the right wing and nose. Neither the pilot nor plane was recovered. Specific pilot error was in taking a wave-off after executing a cut.

CASE II—An SNJ pilot on a carrier qualification flight was approaching the ramp a little high. When the "high" signal was given, the pilot overcontrolled and mushed down. Come-ons and a wave-off were given. The pilot cut his throttle before taking the wave-off. The aircraft struck the deck between number one and two cross deck pendants on the port wing and port wheel. The pilot applied throttle and took off over the port side. He then called the ship, reported the damage, climbed to 5,000 feet and tested the plane in slow flight. Plane maneuvered satisfactorily and the pilot landed aboard on the next attempt. The pilot stated that he mistook the wave-off for a cut because the L.S.O.'s right arm seemed to cross first. The aircraft accident board found that the specific errors committed by the pilot were that: *1.* He violated a cardinal rule of carrier landings by taking a cut on a wave-off and *2.* After realizing this error he attempted to take the wave-off although he had insufficient altitude to take a wave-off without hitting the deck. *Never "Cut" on a "WAVE-OFF" and never "WAVE-OFF" once having executed a "CUT."*

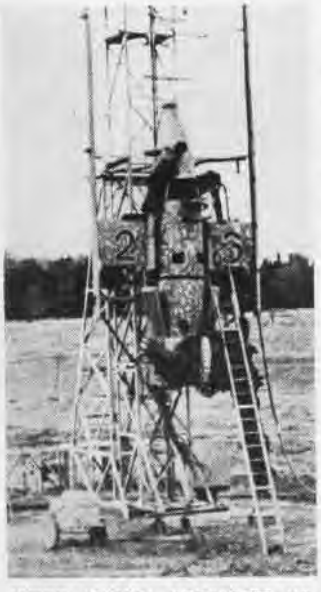
JET PILOT SAFETY

New Aircraft Provide Ejection Seat and Dive Brakes to Save Pilot in Emergency

THE NAVY is exploring an almost-virgin territory, like atomic energy, when it tries to find the answer to safe ejection of a pilot from a 600-mph. jet aircraft. Important as it is to have high speed planes, it is equally important to afford means of escape for the pilot and crew in an emergency.

Development of safety devices to eject the pilot from the various new jets under construction is being carried on by BUAER's Airborne Equipment division simultaneously with development of the planes by Piloted Aircraft division.

The Douglas D-558 *Skystreak* has a jettisonable cockpit nose section from which the pilot can bail out. In the XFJ-1 dive brakes in the wings (see photo pg. 15) will slow the plane down so the pilot can bail out. The XF6U has no escape provisions as yet. The stubby Vought jet, nicknamed the *Pirate*, probably will have safety devices included.



VIPER 'FIRED' STRAIGHT UP

Plans drawn around the configuration of the F2D provide for a jettisonable nose section also, as illustrated above. The pilot's "capsule" drops away from the rest of the nose after deceleration. Parachutes attached to it behind the pilot slow the fall.

Some new plane designs favor the V-type "rudder-vators" for stability. This butterfly type of tail surface is found in the Beechcraft *Bonanza* commercial plane. An aircraft with this arrangement would simplify pilot escape since he would not have to be catapulted so high to miss the rudder. The seat's powder charge could be considerably smaller and his chances of being injured much lessened.

The Navy thus far has attempted and successfully ejected only one person from a plane in flight, and that at a comparatively slow speed of 250 mph. The Army has made two tests. Numerous dummy seat ejections have been made at various speeds from the JD-1, however, up to 350 mph. A twin-fuselage P-82 has been lent by the Army for tests up to 500 mph.

During late phases of the war, the Germans had jettisonable nose sections on their *Viper* rocket interceptor planes and ejection seats in their fighter and bomber planes. They made 60 known successful operational ejections during the war. Personnel who used this device said they never would bail out in any other way. Planes equipped with it were the Messerschmidt 163, 262 and the Heinkel 162, 219, 229 and 280 aircraft. The Germans used hydraulic, powder or compressed air for their experiments.

The Army Air Forces also are incorporating pilot ejection in their high speed aircraft. The new P-80-B's will have a seat which will be thrown out by a single powder charge, as against the Navy's two-charge system. Later versions of Navy seats may employ only one charge if experiments on a slower-burning powder work out. The *Thunderjet* P-84 has an ejection seat, as has the needle-nosed XS-1 supersonic plane.

IN THE Navy D-558 research jet, the pilot can disengage his seat and fall backward out of the pressurized nose section after it has left the plane. Should he try to bail out directly into the slipstream at high speeds the air impact or sudden deceleration might prove fatal. Padded head supports, special harnesses and pads protect him against the violent, sharp jolts of turbulent air at high velocities.

The nose section is detached from the fuselage aft of the pilot's seat by means of a dogging arrangement like the water-tight doors on a submarine.

One of the problems that must be met in tossing a pilot out of his stricken plane in his seat is the airblast he will meet upon emerging. Special face masks and protective canvas canopies are being studied to protect him from the flesh-tearing slipstream. Crash helmets also will help.

If the whole nose section is jettisoned, the problem is lessened because if he has enough altitude he could withhold bailout until his falling "capsule" has slowed down.

AVIATOR BAILS OUT IN F7F 135 MPH. SLIPSTREAM AT CHERRY PT.

CHUTIST MISSES WING, ELEVATORS IN A TEST BAILOUT AT JAX

"Escape Egg" Must Be Streamlined To Avoid Tumbling After Being Released

WHAT IS unknown as yet is the behavior this "escape egg" will have when it is cast free of the fuselage. If it tumbles badly it may dash the pilot to death inside, incapacitate him with vertigo or hold him helpless to move by centrifugal force. Wind tunnel tests are to be made to determine this behavior.

Explosive bolts were used in some early-type planes like the German Dornier 335 (see pg. 15), a twin-engine fighter with power plants in the nose and tail. The bolts blew off the tail so the pilot would not hit the rear propeller or empennage on bailing out. Such bolts have been given some consideration for U. S. planes, but designers are exploring pilot ejection or a less-hazardous means of detaching a plane section. Stories were told of Dornier pilots accidentally separating their planes from their tail sections during flight.

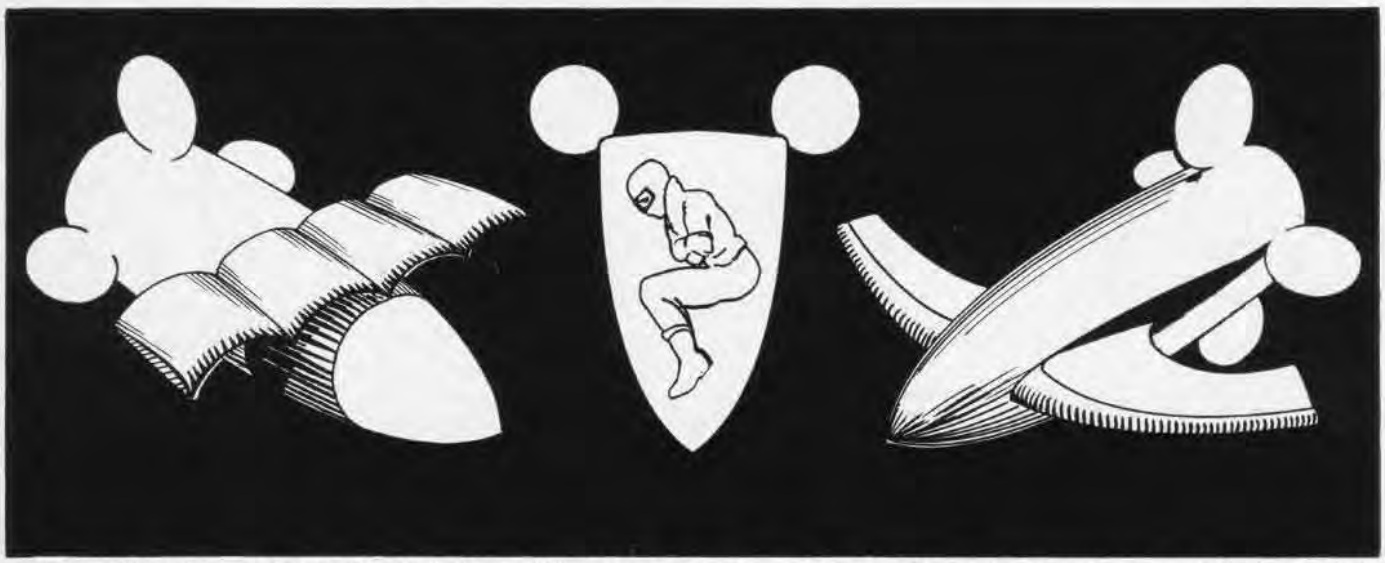
Another problem that takes some engineering thought is that of severing the control cables, electrical connections, fuel and hydraulic lines if the nose section of a jet is to be detached from the rest of the plane. Various methods are being developed to do this job which promise to be workable.

If the war of the future is to be fought in the freezing altitudes around 40,000 feet or higher, the pilot could not bail out directly into the air in his seat. He would freeze or die of oxygen lack before he could fall to a safe altitude. He may ride a pressurized capsule to a safer level before "hatching" himself like a chick out of an egg and descending the rest of the way in his personal chute.

AS YET nobody has developed a parachute that can be depended on to function at high speeds. Around 250 mph., is the safe limit of today's personnel chutes. The Navy has a number of its agencies and private contractors working on various designs which will not split at high speeds or open so fast they would kill the pilot by extreme deceleration (NANEWS, March, *Speed Chutes*).

A capsule may have some sort of small drogue chute that would take the shock of high speed opening and not tear off. This would slow down the capsule and stabilize its fall. BUAER's parachute program is working on the premise that it wants to slow the capsule down from 600 mph. to 130 mph. via drogue chute in four seconds. This would hold the G's down to a safe level.

One trend is toward automatic opening parachutes for high speed aircraft, like those attached to the rear of the pilot seat in the opening photograph of this article. A minimum of encumbrance is desirable on the man's body while he is flying his plane. The XS-1 may have an aneroid device to open the pilot's ribbon chute when at a safe altitude.



'ESCAPE EGG' WITH FOLDING WINGS AND STABILIZERS MAY BE SURVIVAL METHOD OF FUTURE, OR TO TRANSPORT PARACHUTE TROOPS

An idea may be borrowed from the Germans to avoid collision between the pilot escape capsule and the rest of his aircraft—a drogue chute on the tail part to slow it down so the nose will fall free. This was incorporated in the *Viper*, a slightly refined version of the Jap *Baka* bomb in that it tried to provide for escape of its pilot.

SOME similar type of drogue chute might be put on the escape egg to slow down the streamlined capsule or stabilizer fins and a drogue may steady its fall and prevent tumbling. Wind tunnel tests are to be made to see what happens to a nose section when freed at high speeds.

Because he will have to act fast if his 600 mph. plane suddenly gets shot up or the engine quits, the pilot must not be encumbered by heavy gear. He must not be connected to his plane by entangling wires or feed lines that will choke him. The escape mechanism must be automatic, foolproof and fast. If he lost his oxygen or gloves it might be fatal at high altitude.

One recommendation was that the pilot might be catapulted downward from his plane instead of up. This would require some redesigning of present cockpits and has the added disadvantage of being more dangerous to the pilot. A man cannot take more than about five G's in a downward direction without the harness breaking his shoulder or chest bones. In upward catapulting, the 20 G shock is absorbed by his comparatively strong and wide seat area.

The idea of an "escape egg" is not a new one. The principle is the same as the oaken barrel used to ride over Niagara Falls or the escape bells provided on submarines. In addition to their value in escaping a crippled plane, the "eggs" might be used in the war of the future to launch and land paratroopers from high altitudes.

Their eggs might be equipped with folding wings to give them gliding ability. Then the pilot or paratrooper could choose his landing place and avoid buildings, cities, forests or water areas. It may be equipped with automatic opening "feeler" like a proximity fuse, which would unfurl the capsule's parachute when it got near land. Let-go gear probably would be desirable to prevent its being dragged over the ground by its chute.

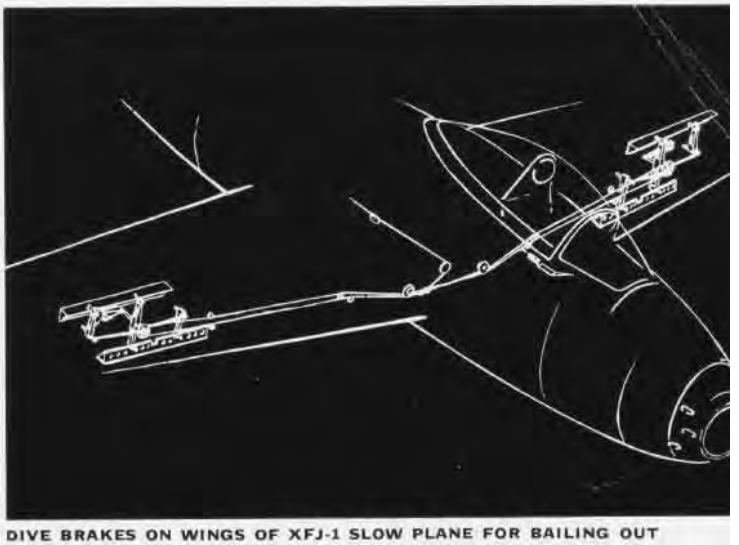
THE MAN himself may need some sort of body harness or "plaster cast" to enable him to withstand heavy G accelerations or decelerations. In a larger plane where men move around inside, some sort of hoisting gear may be needed to help them overcome the tremendous centrifugal force of a spinning plane, reach the rescue station and be catapulted to safety. One bombardier in the war was within 18 inches of his exit but his strength was insufficient to boost him through because of this force.

A method of getting lower G shock when a parachute unfurled at high speed might be a reefing line around the mouth of an elongated chute shaped like a tow sleeve. Opening and closing might be then controlled. Tests at Lakehurst showed a chute opening at 500 mph. caused about 40 G shock, far more than a man safely can be expected to withstand.

The Parachute Experimental Unit at Lakehurst has tested more than 40 different parachute shapes or material ideas in an effort to find ways of meeting the problem of high speed aircraft.

A parachute that opens slowly would reduce the G shock but could be used only at high altitudes. The pilot still would risk injury because the ribbon-type chute, commonest of the slow-opening variety, would fall too fast. The ultimate parachute will have to be one that opens fairly quickly, with small shock and falls slowly to avoid a hard landing.

AAF'S SECOND EJECTION FROM P-61 SHOWS MAN HIGH OVER TAIL



DIVE BRAKES ON WINGS OF XFJ-1 SLOW PLANE FOR BAILING OUT

DORNIER 335 TAIL SECTION BLEW OFF TO PERMIT PILOT ESCAPE

DID YOU KNOW?

Saipan Fighters Try Out GCA

Pilots Get Stamp on Instrument Card

VF-13-A—In preparation for getting the new "Military B" stamp on their instrument card and after a concentrated type instrument program, all pilots of VF-13-A qualified on the ground control approach unit at Agana Field, Guam.

Flights of four planes were made to Guam from Saipan, twice daily for this purpose. Despite a few obstacles such as mountains, rough air, and the harassing by Army P-47's, all pilots received a minimum of eight approaches each.

The squadron was favorably impressed with the ground control approach system and the high degree of cooperation received. The main difficulty was faulty communications. As the GCA unit is installing two ARC-1's as supplementary gear, it is believed that the communication difficulties will be overcome.

Four Drone Units Fly at Once

Quadruple Operation First in History

VU-6, PACIFIC—This squadron, based at Kahului, is believed to have established a record for utility drone squadrons when four TD2C-1 type drones and control groups provided simultaneous coordinated gunnery runs for units of the First Task Fleet.

The normal operational expectancy of this type squadron, based on aircraft and personnel allowances, is a dual exercise. To overcome the control plane shortage, a JRB-4 was obtained from NAS KAHULUL. Control panels of two F6F-5 aircraft which had been used to control Bikini drones were modified to control the Culver planes.

It was necessary to move the drone controls from the rear seat to the pilot's cockpit of the SB2C-5 planes, thus using one pilot a plane instead of two. Three pilots were borrowed from VU-1 at Pearl.

For this quadruple exercise each control group consisted of one JRB-4, one SB2C-5, and one TD2C-1 drone with the exception of one group which used an F6F-5 instead of a *Helldiver*. The four groups were launched in nine minutes. All drones were fired on and the exercise conducted satisfactorily. Final score, two drones destroyed by gunfire.

NEW MODEL APPEARS SAME AS THE JRM-1

Largest Mars Plane Joins Navy

Fifth of Line World's Second Largest

Fifth and largest of the giant *Mars* seaplanes to join the Navy, the JRM-2 has been completed and turned over to flight test at NATC PATUXENT RIVER.

The four JRM-1's—the *Marshalls*, *Philippines*, *Marianas* and *Hawaii Mars*—are in operation with Naval Air Transport Service.

The last of the line is second largest seaplane in the world, eclipsed only by the 200-ton Hughes *Hercules* (NANEWS, February 1947). It is 10 tons heavier in gross weight than the four earlier *Mars* flying boats and cruises 20 miles an hour faster.

Its four R-4360 engines turn out 3,000 hp. each at take-off. Range is nearly 7,000 miles, 1,000 more than sister planes; useful load is nearly seven tons more than the other *Mars* aircraft, height is 45 feet and wing span 200 feet. Gross weight is 165,000 lbs.

The latest member of the *Mars* series will not be turned over to NATS, but will undergo test and development at Patuxent River.

British Award Training Plaques

Eleven Naval Air Stations Are Honored

In appreciation for cooperation of the United States Navy in training its pilots, the British Royal Navy has presented 11 plaques to naval air stations which participated in the "Towers Training Scheme."

CAPT. WOOTTEN GIVES PENSACOLA PLAQUE

Stations receiving plaques were Corpus Christi, Pensacola, Jacksonville, Grosse Ile, St. Louis, Ft. Lauderdale, Bunker Hill, Miami, Squantum, Quonset Point, and Brunswick. In the cases of stations now closed down, the plaques were given to the command under which they operated.

First training of British students in U.S.-type planes like *Corsairs*, *Hellcats*, *Catalinas* and *Avengers* started in 1941. At the start 30 students entered Navy training monthly but by the time the scheme was terminated in May, 1945, after defeat of Germany, 44 percent of all Royal Navy pilots training in U.S. were at naval air stations.

The British supplied some of their own instructors for liaison purposes, but the pilot training was done by U.S. officers. A high proportion of the pilots who flew from British carriers with the U.S. Third and Fifth fleets in the Pacific were trained in this country.

Three VP Squadrons Get Award

Presidential Citations Are Given Out

Three patrol bombing squadrons, VPB-117, VPB-12, and VPB-118, have been awarded the Presidential Unit Citation for their outstanding combat records in the Asiatic area during 1944 and 1945.

VPB-117 destroyed thousands of tons of Jap shipping, damaged shore installations and shot down 63 enemy planes while on its long-range searches, anti-shipping strikes and submarine coverage missions.

It was one of the first three Navy long-range search squadrons to operate from Tinian and the first to base in the Philippines. It ran 1,000-mile searches, patrols for the Third fleet, shore bombardment spotting missions, night shipping strikes and sub protection. Period covered by the citation was 4 October 1944 to 11 August 1945.

VPB-118's citation was for its operations in East China, Korea and Japan during the Okinawan campaign from 26 April to 8 August 1945. It sank 24 enemy ships and damaged 30 others during a three-week period of the campaign.

It made strikes against heavily-defended airbases and airfields on Kyushu and Korea and mined waterways and harbors in Korea while raiding in-

stallations there. As the sea blockade progressed, it shifted to raids on land communications between Japan and China, hitting railroads, airfields and shipping installations.

VPB-12 is the famous *Catalina* "Black Cat" squadron which originated effective night flying tactics in torpedo, bombing, anti-submarine and harassing missions against the Japs. Its award period covers from 24 November 1942 to 1 June 1943.

This squadron's feats during Guadalcanal days are probably among the best known in Naval Aviation. With only nine planes available, it ran up an outstanding record around Munda, Villa, Buka and Kahili.

BANANA RIVER CHIEF AND HIS TROPHIES

Navy Chief Wins Golf Tourney

Banana River Man Is Service Champ

An aviation chief machinist's mate from NAS Banana River, Joseph C. MacDonald, is the new inter-service golf champion. He won the title by besting the best golfers the Army, Marine Corps and Navy had to offer in a two-day tournament held at Augusta, Ga.

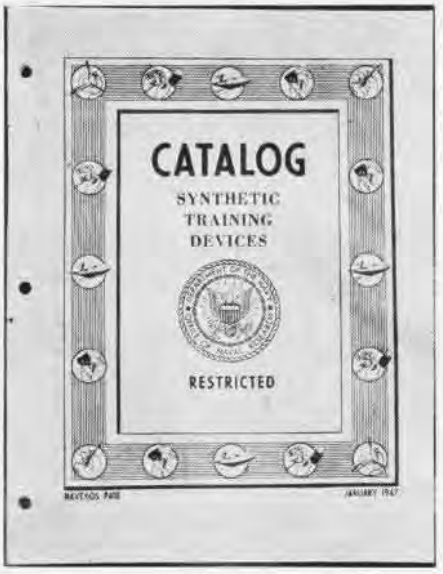
MacDonald carded a 147 in the 36-hole medal play to edge out an Army Air Force major by a single stroke. MacDonald was a member of the Naval Air Training Command team. He holds the all-service title for the Panama Canal zone for 1946.

Special Devices Catalog Issued

Lists New Gear, Services of 'Center'

A triple indexed catalog of synthetic training devices has been issued by the Special Devices Center, Office of Naval Research, Sands Point, Port Washington, N. Y.

The catalog groups devices under the general headings of navigation, flight, gunnery, training aids, and radar and communications. Each device is explained fully with descriptive copy, and



TRAINING DEVICE CATALOG IS AVAILABLE

an excellent photograph of each one.

Three indices cross reference each device, so that it may be located quickly by name, by device number, or by functional heading.

This catalog, which replaces the synthetic training devices Catalog of July, 1945, shows for the first time many new devices of interest to the field. It is available to all activities upon request.

Link School Moves to NAS Jax

Operators Trained to do Maintaining

NAS Corpus Christi—Link Instrument Training Instructors School (LITIS) has been moved for the second time since the war, transferring its activities from Corpus Christi to Jacksonville. It formerly was located at Atlanta, Ga., where it was launched in 1942 to train Waves and a few men to operate Link trainers.

At Jacksonville, the course has been combined with the advanced course on Link maintenance so that operators upon graduation can run their Links and repair them. A total of 1808 Waves, Spars and women Marines had been trained in LITIS when it closed its training for women in October, 1945. The school is under Naval Air Technical Training Command.

Key West Gets 'Fish' Training

Torpedo Pilots Fly From Boca Chica

NAS Key West—The aviation torpedo training unit has been established permanently at this station under military command and coordination control of the C.O. and management control of the Chief of Naval Air Advanced Training. The unit gives live torpedo drop training to student pilots of ATTU #3, based at NAS Banana River.

Air operations are carried on from Boca Chica field, torpedo retrievers are based at the seaplane base, and torpedoes are overhauled at the submarine base. This arrangement constitutes the greatest problem as Boca Chica field is nine miles from sub base.

Up to date, one exercise has been conducted. Five student pilots dropped three torpedoes each on the problem.

Moffett Field's skipper, Capt. G. H. Mills joins in the ceremonies marking the first scheduled landing of a Southwest Airways transport on the Navy field. Recently a contract was negotiated by the Navy Dept. permitting Southwest Airways planes to land at Moffett Field. Airline operates between Los Angeles and Medford, Ore. Postal authorities and local dignitaries joined in ceremonies. Note Naval Reserve poster on truck.

REAR ADMIRAL A. M. PRIDE, USN

Rear Admiral Pride Heads BuAer

New Chief Was World War I Reserve

Rear Admiral Alfred Melville Pride, USN, who entered the naval service in 1917 as a second class machinist's mate, formally succeeded Rear Admiral Harold B. Sallada as Chief of the Bureau of Aeronautics on 1 May 1947. Admiral Sallada will become Deputy Commander-in-Chief Pacific Fleet with the rank of Vice Admiral.

The new Chief of BuAer left engineering school at Tuft's College to enlist in the U. S. Naval Reserve at the age of 19. After completing flight training at Pensacola he was designated naval aviator No. 1119 and on Sept. 17, 1918 was commissioned ensign in the U. S. Naval Reserve.

During World War I he served with the naval forces in European waters and later at NAS Montchic-Lacanau, Gironde, France. After the war he served as ordnance officer at NAS Chatham, Mass., and aboard the U.S.S. *Arizona*.

Rear Admiral Pride served aboard the Navy's first flattop the U.S.S. *Langley* from 1922 to 1924 and developed the arresting gear installed on that carrier. Admiral Pride had duty in fitting out both the *Saratoga* and the *Lexington* and later served aboard the old *Lex*.

For two years Admiral Pride had charge of the flight test section at NAS Anacostia and later was air officer aboard the U.S.S. *Wright*. Later he was exec of the *Saratoga*. Admiral Pride was the first skipper of the U.S.S. *Belleau Wood*, serving aboard that ship from March 1943 to April 1944. Prior to his assignment to the Bureau Admiral Pride was commander of CarDiv 6 and later CarDiv 4.

Latin Americans Taught In U. S.

Quotas Assigned All Military Schools

In line with the general policy of full cooperation between the American countries, the United States is assisting in the training of the armed forces of the other American Republics. The plan is to maintain a close military collaboration for the defense of the Western Hemisphere and to insure against any threat which may arise in the future. The type and scope of the training conforms to the security policies in effect at any time and is based on common military doctrine.

The countries included are Argentina, Brazil, Chile, Peru, Mexico, Colombia, Cuba, Uruguay, Ecuador and Venezuela. The limited quota is divided among these countries depending upon their size and military needs.

COLOMBIAN STUDENTS LEARN TO FLY PBY

As each group of students complete their training, they are replaced by a new quota. A combined total of 80 Latin American officer students may attend primary flight training at any one time, only 15 of whom may attend advanced flight training. Twenty-three Latin-American students at a time, are assigned training aboard ship. Twenty attend the Naval Academy, 25 the General Line School classes, 10 Hydrography school, 10 attend Diving school, 5 attend Photographic school and 5 Photo Reconnaissance school. In addition to these schools, miscellaneous training for special purposes will be given as requested by Chiefs of Naval Missions—quotas are assigned as required. Staff school quotas are as follows: five per group to attend basic medical training, six to aviation medicine, three to basic dentistry, five to naval supply training, five to naval aviation supply school and three senior officers to attend special courses in naval medicine.

Quotas are also assigned to Latin American enlisted personnel for instructor training in service schools in various naval and naval aviation ratings. Quotas for these schools are unassigned as yet.

General qualifications and requirements for South American personnel in U. S. schools are the same as for U. S. personnel. They must conform to the same rules, regulations and standards of mental and physical fitness as their fellow students.

Is this *a deckload of Japanese planes on the flight deck of one of our CVE's? Looks like it, but actually it is not. This aerial shot is of the H. M. S.* Patroller, *loaded with* Wildcats, P-40's, Corsairs *and* Avengers, *built in the United States and sold to the British. Markings on the wing look like Jap Rising Suns if given one quick look.*

NATS Pacific – Propeller trouble was blamed for a mishap which befell the *Marshalls Mars* about 100 miles from Hawaii on a trip from Majuro to Honolulu. The number one engine was suddenly wrenched from its mount and fell into the ocean. Through skillful handling by the plane commander, Lt. Cdr. D'Urse, the plane continued on to Honolulu where repairs were made and the engine replaced.

FLYING MACHINES WERE STILL A NOVELTY WHEN MEN OF THE BATTLE FLEET TOWED THIS VOUGHT-BUILT VE-7 IN 1922 NAVY PARADE

NAVY TO FLY AT VOUGHT'S BIRTHDAY PARTY

ALL HANDS agreed, it was a slick looking airplane. And hot too. The handful of naval aviators standing on the sidelines grew tense as the pilot headed the biplane in for its third pass at the field.

They could sympathize with the man at the controls. Naval aviators hadn't had much experience with landplanes and besides this was a brand-new model right out of the Chance Vought factory. It was the VE-7, first Vought-built airplane delivered to the United States Navy.

The scene was Washington's Bolling Field. The year was 1920. The pilot was Lt. (jg) Bill Wilson, a World War I reserve long since returned to civil life. The naval aviators along the strip were members of the Navy Trial Board assigned to test the new aircraft. They'd borrowed Bolling Field from the Army because NAS ANACOSTIA had no landplane facilities at the time.

That plane, it carried Bureau No. 5661, was the first of nearly 10,000 military aircraft built for the Navy by the firm the late Chance Milton Vought, pioneer American aeronautical engineer and airplane manufacturer, founded in 1917.

The delivery of that 125 mph. VE-7 began an unbroken chain of association between naval aviation and the Chance Vought organization. Today, the history of the Chance Vought firm reads like a chronology of the development of naval aviation.

Just as that first Vought plane with its 150 hp. Hispano-Suiza engine, stick and wire fuselage, streamlined wires and metal cowl was about the hottest military design of its day, so too are the production and experimental planes Vought delivers to the Navy today.

This year as the Chance Vought Aircraft Division of United Aircraft Corporation celebrates its thirtieth year of airplane construction it can look back on a long and successful line of Navy planes.

Starting out with the delivery of 20 landplane models of the VE-7 in 1920, the Vought Company has produced some naval aircraft every year. Early Vought planes like the UO-series were convertible to either land or seaplanes.

LATER Vought produced the O2U series of observation planes. Then came the SBU *Vindicator* design of scout bombers. Vought had produced only four planes exclusively designed for fighter use when World War II began.

In recognition of the part Vought-built planes played in the development of naval aviation, operational and reserve squadrons will stage an air show over the company's Stratford, Conn., plant on 7 June.

The Naval air show will be part of the anniversary celebration for the company that Chance Milton Vought founded in Long Island City, N. Y., 30 years ago. In conjunction with that air show the company will hold open house at its Stratford plant.

Navy and Marine Corps units participating will include pilots from the Reserve organizations based in that area and some Marine Corps and Navy operational squadrons from East Coast air stations. Naturally Vought-built *Corsairs* will predominate.

Vought is keeping up with the times in its design of aircraft for the post-war United States Navy. Two new fighters, the XF5U, flying wing, and the jet-powered XF6U-1, already are going through flight tests.

Though Chance Vought is old as American aircraft companies go, its designs continue to be as modern as tomorrow.

VOUGHT IS A NAVY NAME

IF NAVAL AVIATION were to bake a cake for Chance Vought's birthday party, it would take the shape of an inverted gull-wing fighter plane.

Because the F4U's fighting performance from Guadalcanal to Tokyo is one of the best known sagas of the Pacific war, the names Vought and *Corsair*, to the average American, are synonymous with naval aviation.

Yet great as that job was, and deserved as the *Corsair's* war-won recognition is, it's only part of a longer story of aeronautical development begun 30 years ago.

A Vought-built VE-7 was the first American made landplane to take off from a battleship. That was on Aug. 11, 1920. The U.S.S. *Oklahoma* headed into the wind, and the biplane took off from a 40-foot wood platform built atop the BB's Number Two turret. Pilots were Lt. Cmdr. V. C. Griffin and Lt. E. B. Koger. Later, when the Navy commissioned its first flattop the old *Langley*, VE-9's operated off her flight deck.

Next Navy model to come out of the Chance Vought plant was a two-place observation job known as the VO-1. The trial board that tested this plane included the late Mark A. Mitscher, then a lieutenant commander; Dave Rittenhouse, now with Grumman; and E. W. Rounds, now a captain and member of the Board of Inspection and Survey.

A guinea pig in early Navy catapult experiments, the VO-1 was later placed aboard all first-class battleships and cruisers in the Fleet. It was a VO-1, with 200-hp. air-cooled Wright J-1 engine that took fourth place in the 1924 Pulitzer cup race. That plane, piloted by Lt. G. B. Hall, maintained a speed of 132.27 mph. to beat all the *Liberty* engine powered aircraft except those with super-compression and metal propellers.

First Vought plane to carry the name *Corsair* was the O2U-1 built in 1926 for either land or seaplane use. It was powered with a 400-hp. Pratt & Whitney *Wasp* engine and was used by the Navy as a replacement for the earlier VO-1.

Naval aviators that tested the first O2U-1 were enthusiastic.

Workhorses of the Fleet, *Kingfishers* performed yeoman service during war; Vought produced 1160 OS2U's for Navy's air arm

Comments, filed away in Trial Board reports read like this:

"The marvelous flying qualities of this plane immediately won the unqualified praise of all who flew it."

Brig. Gen. L. H. (Woody) Sanderson, USMC, then a first lieutenant at Quantico, was even more enthusiastic: ". . . It has better flying qualities than any observation plane now built in America. Its take-off is uncanny, climbs better than any observation plane I know of; it is stable at all flying speeds; no flying peculiarities and is very easy to land."

MARINES gave those early *Corsairs* their first combat test in 1928 against Nicaraguan rebels. Four Marine-manned *Corsairs* strafed and dive-bombed Nicaraguans out of well-entrenched mountain positions. Developed and perfected, the pattern of air support set in Nicaragua saw its ultimate refinement in the close air support used on Iwo and Okinawa.

Later developments in *Corsair* design saw the addition of retractable landing gear and Hamilton Standard propellers.

By 1929 Chance Vought was the second largest producer of military airplanes in America. That year it joined with other aeronautical manufacturers to become the present-day United Aircraft Corporation. About that time the Vought company moved from Long Island to East Hartford.

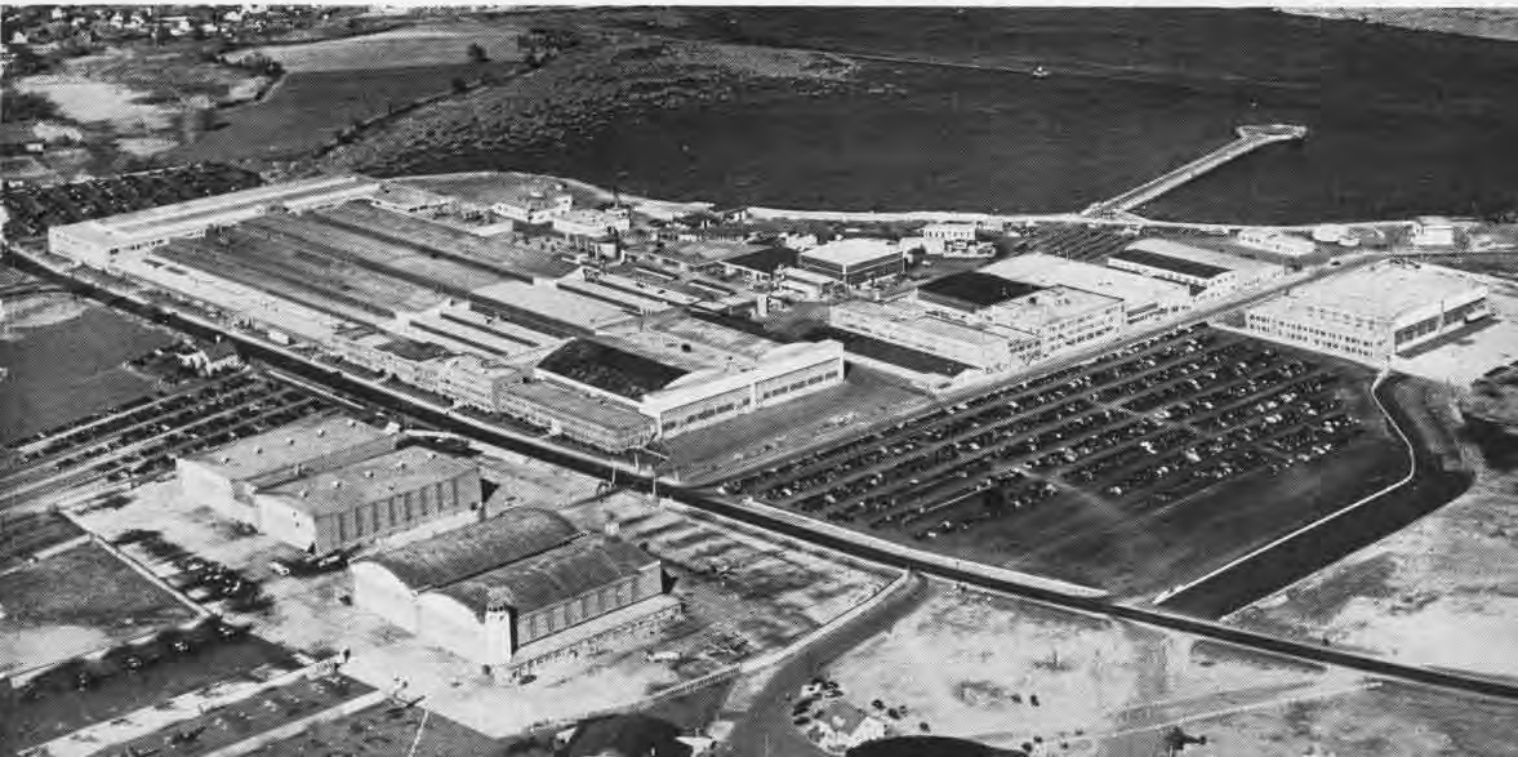
In 1935 Vought came out with the 200-mph. SBU-1 scout bomber. Their first military monoplane was the SB2U-1 built in 1937 and 1938 for Navy and Marine squadrons. Rear Admiral A. M. Pride, then a lieutenant commander, was a member of the board that flight-tested this plane.

America was still at peace when Vought's famous *Kingfisher* model came to the Fleet. Nearly 1000 OS2U's saw naval service during World War II.

BUAER and Vought unveiled the "X" model F4U 18 months before Japan struck Pearl Harbor. The first F4U-1 landed at NAS ANACOSTIA for flight test on 21 July 1942. All told nearly 10,000 *Corsairs* went to war from the Vought factory.

New planes in production and on the drawing board promise to keep the Vought name in the forefront of aeronautical engineering. On its thirtieth anniversary Vought can look back with pride and forward with confidence.

Chance Vought's Stratford, Conn., factory will be scene of 30th birthday anniversary celebration and Navy's air show on 7 June



NAVAL AIR RESERVE PROTECTS THE PEACE

THE MONTHS of May and June have been set aside by the Navy for an intensive nation-wide campaign to interest young men in becoming members of the Naval Reserve. Members of the Naval Air Reserve can best "sell" the program. It is a time to remind the public of why we have a Naval Air Reserve.

It takes two long years to make a combat pilot. We learned that during the last war, just as Japan and Germany learned it. And in this age of atomic energy, guided missiles, long-range jet-propelled planes, the United States, if attacked, would not have two years in which to train pilots.

Of the approximately 60,000 wartime Navy pilots, more than 50,000—representing a training investment alone of 25 billion dollars—are now civilians. The Naval Air Reserve is intended to keep the priceless skill of these men available—to protect the huge investment, to protect the peace. The Navy has set up, at present, 22 Naval Air Reserve Training Units. These are Naval Air Stations which devote their week-ends to the Reserve program of training. Here, Reserve personnel undergo two weeks of concentrated training each year in addition to their monthly work. Just as in the U.S. Fleet of the Regular Navy, Reserves are formed into Squadrons, Air Groups and Service Squadrons. These are brought to such peaks of skill that, if the need should ever come, they could fly aboard carriers as fast as the carriers are brought out of their "zippers."

The mission of the Naval Air Reserve is, like that of the entire Naval Reserve, to maintain the peace. It is not a weapon for aggression. It is a restraining force on any would-be attacker of the U.S. As long as the Naval Air Reserve is adequately manned by experienced, trained, ready pilots and ground men, no nation or combine of nations will make the mistake of thinking that we are an easy mark.

NARTU PLANES FLY OVER WASHINGTON'S CHERRY BLOSSOM FESTIVAL FROM NAS ANACOSTIA

• NAS MINNEAPOLIS—The WAVE volunteer unit has approximately 150 WAVES attached and expects to complete its complement of 200 by the end of April. Forty planes participated in the dedication ceremonies of the LaCrosse, Wisconsin airport. Arrangements are in the process of formation for air shows at International Falls, Minnesota; Eau Claire, Wisconsin, and Pierre, South Dakota during the summer.

• NAS NORFOLK—The first Reserve training period is over. In general it was very successful, however a few discrepancies were noted that can be eliminated on the next training cruise. Some pilots were only able to stay seven days, and it was generally agreed that such a period is too short, when time to check in and out and physical examinations are deducted from the already short week. Pilots flew an average of 33.4 hours each on the cruise and excellent training was accomplished.

• NAS ATLANTA—Marine reserve recruiting is being given a boost by a 15-minute weekly program, "Leathernecks On Parade" sponsored by station WBGE. The many advantages of the Marine Air Reserve are brought out on this program through interviews with Squadron personnel. Medical Department personnel were faced with the sad duty of personnel salvage, when a pilot from NAS QUONSET POINT, R. I., was killed ferrying a plane into Memphis. Plane crashed into a mountain near here during bad weather.

• NAS COLUMBUS—First of a continuing series of training duty periods for Organized Air Reserve pilots began on 1 March, when a group of Reserve flyers reported to the air station for their two-week "cruise." Despite generally bad weather, Reserve pilots logged a total of 2674 hours during the month. Supply department carried out its semi-annual boat inventory. As usual number of boats inventoried was small—None.

• NAS DENVER—This station has received 8 SNJ's, four SNB's and one JRB up to the first of April and during March flew 439.5 hours. Air Group CVEG-53 has been commissioned one and one-half months and has filled 90% of the officer complement and 71% of the enlisted personnel. Work is going on at top speed to make this a first rate Reserve station.

All pilots are required to fly a minimum of five hours familiarization in training prior to entering service type aircraft. It was found that on an average none of the pilots had flown service or training type planes for 15 months.

• NAS OLATHE—A new record at this station was established during March, when 618.2 hours were flown on the week-end of March 22 and 23rd by Air Group 69 and Squadrons VP-ML-65 and VR-53. The GCA unit, based at this station, held demonstrations at Naval Air Station, Lambert Field, St. Louis from 28 February to 3 March, 1947.

• NAS FLOYD BENNETT—As of 31 March, 1947 the "On Board" count of enlisted stationkeepers was 442, just five short of full complement. The Public Information Officer planned for and entertained a group of 80 prominent women fliers and Presidents of representative Women's clubs and organizations in the city. On 29 March, he addressed the Women's Press Club at the Hotel Pennsylvania.

• NAS SAN DIEGO—Information received via telephone conversation with Navy Department representatives indicates that all orders should be on board by 29 March, the date tentatively set to officially complete the inactivation of NARTU San Diego.

• NAS GLENVIEW—On 15 March, Commander A. B. Clark, reported for duty in connection with the establishment of the U. S. Naval Radar Training School here. It is expected that ComNine will deliver the completed preliminary plans and cost estimates the first part of April. It is then anticipated that Comdr. Clark and the NAS GLENVIEW planning officer will take this material along with personnel requirements for the school to DCNO (Air) for consultation and approval.

• NAS MIAMI – The Goodyear blimp *Ranger*–a Navy veteran–was also enlisted to aid in the publicizing of the Naval Air Reserve program. Lt. (jg) C. S. Adams, USNR (Inactive), the Miami manager of airship advertising for the Goodyear Company, was most cooperative in arranging a running neon light display ad, which appeared in Miami's sky about 20 times a night for four weeks. Every 7 to 9 minutes "THE INACTIVE NAVAL AIR RESERVE NEEDS YOU" appeared over large crowds at polo matches, dog races and football games, in addition to the regular 3½-hour nightly tour over the city. Much favorable comment resulted from this display, and it is believed that NAS MIAMI can claim a "first" for the idea.

• NAS OTTUMWA–During the month of March 48 new cadets were received, 156 new midshipmen were sworn in; 13 cadets and 139 midshipmen were graduated.

• NAS ST. LOUIS–The first national convention of the RONS was held in St. Louis March 27, 28, 29. The Naval Air Station was extremely busy from the 26th on, receiving and rendering honor to the visiting dignitaries. As a closing feature of the convention, the Organized Air Reserve put on an air show for the delegates and invited VIP. Besides station aircraft, the McDonnell *Phantom* also participated. Organized Reserve enjoyed a very good press on the air show. During the month of March a total of 139 men were enlisted in V-6 USNR inactive at this activity. The total Organized Air Reserve enlisted personnel now stands at 484, 120 being enlisted during the month of March.

• NAS SQUANTUM–During the month fifteen newspaper reporters visited the station and were taken through the training syllabus of the Organized Reserve for feature story material on the Reserve program. A survey is being made by the PIO to determine employers' attitude concerning the conditions under which Organized Reserve employees may be released for the two-week active duty cruise. Sixty-seven New England radio stations are supplied with spot announcements twice each month. Radio scripts are now being completed for 15-minute programs.

FLOYD BENNETT RECRUITS GET PLANE RIDE

• NAS GROSSE ILE–Using photo-offset printing, the station print shop has turned out a clever sign that is a revamped version of the prewar "Join the Navy and See the World." In this case, light lines have been drawn through the "see the world" part of the sign, and in a different face of type are the words, "live at home." These signs were printed in large quantities and posted in strategic places throughout all the small towns in the area. If there is a volunteer recruiter living nearby, the sign directs the reader to the recruiter's home.

• NAS OAKLAND – A second two-week active duty period was held on the station beginning 20 March through 2 April. Thirty-two pilots, 6 ground officers and 35 enlisted men participated. During that period a station record was set with 45.9 hours per pilot, making a total of 1468.9 for the 14-day period.

NARTU BEAUTY WINNER AT NAS ANACOSTIA

• NAS LOS ALAMITOS–The first group of Organized Reserve pilots reported for annual training duty 15 March. The group consisted of 18 pilots, 2 ground officers and 11 men. The senior pilot in type "ran his own show," and the entire operation was effected smoothly. In general, the organized pilots were keen on instrument time, showing the same enthusiasm in instrument work as the more spectacular phases of gunnery and bombing. The average flight time of the CV pilots on the training cruise was 48 hours each, of the VP boys, 42 hours each. The boys really got back in the groove.

• NAS SEATTLE–Forty Naval and 14 Marine officers, most of whom were from fighter and Bombing Fighting squadrons accompanied by 19 Navy and two Marine enlisted men arrived on the station for their active duty training period on 21 March. The training department had a complete schedule drawn up for each day of the period. The schedule included ground school, a conditioning and athletic program, tactics, lectures, and most important of all, flights. To provide adequate maintenance the flight department returned to a 24-hour day. Results were excellent. VF-74A logged 647.4 hours in 12 days, an average of 53.9 hours per pilot.

" . . . LIKE HIS DADDY USED TO DO"

• NAS ANACOSTIA–The month of March saw the first group of Organized Reserve Officer personnel come aboard for their two weeks active training duty at NARTU.

Nine VF pilots, two VR pilots and five ground officers composed the initial group and the results achieved were most gratifying. Bombing and tactics were engaged in by the VF pilots, while the VR pilots renewed their standard instrument cards and "checked out" in GCA at NAS PATUXENT RIVER. An average of 30.0 flight hours per pilot were completed. Miss Ruby Herring won the Miss NARTU contest. Miss Herring was sponsored by Paul Ambrico, AMM1c, a stationkeeper attached to the base. He is shown dancing with Miss Herring–and no wonder. Over the caption "Like his Daddy used to do", S. V. Bogg is being sworn into the Reserve program while his father Chief Bogg stands by.

• NAS MEMPHIS–This station has 95% of the allowed complement of pilots in the Organized Reserve training program, 43% of the ground officers and 51% of the enlisted personnel. The highlight of March's public information activities was the appearance of a four-page story, illustrated with twelve pictures and a color cover page, in the Sunday *Nashville Tennessean* magazine section.

ATTENTION NARTU PIO

In view of the growing importance of the Reserve program NANEWS intends to enlarge its Reserve space. The Reserve Air Stations have been most cooperative in sending in the monthly newsletter; however, in order to personalize more the NARTU page, the Editors would appreciate an occasional brief history of outstanding squadron members, i.e., war record, present civilian job, etc. This could be included in the monthly newsletter.

Photographs are a constant problem, so an occasional shot depicting life or work around a NARTU, or maybe a Squadron group picture would be gratefully received.

NAS ROCKAWAY, L. I., WAS SANDY WASTE, NO RUNWAYS IN 1919

GLENVIEW RESERVE UNIT HAD FINE HANGAR, GROUND TRANSPORT

RESERVE FLYING PROGRESSES

NAVAL Reserve pilots who fly around in today's *Hellcats* and *Corsairs* on weekends, taking off from long concrete runways on well-equipped air stations are a strong contrast with the Reserve aviator after World War I.

When the Japs threw in the sponge in August 1945 it was the signal for the Navy to launch its comprehensive program to keep aviators, mechanics and others in its air branch interested and proficient. Thousands of operational planes, many new, and efficient air stations could be turned over to Reserves with a minimum of delay.

Less than a year after V-J day the Reserve program was in full swing. Thousands of officers and enlisted men signed up. Twenty-two air stations were assigned to the Reserves. Thousands of flight hours were rolled up each month. Dozens of squadrons were organized. Reserve fliers staged spectacular air shows all over the nation to display their war-won skills. The Navy was far ahead of any other service in getting its program going.

But take a look back to the days after 1918 and World War I. When that war ended the Navy had a flying corps of 4,000 Reserve officers and 20,000 men. A few air-minded Admirals like Moffett and Byrd foresaw the need for a program to keep them from losing their flight abilities won at great expense.

They were bucking a tough situation, however, and the Reserve program did not get underway until four years after the Armistice. In 1922 the Bureau of Navigation established a definite policy for maintaining flying skill of already-trained Reservists. However, most of them had by that time forgotten most of it. Money spent during the war to teach them was practically wasted in the four-year lapse before a Reserve program could be launched. And when it was it was a pretty small operation compared to today's.

Admiral Moffett wrote a letter to CNO recommending the Navy set aside 25% of its Naval Reserve money for aviation. He suggested units in each Naval district with facilities to train at least 10 pilots annually. The unit would have two planes, one officer, one rigger, two machinists' mates and a carpenter. As to facilities, a tractor, a motor overhaul stand, a small machine shop, a motor boat and a hangar would be needed. Most of these latter items would have to be furnished by local authorities.

WITH funds for three reserve units made available during 1923, a start was made. The first Reserve field was opened in New York City aerial police air station at Ft. Hamilton. On July 9 a second unit was authorized for the inactive base at Squantum which had not been used since October 1917. Admiral Moffett sought and got approval for a program of 13 NARU's but due to lack of funds only seven were available by the end of 1925 for elementary Reserve training.

These were at Ft. Hamilton, Great Lakes, Hampton Roads, Seattle, Squantum and the two Naval Air Stations at Pensacola and San Diego. Four stations were available for advanced training in bombing, navigation and gunnery —Anacostia, Hampton Roads, Quantico and San Diego. Lakehurst offered Reserve blimp training.

With small funds, work was severely handicapped. Trainees themselves had to spend considerable time patching dirt runways and maintaining the decrepit buildings. Planes also were extremely scarce, as was money for gas.

Squantum became the first really organized Reserve establishment. By December 1923, a double unit also was established at Great Lakes, where a small hangar survived from the wartime period. All of this training was with seaplanes.

Admiral Moffett's plan called for the 13 units to train 1,000 officer pilots. The budget committee cut the requested funds from $1,500,000 to $502,000 so the units were cut to seven. A double unit was created at Seattle.

CANVAS HANGARS FEATURED EARLY RESERVE FLYING AT SEATTLE

ANACOSTIA'S RESERVISTS IN EARLY DAYS USED MUDDY RUNWAYS

By the end of 1926, the New York base shifted from Ft. Hamilton to Rockaway (see photo) because the former lacked a suitable beach and proper shelter from the weather. Municipal generosity helped get some of the units going. In 1928 leases were made of parts of three California city airports—the Long Beach and Oakland municipal fields and the Los Angeles field at Terminal Island. Single units were set up at the former two.

Other single units started to work in 1928 at Detroit airport, Grosse Ile, and Wold Chamberlain airport, Minneapolis. At municipal airports there either was no charge or else a nominal one of $1 a year. Despite enforced economy, the Navy had met or exceeded its own plans for NRAB's.

It is well to note that these were fields for landplanes. The day of the Navy's almost exclusive reliance on seaplanes was passing. As Reserve units were set up on federal property, fields gradually were being created to cope with the change. Thus, a start was made at Great Lakes in 1927, and in the next year or so a field was developed at Squantum.

During early days of the New Deal, Reserve bases received considerable grants of funds from the government for development, ranging from $1,612,000 for Seattle, $709,000 to Squantum down to $40,000 for Great Lakes.

Marine Corps Reserve squadrons were formed in 1932 at Seattle, Minneapolis, Detroit, Boston, New York and Miami, and in 1936 at Kansas City. By 1938 there were NRAB's at Squantum, Floyd Bennett, Opa Locka, Grosse Ile, Glenview, St. Louis, Kansas City, Minneapolis, Long Beach, Oakland, Philadelphia, Anacostia and Seattle, the latter three within areas of the Naval Air Stations there.

Today all of those cities have Naval Reserve, and some Marine, units in full operation. There are 22 Reserve air stations. The program embraces 35,000 officers and men in the Organized and Inactive Reserves. They have nearly 2,000 airplanes to fly and maintain and when summer-cruise times come around they will have aircraft carriers assigned to keep up their flight deck operational technique.

NAS Los Alamitos—What to do with Reserve flyers on non-flying winter days? This unit is working up a program employing Organized ACI officers in giving lectures on logistic and geographic information and related subjects. Additional lectures will keep pilots up to date on aviation equipment and techniques. Organized Reserve communications officers will visit other Naval facilities during drill periods to keep themselves up to date with all the types of equipment and procedures.

JEEP SWINGS BELOW PIASECKI HELICOPTER

Helicopter Carries a Ton Jeep

Heaviest Load Ever Carried on a Hop

The Navy's new XHRP-1 helicopter demonstrated its unusual load-carrying ability recently by taking off with a Navy jeep weighing more than a ton suspended beneath it and flying to a predetermined destination.

Built by Piasecki Helicopter Corp., the tandem transport aircraft flew before newsreel and newspaper cameramen and writers. It was the first time a military load of any significance had been carried by a helicopter. The helicopter carried 10 men also, to show its versatility.

It is designed to carry a crew of two, plus eight passengers or six litter patients. It can also serve as a medium range rescue machine, capable of rescuing seven or eight persons within ranges up to 300 miles. The plane is the world's fastest helicopter, being capable of 120 mph. and has two counter-rotating rotors.

Ice, Snow Cramp Alaska Flying

GCA Saves Day in 90% of the Flights

VR-5, Seattle—Icing in flight, snow on runways and fog combine to make flying in the Alaska-Aleutian area difficult for pilots of this NATS squadron. Perhaps the heaviest load of clear ice this winter was picked up over Ft. Glenn, Umnak, in the Aleutians.

A plane cruising on instruments at 8,000 feet, outside air temperature −3° C, ran into an icing area just as the pilot was slowing down prior to the high cone. The plane started to lose altitude immediately. Even with 2500 rpm and 35", it took almost an hour to regain 2,000 feet.

This condition was brought about by the nose-high attitude of the plane and formation of ice on the under side of the wing where the boots could do no good. It is recommended that if icing conditions are present, cruising speed be maintained until after the high cone.

Over long periods of icing, the air duct for the nose heater has been frozen over, causing nose heater failure. Heavy frost forms on the inside of the windshield. On letdowns, this difficulty can be overcome by scraping the shield clean with a putty knife. A long screwdriver can be used on the outside of the shield if the ice is too thick to be moved by alcohol.

Despite bad low pressure areas late in February, most NATS flights to the Aleutians were able to get in or out. Ninety percent of these landings have been made possible by GCA. A few pull-ups were necessary because of heavy snow causing poor target return.

Bartow lights are required equipment for any night approaches in fog or snow conditions in this area, but their proper use cannot be too strongly emphasized. They must be turned on to their highest intensity to enable the pilot to pick them up effectively at a greater distance than two miles. However, their fog piercing qualities are not needed for the actual landing, and if ice and snow are present on the runway, the glare created can play havoc with depth perception. Once the trip is definitely located, reduction in intensity is recommended.

NAS San Diego—New training devices installed here during the past month include six new 1-CA-1-45 Link instrument trainers and one ultra sonic radar trainer incorporated with the PBM operational trainer. Installation of a Sonar buoy trainer device is underway at present.

The Pursuit *for recruits in the Reserve program has unearthed some excellent publicity methods. One advertising scheme used by* NAS Memphis *during the 1946 Cotton Carnival was that of displaying witty and weighted mottoes on the sides of their airplanes. "Shades of Fred Allen" — How did the Colonel get into the Navy, Navy that is? In case you're wondering who is flying the "beast", its Major Overhaul, Marine, we hope.*

AND THERE I WAS...

Look! No Propeller!

JETS WERE still hush-hush late in 1944, so you couldn't blame the Army flyboy for getting excited when he saw the first Navy *Fireball* in action.

Our Army friend was cruising along in a P-47 somewhere near Andrews Field when a Naxy X-model Ryan *Fireball* out of Patuxent River pulled alongside. The Navy pilot had his jet engine off and was operating with the conventional power plant.

Apparently the *Fireball*, with its air-cooled reciprocating engine looked like any other Navy fighter to the lad at the P-47's controls.

They cruised along side by side for a few minutes getting acquainted. Then, when the Army pilot turned his attention to the other side for a moment the Navy pilot started his jet, cut the front engine and feathered its prop.

The Army pilot was grinning as he turned back toward his Navy wingman. He started to wave, then stopped. The grin froze on his face as he became aware of the dead engine on the *Fireball*.

He turned and then quickly looked again. The engine was dead all right but the Navy plane was still holding a tight wing position. And, to make matters worse the darned fool in the cockpit just smiled and pointed to his dead engine.

Even an Army fighter pilot can take only so much. He did a fast wing-over, shoved the throttle to the firewall and headed for Andrews Field.

O Noble Man

DURING THE battle of Guadalcanal, very few of the finer things of life were available. One of the items the personnel of VP-12—the original *Black Cat* Squadron—missed most, was beer. And rumor had it that fine bock was to be had at Espiritu Santo. In spite of the fact that the squadron had not been paid for over four months, enough money was obtained through various and devious means to pay for the beer. When the next plane went into Espiritu for spare parts, the crew topped off the load with some 15 cases of Milwaukee's best. The plane, heavily overloaded and jammed to the gills with beer, barely managed to get into the air.

On the way back to Guadalcanal, the crew sighted a Marine pilot on a life raft, and landed to pick him up. Though the sea was rough, the rescue went off without a hitch; but it was impossible to get the overloaded plane into the air again. There followed a disconsolate conference, during which the idea of throwing the Marine back to Davey Jones was seriously considered. However, it was decided that this would impair relations between the two branches of the service. So the precious beer—every bottle—went overboard. Less the brew, the weary *Catalina* staggered into the air.

When the PBY landed at Guadalcanal, a cheering and thirsty throng greeted them. The Marine climbed out first.

"Who is this guy?" a naval aviator asked.

"I hate to tell you," said the Marine, "but I'm your beer."

Inverted Vertigo

THE *Hellcat* squadron was making a ferry-hop from Okinawa to Japan. Flying between cloud layers in loose column, it was a dull affair for the "hot-pilot" boys. The flight leader was a war-worn Commander growing tired of the routine nature of his recent flights. When he spotted a PBM almost directly ahead on the same flight level, he couldn't resist. "Gentlemen, follow the leader," passed out over the air. And the leader flipped smoothly onto his back.

The big-boat was also on a dull and routine inter-island flight. Coffee was being served, the automatic pilot was on and the Co-pilot was dozing in his seat. When the Patrol Plane Commander spotted the fighter plane in the distance he gave it but passing attention. However, as the planes drew together he noticed the fighter was flying gaily along on its back.

"Crazy damn fool fighter pilots!" And he had another sip of "joe." Just the same, he glanced below at the thick clouds and above at the equally impenetrable mass, then to his instruments. Everything was normal—relax. As the fighter went slipping by on its back close enough to the mighty *Mariner* to almost spit into the cockpit, the big-boat pilot noticed a look of blank astonishment on the face of the fighter pilot. It was then that our hero spotted another fighter directly ahead, also on its back. Zip—and the same blank look of "what the hell goes?" on the face of the second fighter lad.

"What the hell indeed?" Fighters ripping along on their back in instrument weather. But what's this? Another and another and they still came, all in perfect in-line formation—but upside down. As each F6F flitted by, the fighter boys "big-eyed" in turn.

Our boy with the coffee in his hands really came alive then.

"My God, Tex," he croaked to his co-pilot, "we must be on our back. Did you see those fighters go by? Something is wrong, we're flying upside down!"

Off auto-pilot—roll her over.

Some distance to the rear the fighter group rolled back upright and circled to watch a thoroughly upset *Mariner;* massive in its refusal to go onto its back, screaming down through the lower layer of clouds, the pilots vainly trying to roll her over.

Whether the big-boat pilot ever got onto his back is unknown—the incident has never been mentioned in big-boat circles; but it is an oft-told tale in Fighter camps.

(Don't quote us, but this is the kind of thing that could only happen to Lieut. Herbert J. Kaczmarek.)

TECHNICALLY SPEAKING

CARRIER TBM-3J AND UTILITY TBM-3U ARE JUST DIFFERENT MODIFICATIONS OF TBM-3E

TARGET TOW PLANES NOW IN USE

THE WAR is no longer fashionable, but some of its effects are still too much with us. One problem that was an outgrowth of the war is, what to do about our heterogeneous group of target tow planes. Utility squadrons, during the war, suffered from growing pains and from a heavy work overload. Everybody wanted to practice gunnery and there weren't enough available tow planes.

Soon, everything from a *Cub* "borrowed" from the Army, to a Navy *Privateer*, was being used by various units for target towing. Now that the war is over, the Bureau of Aeronautics is trying to unravel the situation and standardize once more, all target tow planes.

Because fleet and shore units have already modified their own planes to fit their towing needs, a variety of modifications of standard plane types are in wide use. This situation is being corrected by directives issued by the Bureau of Aeronautics standardizing modifications of aircraft configurations to be used for towing.

At the present time, shore based utility units have three types of planes that are approved to act as target tow planes: The JD, TBM-3U and the J2F. These models are all utility models and have been fairly well standardized. The TBM-3U was designated by Aviation Circular letter 118-46 and is a modification of the TBM-3E electronics plane. The modification includes removal of all offensive and defensive equipment and the permanent installation of a tow reel. Once the plane is modified, it is a permanent utility plane and will remain so forevermore. TBM/TBF Service Change 255 will enumerate changes to be made in this modification.

Carrier based units have but one approved tow plane, the TBM-3J. Some confusion has been caused by Aviation Circular letter 8-47, which established the TBM-3J designation. This configuration is also a modification of the TBM-3E electronics plane. However, it is a carrier plane and the modification consists only of installing towing attachments. All offensive and defensive equipment remains intact and the plane is still essentially a combat plane. When the towing attachments are installed it is a TBM-3J, when the towing attachments are removed, it automatically reverts to its old designation, TBM-3E. TBM/TBF Service Change 256 will clarify this modification when it comes out.

Therein lies the difference between the TBM-3J and the TBM-3U. The -3J retains its carrier combat characteristics, i.e. electronics plane, and is a tow plane only as long as the towing attachments are installed. The -3U becomes a utility plane upon modification, all combat equipment is removed, and it remains a utility plane.

Though the TBM-3J will standardize the carrier tow plane, this convertible tow plane is not necessarily the best answer to the problem, and is merely an interim solution. There is another carrier type plane now under study for conversion to a tow plane, that will better the performance of the TBM-3J, and if accepted this plane will much more nearly parallel the speeds of an enemy fighter than the present -3J. You'll hear more of this plane in the future.

Tightening Cracks Servo Units

During overhaul of servo units R88-S-250, a large percentage of housings were found to be cracked at #1 and #2 ports, BUAER Instruments unit reports.

Overtorquing of the ⅜" N.P.T. Allen screw plug, which is the pipe plug and therefore spreads the port holes, is considered the cause of this failure. It is recommended that caution be taken in tightening the plug to prevent overtorquing and the resulting cracks in the servo housings.

The aviation metal shop at NAS NEW ORLEANS' *A&R has manufactured eight fire bottle carts from an idea outlined in* NAVAL AVIATION NEWS. *It has been shown that the cars protect the CO_2 bottles from damage and improve the line appearance.*

LOW APPROACH LANDING AIDS CONQUER FOG

PILOT BRINGS PB4Y OVER SCS-51 GEAR

MOVING aircraft into a bad weather area like the Aleutians, which in early days would have been impossible, can approach almost routine proportions thanks to GCA and SCS-51 radar gear.

Fairwing Four's VP-HL-10 deployed to an Aleutian base under weather conditions which, a few years ago, would have made such deployment hazardous if not impossible. Alaska and the Aleutians long have been considered the airman's nightmare, and aerologists have continually drawn concentric lines of barometric pressure, labelling them as "flying weather at its worst."

The "Aleutian low" is well known to aerologists, and from its not-too-well-known depths, weather fronts march across the islands with monotonous regularity. Two solutions are in sight and are being used regularly to bring planes in under visibility conditions of one-half to one mile. They are GCA and SCS-51

Since GCA is line-of-sight controlled, any obstruction coming between the aircraft and the controller blocks the plane from the radar scope which talks the pilot in. The other unit is fully automatic and sends out high frequency waves which record on the pilot's instrument board the plane's position with relation to a pre-determined approach path to the runway.

Although SCS-51 is dependent on terrain less than GCA, the glide path is affected by terrain and mineral deposits. For instance, if the approach path came down a valley, the approach beam would tend to follow the channel of the valley. An example of this diversion is found at NAS WHIDBY ISLAND, where trees and a small hill north of the runway cause the beam to bend slightly to the south.

Neither system claims to enable blind landings. They are "low approach" plans. If the pilot in the plane pictured here could not see the runway at the point shown, 50' above the end of it, he would pull out of the approach and go to an alternate airfield.

CAPT. SINTON AND A&R DIVISION HEADS

Pensacola Overhauls All JRB's

NATB PENSACOLA—BUAER has designated NAS PENSACOLA as the sole overhaul activity for all model JRB aircraft. The new assignment includes the repair of the so-called 265 material for the JRB.

The increased work resulting from the JRB assignment will be immediately reflected in increased employment in the A&R Department. The program requires an eventual overhaul schedule of one JRB every other day. Every effort is being made to meet this overhaul schedule.

Center Controls Instrument A&R

NAS ALAMEDA—An Instrument Control Center established in October 1945 greatly simplifies the planning, scheduling, shop loading, packaging, issuing, accountability and return of overhauled instruments to the A&R Production Line and the Supply Department.

Placed in operation adjacent to the Instrument Shop and under the cognizance of the Planning Division, the center has many functions. It acts as a clearing house and recording agency for all instruments processed by Instrument Shop 742.

The Center determines distribution of finished assemblies according to existing work authorizations and packages instruments being returned to the Supply Department. It obtains instruments from A&R disassembly and Salvage shops, stowing and distributing them as required by A&R and completes all paper work in scheduling and returning the material to the Supply Department, including stub requisitions for Class 265 instrument retained in A&R on production schedules.

This center was set up under the cognizance of an instrument planner and staffed with planning personnel to maintain control and production personnel for packaging. This activity has been able to eliminate the scheduling of single items for overhaul by this mass scheduling of instruments.

Personnel review and eliminate all obsolescent and obsolete instruments. Kardex is used for compiling the instrument section of the Industrial Status Report and for compiling usage data for submission to ASO. This method of control will be extended to all accessories in the near future.

▶ ***BuAer Comment*—This proposed plan would require that the Instrument Control Center be physically located near the point of overhaul to avoid damage to the instruments in advance of packaging.**

Shop Paint Design Proves Safer

MCAS EL TORO—A&R has shut down here due to economy measures, but before the shops closed up, a safety measure was tested and found to be accident-preventing enough to warrant passing on to other activities.

Despite proper light from fluorescent globes and full windows, shadows fell on darkly painted machines and confused the operators, causing a safety hazard. To improve this condition, all parts against which the operator would be looking, or adjacent to moving parts, were painted an ivory color.

The remainder of the machine shop was painted a semi-dark green. Switch boxes and starting switches were painted red. Resulting effects of orderliness and greater safety have been produced.

LIGHT PAINT LESSENS MACHINERY HAZARDS

HOLES DRILLED IN "C" ARE UNNECESSARY

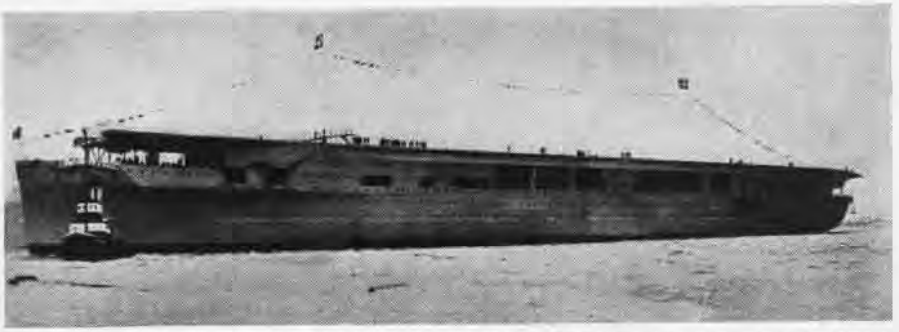
New Wrench Saves Valve Covers

NAS HONOLULU—A wrench designed at this activity facilitates removal of damaged adjusting screw from cover of compensating pressure relief on R-1830 series engines without damage to screw or valve cover.

Use of this tool has saved both material and man hours. The wrench (*see cut marked C*) consists of two round pins attached to end of a T-wrench. The round head of adjusting screw, (*A in cut*) is drilled to suit the wrench pins by using drill jig (*B in cut*).

Before the development of this tool, damaged screws were removed by cutting them off below damaged part, slotting the remainder of screw and using a screw driver for removal. The adjusting screw often became bound in valve cover so tightly that it was impossible to remove it, necessitating discard of valve cover.

[DESIGNED BY JOHN C. FORREST, AMM1c]



GRAF ZEPPELIN, SHOWN HERE AT LAUNCHING, NEVER LEFT THE DOCK UNDER OWN POWER

Nazis' Carrier Had Growing Pains

GERMAN naval strategists had great plans for carrier warfare early in their campaign for world domination. One of their more ambitious activities was building the CV *Graf Zeppelin*.

Photo interpreters first noted her near completion in 1942 and suspected several times that her trial runs might be near. However, the Germans apparently abandoned hope of putting the carrier into combat operation sometime in 1943.

The hull, designated the K-252, was launched in 1939 and had a displacement of 30,075 tons. Work was evidently halted in 1943 by shortages of materials, manpower, a major breakdown of machinery or other unknown causes. The Russians found her at Gdynia in January of 1946 and, after towing her to Stettin, wrote her off as impossible to complete.

Although heavier than our *Essex* class carriers, the *Graf Zeppelin* does not compare favorably in other ways. She has a beam of 88.5 ft. and an overall length of 880 ft. Her flight deck, 81 ft. high, is 800 ft. long and 97 ft. wide. Drawing 25.4 ft., she has a theoretical top speed of 35 kts. She was not balanced and carries a 3.5° list to starboard.

The carrier has only four arresting gear wires, each raised about 10 in. above the deck. These are connected to electric winches located portside on the "A" deck. Each wire is continuous, returning on the underside with 12 to 15 turns on the winch drum.

About 72 to 105 ft. are necessary to stop planes with a deceleration of 2.2 to 2.6 G. Winches act as a dynamo, supplying a resistance load to provide braking action. Frictional brakes are installed for emergency.

Two barriers, one forward and one aft of the center elevator show the confidence the Nazis had in their pilots. The barriers operated hydraulically.

There are two hangar decks enclosed between longitudinal bulkheads spaced 52 ft. apart. Ship's activities were arranged outboard of these spaces.

Complete servicing, including arming, was to be carried out on the hangar deck. A total of 43 planes, some with folding wings can be stowed in these spaces. Gasoline mains cross the upper hangar overhead in eight places. The ship has extensive air conditioning.

ISLAND WAS PARTLY COMPLETED IN 1942

The German aviators would have had time for a short beer while waiting to be catapulted. Two catapults on the forward flight deck utilize a car which disappears over the end of the flight deck to the deck below. Here an elevator picks it up and delivers it back on the tracks on the flight deck.

The catapults were to operate on air pressure at 60 atmospheres, launching a two and one-half ton fighter at 140 km/hr or a five ton bomber at 130.

Three elevators are located forward, amidships and aft, with no sign of a side elevator. These elevators are 42.7 ft. long by 46 ft. wide. All four corners were cut to a rough octagonal shape.

Normal power is supplied by four geared turbine sets of 50,000 shaft hp. each. An unusual feature in naval design are the two Voith Schneider props mounted in the bow. Using these, the ship can be held for'd against side wind pressure when entering locks or narrow waters. Limited to speeds of eight knots, the props are retractable.

Rack Cuts Strut Painting Time

NAS Coco Solo—A time-saving method for painting, preserving and handling struts, devised at this station, has resulted in an annual saving of $150.

Struts are hung on a rack that permits both sides to be painted in one operation. Drying time is reduced one half since the struts can be painted without the extra handling required in the old method. When dry the struts, still in the rack, can be dipped into the preservation tank attached to strut rack.

The Coco Solo operation cuts strut painting and preservation time from sixteen to six hours. In the method previously used at this station struts were placed horizontally on stands and painted, one side at a time. Only four struts can be painted at one time. Under that method it required 16 hours to paint and preserve one set of struts.

▸ ***BuAer Comment*—A sound and sensible operation. The same idea can be used in preparing other parts that require painting or dipping.**

Canvas Cover Protects PK-1 Kit

VMF-452—This squadron's parachute rigger has modified the one man life raft seat pack PK-1 kit container and added a kit cover that protects the gear from excessive wear.

During extensive operations this U.S.S. *Bairoko* squadron noted that excessive wear on the seat pack PK-1 kit container was resulting from the weekly cleaning usage demanded. The kit cover is used when cushion is worn attached to the individual parachute harness.

The modified kit container is extended to completely cover the PK-1 kit with five glove snaps to secure it. Overall size is 17x17" with 4" –side panels 15" long on the sides. The kit cover is a 15"x15" piece of sea blue canvas with 3" overlap. Pieces are cut from the overlap to fit over the release mechanism and harness straps. The cover is tacked at the back in three places with 16x4 cord.

MARINE SQUADRON PROTECTS PARACHUTES

MAG-21, Cherry Point—Despite bad weather that kept planes on the ground for a week, this Group in two weeks carried some 1305 men from Camp Le-Jeune to Dallas, Tex., for overseas duty. West coast transport squadrons carried them from there to San Diego. In addition, MAG-21 carried 387 men from Cherry Point to Dallas and transported 166,493 lbs. of cargo from Dallas to Cherry Pt.

AVIATION PROGRESS

(Short excerpts from Progress Reports of various BuAer sections are presented below. They represent progress during March, contained in April summaries.)

Design Elements Division

Landing Failure—VA-19-A reported a failure at fuselage frame station 364 during a hard landing in an AD-1, attributed to omission of four ¼" bolts during manufacture. An inspection dispatch was sent to all activities having XBT2D-1 and AD-1 aircraft requesting that they be inspected not later than the next 30-hour check for these bolts.

Rocket Firing Failure—VF-8-A reported that following firing of HVAR's, inspection showed pulled and sheared rivets on the two lower wing skin joints aft of the rocket launchers on 20 F8F-1B's. Contractor is providing reinforcements in production aircraft and will provide a service fix. His investigation indicated that they probably were caused by weight of a man standing in the ammunition compartment while servicing the guns, aggravated by the rocket blast.

Rudder Hinge Failure — ComAirPac found cracking of the upper support bracket, installed on the fin, for the rudder center hinge on several PBM-5's. Four reports of this trouble indicating failures on more than 30 planes have been received. Service activities have been asked to inspect the bracket for cracks, and if any are found, to restrict the plane to normal flight until damaged parts are replaced.

Ships Installations Division

Low-voltage Systems — Studies have been completed on location of 28.5 volt outlets on the flight and hangar decks of CVE-105 class carriers. BuShips is preparing final plans. Similar plans are being drawn on such outlets on CVB-class carriers and both will go to CNO for approval.

Ship's Boats—CVB-41 and CVL-48 class carriers will have the following peacetime boat allowance: CVB—one 35' motor boat, one 40' motor launch, four 50' motor launches and three 36' LCP (L)'s. CVL's will have one, two, none and one respectively.

Mars JATO—Installation of JATO has been made on the second JRM-1 and 11 JATO take-offs have been made with the airplane. On two the JATO operating switch failed. Replacement of these switches is being expedited. On receipt of new ones, JATO installations for all four Mars planes can be completed.

Arresting Hook—VF-19-A and VF-20-A report tests of F8F removeable point type hooks on the Boxer. An average of 20 landings a hook were made. In general, the operation of this type hook in catching and holding a wire was considered superior to the old-type hooks. Grumman is reworking defective standard hooks, some 180 of which have been reported defective to date.

Piloted Aircraft Division

XBT2D-1—No AD-1Q's will be accepted until changes dictated by InSurv trials of the XBT2D-1Q are incorporated. Provisional acceptance of the two XTB2D-1 "Dog" ships in the "as is" condition has been authorized. Contractor's proposal to install an electrically-operated pilot's canopy on the XAD-1W airplane has been approved.

XBTM-1—One of the planes is undergoing InSurv trials; the other is being readied by the contractor for the XAM-2 program.

AD-1—Undesirable left wing heaviness of several planes at low speed with high power in the landing configuration was reported by VA-19-A. Preliminary review indicated the fault was due to improper rigging and inspection techniques at the contractor's plant. All delivered AD-1's were checked for proper aileron installation. For possible use in the AD-2, Douglas is checking a power-boost aileron system.

AD-2—Contractor and BuAer have almost reached full agreement on specifications for the AD-2.

AM-1—About a dozen planes are off the production line and the first 30 will be modified at the contractor's plant to incorporate fixes. The first AM-1 is to be flown to Patuxent to check contractor's corrective action on several unacceptable deficiencies.

SC-2—All planes were returned to contractor for modification.

HRP-1—First production model of this Piasecki helicopter is in the assembly stage. Estimated delivery date 1 June.

PB4Y-2S—Total requirements for this aircraft were increased from 27 to 39. Completion of the prototype by 1 July has been requested.

XPBM-5A—This aircraft is at the contractors' plant for revised elevator configuration. Engineering for steerable nose wheel is still progressing.

AD-1—Douglas has been asked to design an AD-1 for utility usage, stripping it and installing target tow equipment, provisions for two more crew members and RCM equipment.

XJL-1—Drop tests of the static test airplane have been completed on this amphibian. The No. 1 airplane is being flown to get prop vibration data.

XJR2F-1—It was found this airplane met or bettered requirements set forth by the AAF for search and rescue aircraft. The Army has been invited to follow the progress and testing of this airplane.

JRM-2—Contractor resumed flights with engine cooling fans installed and with the reinforced bulkhead sheets for vibration elimination.

XR-60-1—The Constitution has made 16 flights for a total of 30 hours.

XTE-1—First flight of the seaplane trainer by Edo is estimated to be under way in July.

XNQ-1—Final demonstration of this Fairchild primary trainer was to be held in May.

Armament Division

Gunsight Controller—Bench tests of the Maxson controller for lead computing sights have been completed at Patuxent and indications are the equipment is satisfactory. Flight tests are under way at the present time.

Release Gear Icing—This project is to get data on various icing conditions on bomb release gear linkages to control variables affecting icing, such as distance between link components, surface finished, and surface areas.

Bomb Shackle Release—Aero X4A design was initiated to get a more compact and powerful release than current service units. The plunger release portion of the mechanism has been completed by N.G.F. and successfully releases a 50 lb. spring loaded plunger. The transfer switch is being manufactured and will be assembled with the existing release unit.

Torpedo Nose Cap—This project is to develop a nose cap release that is smaller, lighter and more efficient than present type. Two types of mechanical releases are undergoing flight tests, one being satisfactory and the other failing about 25% of the time.

Bomb Rack-Rocket Launcher—A combination capable of releasing bombs and launching rockets is under development to do away with having to change the pylon every time the type store to be carried is changed. Bids have been asked from contractors.

Rocket Launcher—Firing tests at Patuxent on the Mk 9 Mod 2 indicate the micro switch is not necessary for satisfactory operation, so it will be eliminated from existing launchers. The tests showed the shear pin was excessively strong and should be substituted by a weaker one that will fail if the launcher malfunctions. Substitutes worked with the HVAR but not the 3.5" AR. Tests are continuing.

Rocket Launcher Mk 6—An aircraft armament bulletin has been drafted ordering modification of all Mk 6 launchers to permit lug bottoms to be readily relocated to accommodate any particular launcher installation.

Armored Tow Cable—NATC has contracted for 40 12,000' spools of armored cable. It will be distributed for service evaluation upon receipt by this activity.

Airborne Equipment Division

High Temperature Applications — Improved techniques in applying very hard, temperature-resisting colmonoy coatings have led to their consideration for various uses in jets and turbines. Spray guns and powders are being procured for use at NAES. Combustion liners for the J-16 jet have been sent to Wall-Colmony Corp. for coating, and arrangements made to get a J-40 liner.

Cleaning Aluminum — The mild abrasive type materials currently used for polishing and brightening aluminum aircraft surfaces require considerable hand work and rubbing. Materials have been developed which will provide surfaces by removing the oxide-films, etc., by chemical action. Tests have been initiated at NAES to determine whether these materials are safe for aircraft use, particularly with respect to possible corrosion by small amounts of residues in seams and crevices peculiar to all aircraft structures.

Hull Protection — NATS tests over a limited period indicate that the Lanolin-Beeswax mixture is providing satisfactory protection of a JRM hull bottom. Little renewal of the coating has been required to date and the then transparent coating has permitted easy inspection for corrosion.

Life Vests—Final report on MK Two Life Vest Hoist Harness revealed that it could be modified for hoisting personnel from the water by attaching two sponge rubber pads to the hoist support straps where they pass under the armpits, and by providing stronger stitching at the attachment hoists of the harness assembly. Sample Mk two vest so modified has been received for extensive examination and evaluation.

Pararaft Kit — NavAer Specification 23K3 (AER) covering the redesigned Model PK-2 pararaft kit has been promulgated. Revised applicable drawing will be completed approximately 1 April. Deliveries have been resumed under present contract for Model PK-2 pararaft kits with Armstrong Rubber Co.

Pressure Breathing—McDonnel Aircraft has been flying the XF2D-1 to 35,000 ft. and desires to go above 40,000 ft. to demonstrate further performance of the airplane. Flights to 43,000 ft. require pressure breathing equipment which will be issued to test pilots after proper indoctrination in its use. Flights to higher altitudes must wait until June when the pressure cabin plane will be ready for test.

Helicopter Instrument Flight—Development of instrumentation for instrument flight in helicopters is being studied. Conventional instrumentation is considered inadequate because the attitude of fuselage of a helicopter is not necessarily indicative of the aircraft's actual path of flight.

KNURLED BUSHING PERMITS A ROTATION

Tool Speeds Bezel Removal Job

NAS CORPUS CHRISTI—Bezels on electric instruments may be removed or replaced without injury through use of a device developed by a civilian toolmaker under the employee's suggestion program, cutting three-fourths of the time formerly required for the work.

The device is a combination tool comprising a hand-operated wedge for removing the bezel and a screw-operated press for inserting the bezel. In use the instrument is placed in a bushing knurled on the outside to permit rotation of the unit during the removal process.

[DESIGNED BY FRED FORD]

BuAer Directs Usage of 'Knot'

BUAER has issued TN 7-47 setting forth standardized values for the nautical mile, which has been adopted as the standard aeronautical unit of distance by the Army Air Forces and BUAER.

The TN stated that the figures were in common use in formulating air speed tables, calibration of instruments and in all calculations in design of Naval aircraft and shall be used by all aeronautical activities concerned.

The Aeronautical Board established the knot (nautical mile an hour) as the standard speed measurement. One nautical mile equals 6080.2 feet and equals 1.151553 statute miles.

Log Books Belong with Engines

This article from the December 1946 issue of NAVAL AVIATION NEWS is reprinted because engines still are being received without log books. A conscientious effort by those concerned is necessary in order to correct this practice.

"BuAer continues to receive RUDM's which state 'the log book did not accompany the engine' or 'log book not received with engine,' or words to that effect.

"Investigation and comment can always be made even on incomplete data, but the value of such investigation and comment will depend entirely on the data available. To make a safe diagnosis of a sickness the doctor obtains a history of his patient's troubles. Similarly a proper analysis of service troubles can be made only when historical details are provided.

"The properly kept engine log book provides these details, and a concerted effort should be made to insure transfer of log books with engines. BuAer Manual, Article 27-103, and Part 1 of all log books make the following statement: 'The log book shall accompany the engine and shall be transferred with the engine, preferably in or attached to the engine box.' It tells the story."

Ground Collision Costs Airplane

The engine responded with a burst of power on starting, broke the tail tie-down line, the plane jumped its chocks and crashed into another aircraft 50 feet away. One plane had to be junked, the other needed major component repairs.

This accident occurred during the indoctrination of ground personnel on starting procedure for the plane involved.

The plane was secured with three turns of 21-thread Manila line from the catapult holdback fitting to the padeye of the concrete parking apron. Both wheels were chocked.

***BuAer Comment*—In the future steel cable tie-downs should be used to secure the tail. Higher chocks, similar to those used on transport aircraft, are recommended for use during instruction periods. Higher chocks should not be necessary during regular operations. All hands should review ACL 25-47, dated 11 March 1947. It covers aviation safety and prevention of accidents.**

Lock Pin Puller Aligns Struts

NAS SAN DIEGO—An aircraft mechanic in A&R has invented a tool to ease the task of pulling the oleo strut to the cap strut on the SB2C-4 landing gear. The tool is self-equalizing and exerts a straight pull on the plug, thereby eliminating breakage that occurred in using the conventional screw-type puller. Shop tests show that the tool saves three hours a week, amounting to over $200 per year. Its inventor was awarded $10.

[DEVELOPED BY S. M. WALLUS, AMG, Max.]

NEW TOOL IS IMPROVEMENT ON OLD TYPES

SERVICE Test
INTERIM REPORT DIGEST

This digest covers the 15 March and 16 April Interim Reports of Service Test, NATC PATUXENT, and does not necessarily reflect BUAER policy.

F8F-1 (261 Hours)

Power Plant. Oil leaks necessitated replacement of inter-cylinder drain lines for cylinders 3 and 5, 7 and 9, 11 and 13, and the installation of new gaskets for rocker box covers. Rocker arm shaft seals were replaced on intake side of cylinders 8 and 9 and on exhaust side of cylinder 10. Relatively short life of lubricating system packings and gaskets have been reported frequently during this test.

Specific oil consumption for this engine after 243.5 hours was .0234 pounds /BHP/ hour at normal rated power (1700 BHP).

Fuel System. Linkage between fuel selector valve handle and fuel selector valve was adjusted to bring the two into coincidence after 206.2 hours when selection of main tank resulted in fuel overflowing from centerline drop tank vent. Investigation showed that when fuel selector indicated MAIN position, cam in selector valve was unseating both main and drop tank poppet valves.

Exhaust System. No failures were encountered with the Prototype 3S exhaust system during interim, although 6 support clamps failed during a 4-minute combat power run. Support clamps will be used in the future only on cylinders 16 and 18, in order to evaluate effectiveness of modified stack-end clamp.

Elevator Assembly. P/N 53809 was replaced after 206.2 hours when numerous cracks and "ring-worm" deteriorations developed in the fabric surfaces. *Recommend* that manufacturer take greater care in doping and painting elevator fabric.

Hydraulic System. An Aeroquip quick disconnect, P/N AN 141-16, was installed in reservoir suction line to facilitate use of a hydraulic test stand.

Modified hydraulic actuating cylinders were removed after 261.8 hours. Standard production actuating cylinders will replace them.

Aileron Control Installation. Instrument oil, used instead of AN-6-3 low temperature grease and AN-0-6 general purpose oil on the universal and slip joint tube to prevent seizure of the aileron tab assembly at high altitudes, was removed after 240 hours. It is proposed to fly the aileron tab assembly dry for remainder of test.

Cowl Flap System. Cowl flaps failed to operate in the "auto" position after 256.9 hours. TSE bulb, P/N R-17-G-CR 2992-A-104-A-1, had failed internally. Life of the TSE bulb in this system has averaged 57 hours during test.

Alighting Gear. Brake linings and main wheel tires were renewed after 261.8 hours. Nylon 8 ply tires will be installed in lieu of rayon tires previously used.

Spark Plugs. RB-19R spark plugs, removed upon completion of their test time are being replaced with C-34S spark plugs.

Instruments. Failure of electrical system in F8F aircraft will make all gyro flight instruments inoperative. To improve this condition and to insure proper erection of attitude gyro prior to take-off, Grumman Service Bulletin No. 20 will be installed as soon as parts are available. This change includes installation of a vacuum operated turn and bank indicator, and isolates flight group relay by connecting gyro flight instruments directly to the 28.5 volt boss.

F8F-1B

Cannons. On five final firing flights of third set of guns, performance declined somewhat. Attributed to wear, plus fact that on last three flights no cooling interval between bursts was permitted. Total of 15,888 rounds fired on this set of guns.

Fourth set of guns was installed. 9878 rounds were fired with 20 stoppages: 4 link jams, 3 parted belts, 3 telescoped rounds, 3 failures to extract, 2 loose solenoid connections, 2 loose solenoids, 1 feed operating lever disconnected, 1 charger lug bent, 1 drive spring lock washer and guide failure.

After five flights the T-2 electrical heaters were removed from cannons. No change in gun performance was noted. All firing was done at altitudes above 25,000 feet and in several instances guns fired out complete loads without stoppage at 35,000 feet. No stoppages could be attributed directly to freezing. Indicates that gun heaters are not needed on this installation if careful maintenance and proper lubrication are observed.

Rockets. COMAIRLANT reported that F8F-1B wing structures were failing after two loads of 5" HVAR in 9 out of 10 aircraft from a local squadron. Further investigation was made by Service Test. This same type failure has occurred before on this project, but was attributed to inadequate supporting structure for the ammunition during high acceleration pull-outs, since no signs of failure appeared during the firing of 16 loads of 5" HVAR's. Five test flights made under varying conditions in an attempt to produce the same failure again did not do so.

XBT2D-1 (147 Hours)

Exhaust Stack Failures. DOUGLAS P/N 5258887-18, third revision, failed at 23.8 hours, with a complete diagonal break at an angle of approximately 45° centered at after edge of the drain boss. This stack is latest revision, but Douglas E. O. 525887W had not been incorporated. Remaining exhaust stacks have since been revised accordingly.

Second failure of DOUGLAS P/N 525887-18 occurred at 59.3 hours, with a crack passing the after edge of the ⅜" pipe boss at a 45° angle to the mounting flange and extending from seam to seam. Believed that this stack failed because of breaking of the lower right exhaust port stud, WAC P/N 5051D95, flush with the flange.

Exhaust stack, DOUGLAS P/N 525887-6, third revision, on ⌀5 cylinder failed at 123 hours. Failure occurred circumferentially at the flange. *Recommend* that contractor comply with BUAER SPEC. 81E1 (Aer) for exhaust system.

Exhaust stack, DOUGLAS P/N 525887-16, third revision, attached to ⌀10 and ⌀12 cylinders failed at 81 hours. The ⌀10 cylinder stack failed at the ⅜" pipe boss welded to the underside of stack and ⌀12 cylinder stack flange at the upper left corner.

Oil Drain Line. Line between stacks 9 and 10 was not properly shaped to connect the fittings concerned without being placed under stress. The line between stacks 11 and 12 was 5/16" too short and improperly shaped. As a result, two 45° brass ⅛" pipe x ¼" tube fittings were broken flush with the bosses welded to stacks 9 and 12.

Hydraulic Pump Supply Line. Bracket supporting the hydraulic pump supply line, at left side of engine rear section, failed at 15 hours. This failure transferred all line support to the rubber hose connections of the hydraulic pumps.

Deflector Assembly. Six assemblies, WAC P/N 424692N1, failed at 51.6 hours operating time. Failures occurred in the Z bend between the high tension coil attaching bolts and the deflector to the cylinder attaching bolt on the intake side. It is believed that support plates, WAC P/N 30926N-1 and N-2, will correct this discrepancy when received from Wright Aero Corp.

Exhaust Pipe and Shroud. WAC P/N 420887 (Special) on ⌀12 cylinder failed at the ⅜" pipe boss weld provided for the special oil drainage fix on this airplane. Failure occurred at 105 hours and is believed to have been caused by the poor welding.

Exhaust Pipe Support Bracket. WAC P/N 421364RH, supporting right side of #14 cylinder exhaust stack, failed after 74 hours. A second failure in same position occurred 22.9 hours later. In both cases the flange at exhaust stack end of bracket fractured completely near each of the threaded bolt holes. *Recommend* that contractor provide a bracket that will last life of engine.

Clamps, Exhaust Stack. DOUGLAS P/N 525887-134 and 112, tying together the tail pipes of exhaust stacks 525887-24,-6,-28 and 525887-6,-2,-4, failed at 105 hours and 140 hours respectively. Chafing with the exhaust stacks reduced the material thickness prior to failure.

Panel Rivets. Explosive rivets used in the fabrication of the lower and right accessory side panels, P/N 5256362 and 5256362-1, were found loose or missing in many places after 123 hours. *Recommend* that manufacturer use bucked rivets.

Valve Adapter. DOUGLAS P/N 2255094 for main landing gear struts, failed at 123 hours. In one case the "O" ring seal flange cracked circumferentially, and in the second, a complete break occurred at the "O" ring seal recess while removing adapter from strut. New valve adapters were manufactured incorporating the following changes: *1.* "O" ring flange thickness was increased from .045" to .075" and the outboard fillet radius increased from 1/16" to 3/32". 2. Wall thickness of the "O" ring recess was increased by reducing the hole diameter from .437" to .3125". *3.* The ¾ wrench square was raised from .166" to .312" to provide clearance for standard tools.

Oil Tube External oil tube, WAC P/N 424267, supplying pressure oil to front oil sump failed after 126 hours, with circumferential hair line fatigue crack adjacent to the attaching flange boss.

Windshield Bullet resistant panel, DOUGLAS P/N 5255150, was found cracked at 123 hours. Crack passed through the gun sight support bolt hole and was approximately 4" in length. Gun sight support bolt had been tightened to 50-60 inch pounds as recommended in E&M manual.

Gun Mounts. Forward gun mounts, DOUGLAS P/N 3218357, have failed three times during test, with circumferential breaks forward of plate bolted to the two retaining rods. New heavier steel forward gun mounts received from Douglas have fired 4,665 rounds with no discrepancies.

Forward gun mount retaining rods have failed twice from breakage at the first few threads of the 5/16 x 24 bolt welded to forward end of retaining rod. *Recommend* that size of forward bolts be increased to ⅜" to increase life of retaining rods.

Rear mount, outboard support keyway plate, DOUGLAS P/N 2252803, cracked through lower edge of rear mount tube hole and necessitated replacement at 123 hours. Replacement part was made from 24 ST material and thickness increased to .156".

Wing Flap Rivets. Cherry rivets in wing flap, DOUGLAS P/N 5251480RH, attaching trailing edge skin of right landing flap were found loose after 123 hours. Believed that oil canning of skin caused rivets to work loose. Unsuccessful attempt was made to replace loose ⅜" rivets with next larger size, 5/32". Thin skin buckled when setting rivets, and only small margin of material remained between the hole and skin edge when holes were dimpled. *Recommend* that A-17S type countersunk rivets be installed in place of the cherry rivets now used. This will require opening flap skin spanwise at trailing edge. Installation of a strip fillet for closing this opening is recommended.

Arrested Landings. Thirty arrested landings were made during interim after installing an AD-1 tail hook and adjusting it to trail at 35°. Surface winds averaged 8 knots, and wire pull out was approximately 110 feet with airplane gross weight of 13,774 lbs. No discrepancies encountered.

SC-2 (113 Hours)

Oil Drain Lines. The ¼" exhaust stack oil drain lines from cylinders 4 and 7 failed completely at the flared ends. New lines were made of stainless steel tubing.

Oil drain line tee fittings, P/N C45-T-9810-10, for #6 cylinder exhaust stack broke loose from stack. Tee fitting in #5 cylinder exhaust stack had the threads stripped on the #4 cylinder exhaust stack drain connection side. Both were replaced with aluminum fittings temporarily.

Exhaust Port Studs. One stud P/N R85-WAC-5651H95, on 8 cylinder exhaust port failed.

Stud, P/N R85-WAC-5051D95, right upper on #7 cylinder exhaust port flange pulled out, stripping threads in stud hole. Stud hole was tapped with a 7/16-14 Aero thread, and a helicoil insert and step stud, 7/16-14 Aero thread by 5/16-24 standard thread, were installed. The top outboard stud on #6 cylinder exhaust port backed out and was replaced with oversize stud, P/N R85-WAC 5051H95.

RECESSED BLOCK HOLDS THE EXTRACTOR

Device Aids Ejector Pin Removal

NAS SAN DIEGO—A fixture that facilitates removal of ejector pins from .30 to .50 caliber extractors has been developed by an ordnance mechanic under the employee's suggestion program at this station.

The device is a block suitably recessed to receive and hold the extractor while the pin is driven out with a hammer and punch. Construction details are available on request from this station.

[DESIGNED BY O. B. FORTESON]

The following check list of books and magazine articles makes no attempt to cover the entire field of current aviation writing. It does, however, suggest some of the titles considered most likely to interest naval aviation personnel.

BOOKS

One Damned Island After Another. Clive Howard and Joe Whitley. Chapel Hill, The University of North Carolina Press, 1946, $3.75. (Official history of the Seventh Air Force.)

The Island War. Major Frank O. Hough, USMCR. Lippincott, 1947, $5.00. (History of the Marine Corps Ground Forces in World War II.)

MAGAZINE ARTICLES

Pilot Proneness to Accidents. *Aero Digest*, Vol. 54, No. 4, April 1947, pp. 38, 39, 148, illus. Study of psychological factors affecting pilots.

Airline Safety. Adm. Emory S. Land. *Air-Sea Safety*, Vol. 2, No. 2, Feb. 1947, pp. 5-14, illus.

Fire Factors in Aircraft Accidents (Part II). George H. Tryon, III. *Air-Sea Safety*, Vol. 2, No. 2, Feb. 1947, pp. 15-20, illus.

Integrated Landing System. Cmdr. C. S. Moffett, USN. *Air-Sea Safety*, Vol. 2, No. 2, Feb. 1947, pp. 21-35, illus. Results and recommendations of the Army, Navy, CAA program developed at Landing Aids Experiment Station, Arcata, Calif.

Safety from the Ground Up. Maj. Gen. Frederick L. Anderson, Jr., USA. *Air-Sea Safety*, Vol. 2, No. 2, Feb. 1947, pp. 40-44, illus. Story of the AAF ground safety program.

Impact of Supersonic Speed on Air Navigation. Cmdr. W. J. Catlett, Jr., USN. *Air-Sea Safety*, Vol. 2, No. 4, April 1947, pp. 7-16, illus.

Competent Navigation Equals Greater Air Safety. Harold A. Fulton. *Air-Sea Safety*, Vol. 2, No. 4, April 1947, pp. 17-21, illus.

Airway Aids for Tomorrow's Pilot. Theodore P. Wright. *Air-Sea Safety*, Vol. 2, No. 4, April 1947, pp. 32-38, illus.

Designed-In Maintenance Ease Keynoted in Douglas AD-1. W. L. Whittier. *Aviation*, Vol. 46, No. 4, April 1947, pp. 78-80, illus.

U. S. Whittling British Lead in Jet Plane Production. William Kroger. *Aviation News*, Vol. 7, No. 14, April 7, 1947, pp. 24, 25.

AAF Developing 500 MPH Multi-Jet Bomber Fleet. *Aviation News*, Vol. 7, No. 15, April 14, 1947, pp. 7, 8, illus.

Douglas Skystreak Ready for Flight. Scholer Bangs. *Aviation News*, Vol. 7, No. 15, April 14, 1947, p. 10.

Army-Navy Split on Role of Air Power in Atom Warfare. Robert Hotz. *Aviation News*, Vol. 7, No. 16, April 21, 1947, pp. 7, 8.

Fashions in Folds. *Flight*, Vol. 51, No. 1996, March 27, 1947, pp. 266a, b, illus. Methods of "trimming" British naval aircraft for stowage aboard carriers.

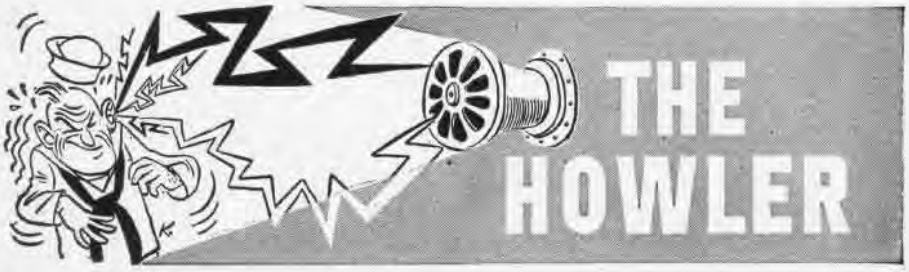
Photo Jet. *Flying*, Vol. 40, No. 5, May 1947, pp. 25, 26, illus. Jet camera planes take aerial photos at 500-plus mph.

The AAF. William Winter. *Flying*, Vol. 40, No. 5, May 1947, pp. 28, 29, 74, 76, 78, illus.

Plane Talk. John M. Herman. *Flying*, Vol. 40, No. 5, May 1947, pp. 32, 34, 85, illus. Techniques in use of aircraft radio.

Thrifty Airline. *Flying*, Vol. 40, No. 5, May 1947, pp 35, 36, 98, illus. NATS study of economy in air transport.

The Mighty Link. Paul Fountain. *Flying*, Vol. 40, No. 5, May 1947, pp. 40, 42, 90, 92, illus. Evaluation of Link trainers in war and peace.



Carburetor Failures. BuAer Multiple Address letter Aer-Ma-32, Serial No. 3093 dated 7 Jan. 1947 is not being complied with by operating activities. Until such time as the operating squadrons comply with existing instructions BuAer has its hands tied and is unable to investigate troubles intelligently. It has been pointed out in the past and is herein amplified that the above letter must be complied with.

Hydraulic Leak. Commenting on an RUDM covering an internal hydraulic leak traced to the hydraulic strut cylinder assembly, P/N CV-VS-41132, on an F4U-4 aircraft, BuAer calls attention to the fact that the RUDM *fails to give the hours in service.*

The case appears to be one of poor inspection of cylinder material by the contractor, but the RUDM is incomplete.

F8F Rigid Wing Folding Joint Support Strut. Difficulties are being encountered in using the wing outer panel tie-back cable assembly during carrier operations.

As soon as parts become available, the contractor will furnish a newly designed rigid wing folding joint support strut, P/N GT-172 for future production aircraft, in an attempt to eliminate the current tie-back cable assembly removal problems. This change will not be retroactive.

Where these difficulties are being experienced with service aircraft during carrier operations, it is recommended that service activities fabricate struts for the affected aircraft in accordance with information given in the drawing reproduced below from Grumman Drawing GT-172.

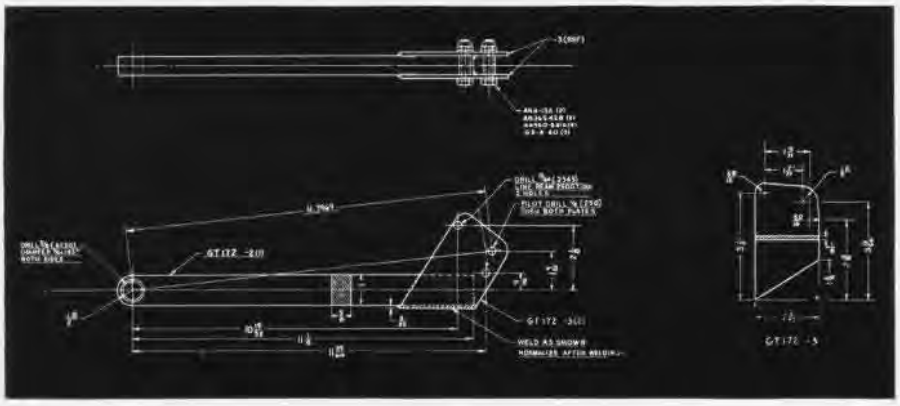
Specifications to accompany the drawing are as follows: spacer, tube, P/N G5-4-40, Grumman std.—(2); washer, plain, P/N AN960-D416, std. part, —(4); nut, self locking, P/N AN365-428, std. part,—(2); bolt, hex. hd. P/N AN4-13A, std. part,—(2); plate, P/N GT172-3, cr. mo. steel sht., Navy spec. AN-QQ-S 685, comm. spec. 4130, stock size ⅛ x 2½ x 4¼,—(2); bar, P/N GT172-2, cr. mo. steel bar, Navy spec. AN-QQ-S 684, comm. spec. 4130, stock size ⅝ x 1 x 11¾,—(1). Machine finish. Break all edges .015". Two assemblies, support strut, P/N GT 172-1, are required per plane.

Improper Installation of Distributor. After the R-2800-18W engine on an F4U-4 cut out in flight, inspection showed a heavy coating of Seal Tight compound between distributor cover P&W P/N 10-32702 and its mating surface on distributor bowl P&W 10-32701. Further investigation revealed that the provisions of *P&W R-2800 Engine Bulletin No. 121*, 28 June 1944, had not been complied with at time of overhaul.

The reporting activity states that four cases of cutting out within two weeks have been traced to this cause. The application of Seal Tight compound to the machined surfaces of distributor cover and bowl is contrary to instructions contained in *P&W R-2800 Engine Bulletin No. 113, Sup. No. 2*, 1 November 1945, under A. 3, and to those in the handbook *ANO2-10GD-3*, Section XI, paragraph 2, under (E)2, which states in part: "The surface will be polished with crocus cloth and free from scratches and the surfaces should be coated with ferrocote No. 347 to protect the surface from corrosion. It is important that such places as the gasket contact surface and grooves be thoroughly cleaned to insure a good electrical contact."

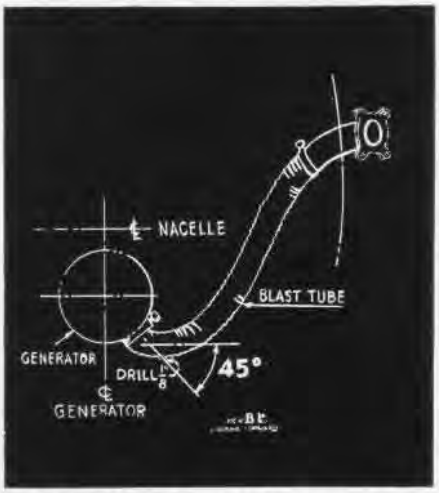
Paragraph 3 on page 7 of *P&W R-2800 Engine Bulletin No. 121* was not complied with. This states: "When trouble is encountered or at next overhaul, should the clearance exceed the new maximum gap clearance, sufficient spacers, Scintilla P/N 10-31593, should be installed under the shoulder of the electrode to bring the gap clearance within the new required limits; .010 to .030 is now specified." This clearance, when checked, was .068, and no spacers had been installed.

All overhaul activities are advised of the importance of complying with the provisions of the Engine Bulletins noted above. Activities servicing P&W R-2800 engines should inspect for the conditions described and, if found, correct the discrepancies as directed in the Engine Bulletins and in the pertinent section of AN-2-10GD-3.



Overheating of Generators on PV-2's. Medium Patrol Squadron Five RUDM 1-47 dated 28 January 1947 reported overheating of the generators. Investigation revealed that the "U" shaped sections of the generator blast tubes, P/N 113094, were full of water, preventing passage of cooling air to the generators. This trouble was found in four PV-2 aircraft after rain squalls in a semi-tropical area while they were parked. This condition has not been reported in other climates.

To eliminate this condition BuAer recommends that a 1/8" hole be drilled in the blast tubes at their lowest point, as shown in accompanying sketch, by those squadrons which have had the same difficulty. A coating of shellac shall be painted around the hole to prevent spreading.



FIX TO PREVENT GENERATOR OVERHEATING

Reasons for Overhaul. Engine Disassembly and Inspection Reports are being received on individual engines with the notation "Time" or "Routine" as the reason for overhaul and no further explanation. This is unsatisfactory when the number of hours indicated as having been accumulated between overhauls is below or barely within the limits established by General Engine Bulletin No. 86 Revised.

Additional information is required to explain *why* the engine was turned in for overhaul. If it was turned in because the airplane in which it was installed was salvaged or turned in for overhaul, these circumstances should be mentioned. Unless such reasons are noted, it is difficult, if not impossible, to conduct an accurate analysis of such reports to determine the relative efficiencies of service engines and overhaul practices at A&R shops.

The need for corrective measures to be taken by the manufacturer to redesign a part, or by the A&R shops to improve their overhaul procedure, or by maintenance activities to extend the operating period between overhauls, can be made evident only if the reasons for overhaul are clear.

Tail Wheel on SB2C-5. A report of failure of the solid tail wheel on SB2C-5 aircraft states that the tire parted from the wheel along outer circumference of wheel. Fifteen such cases occurred within 30 days.

BuAer calls attention to the fact that ComAirLant *SB2C Airplane Bulletin, No.*

IAB-46, dated 23 April 1946, requests activities concerned with SB2C-4, 5 aircraft to include in such RUDM's all the information asked for in paragraph two of BuAer letter Aer-Ma-31, serial 26857, dated 4 April 1946. Two of these items: *whether aircraft are land or carrier based (if land based, length of taxi strip and type of surface)* and *average atmospheric temperature*, both considered very important, are not included in the RUDM in question.

This difficulty with the solid tail wheel is a recurrent trouble. Handling of the problem is dependent on specific information as to operating conditions. RUDM's should give full information.

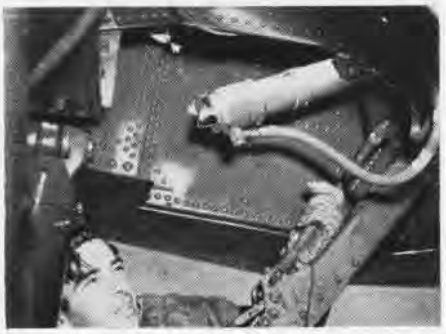
HOW LONG DID THIS WHEEL BOLT SERVE?

Comp'ete RUDM Data Needed. A recent RUDM on failure in the wheel assembly of the main landing gear of an SNB-2 reported one of the main wheel mounting studs broken (*see photo*); stud holes on P/N 530972 cracked; and inner rim on P/N 530972 mutilated and worn.

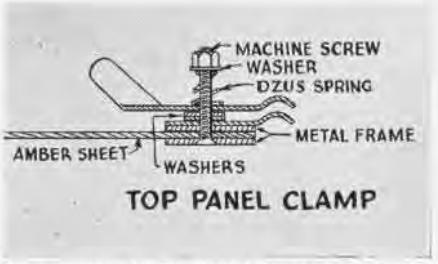
Although the RUDM gives the total time in service of the aircraft as 1969.8 hours and total time since overhaul as 309.2 hours, there is no definite statement of the actual time the wheel was on the plane. An estimate of the *actual service life of the wheel* is necessary before such an RUDM can be properly evaluated.

TBM Landing Gear Uplock Assembly. It has been reported to BuAer that as a result of the failure of the landing gear uplock assembly to engage properly, the landing gear has extended inadvertently during glide bombing run pull outs. In one such case the gear of a TBM-3E aircraft extended with such force that the actuating rod broke. (*See photo*)

All activities operating this type aircraft should check the adjustment of the uplock assembly during the routine drop tests. Particular care must be taken in such a check, since the failure of the uplock assembly to engage can be determined only as the result of close inspection.



BROKEN ROD RESULT OF UPLOCK FAILURE



ASSEMBLY HOLDS HOOD IN THE COCKPIT

Bearcat Uses Instrument Hood

VF-19-A—This squadron has developed an amber flying hood for installation in F8F's, for instrument flight practice which gives a more positive securing of the shield in the cockpit. Normal installations with clips and other holding devices were found unsatisfactory due to the strong slipstream forces encountered in the *Bearcat* when canopy is open during takeoff and landings.

The amber hood consists of sheet metal frames made from .032 24st sheet and amber sheet stock No. R-93-S-144300. One-eighth inch brazier head rivets spaced one and a half inch apart or as needed bind the metal frames to the amber sheet. Metal frames act as stiffeners.

The assembly has a top panel 20"x42", two side panels and one center panel. A machine screw of desired length is used to hold the side panels at the lower forward corner of the cockpit enclosure (*see photo*). The accompanying drawing shows the assembly used to secure the top panel to the canopy. The top panel is secured with a clip attached to the canopy jettison cable cover at a spot about opposite the pilot's ear (*see drawing*).

FOUR-PIECE HOOD FASTENS ON TIGHTLY

Production Lines Overhaul Wings

NAS Alameda—A production line for the overhaul of F6F wings was recently established by the Structures Division of A&R. Time for overhauling a wing has been reduced to 84 hours per wing, thereby effecting a saving of 42 per cent in man hours and also saving 30 per cent in floor space.

Before the production line was set up a total of 145 hrs. was required for each wing. Each of the new lines has two sets of rails, one for right and one for left wings. Each section has six spots for the working of wings. Originally the line moved every eight hrs. and required 30 personnel to operate it. The line now moves every six hrs. and requires only 26 personnel to operate.

Before the wings are put on the line they are run through a disassembly and pre-production section. The man hour requirement for this operation has been reduced from eight to six hours with prospects of further reduction.

Moffett Gets Intensity Lights

NAS Moffett Field—A new system of the most advanced type of high intensity approach and runway lights was dedicated here on the night of 21 March. The system, operating in conjunction with GCA, is expected to insure safe landings for all types of aircraft including planes of NATS which has headquarters at this station.

NEW LIGHTS INSURE SAFE GCA LANDINGS

Producing 40,000 candle power beams from opposite sides, the lights are supplemented by color screens for variable conditions. Red filters are used to give exact bearings to a pilot flying in low visibility.

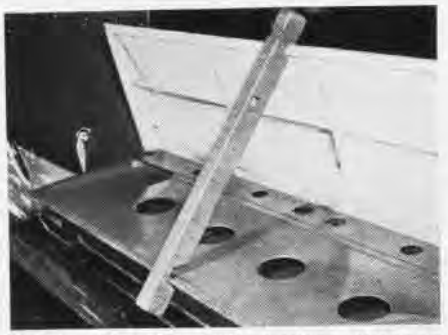
Intensity of the $53,000 system can be regulated from a central control panel located in the field control tower. Minimum lighting can be supplied for clear weather. Two rows of lights stationed 200 ft. apart run parallel with the runway and are 31,500 ft. in length. Lights mounted on poles extend 2400 ft. beyond the south end of the runway and across Bayshore Highway.

Simple Device Protects Flaps

NAS San Diego—To prevent damage to TBM wing flap ribs during removal or installation operations, a metalsmith at this activity has developed an adjustable wood support. Use of his support saves flaps from the damage that sometimes results when personnel lean on them while removing attachment bolts after actuating arm has been disconnected.

The wood support is 1 5/8" x 2 5/16" and approximately three feet long. A bungee cord with a hook secured to the end provides means for attaching the device to flap's training edge.

[Designed by William G. Rodgers]



CORD AND HOOK SECURE WOOD SUPPORT

SUPPLY NEWS
FROM ASO AND SUPPLY DIVISION BUAER

Changes Made In Source Coding

In recent months coding committees have increased considerably the range of airframe bits and pieces to be manufactured locally by the Navy (coded in the "M" category), and correspondingly have decreased the number of items coded "P," signifying they are to be purchased, if possible, from the prime airframe contractor, if and when needed.

It is the intent of BuAer and ASO that these items *newly coded "M"* (yet previously purchased and stocked on supply shelves) should be drawn from supply instead of being manufactured, until such stocks purchased in the past have been exhausted. In other words, there is delayed action, especially insofar as A&R departments are concerned, in the application of this change in coding. Practically none of the operating spares allowed on Section "B" Allowance Lists have been recoded, and practically all except control cables will continue to be purchased from the prime airframe contract or when "peculiar." Consequently line maintenance activities—meaning squadrons, FASRONS, augmenting units, V-2 divisions, and Class C repair activities—will not be affected by this change in policy. Specialized A&R stations, however, will be affected considerably.

A&R Material Planners and Estimators should make sure that newly recoded "M" items are not actually available in Navy Stock before arranging for manufacture of any coded "M" items by A&R.

BuAer concurs that "M" items should be manufactured only upon "Supply Officer's Manufacturing Requests" (SOMR's). Furthermore, it is understood that most air stations consistently use the SOMR system, although reasons for its use are not always clearly understood by all hands.

If the Supply Department carefully screens all SOMR's it may eliminate manufacture of items already available in naval stock, locally or elsewhere, and be able to suggest use of a suitable substitute in local stock, perhaps in the form of the next higher assembly which incorporates the item desired.

BuAer suggests exercise of local judgment with regard to manufacture of "M" items. If the item desired or a suitable substitute is not available in local stock, then consideration must be given to the effect of delay in obtaining shipment from another stock point, sometimes resulting in SOMR's being issued for local manufacture of interim requirements.

Limit Quick Engine Change Units

The cost of spare QEC units runs from about $7,000 each in the case of fighters up to about $24,000 each in the case of the Martin *Mauler* (AM-1). Therefore it is highly necessary to economical maintenance that their procurement be limited to the absolute minimum. Even during the war it was customary to procure quick engine change units on a very limited basis, but reduced appropriations are resulting in further cuts of the ratio to be procured in the future.

Currently allowed quantities for a squadron are being reduced about one half, as stated in Section "B" Allowance Lists now being revised. Quantities procured today for the F8F-1, F4U-4, et al, are barely sufficient for initial outfitting—"setting up in business"—of new squadrons or their servicing activities.

There is evidence that some QEC units are being issued in response to replenishment requests. This is wrong. BuAer has never intended that they be purchased in sufficient quantities to replenish any user activity, nor has it ever been intended that they should be issued to A&R departments, other than small quantities for sample or template purposes. Recently an air station supporting about 50 PBM-5's requested a total of 47 QEC units for PBM-5, costing about $19,500 each, and indicated that they were for use in the A&R department. To have filled this request, had it been possible, would have been contrary to BuAer instructions and the dictates of economy. Accordingly, all supply points stocking QEC's are requested to insure that they are issued only for initial outfitting purposes.

Furthermore, ASO is asking Force and other Supply Officers to arrange the return to specialized stock points of ready-for-issue QEC units mistakenly issued in the past, or in excess of the new reduced allowances.

Purchasing of Aviation Material

Pilots and ground crewmen occasionally indicate lack of knowledge as to who procures and distributes aeronautical items, non-aviation items, and commonly used items needed by aeronautical activities. The following is an over-simplified answer, but should prove helpful.

ASO procures and distributes practically all BuAer aeronautical support material described as "peculiar and special to aircraft," under authority delegated to it by BuAer and BuSandA. Practically all items peculiar to naval aviation are listed in the ASO Catalog.

"General Supply Branch," "Standard Stock," and "Shipyard" are the terms frequently applied to the items commonly used in the support of most kinds of naval establishments, ships, and aircraft. Examples are commonly used tools; paints, cleaning compounds, and other chemicals and consumables; general hardware including plumbing, bar, sheet, rod, etc., forms of metals; protective clothing and devices. BuSandA procures and distributes these. It should be noted that even in these categories there are paints, hand tools, etc., that are peculiar to the maintenance of aircraft and therefore will be identified by the letter "R" prefixed to the stock number.

Materials of common use are cataloged in the General Stores Section of the "Catalog of Naval Materials" published by the Navy Catalog Office under the cognizance of the Chief of BuSandA. Support materials peculiar to ships, ordnance, etc., are separately cataloged for the respective Bureaus concerned.

For a user to requisition correctly he must *1.* know whether the item is peculiar to aircraft, electronics, ordnance, etc., or is commonly used; 2. furnish correct nomenclature and stock number after reference to the appropriate catalog. He should then refer his request to his Supply Officer.

The user is also interested in how emergency purchases may be made. It is sufficient to say that local purchase is authorized for both standard stock and non-standard materials, but under very limited and highly controlled conditions. Your local Supply Officer is not free to purchase from local retail stores or dealers anything you may desire. Controlling directives vary with different categories of material, so accept his word for it when he says, "Local purchase not authorized," without asking to see the numerous applicable instructions. Centralized procurement is absolutely essential to economical purchasing, to the end that neither too much nor too little is procured in support of a Navy program. In these days of rigid economy it is more important than ever that the advantages of centralized procurement be utilized to the utmost, and local purchases confined to real emergencies.

Packings, Seals, Gaskets Scarce

More naval aircraft are grounded or held up in overhaul for lack of rubber-like extrusions, moldings, and formings than for any other category of support material. This was a chronic condition during the war and is even worse today, mainly because many previous supplies have gone out of this business.

This problem is being given attention by BuAer and ASO. Ways and means of solving have been narrowed down to two possibilities: *1.* Consolidate manufacture of the myriads of different items required with one single commercial contractor; 2. Consolidate such manufacture in a naval manufacturing establishment.

Because of the short shelf-life of most rubber-like items and because of the greatly reduced numbers of airplanes operating today, the quantity required of any one item is so small as to be unattractive to established manufacturers unless they charge exorbitant prices. Furthermore, no single commercial source has the know-how or equipment for compounding and fabricating the complete range. Lack of standardization of compounds and lack of standardization of sizes and shapes in this category of material have complicated further the problem of the user and his supplier. Steps are in process to simplify further as another possible relief measure.

AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

Night Fighters Get Mark 8 Gun Sight

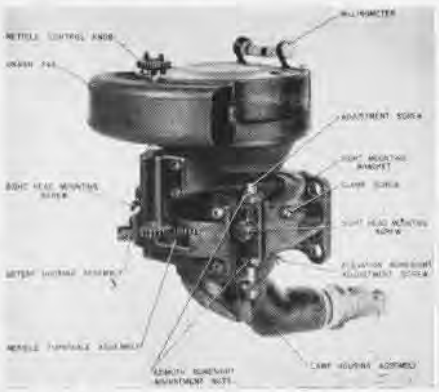
The illuminated sight Mk 20 Mod 0 is now being delivered to aviation activities for installation in VF(N) type aircraft. It is presently planned to equip service aircraft retroactively during overhaul availability and to equip all new production night fighters beginning with F8F-2N and F4U-5N aircraft.

This sight is similar to the illuminated sight Mk 8 with the added feature of presenting the pilot with a selection of reticles, depending on visibility at the time of attack. By merely turning a control knob mounted on the sight, the pilot can have any of the three patterns as shown in the accompanying illustration available for use at a moment's notice.

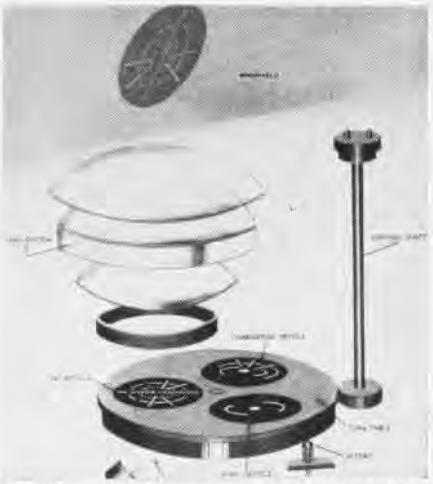
This illuminated sight is designed especially for use in night fighter aircraft in operations where the target visibility is limited and tactics are formalized. Therefore a reticle pattern of reduced markings with a minimum amount of illumination is provided to reduce or eliminate pilot blindness. However, as specialized night fighter aircraft may be operated in daytime, using the night reticle pattern for daytime operations, the pilot would be hampered by lack of needed reference points and illumination of the pattern.

For this reason a more detailed reticle pattern of the conventional "ladder type" design is also provided. The markings of the day pattern furnish the pilot with reference points for use in operations such as fixed gun deflection firing, rocket firing, and glide and low altitude bombing. A third reticle is included as a compromise between the more complete and brilliant day reticle, and the limited pattern of the night reticle.

The combination reticle is for use under low or medium visibility conditions that occur during dawn, twilight, or overcast periods of operation. Thus, the sight will provide the pilot with a selection of reticle patterns which will adapt the aircraft for use in both night and day operations where the light conditions may vary over a range from extremely low target visibility to full daylight illumination.



MK 20 SIGHT USEFUL IN DAY AND NIGHT



KNOB ALLOWS QUICK SHIFT OF RETICLES

Another feature of this new sight worth noting is that the mounting bracket is an integral part of the sight and accordingly, when installing this sight in place of the illuminated sight Mk 8, it will also be necessary to remove the mounting bracket, Mk 1 Mod 2 or 3.

An ordnance pamphlet, OP-1671, describing the operation, installation and maintenance of this sight is being prepared and it is expected to be distributed to fleet activities during July 1947.

It is anticipated that line maintenance of this sight will be limited to cleaning the lenses, lubricating the turntable bearing, replacement of lamps, inclinometer vials and crash pads. Items required to effect such maintenance are available in the aviation ordnance supply system and will be added to applicable ordnance allowance lists.

BuOrd Explains Nomenclature of Jato

Information received by BuOrd indicates that considerable confusion exists as to the correct designation of the latest type Jato units. The units currently authorized for use are "Jato Unit 12AS1000 D3" and "12AS1000 Jato Unit Mk 2 Mod 3".

The latter is the official designation for those units previously referred to as "Jato Unit Mk 2 Mod 3" or "Jato Unit 12AS1000 D4", all of which are different designations for the same unit. "12AS1000 Jato Unit Mk 2 Mod 3" is the most recent designation and is now being marked on all units produced and will be used in all future correspondence.

Early Explosion of Torpex Depth Bomb

A heavy patrol squadron operating in the Pacific has recently reported the premature functioning of a torpex loaded, Mk 54 depth bomb. The bomb, with an AN-Mk 230 Mod 3 hydrostatic tail fuze and no nose fuze installed, was dropped from a PB4Y-2 from an altitude of 100 feet. The fuze was set for 25 feet but the bomb, striking short of the target, detonated on or very close to the surface.

This malfunction is an isolated case and positive analysis of the cause cannot be made. However, two possible causes exist, either of which, under the circumstances, is improbable, but, as evidenced by the actual event, is entirely possible. The first is deflagration of the torpex on water impact, which has occurred in previous tests but always when the bomb has been dropped from a considerably greater altitude. The second possible cause is the lack of an anti-crash feature in the tail fuze which, although previously declared obsolete, had been issued and installed in error.

No further action is contemplated by the BuOrd. This information is supplied as a reminder that all fuzes must be carefully checked before installation to insure that they are authorized for use and that the use of depth bombs for training is now limited, by BuOrd OCL AV1-47, to those loaded with HBX.

Cast Harness Works on Harpoon

VP-ML-6, Pacific—Due to frequent burning out and cracking of the ignition leads on the squadron's R-2800-31 engines, it was decided to attempt a change from tubular to cast-type harness on one engine on a PV-2.

It was found that, due to the ease of setting up and timing the cast harness, installation of this type would save three or four man-hours of labor on each engine. In addition, subsequent tests showed that the new harness was much cooler running, due to its pressurization. It also was noted that starting was easier and single-engine performance increased.

[Developed by D. B. Nelson, AMMIc]

Dolly Speeds R4D Wheel Repairs

NAS Corpus Christi—Based on a suggestion of two enlisted men, a dolly was constructed here to attach to R4D airplanes during overhaul operations on the landing gear.

The device makes possible an increase in production by permitting uniform flow of work on a progressive stage system. It replaces the former method of leaving the damaged landing gear mounted until replacement of a new or overhauled gear could be made. This Beneficial Suggestion idea saves an estimated $2,200 annually in time and labor.

[Developed by F. Junio S1c, and C. L. Phillips, AM1c]

DOLLY PLACED UNDER BOTH WING STUBS

APRIL SUPPLEMENT

AERONAUTIC PUBLICATIONS INDEX

Aviation Circular Letters

Title	Order No.
§Bureau of Aeronautics Section "U" Allowance List of Standard Hand Tool Kits for Aircraft Maintenance Activities, Naval and Marine Corps—Establishment of.	31-47
§Airborne Electronic and Test Equipment; Installation, Overhaul and Maintenance of.	32-47
§KD2R-2 Pilotless Aircraft Model Designation; Establishment of.	33-47
§FG-1K and F4U-4K Aircraft Model Designation; Establishment of.	34-47
§KD2C-2 Pilotless Aircraft Model Designation; Establishment of.	35-47
§KDG-2 Pilotless Aircraft Model Designation; Establishment of.	36-47
§Radio Countermeasures Equipment, Removal of from Carrier Type Aircraft.	37-47
§Peacetime Policy for Modernization of Aircraft and Aeronautic Equipment, Change to	38-47
§Aircraft Electronic Equipment, Test Equipments and Accountable Components, Reporting of.	39-47
§KAY-2 Pilotless Aircraft Model Designation; Establishment of.	40-47
§KAQ-2 Pilotless Aircraft Model Designation; Establishment of.	41-47

Technical Notes

§Model C-173/AIC-4 Station Control Unit, Model C-174/AIC-4 Operator's Control Unit Modification Required when Installing the CX-922/AR Coiled Microphone—Headset Extension Cord.	6-47
§Nautical and Statute Mile—Standard Relationship Between.	7-47

Technical Order

§Safe Handling of Radio Active Luminous Compound.	9-47

General

Model Designation of Naval Aircraft, Apr. 1947	NavAer 00-25Q-13
Care and Preservation of Aeronautical Material in Inactive Status Vessels. Feb. 15, 1947	NavAer 00-85A-500

Flight Safety Bulletin

§Dangerous Attitudes in Carrier Approaches, Apr. 7, 1947.	1-47

Inspection Manual

§Aero. Technical Inspection Manual Volume 9 Aircraft Assembly Pre-Flight and After-Flight Inspection, Mar. 1, 1947.	NavAer 00-15PI-500

Performance and Characteristic Data

§U. S. Navy Service Airplane Characteristic and Performance Data Sheets Addendum No. 1 (to issue of 1-1-47) Listing Sheet Mar. 1, 1947.	NavAer 00-45RA-522

Allowance Lists

Section B

F8F-1, -1B Reissued Apr. 1947.	NavAer 00-35QB-55
SC-1, Reissue Apr. 1947.	NavAer 00-35QB-36

Section G

§Section G Shop Hangar Office and Ground Equipment for Class C and D Aircraft Maintenance, Feb. 1947.	NavAer 00-35QG-17

Section R

Aeronautics Electronic Material for General Expendable Material and Test Equipment Change #1 Apr. 1947.	NavAer 00-35QR-3
§Aeronautics Electronics Material for ARB, May 1947.	NavAer 00-35QR-34

Section U

§Standard Hand Tool Kits for Aircraft Maintenance Activities Naval and Marine Corps, Apr. 1947.	NavAer 00-35QU-1

Accessories

§Airframe Accessories Bulletins:	
§Lubricating System Accessories, G-8, Apr. 4, 1947.	1-47
§Aircraft Hose and Hose Assemblies—Removal and/or Retention of during Overhaul—Instructions for, Apr. 11, 1947.	2-47
§Emergency By-Pass Valve, Great Part No. DB1-200—Information Concerning, Apr. 22, 1947.	3-47
Power Plant Accessories Bulletin:	

Carburetors

Naval Aircraft Carburetor Setting Specifications and Flow Sheets, Rev. Feb. 1, 1947.	NavAer 03-10BQ-700
§Handbook of Operation, Service and Overhaul Instructions with Parts Catalog for Chandler-Evans 100-CPB-7 Carburetors, Feb. 14, 1947.	AN 02-10BF-1

§Designates New Publication.

Title	Order No.

Hydraulic System

§Operation, Service and Overhaul Instructions with Parts Catalog Model 1P-196A for Hydraulic Pump, Dec. 15, 1946.	AN 03-30CB-12
Operation, Service and Overhaul Instructions with Parts Catalog for Constant Delivery Pumps PF-3911 Series, Rev. Feb. 14, 1947.	AN 03-30CH-10

Landing Gear

Operation, Service and Overhaul Instructions with Parts Catalog for Bendix Wheels (All Models) Revised Jan. 22, 1947.	AN 03-25C-9
Operation, Service and Overhaul Instructions with Parts Catalog for Wheel Brakes (Bendix) Rev. Feb. 13, 1947.	AN 03-25C-10

Magnetos

Operation, Service and Overhaul Instructions with Parts Catalog Types SF14LU-8 and SF14S Aircraft Magnetos, Reissue Apr. 3, 1946.	AN 03-5DC-11
Aeroproducts Propeller Bulletins:	
§Aeroproducts Propeller Assemblies A642-G1, Hub Assemblies 6500320, Regulator Assemblies 6500690, Governor Assemblies 6500688, and Pump Assemblies 6500752—Modification of, Apr. 8, 1947.	4
§Aeroproducts Propellers Models A642-G1, A642-G2 and A642-G4—Regulator Oil for, Apr. 22, 1947.	5
Hamilton Standard Propeller Bulletin	
§Hamilton Standard Service Bulletin No. 118—Approval of Apr. 8, 1947	50

Fuel Booster Pumps

Operation, Service and Overhaul Instructions with Parts Catalog for Submerged Booster Pumps Type B-5B, Rev. Feb. 20, 1947.	AN 03-10EC-15

Vacuum

§Operations, Service and Overhaul Instructions with Parts Catalog for Motor Driven Dry Air Pump Model 1511-1A (Eclipse-Pioneer), Jan. 1, 1947.	AN 03-30AA-6

Valves

Operation, Service and Overhaul Instructions with Parts Catalog for Aircraft Valves Types AV-1, AV-2, AV-5, AV-7, AV-9, AV-11, AV-12, AV-14, (General Controls Co.), Rev. Feb. 1, 1947.	AN 03-30-71

Airframes

§Illustrated Maintenance Parts List for Navy Models AD-1 Airplanes, Mar. 1, 1947.	NavAer 01-40AQ-504
Erection and Maintenance Instructions for Model B-17G Airplanes, Nov. 12, 1946 (Rev.)	AN 01-20EG-2
Handbook of Installation, Operation and Maintenance, Navy Models F6F-3K, F6F-5K Drone, Reissue, Apr. 1, 1947.	NavAer 01-85SA-520
§Preliminary Pilots Handbook of Flight Operating Instructions Navy Model FG-3, Feb. 1, 1947.	AN 01-45HC-1
Erection and Maintenance Instructions for Army Model R-5A and YR-5A Navy Model HO2S-1 Helicopters, Rev. Mar. 13, 1947.	AN 01-230HB-2
Erections and Maintenance Instructions for Army Models C-45B and Navy Models JRB-3, -4 Airplanes, Rev. Jan. 22, 1947.	AN 01-90CD-2
Structural Repair Instructions for Army Models B-17 and G, RB-17E British Models Fortress II, IIA, III Rev. Mar. 25, 1945.	ATO 01-20E-3
Erection and Maintenance Instructions for Airplanes Army Models L-5, L-5B, L-5C, L-5E, and L-5G Navy Models OY-1, Rev. Jan. 28, 1947.	AN 01-50DB-2
Erection and Maintenance Instructions for Army Models B-25J-1, -5, -10, -15, -20, -25, -30, -30NC Navy Model PBJ-1J, Rev. Feb. 15, 1947.	AN 01-60GE-2
Erection and Maintenance Instructions for Army Models C-47, C-47A, C-47B Navy Models R4D-1, R4D-5, R4D-6, -7, Rev. Jan. 27, 1947.	AN 01-40NC-2
Erection and Maintenance Instructions for Army Models AT-7, AT-7C, SNB-2, -2C, Rev. Nov. 21, 1946.	AN 01-90KA-2

Airplane Bulletins, Changes

F4U - F3A - FG

Bulletins §Hydraulic System—Landing Gear Shuttle Valve—Replacement of, Apr. 15, 1947.	285
§Armament Provisions—Aircraft Rocket Launchers, Mark 5 and Mods—Electrical Circuits for, Apr. 1, 1947.	288

F4U-FG

Bulletin §Landing Gear—Shock Strut—Piston Tube—Bearing Nut, Part No. VS-16409—Lockwiring of, Apr. 22, 1947.	290

F7F

Change §Furnishings—Heating and Ventilating—Cockpit Heating System—Modification of, Apr. 11, 1947.	17

F8F

Change Cancelled: 13	
§Electronics—AN/APX-1 and AN/ARR-2A Antennas—Relocation of, Apr. 11, 1947.	26
Bulletin Cancelled: 11, 21	
§Electrical—Approach Light Installation—Modification of, Mar. 28, 1947.	31

§Designates New Publication.

Title	Order No.
FR	
Change Safety of Flight: 35	
§Fuel System—Vent Lines—Modification of, Apr. 1, 1947.	35
Bulletin §Engine Accessories—Exhaust Cone—Tail Pipe Attaching Bolts, I-16 Engine—Installation and Adjustment of, Apr. 15, 1947.	27
HO3S	
Bulletin §Instruments—Engine Tachometer Indicator—Installation of Red Range Marking on, Apr. 22, 1947.	5
HOS	
Bulletin §Transmission—Main Gear Box—Power Take-off Assembly—Inspection of, Mar. 28, 1947.	9
JRB/SNB	
Bulletin §Landing Gear—Retracting Mechanism—Inspection of, Apr. 15, 1947.	50
JD	
Change §Fuel System—External Auxiliary Fuel Tanks—Installation, Mar. 21, 1947.	4
PBM	
Bulletin §Propellers—Operation—Restriction of, Apr. 4, 1947.	175
§Anti-Icing Equipment—Boot De-Icing System—Installation of, Apr. 11, 1947.	177
PBY	
Change §Anti-Icing Equipment—Installation of, Apr. 4, 1947.	178
§Instruments—Automatic Pilot—On-Off Control—Replacement of Mar. 28, 1947.	196
PB4Y	
Change §Tail—Rudder Trailing Edge Channel—Rib Attachment—Reinforcement of, Apr. 15, 1947.	210
Bulletin §Heating and Ventilating—Binding of Heat Exchanger Duct Valve Shaft—Elimination of, Apr. 11, 1947.	245
R4D	
Change §Heating and Ventilating—Exhaust Type Heating System—Installation of, Apr. 1, 1947.	46
Bulletins §Furnishings—Strap Type Litter Support Provisions—Installation of, Mar. 28, 1947.	65
§Propellers—Propeller Governor Pulley Assembly—Hamilton Standard Part No. 53301—Modification of, Apr. 18, 1947.	66
§Heating and Ventilating—Critical Temperature Thermoswitches for—Information Concerning Temperature Setting, Apr. 4, 1947.	67
§Miscellaneous Equipment—Portable Fire Extinguisher—Installation of, Apr. 11, 1947.	69
R5D	
Bulletins §Tail—Horizontal Stabilizer—Rear Spar—Gap Closing Channel—Inspection of, Mar. 28, 1947.	101
§Hydraulic System—Pressure Regulator Valve, Bendix Part Number 407484, Installation of, Information Concerning, Mar. 28, 1947.	104
SB2C-SBF-SBW	
Change §Engine Accessories—Carburetor Air Filter Door and Linkage—Removal of, Apr. 18, 1947.	172
Bulletin Cancel 199. §Arresting Gear Installation—Latch Type Hook—Modification of, Apr. 4, 1947.	252
§Tail—Rudder and Elevator—Hinge Bolts—Inspection of, Mar. 28, 1947.	253
SC	
Bulletin Cancelled: 15, 16, 29, 31, 41, 44, 58, 63, 64, 72, 79, 94, 98, 99.	
§General—Bureau of Aeronautics Aircraft Service Changes and Bulletins—Cancellation of, Apr. 1, 1947.	110
Change Cancelled: 21	
TBF/TBM	
Bulletins §Instruments—C-1 Automatic Pilot—Bank and Climb Control Unit—Replacement of, Mar. 25, 1947.	232
§Power Plant Controls—Flexible Controls—Replacement and Rerouting of, Apr. 11, 1947.	234

General Engine Bulletins

§Inserts, Crankcase, Intermediate Rear Pratt & Whitney R-1830-92 Engines, Apr. 15, 1947, Reclamation Instruction No. 1-P-5.	8
§Crankshafts—Chromium Plating—Pratt & Whitney R-1830 Engines, Apr. 15, 1947, Reclamation Instruction No. 2-P-4.	8
§Crankshaft—Chromium Plating—Pratt & Whitney R-985 Engines, Reclamation Instructions No. 2-P-7, Apr. 15, 1947.	8
§Crankshaft Main Bearings—Chromium Plating—Pratt and Whitney R-1830 C Series Engines, Apr. 15, 1947, Reclamation Instructions.	8

§Designates New Publication.

Title	Order No.
§Compression Checks for Aircraft Engine Cylinders, Apr. 15, 1947, Rev. #1.	94
§Spark Plugs—Allocation—Issue and Use of, Apr. 18, 1947.	98
§Operation of Engines with Chromium Plated Cylinder Bores, Apr. 11, 1947.	99

Instruments

§Parts Catalog Altimeters—Kollsman, Jan. 15, 1947.	AN 05-30-9
§Handbook of Overhaul Instructions Altimeters—Kollsman, Jan. 15, 1947.	AN 05-30-15

Automatic Pilots

G-1: General Electric (Electric-Hydraulic)	
Overhaul Instructions for Automatic Pilot Type G-1 Model 2CJ1A1, Rev. Jan. 10, 1947.	AN 05-45AE-2

Component Parts

Handbook of Overhaul Instructions with Parts Catalog Rudder Control Units, Reissued, Mar. 1, 1947	AN 05-45-17

Compasses

§Handbook of Operation and Service Instructions for P-3 Lightweight Gyro Flux Gate Compass, Mar. 15, 1947.	NavAer 05-15-584

Gyro Horizons and Directional Gyros

§Handbook of Overhaul Instructions for Attitude Gyro Indicators Navy Stock No. R88-I-1365 Part No. 14601-1A, Mar. 15, 1947.	AN 05-20-46
Overhaul Instructions for Attitude Gyro Indicator Navy Stock No. R88-I-1310 and Army Type J-1 Rev. Dec. 15, 1946.	AN 05-20GD-5

Indicators

Airspeed

Handboook of Overhaul Instructions with Parts Catalog for Dual Tachometer Indicators, Sept. 1, 1946. (Rev.).	AN 05-5E-4
Overhaul Instructions for Type F-4 Airspeed Indicator, Rev. Oct. 18, 1946.	AN 05-10-24

Autosyn

Parts Catalog for Dual Autosyn Indicators Rev. Feb. 1, 1947.	AN 05-55B-9

Tachometers

Operation, Service and Overhaul Instructions with Parts Catalog for Electric Tachometer Indicators and Generators Army Types E-13, E-23, AN 5530-1 and AN 5531-1 and -2 Navy Stock No. R88-I-2385, R88-G-1330, 1535, Rev. Feb. 28, 1947.	AN 05-5E-16

Power Plants

Overhaul Instructions for Models R-985-AN-1, -3, -6, -12, -12B, -14B Aircraft Engines, Rev. Feb. 1, 1947.	AN 02-10AB-3
Overhaul Instructions for Aircraft Engines Models R-985-AN-5 and -AN-7, Rev. Mar. 15, 1947.	AN 02-10AC-3
Modification Instructions for R-1830 Aircraft Engines, Rev. Mar. 1, 1947.	NavAer 02-10C-500
Overhaul Instructions for Aircraft Engines Models R-1830-43, -65, -90C, Reissue Mar. 1, 1947.	AN 02-10CD-3
Handbook of Service Instructions for Aircraft Engines Model R-1830-94, Rev. Mar. 15, 1947.	AN 02-10CE-2
Handbook of Overhaul Instructions for Aircraft Engines Model R-1830-94, Reissue Mar. 15, 1947.	AN 02-10CE-3
Parts Catalog for Aircraft Engine Model R-1830-94, Rev. Mar. 15, 1947.	AN 02-10CE-4
Modification Instructions for Aircraft Engines R-200 Series, Rev. Mar. 1, 1947.	NavAer 02-10F-500
Overhaul Instructions for Models R-2000-7, -11 Aircraft Engines, Rev. Dec. 15, 1946.	AN 02-10FA-3
Overhaul Instructions for Model R-2000-9 Aircraft Engine, Rev. Feb. 1, 1947.	AN 02-10FB-3
Modification Instructions for Aircraft Engines R-2800 Series, Rev. Mar. 15, 1947.	NavAer 02-10G-500
Service Instructions for Models R-2800-8, -8W, -10W, -65 Aircraft Engines, Rev. Feb. 1, 1947.	AN 02-10GB-2
Overhaul Instructions for Aircraft Engines Models R-2800-8, -10, -10W and 65, Rev. Nov. 1, 1946.	AN 02-10GB-3
Parts Catalog for Aircraft Engines Models R-2800 -14W, -22, -22W, -34, -34W, -57, -73, -77, -81, -83 and -85 Reissue Jan. 15, 1947.	AN 02-10GC-4
Handbook of Service Instructions for Aircraft Engines Models R-2800-18W, -18WA, -42W Reissue Mar. 15, 1947.	AN 02-10GD-2
Handbook of Overhaul Instructions for Aircraft Engines Models R-2800-18W, -18WA, -42W, Reissue Mar. 15, 1947.	AN 02-10GD-3
Parts Catalog for Aircraft Engines Models R-2800 -18W, -18WA, -42W, Reissue Mar. 15, 1947.	AN 02-10GD-4
Modification Instructions for Aircraft Engines R-4360, Rev. Mar. 1, 1947.	NavAer 02-10H-500
Parts Catalog for Turbo-Jet Engines Army Models J33-A-9, J33-GE-11 and J33-A-17 Navy Model 40, Rev. Feb. 21, 1947.	AN 02-105BA-4
Preliminary Handbook of Service Instructions for Turbo-Jet Engines Model 19XB2B, Rev. Apr. 15, 1947.	NavAer 02-110AA-500

§Designates New Publication.

LETTERS

SIRS:

There is an old saying in the Navy that the best overseas duty ranks below the worse Stateside duty. The personnel of Naval Air Station, San Juan disagree. For here is a spot for duty that the Navy man dreams of someday getting—a station in a setting of the beautiful Island of Puerto Rico, with an ideal climate which varies not more than 5 degrees throughout the year, making air operations a pleasure. Commissioned in May, 1940, San Juan's buildings are modern, comfortable and designed for the tropics. Situated on the site of "Isla Grande" airport, it faces the quaint old castilian town of San Juan across San Antonio channel.

This Paradise of the Atlantic is a much sought after billet, and the personnel on duty here are content to remain forgotten men. Swimming, baseball, tennis, soft ball . . . parties on the beautiful beaches . . . spacious movie hall . . . all are enjoyed the year around. And NAS San Juan, already geared to its peacetime mission, continues to serve the fleet on its frequent visits, as ably and efficiently as it did during the war.

This photograph is of an N2S converted into a DDT spray plane. To paraphrase a well-known phrase: "There are no mosquitoes on us."

ROBERT S. HARDWICK,
LIEUTENANT, USN
PUBLIC INFORMATION OFFICER
NAS SAN JUAN

SIRS:

Captain Seth Ward of the Marine Air Reserve at Floyd Bennett can remember when he was on Easter vacation from school. Spotting a youthful quintet of potential future Marine aviators peering through the fence, he invited them aboard as his guests to see how a real fighter plane operates.

Reading left to right are Leon Meshel, Stanley Wechkin, Morton Edelstein, Seymour Goron and Joseph Freedman, all of P.S. 252, Lenox Road and Kings Highway, Brooklyn, inspecting the *Corsair* with the Captain.

PAT SULLIVAN, LT. COMDR.
PUBLIC INFORMATION
NAS FLOYD BENNETT

SIRS:

I should like to point out that the personnel figures quoted in your article "GENERAL LINE IS MUST DUTY FOR NAVAL AVIATORS" (NANEWS May, 1947) are incorrect. There are approximately 4000 non-Academy Line officers and 5500 Non-Academy aviation officers to attend the General Line School.

Your article stated there were ". . . about 7000 ground officers and something over 3000 Naval Aviators."

H. D. FELT, CAPTAIN USN
DCNO (AIR) PERSONNEL

¶ NANEWS regrets the error.

SIRS:

May I suggest a credit to Naval Air Station, Miami for the photo of "Welcome to Operations Reunion" sign on page 22 of the April issue.

The sign itself stretched fifty-six feet along the station boundary fence at the main gate, attracted much attention and favorable comment, and was the idea of James X. Dowd, Jr., USNR.

W. M. EHART, LT., USNR
PUBLIC INFORMATION
NAS MIAMI

¶ Enough said—our apologies, gentlemen.

SIRS:

The officers and men of Attack Squadron One Easy, formerly Torpedo Squadron 41, are eagerly awaiting publication of our squadron insignia on the back cover of NAVAL AVIATION NEWS. The enclosed facsimile is forwarded with hopes of publication in the near future.

Ideas and sketches were submitted by all hands in early 1945. The approved insigne was designed by R. W. Connor, ARM3C, one of our aircrewmen at that time. We felt that the insigne was very pictorial, in that the torpedo bomber flies "low and slow" and can be loaded to a maximum.

K. M. CUSHMAN, LT. CMDR.
COMMANDING OFFICER

¶ See the back cover for VA-1-E's belligerent insigne.

NAVAL AVIATION NEWS

Published monthly by Chief of Naval Operations (Op-50-D) and Bureau of Aeronautics to disseminate safety, survival, maintenance and technical data. Air mail should be used if practicable, address to: Chief of Naval Operations, Naval Aviation News, Navy Department, Washington 25, D. C. Direct communication can be made to Naval Aviation News, Room 4927, Main Navy Bldg., office telephone extension 61662.

The Cover: Rescues like this are Coast Guard specialties. This St. Petersburg PBY made an offshore landing to pick up the injured Navy VF pilot who had bailed out after a midair collision. He's one of many saved by Coast Guard Airmen.

CONTENTS

Coast Guard Aviation..... 1
Grampaw Pettibone..... 6
Aerial Gunner..... 8
Helicopter on Carrier..... 9
Flight Safety.....12
Jet Pilot Safety.....13
Did You Know.....16
Vought Anniversary.....19
Reserve Flying.....22
Reserve History.....24
And There I Was.....26
Technically Speaking.....27
Nazi Carrier.....29
Aviation Progress.....30
Service Test.....32
Wing Tips.....33
Howler 34
Supply News.....36
Aviation Ordnance.....37
Publications 38
Letters to Editor.....40

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RESERVES NOTICE—A RESERVE EDITION OF NANEWS WILL SOON BE AVAILABLE AT NOMINAL SUBSCRIPTION RATES TO MEMBERS OF THE ORGANIZED AND VOLUNTEER RESERVE. WATCH FOR IT!

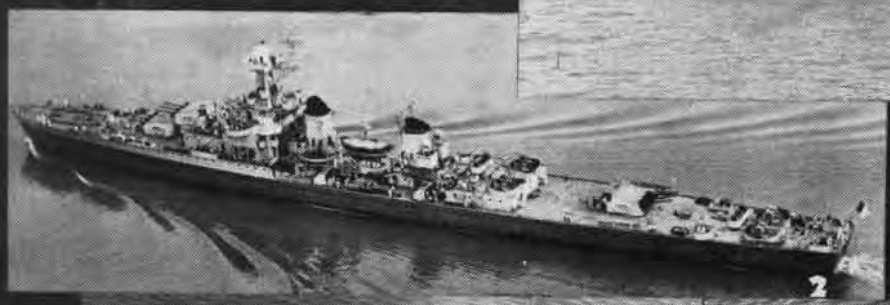
ANSWERS TO QUIZZES

● **AIR STATION QUIZ**
(inside front cover)
Top—NAS San Juan, Puerto Rico. Bottom—NAS Norfolk

● **RECOGNITION QUIZ**
(inside back cover)
1. Barnegat AVP 2. La Gallissonniere class CL (French) 3. Oregon City, CA 4. Russian submarine L-15 5. Vella Gulf, CVE-111 6. Colossus class CVL (British).

SEA SCOURGES

1



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NAVAL AVIATION
NEWS

3

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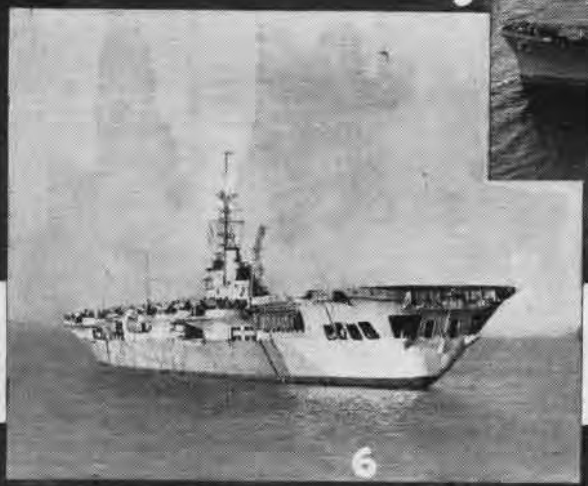

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ANSWERS ON PAGE 40

SQUADRON INSIGNIA

MARINE Air Group 33, one of the first to operate from Okinawa, received the Presidential Unit Citation. Its insigne with a pair of 3's on the dice, a rocket symbolizing armament and aviation wings is one of simple design. VA-22-A's symbol carries the Latin words "Prepared — In Peace or War", plus a torpedo for its mission. FASRON 103's insigne has many elements—indicating its work on parachutes, guns, engines, electronics—all circled by a tire. VA-1-E has a truculent turtle with guns, aircraft rockets and torpedo.

MAG-33

VA-22-A

FASRON 103

VA-1-E