

NAVAL AVIATION

NEWS

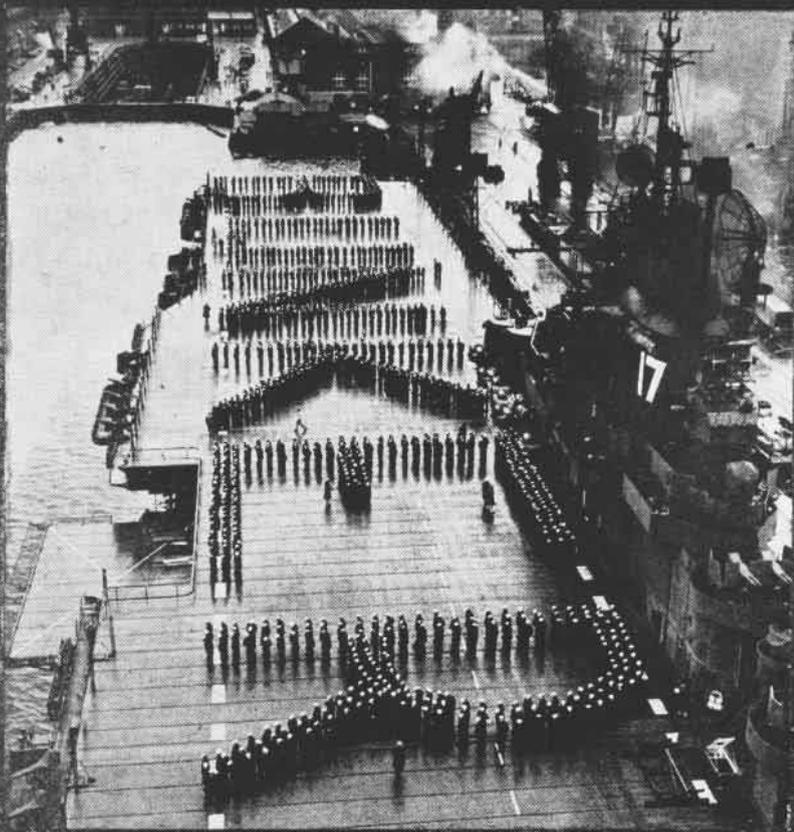


Annapolis Aviation
Eagle's Valhalla
Bikini Bomb Tests

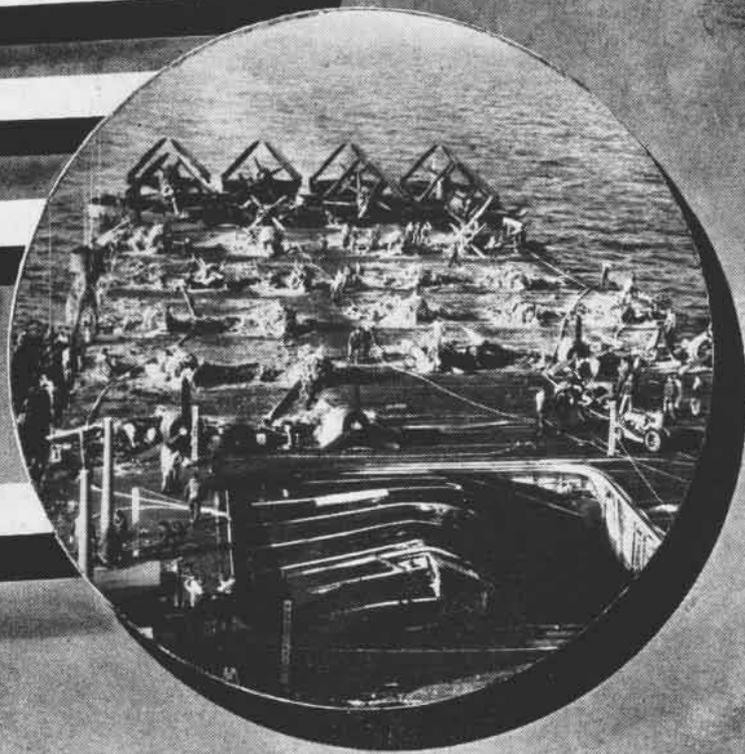
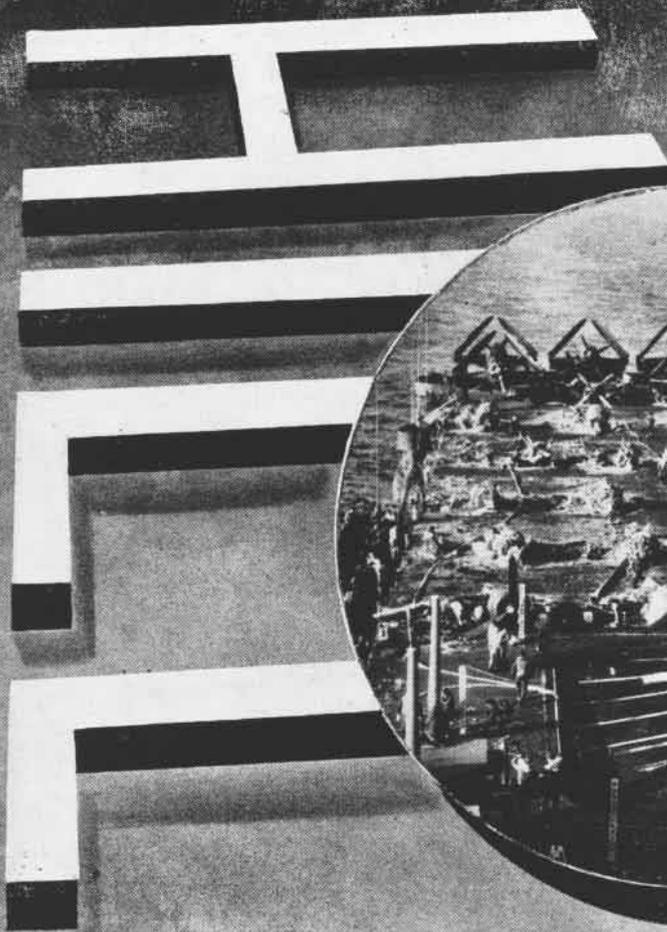
September 1946

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**PEACE
OR WAR**
BATTLE-TRIED
AND PROVEN, THE
BUNKER HILL
JOINS 19TH FLEET





Middies Learn To Fly

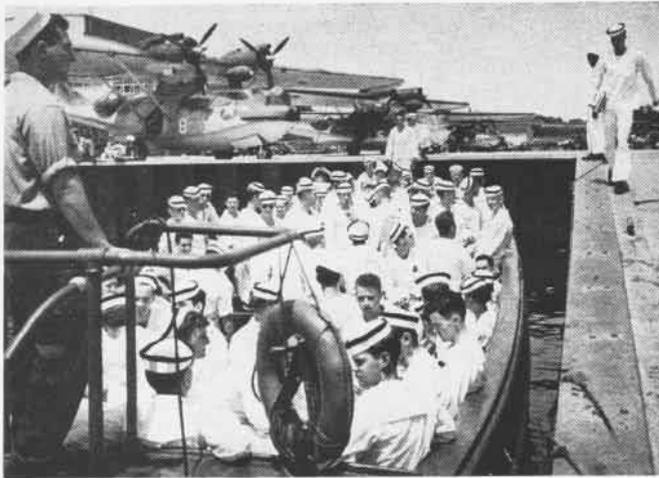
STRANGE noises resound these days from the ivy-covered walls and study halls of the United States Naval Academy at Annapolis. From the north bank of the Severn River comes the roar of many aircraft engines.

Why this bee-hive of aviation at the nation's school for future admirals? The Department of Aviation now has equal status with other academic departments.

In a 10-week course, midshipmen of the second class are indoctrinated in the science of aviation. Flights in

trainers and carrier-based planes are giving them an appreciation of aircraft as naval weapons. They are learning the necessity for cooperation between flying and non-flying officers.

During the Academy's first hundred years, five wars have left their marks in innumerable ways. The last has brought aviation to the fore. By keeping abreast or a little ahead of naval developments, the Naval Academy will train its graduates for any eventuality.



SAILING ON THE SEVERN HAS TAKEN ON A NEW MEANING FOR MIDSHIPMEN WITH THE ADVENT OF THE DEPARTMENT OF AVIATION

Intensive Aviation Department Course Is Giving Students Respect for Air Power

IN THE opinion of officers and midshipmen alike, the aviation program is the greatest thing that ever hit the Academy.

Established in December of 1945 when the institution returned to a four-year course, the Department of Aviation began intensive operations this summer. Under the command of Capt. Robert B. Pirie, the department has taken over a job envisaged by Academy Superintendent Vice Admiral Aubrey W. Fitch—giving every midshipman an appreciation of and a respect for air power.

The mission of the Department of Aviation is to instruct every midshipman in the fundamentals of aviation which every naval officer must know. He is given an understanding of the uses, potentialities and capabilities of naval aircraft.

Instruction is not intended to include actual pilot qualification, but does impart fundamentals of the employment of naval aircraft. The flight familiarization phase of the course is designed to help the students decide whether or not they desire to set course toward specialization in aviation after receiving their commissions.

To the class of 1948-B goes the distinction of being the first to participate in the concentrated aviation program. Aviation instruction and flight indoctrination at the Academy plus a five-week cruise aboard the aircraft carrier

Randolph will round out the summer program for 440 midshipmen.

The midshipmen are divided into two groups of approximately 220 each. One group receives five weeks of instruction aboard the *Randolph* while the other is undergoing instruction at the Naval Air Facility at Annapolis. Groups interchange for the second period of five weeks.

Although the fledgling midshipmen will not solo, they will receive instruction in the control of aircraft, much the same as do aviation cadets at primary training centers. Midshipmen admit the course is not easy. The program is equivalent to a year's work in any other Naval Academy academic subject.

The aviation department has gotten off to a good start in keeping abreast of the times, but there is danger of inadequate training during coming years unless more modern facilities are provided. The 100-square-foot concrete ramp at the Naval Air Facility is loaded with *N3N*'s and *PBY-5A*'s. This won't be enough room next summer when there will be 900 midshipmen to train instead of 440.

According to Capt. R. B. Pirie, successful development of aviation courses hinges on obtaining an adequate airfield near the Academy. Any action along this line depends upon Congress which has been asked for a \$12,000,000 initial appropriation for the airfield. This bill recently won the approval of the Senate Naval Affairs Committee.

BEFORE the summer is over, the midshipmen will have a good over-all view of the value as well as the potentialities of air power. Sandwiched between occasional flights in float-equipped *N3N*'s and *PBY*'s is an intensive course of ground instruction covering all phases of naval aviation.

At 0730 each morning the middies, clad in white dungarees and blue-rimmed hats, arrive at the NAF by boat and proceed to their classes or flights on the double. From then until 1730 they hear nothing but aviation.

On historic Chesapeake Bay, the middies practice landings, take-offs, turns and other primary maneuvers in yellow *N3N*'s on floats. After approximately 10 hours of this familiarization with the problems involving physical control of aircraft, the students graduate to *PBY-5A*'s.

Here they alternate stations on each hop so that each middy can become acquainted with the equipment and with the duties of various crew members. Co-pilot time in the large seaplanes is a regular part of the course.

On patrol plane flights, the midshipmen man the waist guns, navigate, operate the radio and radar gear and supervise engine controls in the tower. With a faster target plane making approaches from all angles, the midshipmen "fire" the free camera guns. Later they evaluate the film and



MIDDIES LEARN AIRCREW PROBLEMS BY MANNING VARIOUS POSTS

soon learn the diverse problems of a combat aircrewman.

Ground courses include naval aviation history, organization, and operations in which the students study general characteristics and tactical uses of all types of naval aircraft and carriers.

Divided into wings and sections to ease the jobs of the 40 pilot instructors, the midshipmen study communications and electronics, engineering, ordnance and gunnery, navigation, aerodynamics, aerology, air combat information and recognition. In their spare time they make up flights which have been missed because of weather and various other reasons.

WHAT is it? What does it do? How does it work? These are the three questions topmost in each student's mind as he studies the electronic equipment. The course explains basic principles of aviation radios, radar, Loran, IFF and fighter direction. Complete portable aircraft radios are provided for the students to test and tear apart in the classroom. Synthetic trainers test knowledge of radar on simulated flights over all parts of the world.

Besides imparting a general understanding of aircraft structures, power plants and accessories, the engineering courses bring the midshipman up to the minute in latest developments and research. Latest jet propulsion and gas turbine units such as now being used in the *Phantom* FD-1 are studied to determine their advantages and disadvantages.

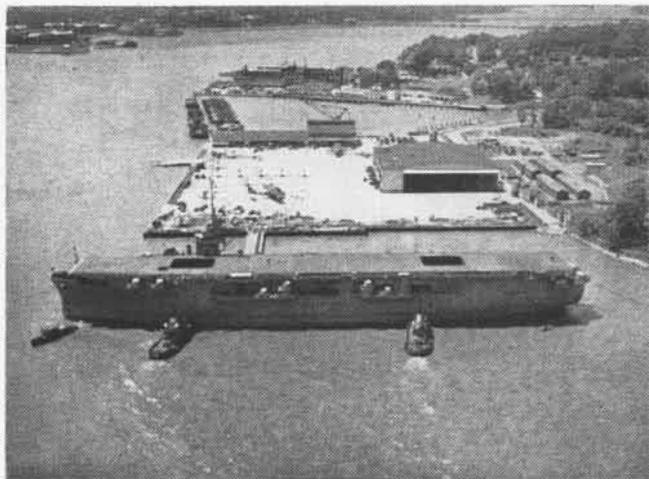
Ordnance and gunnery instruction in research, development and use of new weapons is mixed with instructions in free and fixed gunnery, dive and horizontal bombing and use of the bombsight. Practical experience is gained on the bomb trainer.

Actual use of Mk III plotting boards, radio aids, and Loran navigation gives midshipmen an insight into navigational capabilities and limitations under various conditions.

In aerodynamics they not only study accepted theory of flight, but also the design problems of high speed jet planes. Aerology teaches respect for the elements and the early recognition of weather danger to an aircraft in flight.

ONE OF the most important phases of this ground instruction is the stressing of strategical and tactical employment of naval aircraft, carriers and task forces. Even though a midshipman does not choose to specialize in aviation, this potential leader of tomorrow's Navy will be able to understand the problems of air power.

Since the course is equivalent to a year's training in other academic courses, the students will be well grounded in fundamentals. The intensive ground school courses are



BLOCK ISLAND SUPPLEMENTS NAF ACROSS SEVERN FROM ANNAPOLIS

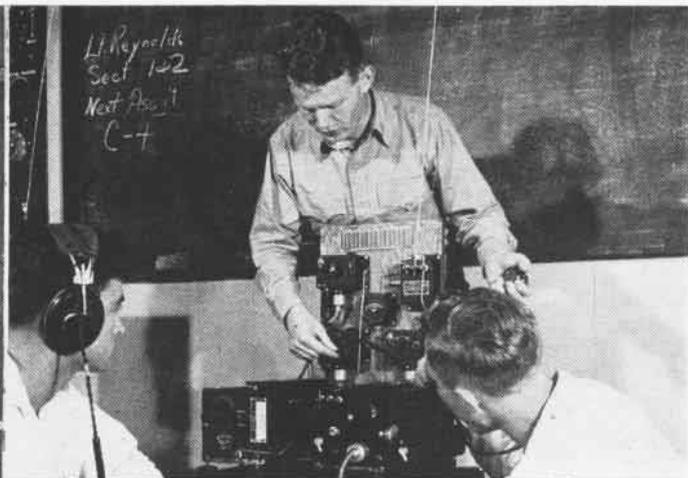
well illustrated by practical application in trainers and by tactical maneuvers in combat planes of carrier-based air groups.

These future naval officers, by studying history and organization, are gaining an understanding of the vital importance of naval aviation in warfare. No matter what types of command they may have in any future engagements, they will have a basic knowledge of all phases of naval aviation. The result will be even greater coordination between ground, surface and under surface units.

Because of the limited facilities at the Academy, graduating classes have been attending indoctrination courses at the Operational Training Command, Jacksonville. Here they can fly in all types of naval aircraft and are not restricted to seaplane types. The proposed airfield at Annapolis would have four runways and macadamized mats and could take over the job of instructing in these phases.

Moored alongside the dock near the Severn river seaplane ramp is the escort carrier *Block Island*, veteran of Pacific and Atlantic campaigns. Her guns preserved and operating personnel cut to a skeleton crew, she now serves as barracks and messhall for NAF personnel. Midshipmen eat noon meals aboard her. On her hangar deck are stored various and sundry floats and other spare parts for squadron planes.

Groundschool instructors are former fleet pilots, experienced in all types of aircraft. The N3N pilots were transferred from Pensacola for the summer program. A detachment of VP 73 was transferred from operational duty with FAW 5 for the patrol plane phase of the summer training.



STUDENTS CHECK OUT WITH OPERATIONAL EQUIPMENT, FLY LINK HOPS TO SUPPLEMENT INSTRUCTIONS IN FLOAT AND SEAPLANES



FUTURE ADMIRALS FLY IN RANDOLPH AIR GROUP'S VT AND VB BOMBERS TO LEARN LATEST DEVELOPMENTS IN CARRIER WARFARE

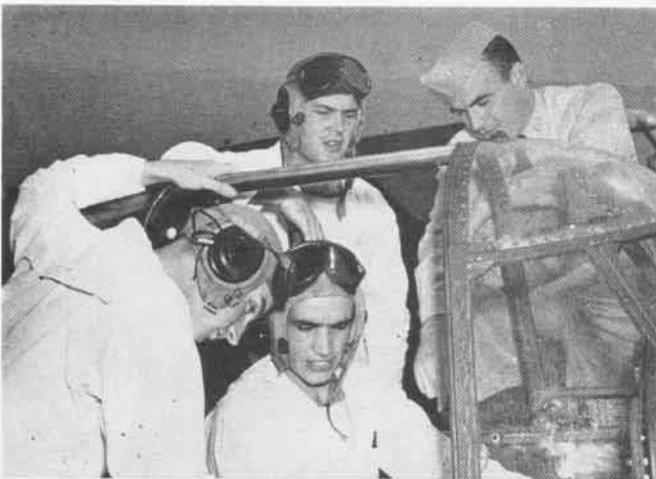
Midshipmen See Naval Aviation at Work During First Summer Cruise in Randolph

SOMETHING new in summer cruises began on 6 July for members of group I. The second classmen embarked in the carrier *Randolph* for a five-week Atlantic cruise.

Witnessing the running of a battle-tested carrier and learning all of its intricacies and perfectly timed operations appeals to the second classmen. They had no such chance on their youngster cruise last summer. This year they will absorb operations from battle duty stations instead of from the business end of a swab.

Learning shipboard duties doesn't end the midshipmen's instruction, however. They take to the air daily, weather permitting, for section, squadron and air group tactics. Replacing aircrewmembers in machine gun turrets and radio stations, they ride and observe in both VT and VB combat planes.

On primary flights at the Naval Air Facility at the Academy, the middies learn what makes an airplane's nose go up or down. But in air group tactics they experience the thrills of dive bombing. They see how close a torpedo bomber pilot has to fly in order to get a hit on an enemy ship—they see what the landing signal officer looks like from the seat of an airborne SB2C-5 or TBM. They heave a sigh when the hook engages an arresting wire on a landing.



SECOND CLASSMEN INSPECT TBM COCKPIT BEFORE AIR GROUP HOP

Covered by the fighters of the carrier's Air Group 82, they see how all the elements cooperate in coordinated strikes. A complete pageant of aviation tactics illustrates the latest methods in air strike, air coverage, air support in landings, air raids, and coordination of air and surface units.

Aerial reconnaissance, developed to tremendous proportions during the war, is an important subject. Courses in photo-reconnaissance, photographic interpretation and map making supplement time in the air. Pilots demonstrate the various anti-submarine and escort tactics and methods of attack.

Briefing by ACI officers before and after hops, in the manner of regular combat hops, helps the middies understand the employment of naval aircraft as weapons and eyes for the fleet.

THE midshipman's day aboard ship is not unlike his day at the Academy. Hitting the deck at 0600 reveille, or earlier for pre-dawn strikes, he musters for his first class at 0745. He attends classes or flights until 1600 followed by a recreation or ship emergency drill period. His day is then complete, since the middies stand no night watches.

These five weeks of close association with the operations of a fleet carrier give the midshipmen a well-balanced view of aviation in naval warfare. When mixed with their four years of instruction in all types of tactics and equipment, it will form a good foundation for the future Naval officers.

They will need all this enlightened education in order to bear the tremendous responsibilities predictable in the era of atomic bombs and supersonic aircraft and missiles.

Not a nook or cranny of the *Randolph* escapes the eager eyes of the midshipmen. Their instruction takes in all ship functions and department organizations with stress on aviation. They stand instruction watches on the bridge, flight deck, hangar deck, etc., fighter direction stations, Air Plot, Fly 1-2-3 and at Bos'n mate stations.

On the flight and hangar decks they learn the intricate but interesting art of spotting. Battle experienced instructors show them how efficient handling and launching crews can increase the carrier's punch. They see the important part maintenance and engineering crews play in keeping the carrier's planes ready for action. They aid in re-arming and refueling, handling bombs, ammunition and gasoline, and study systems of stowage and delivery. Below decks, they learn to solve damage control problems peculiar to carriers.

The carrier phase of the training includes the handling of



FLIGHT, CLASSROOM INSTRUCTION ABOARD CARRIER GIVES NAVAL STUDENTS CONCEPT OF HOW WAR IN PACIFIC WAS FOUGHT AND WON

all electronic gear aboard ship—the functions of the fighter director or combat information center. Middies watch “friendly” fighters intercept inbound “raids” and soon get the knack of interception problems.

Veteran of Task Force 58 and Task Force 38, the *Randolph* is fully qualified to instruct the middies on their first cruise aboard a carrier. The *Randolph* set an enviable record in the Pacific and once felt the sting of a Kamikaze which crashed into her stern. Only a year ago her hangar deck echoed the roar of fighters, bombers and torpedo planes taking off to strike the final lethal blows at a badly mauled but still dangerous enemy.

ACCORDING to her skipper, Capt. Jackson R. Tate, she will give the midshipmen a firm grasp of the basic ideas behind carrier and task group operations. On this solid foundation the students of naval warfare can build their concept of how the war in the Pacific was fought and won.

Dropping group I on 24 August for the Academy phase of the course, the *Randolph* proceeded southward with Group II. She will rendezvous with the midshipmen summer cruise ships to form a training cruise task group.

Proceeding to the Guantanamo area, the group will carry out raids against the bomb-battered isle of Culebra. Following more independent operations in the southern drill grounds, the midshipmen will get liberty in New York as did Group I. After another short respite at NAS QUONSET, they will arrive back at Annapolis on 22 September and the first summer carrier cruise will be history.

The carrier cruise differs from previous midshipmen training cruises in that the entire period is devoted to prescribed academic and practical instruction. Emphasis is placed on instruction rather than on familiarization with ship's routine cleaning and drill stations. However, the same degree of responsibility for required cleaning and general care of midshipman compartment prevails as at the Academy.

The ship's company has found it necessary to word carefully all announcements over the “bull horns.” A carelessly worded call is liable to bring midshipmen from all directions on the double to a drill intended solely for ship's company.

Between the NAF and carrier phases of the course, the second classmen will team up with cadets from West Point for two weeks of joint amphibious maneuvers off Norfolk. They will man many diversified types of equipment, meanwhile getting a Marine's eye view of air support by carrier air groups which will operate over the landing beaches.



MIDSHIPMEN PLOT TASK GROUP RADAR MANEUVER IN CIC ROOM



FORMER GRADUATES WERE INDOCTRINATED AT JACKSONVILLE

GRAMPAW PETTIBONE

It's Getting Worse

Case 1. Some witnesses, golfers to be exact, saw a Naval aircraft make two passes at an estimated altitude of 200 feet over a golf course. Seconds later, as he pulled out of a 2000-foot dive, the pilot slow-rolled at a low altitude, scooped out and crashed to his death.

Case 2. Two pilots were scheduled for a familiarization flight but ended up in a simulated gunnery flight, not authorized. After making a roundhouse high side, Pilot A recovered too abruptly and blacked out. Pilot B, who was attempting to get into a position for his run, lost sight of his cohort. The inevitable happened—a mid-air collision. Pilot A parachuted from his aircraft and Pilot B was lucky to make it back to base. The trouble, unfortunately, did not end with the bailout as the abandoned aircraft crashed into a house, killing a mother and her baby.



Grampaw Pettibone says:

Yes, our fatal accident files are full of narratives such as those briefed above. Flat-hatting or unauthorized flying in any shape or form is intolerable and inexcusable. This sort of thing becomes more prevalent month by month, as noted by the increase in the number of flat-hatting accidents and the unusual thickness of the "complaint" file.

You flat-hatters, those of you who still want to live and fly Navy aircraft, had better heed this warning because our citizens are more and more concerned over your antics and about what the Navy is going to do with offenders. If you fellows think you can get away with buzzing your folks' home, and your gal's house, or scaring hell out of your friends and the public in general, then you'd better think again. Sooner or later your mistakes will foul you up good and proper. It's merely a question of time.

If flat-hatters and violators of authorized flying continue to ignore pleas for safe and disciplined flying, they can expect no consideration when caught.

What can be done with violators? Well, the Navy, the Federal Courts and the State Courts have something to say about it. Look at the list.

Some of the punishments which a Naval Aviator Disposition Board can hand out are:

1. Ground you.
2. Dismiss you from service.
3. Revoke your commission.
4. Release you to inactive duty.
5. Reclassify you.

Then a Navy Court Martial can do all the above and more. The court can:



1. Sentence you to substantial loss in pay.
2. Withhold all your promotions during your period of probation.
3. Discharge you from service and confine you in prison at hard labor.
4. Discharge you from service under conditions other than honorable with consequential loss of all your veteran's rights.

Finally, the State and Federal Courts can prosecute a Naval pilot if he violates a State or Federal statute while flying.

One more thing: Death gratuities and benefits can be withheld from next of kin, or from people named as beneficiaries, if the pilot is killed in an accident resulting

from his own misconduct. A pilot's misdemeanor thus can have a disastrous effect on the income that might have provided some security for his wife or immediate family.

It seems to me, fellows, that it isn't worth it. I know that all of us are not saints in this respect, but let's keep our wings—this side of heaven.

Quick Henry—the Hand Pump!

After a normal landing an SB2C was returning to the operations line. The pilot stopped the plane about 60 yards from the parking area, folded the wings, checked the hydraulic pressure, which read 1,000 lbs. P.S.I., and proceeded towards his parking spot. As he completed a 90 degree turn to the left to enter the parking space, the left brake failed and the plane slowly pivoted to the right and hit the next parked aircraft.

Inspection showed that only air pressure remained in the hydraulic system and the brake accumulators. The fluid level in the hydraulic reservoir was very low, with only reserve fluid available. A few strokes of the hand pump, however, built up sufficient pressure to operate the brakes satisfactorily, but caused hydraulic fluid to run freely from the right rear bomb door cylinder which was leaking badly. Inspection of the brakes themselves revealed no discrepancies.

► *Comment:* It is noted that in this case the landing gear and flaps were lowered without difficulty prior to the landing. The flaps retracted normally after landing and the plane was taxied to the parking area with no indication of brake failure. Folding the wings was also accomplished without difficulty. In view of the above facts, it is concluded that the system fluid was partially dissipated during flight and almost completely by the time the flaps were retracted and the wings folded. After these operations, the brakes were probably operating only on brake accumulator pressure.

This accident was caused primarily by a material failure of the hydraulic system which allowed the loss of most of the hydraulic fluid. The pilot showed care in coming to a stop before folding his wings, an excellent precaution in view of the limited capacity of the hydraulic pump on the SB2C when the engine is turning over at low RPM. The pilot's only error was in not actuating the hand pump immediately when his brakes failed; as there was sufficient reserve fluid available, and he might have been able to avoid the collision which damaged the two planes.

GRAMPAW'S SAFETY QUIZ



1. Cold fronts on a weather map are colored: (a) Green, (b) Blue, (c) Purple, (d) Red.
2. If it is impossible to fly below the base of a thunderstorm line, or over the tops of the saddlebacks, and it is necessary to fly through, the point of least danger will be: (a) Lower one-third of cloud; (b) Middle of cloud; (c) Above two-thirds of the distance from the base to the top.
3. How can you detect carburetor icing by reference to your instrument panel?
4. What is the relationship of Aircraft "Mach Numbers" to flight safety?
5. What are the first three things you should do to regain fuel suction if a tank is run dry in flight?

(Answers on page 40)

Surprise Salvo!

On a rocket training flight the pilot of an F4U was preparing to fire. The plane was equipped with a Mk1 Mod O rocket selector switch. In the process of turning on his armament switches the pilot placed his left hand on the stick, inadvertently pressing the bomb-rocket button. Then, without noticing the position of the indicator on the rocket selector switch, the pilot snapped on the master armament switch.

His entire load of rockets fired in salvo causing extensive damage to the aircraft.

Pilot in his statement attributed the accident to the ground crew because they failed to set the rocket selector switch in a position other than salvo.



Grampaw Pettibone says:

Wait a minute, brother. If you had familiarized yourself with the location and position of all the armament switches before take-off, this accident would never have happened.

Safety regulations provide that both the ordnanceman and the pilot check to see that all switches are in the "off" or "safe" position before the rockets are loaded and the pigtailed plugged in. They should be left in these positions until after take-off to minimize the possibility of accidental firing.

Bureau of Aeronautics Technical Order #70-45 prohibits the firing of aircraft rockets in instantaneous salvo.

Any pilot who goes out on a bombing, rocket, or gunnery training flight without knowing exactly how the armament system works, is really looking for trouble. You were plenty lucky that those rockets didn't shoot up some shore installation or another aircraft.

Clear the Runway Promptly!

The pilot of the GH-3 pictured above made a normal landing and was cleared to turn off the service runway at the first intersection. He rolled past the first intersection while trying to unlock his tail wheel. Instead of taxiing promptly to the end of the runway, he stopped and two passengers got out to shake the tail in an attempt to unlock the tail wheel. The tower, meanwhile, had instructed the pilot to taxi ahead to the next intersection as four F4U's had been cleared to land.

The first F4U took a voluntary wave-off; the second landed short and turned off at the intersection. The tower warned the pilot of the third F4U too late for him to avoid the crash.

The two passengers saw the F4U coming in time to jump clear. The pilot of the GH-3 suffered very serious injuries.



Grampaw Pettibone says:

Responsibility for this accident



rests mainly with the pilot of the GH-3 for not clearing the runway promptly. Maybe faster action on the part of tower personnel could have prevented the accident and very probably the third F4U should have taken a voluntary wave-off. But the best life insurance in this instance would have been to taxi straight ahead to the end of the runway. Remember it's your neck you are sticking out when you dope off.

Wing and Throttle Pilot

The pilot of the plane pictured below didn't get a thorough cockpit check-out before taking off on his first flight in an F4U.

Because he failed to turn on the instrument switch, his gasoline gauge, oil temperature gauge, and magnetic compass were inoperative. After take-off, the pilot realized that these gauges were not working, but continued to fly for two hours and fifteen minutes.

He was flying with his gasoline selector on Reserve, so that he didn't have the 50-gallon standpipe warning. He ran out of gas near the field, but not quite close enough to make it. He landed wheels up in an adjacent field and received only minor injuries because he had his safety belt and shoulder harness locked.



Grampaw Pettibone says:

"Dilbert," I didn't know you had it in you. I'm right proud of that spark of genius you showed at the very end. Except for that locked shoulder harness you would be explaining the whole thing to Saint Peter instead of to a pilot disposition board.

Anyone who flies a plane without even knowing where the instrument switch is or how the fuel system operates is just an accident ready to happen.



Check Those Guns!

Case #1:

Ninety-two (92) rounds of ammunition accidentally fired from port in-board gun of F4U during preparations to start aircraft. During entire incident all gun switches in the cockpit were in "OFF" position. Firing commenced when external power supply was plugged in.

Causes:

1. Short in electrical system.
2. Guns left in charged condition with live rounds of ammunition in gun chambers.

Case #2:

Accidental firing of machine guns on F4U fifteen minutes after aircraft landed aboard carrier. Master arming switch and all gun switches on "OFF" position, and all guns set on "SAFE" at time of accident. *One fatality.*

Causes:

1. Defective gun charging valve permitted gun bolt to return to the in-battery position despite gun charger handle being set on "SAFE."
2. Live ammunition in chamber after safing of guns in flight.

Case #3:

Two civilian employees removing gun from F4U wing in salvage yard. Gun fired as it was placed on the ground following removal, causing severe injuries to one civilian.

Causes:

1. Ordnance personnel failed to remove live round of ammunition from chamber when preserving guns for storage.
2. Civilian personnel failed to inspect chamber before handling gun.

► *Comment:* Two of these accidents were caused by material failures and the third as a result of gross carelessness. However, all three could have been prevented if the following safety rules specified in BuAer Technical Note #19-46 had been observed:

1. Clear all guns of all ammunition after flight both aboard ship and ashore.
2. Inspect guns for presence of ammunition in chamber before servicing guns or airplane, particularly before removing guns from airplane wing.
3. Inspect guns and accessories frequently and replace worn parts.
4. Flight personnel inform ground personnel of the exact condition of gun installations before leaving the aircraft.

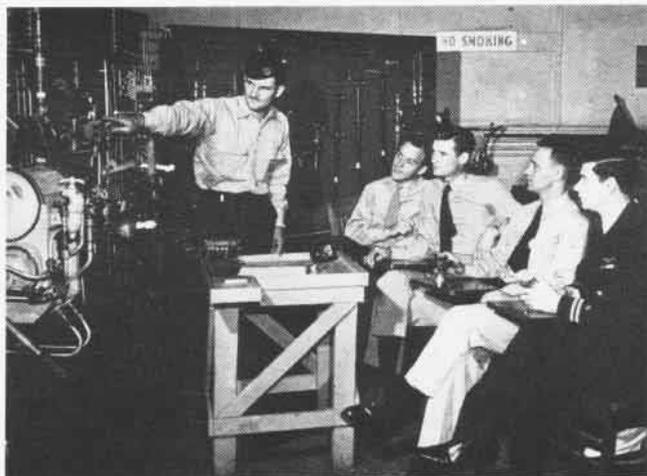


Here lies the body
Of Dilbert McBride
Who said it was easy
To stretch out a glide.

RESERVE OPEN HOUSES DRAW OVER 100,000



RESERVE F6F GETS 'HIGH' DURING LAMBERT FIELD OPEN HOUSE



OPERATION OF NEW EQUIPMENT IS PART OF RESERVE TRAINING

THE DEATHS of fourteen Naval Reserve pilots during the interim program prior to the formal commissioning of the squadrons on 1 July has provoked Reserve heads and subordinate squadron leaders alike to call for ever-increasing safety in all Reserve flying.

Flat-hatting, always needless and never condoned, was named as the principal cause for the fatal accidents.

Squadron leaders have promised strong disciplinary action for any such action, reported, and squadrons are painting their planes so that they will be easily distinguishable by citizens desirous of reporting low-flying enthusiasts.

Reserve pilots should note that they are much more expendable now, and the long waiting lists of other inactive Reserve birdmen guarantees a short Organized career for any serious offender of the "no-buzzing" rule.

Air Combat Intelligence Officers who have been unable to locate themselves in the Organized Reserve with a squadron will be interested in the note from Washington that states that an Intelligence division will be set up, and the Air component will be comprised of former ACIO's.

Reports of all the Open Houses conducted on 30 June indicate the ultimate of success was attained in acquiring publicity and enlistments. Most every station gave away free rides in Link trainers and planes to some of the more than 100,000 visitors.

Outstanding reports of Naval Air Reserve activity last month came from the following stations:

● **NAS FLOYD BENNETT**—More than 25,000 Manhattan and Brooklynites poured through the gates on 30 June to celebrate

the Open House. An estimated additional 60,000 watched Navy and Naval Reserve attack groups put on a spectacular air show from nearby Flatbush Avenue. Presentation of awards to seven Navy and Marine Corps heroes and display of latest type Navy planes were feature attractions along with the Navy helicopter's performance.

● **NARTU CECIL FIELD**—At the recent Southeastern Air Show held at Jacksonville Municipal Airport (Number Two) this unit set up and maintained an information and recruiting booth. Special attention to the Reserve was attracted by the in-flight of an SNB during the progress of the show and the subsequent exhibit of the plane to the general public.

● **NAS OLATHE**—In this comparatively outlying reserve outfit a total of over 550

pilots have signed up for inactive flying. Last month a portion of them flew 520.4 hours. In the same period station pilots flew 352.9 hours, a majority of that number being in connection with training reserve pilots.

● **NAS SQUANTUM**—One of the largest groups of pilots to sign up in the Reserve flying program have been enrolled here—1319. Two-thirds of them have requested Organized Reserve duty, were on the dotted line last month.

Flight time for Reserve pilots last month totalled 784.8 hours, 126.5 of these going to Marine aviators on inactive status. A total of 282 Navy pilots participated in 510 training flights during that time.

Below is a list of squadrons and CASU's assigned to stations throughout the nation according to the number of each unit:

RESERVE SQUADRON AND CASU ASSIGNMENT ACCORDING TO STATIONS

STATIONS	CVG	CVLG	CVEG	VO	VP	VR	CASU (L) or (S)
Anacostia	710	—	765	815, 816	900	936	700 —
Atlanta	—	750	766	817, 818	901	937	— 750
Columbus	711	—	767, 768	819, 820	902	938	701 —
Dallas	712	—	769, 770	821, 822	903	939	702 —
Glenview	713	—	771, 772	823, 824	904	940, 941	703 —
Grosse Ile	714	—	773, 774	825, 826	905	942	704 —
Jacksonville	—	751	775	827, 828	906	943	— 751
Livermore	715	—	776, 777	829, 830	907	944, 945	705 —
Los Alamitos	716	—	778, 779	831, 832	908	946	706 —
Memphis	—	752	780	833, 834	909	947	— 752
Miami	—	—	781, 782	835, 836	910	948	— 753
Minneapolis	717	—	783	837, 838	911	949	707 —
New Orleans	—	753	784	839, 840	912	—	— 754
New York	718	—	785, 786	841, 842	913	950, 951	708 —
Norfolk	—	754	787	843, 844	914	952	— 755
Olathe	719	—	788, 789	845, 846	915	953	709 —
San Diego	720	—	790, 791	847, 848	916	954	710 —
Seattle	721	—	792, 793	849, 850	917	955	711 —
St. Louis	722	—	794, 795	851, 852	918	956	712 —
Squantum	723	—	796, 797	853, 854	919	957	713 —
Willow Grove	724	—	798, 799	855, 856	920	958, 959	714 —

DID YOU KNOW?



NATS' VERSION OF VANISHING 'CORONADO'

Coronados are Graveyard Bound PB2Ys Will Be Scrapped, Melted, Sold

The last of the *Coronados* has headed for the scrap heap. Outmoded as both a bomber and transport the PB2Ys will pass out of existence via the reverberatory furnaces at the many air station bone yards.

Most of the *Coronados*, designed as long range patrol bombers, were drafted by the Naval Air Transport Service for overseas duty in the Pacific. Few changes and modifications were made and the transport version sped urgently needed supplies to Australia and New Guinea at the start of the war.

A year ago 51 PB2Ys were operating with NATS. Last April there were only 23 in the entire Navy, with VB-2 flying 12. Now even these have been consigned for scrap.

Squadron Teaches Via Practice MAG 25 Service Groups Stress Training

Service Squadron 25—As with all units these days, this squadron has run into qualified personnel difficulties, so, following the adage of necessity being the mother of invention, the training officer has outlined and executed a period of instruction for replacements that is gradually meeting the needs of the unit's demands for proficient aircraft personnel.

Spreading out the limited supply of Naval Air Technical Training Command textbooks among the newcomers, the squadron is following the NATTC program of training men, incorporating the question-and-answer method of *Aviation Maintenance* magazine to help distribute information. Actual practice continues to be the basis for most instruction, leaving classrooms to be busy with fixing principles of operation and acquainting personnel with reference data sources.

USCG Takes Over Air/Sea Rescue ASR Units Under Coast Guard Districts

Air/sea rescue units have been reverted to the Coast Guard by a recent AINav for the duration of the peace. Originally having legal responsibility for disasters at sea, the Coast Guard has resumed its peacetime status.

The changeover from Navy command had no effect on air/sea rescue operations. The shift has been made in name only. Navy directional control under the sea frontiers is now continued by Coast Guard districts.

During the war most air/sea rescue operations were undertaken by Coast Guard men. Now the same facilities will be available with a slight manpower change.

At some air stations Navy utility squadrons may continue their function of aiding in the recovery of downed pilots. Other rescue facilities will be supplemented when required.

West of Pearl Harbor the present arrangements will continue to function.

Navy Rescues Japanese Seamen Letter Expresses Gratitude For Helping

RESCUE SQUADRON 4—The following letter was received by this squadron after an air/sea rescue mission this year in the Japanese area. The prompt action was probably a surprise to the Japanese since air/sea rescue operations were new to them.

SIR:

I wish to express my appreciation for the great assistance given by U.S. Navy in saving the lives of Japanese seamen on board special subchaser No. 248 which hit mine and sank during the mine sweep operation off Iki Shima.

On receipt of my accident report regarding special subchaser No. 248, you immediately dispatched American plane to the accident place to search and rescue survivors for considerable time on the surface.

Four dead were recovered. Several wounded men have been taken into military hospital at Gonoura, are getting better and better day by day.

I express my gratitude for your assistance in this rescue work.

K. Ishii

Director of Sasebo

District Demobilization Office

Navy Airplanes Sank 101 U-Boats Land-based Craft Outdistance Carrier

Navy carrier and shore-based planes sank 101 enemy submarines during the

war—81 of them German, 19 Japanese and one Italian—according to a Navy Department summary.

The Germans lost a total of 781 submarines to British air and sea forces, U. S. Army Air Forces and U. S. Navy ships and planes. Jap total losses were 130 and Italian 85.

Out of the 101 undersea boats sent to the bottom by U. S. Navy planes, it is interesting to note that 48 were bagged by shipboard planes and 53 by land-based aircraft of the Navy.

The escort carrier *Bogue* ran off with top honors as a sub killer, its planes sending nine U-boats and one Jap sub to the bottom. Another CVE, the *Card*, was second with eight, the *Core* and *Anzio* tied for third with five each; the *Guadalcanal*, *Santee*, *Block Island* each got three; and one apiece were credited to CVE's *Croatan*, *Solomons*, *Wake Island*, *Suwanee*, *Tulagi*, the CA *Helena*, CVL *Monterey*, and CV *Enterprise*. In a number of sinkings, other ships or Allied vessels or planes aided. The CVE *Anzio* was the champion in the Pacific war, sinking its five there.

According to the compilation, VP-84 was top giant killer with six submarines to its credit, while VP-107 got five and a half.

First submarine sunk by the United States was the I-170, sent to the bottom by the *Enterprise's* planes on 10 December 1941. The last was the I-372, sunk on 28 July 1945 by unidentified U. S. Navy planes. The Army Air Force sank no Jap subs, two Italian, and 60 German U-boats, mostly in raids on harbors.

The summary was based on information obtained from German, Japanese and Italian records following cessation of hostilities, as well as data compiled by the Chief of Naval Operations Committee on Assessment of Damage to Enemy Submarines and its British counterpart.

During the war, U. S. Navy planes sank 6 Jap battleships, 9 carriers, 8 heavy cruisers, 7 light cruisers and 45 destroyers. In the air, they shot down 9,291 Jap planes and destroyed 6,182 on the ground.



U-BOAT CREW CRINGES AS PB4Y HITS SUB

VF-43 Has But Single Accident

Safety Procedure Lectures Beneficial

VF-43—Using such precautionary measures as weekly safety-meetings for all squadron members and placing posters as minute reminders, VF-43 has hung up a good safety record since its commissioning the first of August, 1945. Logging more than 2300 hours, the fighter squadron has had but one accident, a barrier crash that was judged to be 100% pilot error. Though the aircraft was struck for salvage, there were no injuries to personnel.

Considering the fact that the majority of Forty Three's pilots were fresh from operational training the low percentage of only one mishap is believed extremely good. Doubtless, the record is a result of the thorough indoctrination of safe and sane procedure and the individual energy and alertness of the safety officer and each individual pilot.

Weekly safety board meetings produce many good ideas which are brought promptly to the pilots' attention. All department heads are responsible for disseminating the latest word to pilots in their respective field, and give lectures from time to time to keep them abreast of the changing picture on safe flying.

Navy Authorizes Reserve Ribbon

Special Commendation for NR Officers

Authorization has been made for a Reserve Special Commendation Ribbon with a letter from the Secretary of the Navy in recognition of the meritorious and faithful service of those officers of the organized Naval Reserve and Marine Corps Reserve who commanded for a period of four years between 1 January 1930 and 7 December 1941 an organized battalion, squadron, or separate division of the Naval Reserve, and have a total service of not less than ten years in the Reserve.

The ribbon will take precedence before any Campaign or Service Ribbon. It will be the same as the Naval Reserve Ribbon with the addition of a $\frac{1}{8}$ -inch vertical stripe of myrtle green.

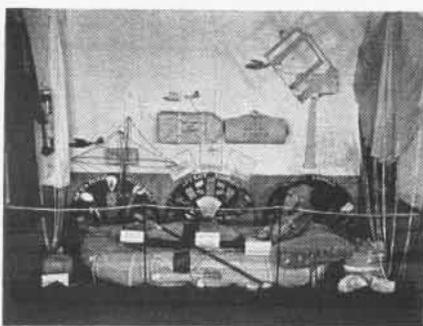
All cases will be referred to the Board of Decorations and Medals for consideration.

Rescue Exhibit Displays Gear

Ingenuity Gives Realism to the Show

CGAS BROOKLYN—Aviation ordnance men of this air/sea rescue unit constructed a permanent survival equipment exhibit which is valuable in indoctrinating new personnel and refreshing knowledge of experienced men.

The three semi-circular panels shown in the accompanying photograph give details on air/sea rescue pyrotechnics

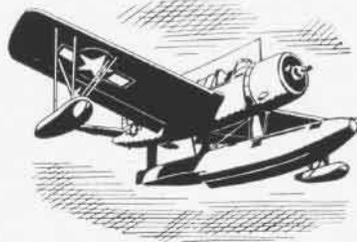


COAST GUARD EXHIBITS LIFE RAFTS, GEAR

—the Mk 2 night depth charge marker, the Mk 4, 5 and 6 float lights, and the Mk 1 day depth charge marker that gives a large fluorescein slick. Also shown are the equipment in the life raft and the equipment provided for distress signals—dye marker, mirror, grenade, Very's signal, flashlight and Mae West light.

The orange smoke developed by the Mk 1 Mod 1 orange smoke distress signal was simulated by using cotton stained with smoke from an actual grenade, a piece of polished brass plus cotton simulate float lights and depth charge markers. Red ping-pong balls emulate star signals.

SHOW ME THE WAY TO GO HOME



CELESTIAL QUIZ

At assumed position, Lat. $24^{\circ}00'N.$, Long. $161^{\circ}30'W.$, a three star fix is taken.

Given:

1. Date: 10 September, 1946.
2. Course 124° , Ground Speed 180K.
3. Stars observed:
 - (a) Deneb HO $24^{\circ}16'$ LCT 0240
 - (b) Fomalhaut HO $20^{\circ}27'$ LCT 0244
 - (c) Aldebaran HO $54^{\circ}43'$ LCT 0248

What is the 0244 LCT position?

Note: To refresh your memory, the use of aircraft navigation instruments, see the Air Navigation Training Unit's *Instrument Course No. 1*, NAVAER 00-8W-10.

(Answer on Page 40)

VP-71 Wins Unit Commendation

East Indies, Philippines Record Cited

The Navy Unit Commendation has been awarded to VP-71 for outstanding heroism in action against the Japanese from November 24, 1944 to March 16, 1945.

Operating from advanced bases in the Netherlands East Indies and the Philippine Islands, the squadron carried out highly successful air/sea rescues, reconnaissance and convoy screening operations and single-plane, low-level bombing attacks. The squadron saved 13 U. S. aviators by its rescue operations and sank thousands of tons of enemy shipping.

Marines Begin Housing Program

Building Quonset Huts for Dischargees

MWSS 1—To house personnel awaiting transportation to the United States whose tour of duty has been completed with the First Marine Aircraft Wing, this squadron found it necessary to begin a housing program to provide quarters for 750 to 1000 enlisted men and 100 officers in the suburbs of Tsingtao, China.

The construction of 50 Quonset Huts, 20×48 , was performed by Marine personnel and contracted Chinese labor. Four shower units and one 40×100 garage are on the road to completion.

A galley, scullery, messhall, library, movie hall, dispensary, shower-room and gymnasium have been added to the Main Building.

New Site for Special Devices

Demonstrations Center To Be in D.C.

The Navy's Special Devices Division has moved from Washington, D.C., and is now located at Sands Point, Long Island, in the buildings formerly occupied by the Institute of Aeronautical Science. Commissioning was on Aug. 13.

Despite the distance separating the Division and the majority of Army and Navy bureaus in Washington which it serves, liaison will be maintained through the Navy Department. In addition, a demonstration center will be established in Washington at the Naval Research laboratory, which, like the Special Devices Division, is a part of the Office of Naval Research and Inventions.

One hundred key jobs held by Naval Officers in the past have been classified by Civil Service Commission so they may be filled by civilians with scientific qualifications. Special Devices was developed four years ago by Capt. Luis de Florez, U.S.N.R. (now R. Adm.), as a means of providing flight personnel with synthetic training equipment. Later it extended its devices to aid surface ship and submarine personnel.

Japs Greet First Plane at Truk

Harpoon Lands Before Entire Garrison

VP-144—First land plane to land at Truk, once-powerful Jap air and naval base in the central Pacific, was piloted by the commanding officer of this squadron, flying a PV-2. He was greeted by the entire Jap garrison.

When hostilities ceased, Truk's runways were far from serviceable, thanks to some nice bombing by American carrier planes. The concrete strips were badly cratered and the holes filled with trash. The trash had to be dug out and the crater filled with coral before Moen airstrip could be used.

Next, the level of the strip had to be raised considerably above the original Jap strip to insure proper drainage. The final result is a 4100x150 foot strip, smooth and an excellent landing surface.

Seabees built the runway, but it was with Japanese labor, supervised to a degree by their own officers and petty officers. At the time of the initial landing, only the strip had been completed and it was necessary to park, as well as land, on it. Moen's inhabitants turned out for the occasion, from the Atoll Commander to the lowest Jap boot. The plane was surrounded the moment the engines were cut and the crew accorded a large-scale reception, including photographers. The takeoff was likewise made down a strip lined by men on both sides.

Approaching and leaving, the tower operator kept up a continual chatter, babying the plane like a mother hen would a chick. The crew will remember the occasion for a long while.

Natives Taught Beaching Style

Marshallese Relieving in Forward Area

NAB-3234—Having been relieved by Waves for forward area duty during the war, enlisted men are now being relieved by natives in the forward area so they may return to the continental limits and aid in the release of the Waves who implemented their departure. This unusual fact was uncovered recently when it was disclosed that Marshallese at this base have been given instruction in the beaching and docking of seaplanes.

Under competent supervision they are accomplishing much of the ground work and have proven themselves to be intelligent and noteworthy sailors. The natives are apt at such jobs as floating the beaching gear and attaching it to the hull fittings during the beaching process.

While launching they assist in handling the guide lines, in removing the beaching gear, and in floating it ashore. Process of instruction is now underway

to give them full understanding of the beaching and docking procedure in order that they may soon perform the entire operation rather than just implement same.

Navy Studies High Speed Plane

Nazi Supersonic Craft to go 1250 mph

Details of a projected German fighter plane designed to operate at speeds of 1250 miles an hour at 60,000 feet altitude are contained in a report prepared by the U. S. Naval Technical Mission in Europe.

The Siebel Aircraft Company in Halle had completed plans for a flight test model of the 8-346 supersonic plane, indicating



PILOT WOULD FLY PLANE WHILE PRONE

that the Germans considered it had definite possibilities. The model would be powered by two thrust jets in the tail, the Nazis planned, flown to an altitude of about 33,000 feet by a carrier-plane and then started upward vertically to its top altitude.

Tests were expected to give scientific data on forces met at speeds greater than the speed of sound. This data, it was said, would be valuable in determining in advance flying qualities and performance of superhighspeed aircraft, especially automatically controlled planes.

The plane's 30-foot wings would be swept back at a 45° angle. The pilot would lie prone in the nose, permitting him to stand up to 14 G's. It would land on skids at 160 kilometers an hour. Its pressurized chemically-heated cabin would be jettisonable automatically or manually by the pilot.



"I TOLD YOU THIS WOULD HAPPEN IF YOU DIDN'T STOP BEING SO EAGER"

Plane Captains Get Safety Dope

Line Procedure Taught in New School

NAAS BARIN FIELD—Latest addition to safety features at this Pensacola outlying field is a school for plane captains to demonstrate and teach safety precautions and line procedure.

Men are assigned full-time to the school, being detached from the line temporarily for that purpose. While in training, they spend a full working day in the classroom, studying practical safety precautions and being indoctrinated with ground crewmen responsibilities involved in sending a plane in the air.

Classroom talks, lectures and movies are given for five days and the sixth is spent in practical line demonstration and check-out. A rigid examination is given before completion of the course, covering thoroughly safe line procedure.

New men assigned to the squadron will be sent through the plane captain school before being assigned to line duties and those now assigned are being sent through the school as rapidly as possible. It is believed that the new school will result in a high safety factor through standardizing line procedure and eliminating much plane captain inefficiency.

►CNO Comment—This is an excellent idea. It is gratifying to see that field commands are becoming safety conscious. Much improvement in the accident rate will be realized by educating and training ground personnel in safety procedures for they as well as pilots are directly concerned in squadron efficiency and aviation safety.

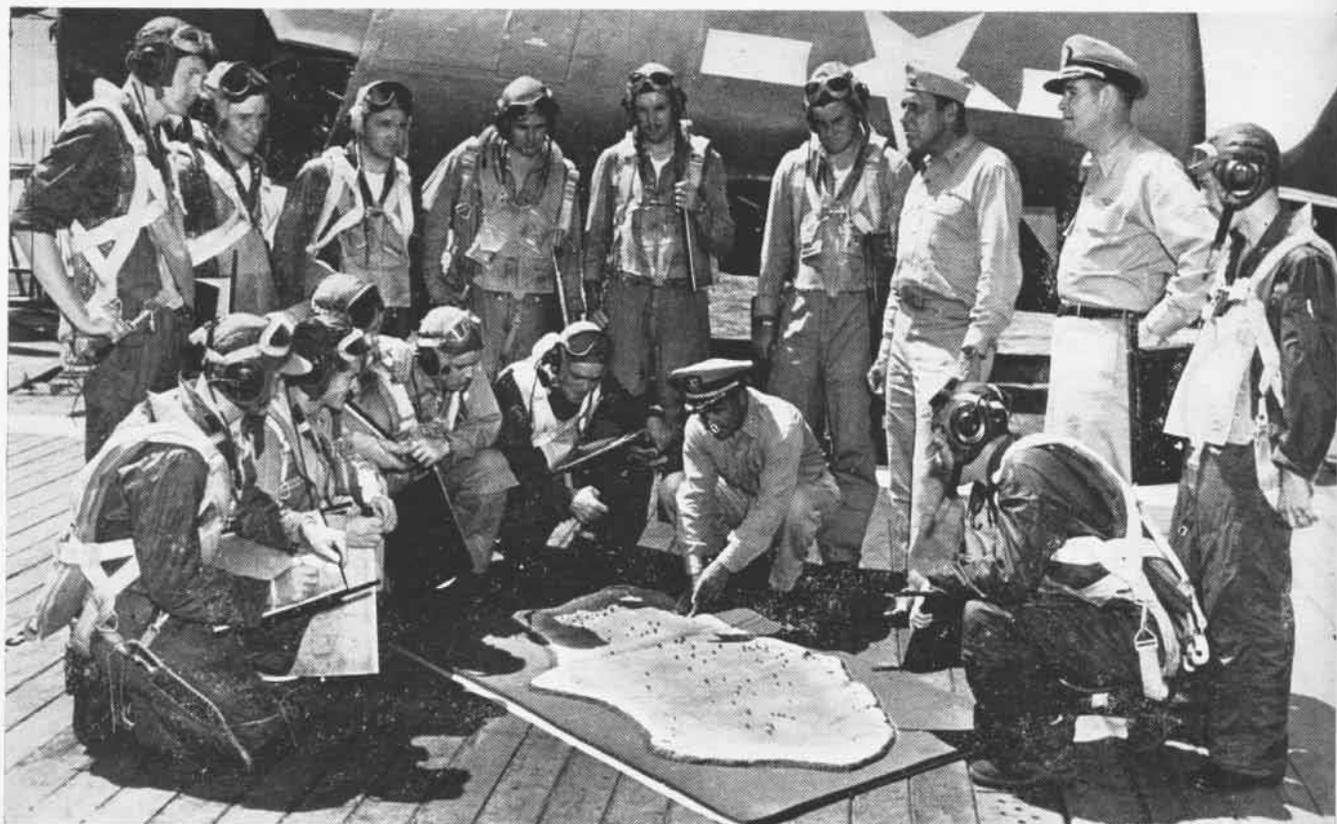
Squadron Ditches in Reservoir

Trains for Survival in Old Liberator

HEDRON 14-2—Checking out crews in the technique of ditching, survival instructors of this unit have trained more than 9,000 pilots and crewmen of *Liberators* and *Privateers* since August, 1944. Believed to be the only Navy "ditching tank" for four-engined planes in the United States, an abandoned water reservoir at Camp Kearney is used in this training.

A stripped *Liberator* fuselage, equipped with ditching belts, life raft cradles, and dummy emergency gear was set in seven feet of water inside the reservoir. Trainees take their assigned stations inside the hulk and abandon ship on a whistle signal from an instructor, leaving through the proper escape hatches.

After a short period of instruction, each crew learned to escape, inflate and provision the rafts, and paddle away on the miniature Pacific, going through the drill in a matter of seconds.



THESE ARE THE PILOTS WHO FLEW THE NAVY'S HELLCAT PHOTO PLANES AT BIKINI; HERE THEY STUDY RUBBER MODEL OF THE ATOLL

DRONES FLY IN CLOUD COLUMN OF ATOM BOMB



A-BOMB PLUME

NAVAL aircraft carrying full loads of cameras or scientific measuring equipment played a leading role in the two atom bomb tests conducted at Bikini Atoll on 1 July and 25 July. Success of the drone flights demonstrated aircraft could fly through radio-active cloud columns without fouling up their operating systems.

The tests also showed that new designs for aircraft carriers and seaplane tenders probably are necessary to meet the threat of the atom bomb. Danger to exposed personnel from gamma rays, even if they survived the fiery explosion, would be great.

Spectacular photographs of the huge bomb cloud in the first blast were secured from Navy PBM's. The two *Mariners* carried "pick-a-back" F-5 cameras with telephoto lenses to get

large pictures of the blast without being close enough to pick up radio-activity.

Four F6F drones controlled by specially-trained pilots in "mother" *Hellcats* (see front cover) participated in the drops. In the first one three drones flew directly through the tremendous cloud column and came out "burning" with radio-activity but still in operating shape. The fourth drone was lost when it went out of control and crashed.

One of the drones had probably the most spectacular experience of the first blast. When it got into the rapidly-billowing cloud column, updrafts like those found in a thunderhead tossed it 6,000 feet above the place where it entered. Consequently the mother *Hellcat* which was flying on the other side of the cloud to pick it up when it came out could not find the errant drone.

Fighter director aboard the *Shangri-La* located the lost F6F and the mother plane was vectored toward it. It caught up with the drone 55 miles from the cloud. Bringing it back to Roi Island, it was landed with the other two drones which negotiated the cloud successfully.

NAVAL AVIATION's interest in the two blasts, besides how its drones and photo planes functioned, rested in the two aircraft carriers which were target ships. In the first blast, the CVL *Independence*, being near the center of the bull's-eye, took the worst beating, as can be seen in the accompanying photograph. The *Saratoga* at the outer rim

(see photo, top page 14) was unhurt. In the second blast, however, when



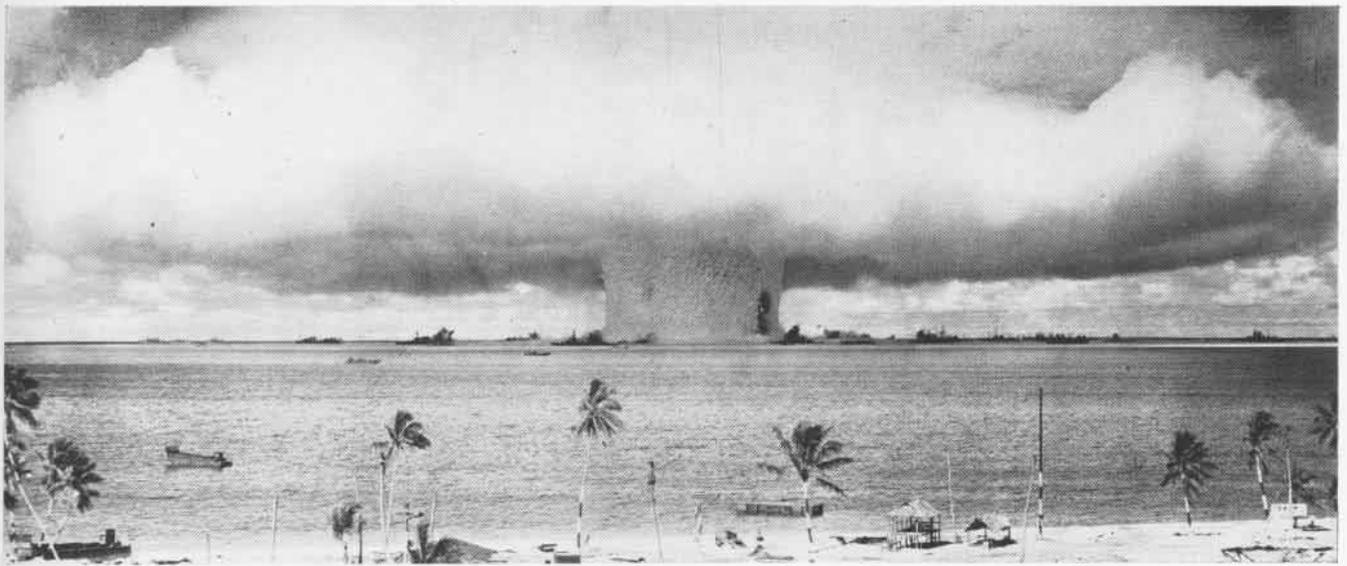
SARATOGA, STACK AWRY, GETS DEEP SIX



GALLANT OLD INDEPENDENCE AFTER BLAST

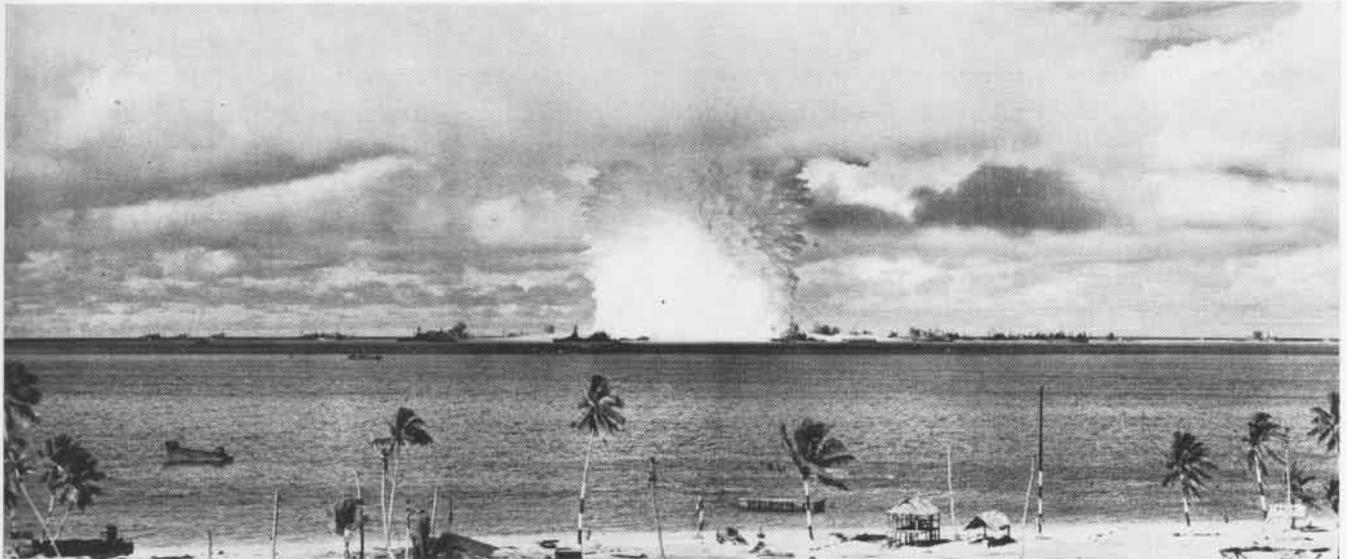


BEFORE THE BLAST HIT NEVADA'S OS2U'S



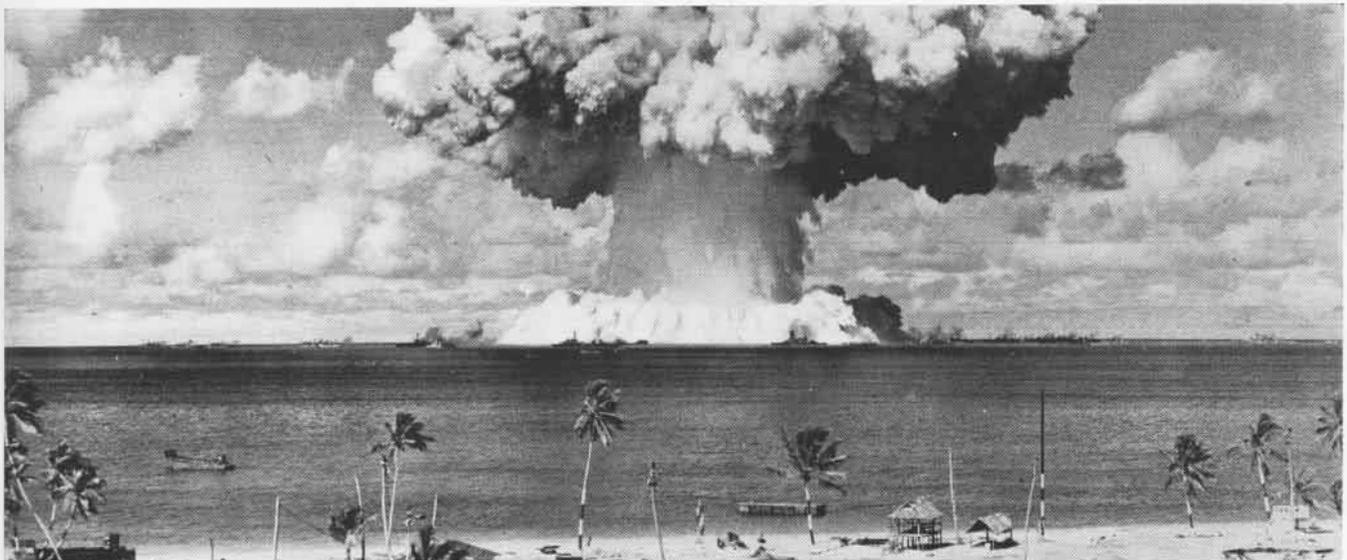
1 First of this series of remarkable action shots of Atom Bomb Test #2 shows the huge mushroom cloud of steam already

spread over lagoon. Speculation centered over identification of dark object in column; some thought it was battleship *Arkansas*



2 Up goes the cloud column and the mushroom of steam dissipates. Water tossed straight out from column has reached

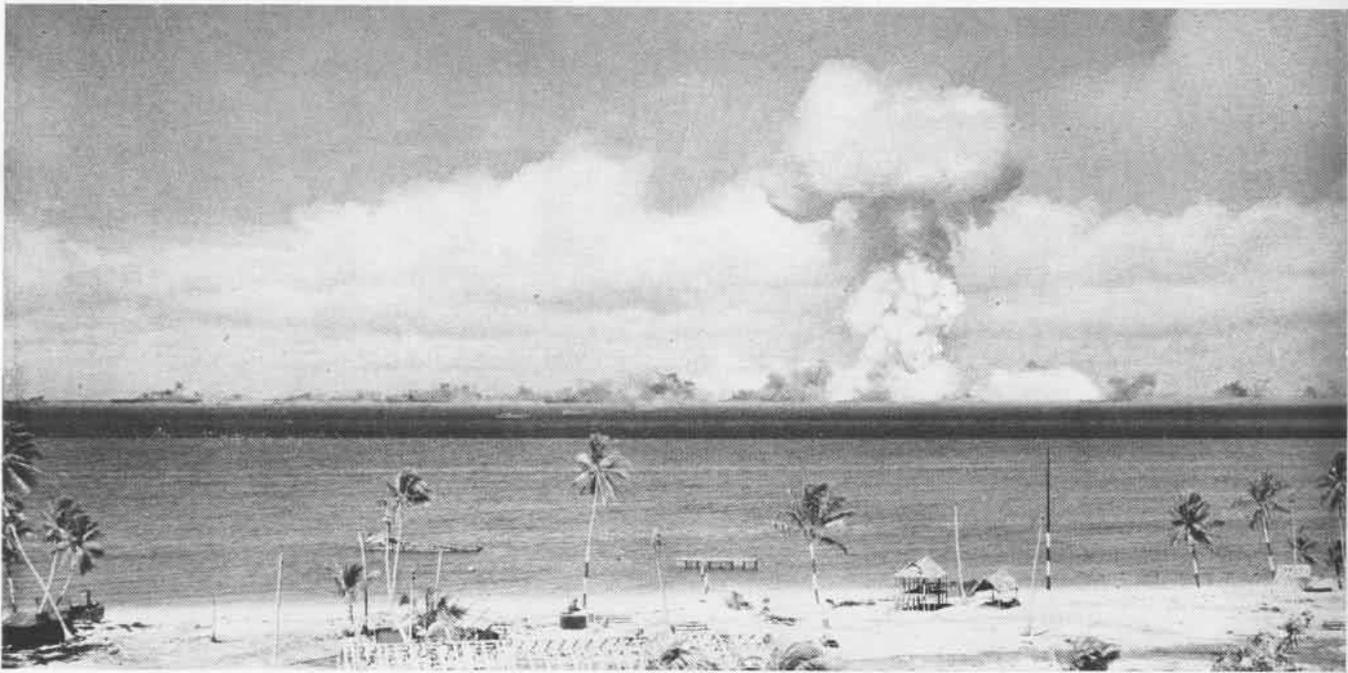
outermost flight. In left foreground is cruiser *Salt Lake City* and right (foreground) is Jap battleship *Nagato* which sank later



3 Tremendous tidal wave of water heads toward the moored target fleet as water column tumbles and cloud of smoke or

steam whirls upward. Column is 2,000 feet across and went 5,000 feet high. Note the *Nagato* apparently unhurt and floating

(Continued on next page)



PRESSURE WAVE (BLACK BAND) MOVES SHOREWARD ON BIKINI AFTER FIRST BLAST; SARATOGA, ON LEFT, SMOKES BUT FLOATING

the bomb was detonated underwater, the *Sara* took great damage and at first was listing but still afloat. Seven hours later it sank. One of the ships closest to the underwater bomb, the holocaust shredded her island, knocked down her stacks and fire broke out aboard her. Attempts to beach the heroic old CV-3 failed because tugs could not approach in the radio-active water.

It took the underwater explosion to finish off the *Sara*. Seven times during the war the Japs announced she had been sunk. Twice she was torpedoed, near Hawaii and in the Solomons. She withstood repeated Kamikaze attacks off Iwo Jima, but she came through.

One theory advanced by Navy experts was that the *Saratoga* might have been sunk by hitting the bottom of the

lagoon when the bomb blasted a huge "crater" in the shallow water.

The Navy also is interested in how aircraft stowed below decks on the *Independence* and *Sara* and those on the catapults of ships like the *New York*, *Nevada*, and *Pensacola* withstood the explosions. Released pictures of exterior planes like OS2U's and SC-1's showed heavy damage.

All of the drone *Hellcats* picked up samples of air in the columns for scientific analysis. A VGTA recorder was installed in each to help gather data on velocity, acceleration and altitudes.

Because of their radio-activity, drones which flew through the clouds had to be allowed to "cool off" after landing at Roi before their instruments could be removed. The second bomb threw

a tremendous column of water into the air a mile high, with a base of 2,000 feet. No attempt was made to fly drones into the water, but they did negotiate the steam and smoke column 9,000 feet above the "waterspout."

Four Army B-17 drones also flew through the cloud and were landed at Eniwetok for analysis. In the second test one of the B-17's at 30,000 feet reported feeling a shock wave of about 3 G's at the time of the explosion.

Although X-ray emanations will fog photographic film, the fact that many drones flew into the cloud and brought back pictures indicated that radioactivity in it was of a different nature. Cameras in lead-lined towers on the island, which also were fairly close to the blast, also produced good shots.



These two pictures, taken in pre-atom bomb days when the *Saratoga* and *Independence* were still active in the fleet, are reminders of happier times aboard the two battle-scarred veterans. The *Sara* (left) was bringing Army personnel back to the states

on the *Magic Carpet* run. Behind them is painted the impressive war record that stretched from Guadalcanal days. The *Independence* (right) was the last of a long line of Navy ships by that name. Many Navy men wept when the *Sara* sank



PLANES ON STARBOARD QUARTER TURNING UP FOR SHARE IN MANEUVER AS U.S.S. MIDWAY IS MOVED BY POWER OF ITS OWN AIRCRAFT

OPERATION PINWHEEL TURNS SHIP

IT TAKES a lot of room for a carrier to turn around under its own power. If tugs are available they can do the job adroitly, but the latest development for maneuvering a carrier in limited space is *Operation Pinwheel*. In this procedure a ship is moved by the thrust of planes secured to the flight deck.

At Guam in June 1945 the method was used by Capt. Felix L. Baker, USN, commanding the U.S.S. *Ran-*

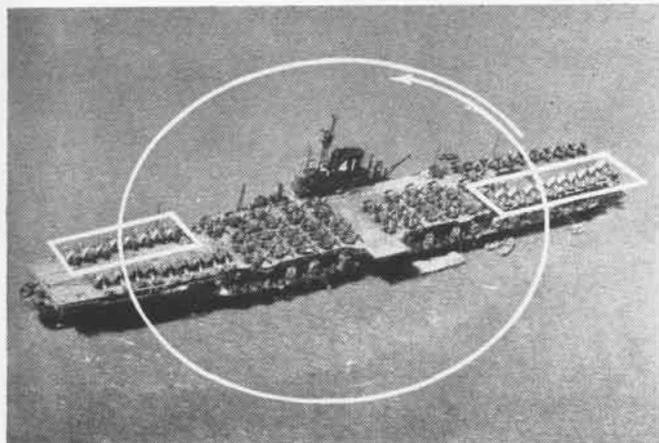
dolph, when crowded harbor conditions made normal maneuvers impossible. The name *Pinwheel* originated on the U.S.S. *Lexington* commanded by Capt. (now Rear Admiral) Thomas H. Robbins, Jr., USN. Difficulties with inexperienced Japanese tug service prompted a series of extensive tests of the operation to make the carrier independent in close quarters.

Following this plan, the U.S.S. *Midway* uses four groups of planes as "air tugs." Each group is placed on a corner of the flight deck, two forward and two aft. The planes, with wings folded, are lined up facing inboard and securely lashed to the deck. When the engines of any group are turned up, they exert a strong forward pull.

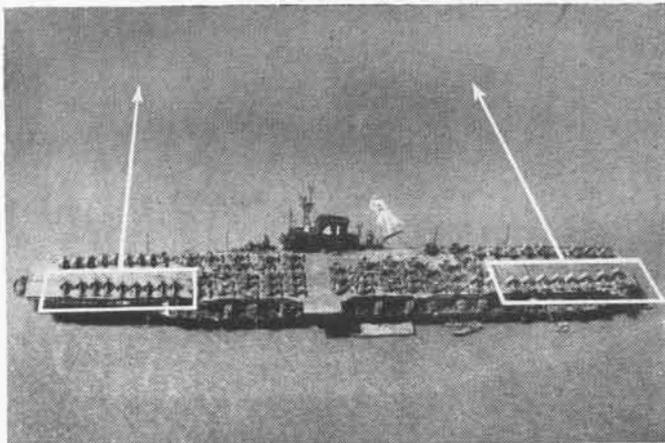
In a turn to port, for example, the planes of the starboard bow are turned up, thus pulling the bow to the left. At the same time the planes on the port quarter pull the stern to the right, completing the pivoting job on the ship.

When a carrier is being moored alongside a dock in a high wind blowing too hard toward the pier, it has proved more satisfactory to hold the ship off with the pull of its planes ranged along one side of the flight deck than with restraining lines put out from tugs. Similarly, if the wind is in a direction to blow the carrier away from the dock, planes on the opposite side of the deck can be used.

On the *Midway* the "air tugs" are controlled by the ship's Air Officer from the primary flight control station in the "island." Radio communication is used as well as regular flight deck hand signals to communicate instructions to the pilots whose lashed down planes are straining at their ropes. In normal operation the planes are not repeatedly stopped and started again when their participation is needed, but are allowed to idle at low speed when not actually furnishing thrust.



Around she goes in a port turn, moved by the thrust of groups of planes securely lashed to deck at starboard bow and port quarter



Forward pull of engines in direction turned up planes are facing will move carrier sideways, useful in approaching or leaving pier



LT. CDR. DAVIDSON BRINGS IN PHANTOM FOR FIRST JET LANDING ON CVB ROOSEVELT

propeller. Wind over the deck for the five landings varied from 32 to 40 knots. Top speed is more than 500 mph.

Since no barrier has been developed to stop this particular type plane, the F.D.R. worked out a "quick fix" in case the *Phantom* missed the wires. It was never tested, however, as the plane caught the wires going 90 mph., about five mph. above stalling speed. An emergency safety catch to engage the barrier top was installed in front of the canopy (see photo, left).

The same type of approach is made with a jet as with a propeller engine, with the cut coming a bit earlier since deceleration of the jet engine is slower. After its short deck runs, the FD-1 zoomed into the air at a steeper angle than ordinary fighters usually use during a takeoff.

ONE OF the problems which use of a jet plane raises aboard a carrier is the hot-air blast from its two axial-flow Westinghouse gasoline-burning turbo-jet engines. Although the air-flow is hot, the force dissipates rapidly away from the plane's high tail. The sharp-edged exhaust is boiling at that point and could burn a person. Different methods of spotting planes and different technique by flight deck personnel probably will have to be developed for jet operations. Care must be taken not to be sucked into the air intake in the leading edge of the wing.

So far the Navy has but one *Phantom*, with deliveries on the first group of 30 planes expected to start coming out this fall. An XF2D is in the works.

A Ryan *Fireball* made an emergency landing on its jet engine alone on 6 November 1945 when its front engine failed. A British *Vampire* took off and landed on the H.M.S. *Ocean* on 4 December 1945, the first time any all-jet had ever accomplished the feat.

(Pictures by NANews Photographer)

JET PLANE LANDS ON ROOSEVELT

THE NAVY'S new FD-1 demonstrated all-jet planes are adaptable to carrier operations by making five smooth take-offs and landings on the steel deck of the CVB *Franklin D. Roosevelt* on 21 July. It was the first time an all-jet plane ever made a fly-off from a U.S. ship. The 8800-lb. aircraft left the deck with less than 400 feet run.

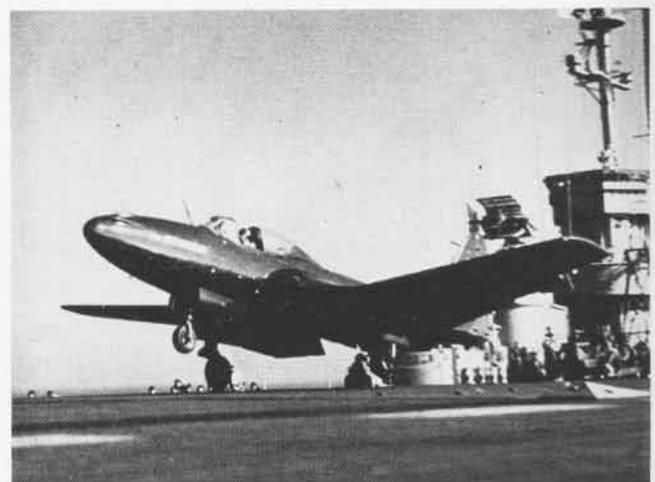
Customary take-off run on land for the *Phantom* is 1100 feet, about half that required for the more powerful P-80. NATC PATUXENT RIVER has successfully catapulted the P-80. The *Phantom* has not been catapulted as yet but its performance on the *Roosevelt* indicated it adaptable to such launches without too much trouble or conversion.

Pilot of the first all-jet to land on a U.S. carrier was Lt. Cdr. James Davidson. On one of the approaches he was given a surprise wave-off (see photo below) and zoomed over the LSO's head, answering the question of whether a jet had enough pick-up to take a wave-off. Davidson after the five landings reported acceleration and deceleration were slightly less than in conventional-type aircraft but there was no torque trouble, less noise, and speed and altitude were easy to maintain. No warm-up is necessary before take-off, which would speed up launchings.

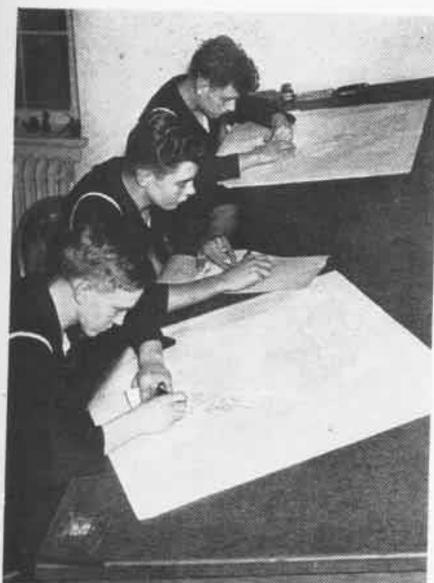
The FD-1's rudder is effective from the start and visibility in front is better due to its tricycle landing gear and no



PHANTOM ZOOMS AFTER LT. LOCKE, LSO, GIVES IT A WAVE OFF



AFTER DECK RUN LESS THAN 400 FT., PHANTOM HEADS UPWARD



Students complete a synoptic chart with data disseminated from teletype reports



Outdoor observation units record the differences in wind direction and velocity



Intricate instruments measure changes in pressure and humidity in the Observatory

WEATHERMEN ARE TRAINED IN AEROLOGICAL LAB

AS LAKEHURST'S Naval School for Aerographer's Mates, under Naval Air Technical Training Command, boasts a fully-equipped aerological laboratory as an integral part of the 16-week course given there.

This laboratory provides future "weathermen" with a week's practical work in a standard aerological office similar to what may be found anywhere in the Navy either afloat or ashore.

Upon first being assigned to this phase of the training, the student is acquainted with the duties of the aerological officer, aerographer's mates and the office itself.

The trainee is then scheduled for a laboratory watch, and under the supervision and guidance of officers and men with years of experience, he now

"learns by doing" the various things he has studied in the classroom.

Each student is given a "check-off" list which is used to indicate his degree of advancement. This list is divided into four parts and the first section can be checked off as rapidly as he can demonstrate his ability to read, correct, and make use of the results of every instrument in the laboratory.

The other three sections of the list are completed successively as the amount of time in the aerology offices increases, time limits being placed for each assigned duty.

The aerological laboratory runs in three departments. Two large map rooms are used for the decoding and entry of the various collected data on upper air charts and maps, and the plotting of the pseudoadiabatic charts.

An observatory, located on the upper deck, contains all the latest and most modern aerological instruments and equipment. It is in this section that the students learn the proper operation, care, and use of all the weather-finding apparatus.

All the work and functions of the various divisions are coordinated in the forecast or operational room. This room contains two teletypes bringing in weather information from all parts of the country.

The latest and current weather maps and charts are displayed at the forecaster's desk in this room. A large "flight condition board," recently constructed, shows at all times the various flight classifications for airports in this part of the world. Superimposed upon

this board an hourly weather map is maintained and changed to meet the varying weather conditions.

Students begin the actual laboratory work by decoding and entering teletype reports onto a large map of the United States. Errors are then discussed by the instructor and suggestions for further improvement are given. The synoptic map is taken in to the operational room where it is analyzed and a forecast made from it.

The same method is used for decoding and entering upper air maps and charts, and then the students are allowed to take their own readings with the instruments in the observatory, making use of the barometer, the barograph, the microbarograph, thermometers, thermograph, hydrothermographs, anemometers, a n e m o g r a p h s, rain gauges, and Selsyn recorders.

Wind direction and velocity readings are taken with the theodolite and a helium-filled balloon and all data recorded on an upper air plotting board.

The remainder of the week in the aerological laboratory is spent in the operations room where students are assigned to the tasks of disseminating data received on the teletype machines and changing the "flight condition board" to meet the hourly reports.

Assignment to the laboratory usually takes place in the fourth week of training, and although the students are experienced in all the methods of compiling weather information, eleven weeks of classroom study follow the practical work to turn out some of the Navy's finest aerographer's mates.



Facts compiled from different sources are transferred to the Flight Condition Board

RESCUE WORK AT CROSSROADS

RESCUE Squadron Four, based on Rebebe Island in the Crossroads area, recently completed a novel refresher air/sea rescue training program in which all pilots and crews took part. With the idea that in peacetime operations the safety of all personnel is of paramount importance, the rescue and safety department of the squadron designed a new program to familiarize all hands with rescue and safety gear carried in the planes and the correct use of each piece of that gear.

Since in the Crossroads area there is an exceptionally large amount of air traffic and since VH-4 is the only squadron operating PBM *Mariners* as air/sea

nal, sustenance, shipwreck and other kits laid out so that the class could see how each piece of gear contained in these kits was packed. The class was encouraged to demonstrate use of the different pieces of equipment.

The third part of the instruction was a practical demonstration of how to rig a liferaft. The instructor, with members of the class, opened and inflated the raft and secured the gear. They set up the sail and the corner reflector, put together the oars, rigged the fish spear and other pieces of gear as would be done in an actual emergency.

(CNO Comment—The best procedure is to mark and stow the equipment

An Open Letter to All Sentries Coolies Must be Peppared in Posterior

The following letter, submitted by the Senior Medical Officer to the Commanding Officer of MARINE AIRCRAFT GROUP 25 in China is indicative of conditions at this Marine Air Base relative to the Chinese. The letter was written after an incident where a Chinese coolie failed to halt when challenged by a Marine sentry.

"Subject: Chinese Coolies, open season on.

Reference: (a) W. M. Thackeray: 'An alderman coming from a turtle feast will not step out of his carriage to steal a leg of mutton; but put him to starve, and see if he will not purloin a loaf.'

1. It is recommended that during the remainder of the open season, only the fair game's posterior be peppared with birdshot rather than he be decapitated or disemboweled.

2. The Medical Department has neither the talent nor the equipment with which to put the miscreant back together again; and the Tsingtao Medical College is in a similar fix."

Light Is Substitute for "FIDO"

Makeshift Orientation Equipment Used

NAS SAN DIEGO—Not to be outdone by the British-originated FIDO system for getting lost planes down in foggy weather now available at NAAS ARCATA, California, (see FIDO, NANews, February 1946) one industrious tower operator produced an ingenious "light-landing procedure" scheme and aided two pilots to land.

Working a plane in for landing instructions, the tower crewman found the pilot was lost in the overcast and unable to find the field. A quick and effective solution to the problem was produced as the operator ordered the stations' light truck moved to the center of the mat, thus providing a beam of light arched into the clouds to act as a cone for the aviator's guidance.

Let-down instructions had no more been executed and the plane hit the deck than a second voice in distress made known its plight and desire to use the novel system of orientation as a voice came over the tower frequency announcing, "Tower, leave that light on. I'm coming in, too." They did. It did—and all's well that ends well.

Pilots and tower operators alike agreed the idea was par excellence.

NAS TILLAMOOK—You never know around these air stations who you're going to help next. A local dairy called up the OOD one day and asked for rescue breathing apparatus. A leak in the ammonia lines of its refrigerating system was endangering valuable food. The equipment and a refrigeration expert from the station soon stopped the trouble for the dairyman.



BIKINI JOB REQUIRED VH-4 TO BRUSH UP ON ITS RESCUE PROCEDURES AND EQUIPMENT

rescue planes in this area, it was imperative that this squadron be sure each man was trained in the use of all rescue gear and was capable of handling the equipment intelligently.

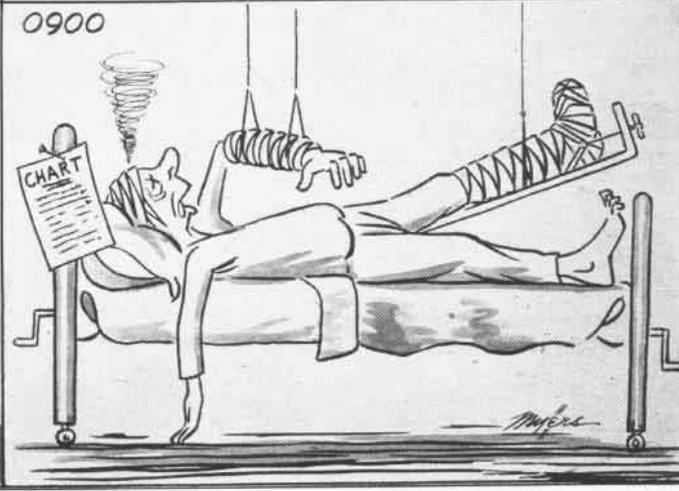
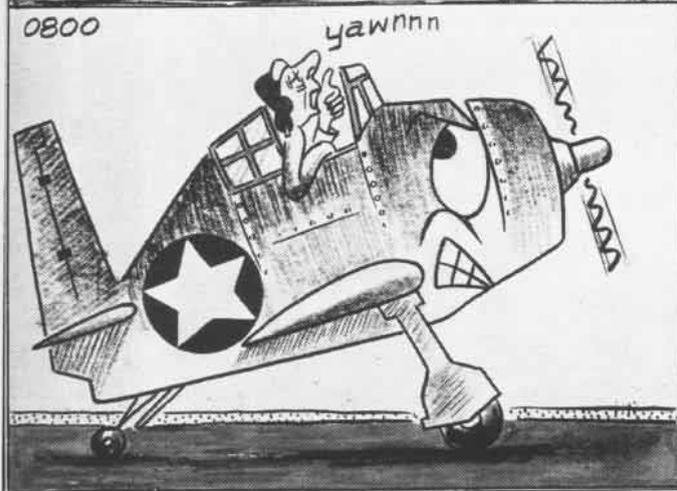
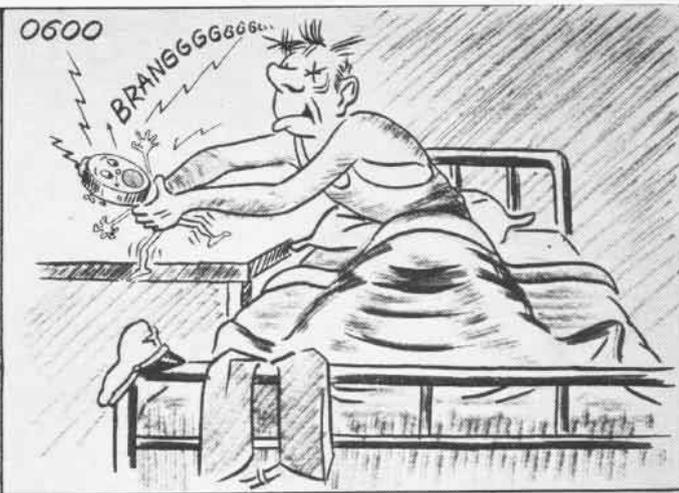
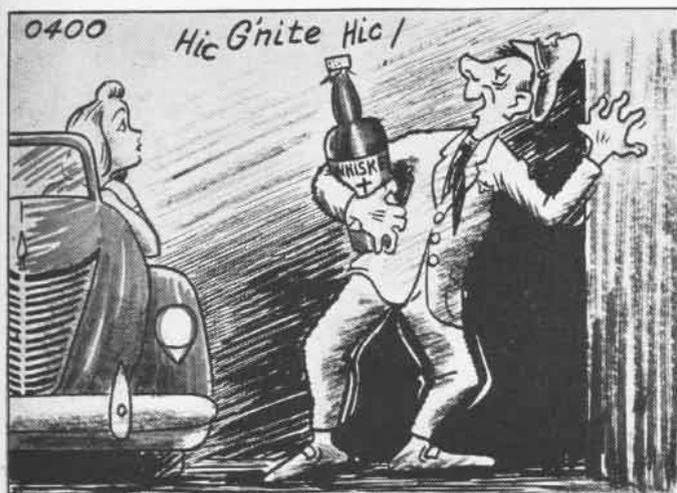
A Quonset hut adjacent to the squadron offices was used as a material store-room. It was redecorated with Mk IV and Mk VII liferafts, emergency equipment, and safety gear, all of which resulted in a colorful classroom. The instructor, after inflating the rafts and opening each piece of the safety gear, lectured on the proper use of the equipment. After the lecture, the class began an open forum in which each crew member was encouraged to ask questions and clear up for himself and the group any problems which had not been made clear to him in the lecture.

Around the outside of the semi-circle of chairs were tables with opened sig-

in the order of its comparative importance, and indoctrinate the crew to remove the gear in accordance with the priority. Attention is invited to Flight Safety Bulletin 14-45 regarding Abandon Plane Procedure.)

A second period devoted to practical application was held at the plane. During this period the crew went to their crash landing positions, the co-pilot "talked the plane down," the pilot gave the orders "Abandon Ship," all hands broke out the rafts and loaded them with the gear which they were to take according to the abandon ship bill.

Classroom instruction, the lecture, demonstration and open forum were so spaced as to hold attention and interest of crew members. Practical application at the plane during the second period was enthusiastically entered into with the complete cooperation of all hands



ENSIGN I. LACKSLEEP

Moral: Be Physically Fit for Every Flight.

IN VIEW of the importance of the human factor in the operation and control of aircraft all naval aviators must be in proper physical trim for every flight. This aspect of Flight Safety rests primarily upon the pilot. It is obvious that periodic routine physical examinations cannot possibly guarantee daily variations from normal.

Temporary physical indisposition occurs to all men alike. Consequently, it is apparent that in any group of aviators there will be times when one or more of them will not be in proper physical trim for flight. One of the commonest causes for temporary physical deficiencies originates from the excesses of the "Night Before." In many instances in the past, lack of sleep alone has resulted in physical and mental reactions so retarded that pilots were unable satisfactorily to control their aircraft. In demanding flights, lack of sleep has resulted in lowering a pilot's normal "G" tolerance of four "G" to one or two "G," leaving him dimmed-out or blacked-out when his faculties are most urgently needed. In other words, poor physical condition is detrimental to combat efficiency. It decreases your resistance to anoxia, the bends, cold, black-out, and diminishes your chances for survival under emer-



gency conditions. Your life is really worth taking care of.

CASE I. An investigation of a recent fatal aircraft accident revealed that the pilot did not retire until 0500 on the morning of the accident and that he had been drinking alcoholic beverages during the course of the evening. The pilot reported to the squadron at 0700 after having breakfast, and manned his aircraft at 0745. His fellow pilots observed that he was in poor physical condition and they commented about it among themselves. However, the pilot took off on his scheduled hop, joined up, and then for no apparent reason left the formation and crashed.

The Aviation Safety Board is of the opinion that the pilot involved in this fatal accident was in an unfit condition to fly his aircraft and that at the time he left the formation he had either fallen asleep or had lost consciousness.

CASE II. Another investigation of a fatal aircraft accident revealed that the pilot was sick the night before, and did not eat any breakfast or lunch on the day of the accident. However, no information of his condition was given to anyone but his student friends who stated that the pilot decided to try to qualify in carrier landings. On the fourth carrier approach the plane spun in on the turn into groove, entering the water in an inverted position and sinking immediately.

Sincere thanks are extended to the Aviation Safety Board, Jacksonville, Florida, for this excellent specific accident-type sequential cartoon and subject case histories. The Flight Safety Section appreciates the safety value of cartoons and accident histories that are capable of rapidly portraying accident cause and effect. All Safety Boards are invited to contribute in the fulfillment of NANews phase of the Aviation Safety Program. Address your safety correspondence to Flight Safety, Room 1802, Navy Department,

Navy Offers M.I.T. Radar Course

Curriculum Includes Atomic Studies

A new peacetime curriculum for officers interested in electronics and atomic physics has been established by the Naval Training School (Radar) at the Massachusetts Institute of Technology. Virtually all the Navy's airborne electronic officers trained since mid-1941 learned about radar at M.I.T.

The new curriculum, a 20-month course leading to a bachelor of science degree in electrical engineering, is considerably longer and more comprehensive than the concentrated wartime curriculum that packed instruction into less than a year.

To prepare officers for possible atomic warfare, three different courses in atomic and nuclear physics are included in the curriculum. In electronics, the peacetime course will devote less emphasis to maintenance of current electronic equipment and more attention to principles common to all electronic systems. Consequently, graduates will be prepared to supervise maintenance of future electronic equipment with little additional training and to serve in a wide variety of other technical capacities.

Training will be conducted on the M.I.T. campus for students in the first two sections of the 20-month course covering basic engineering and pre-radar. For the final period of instruction in radio, radar, countermeasures and sonar, students will go to the Harbor Building. This structure, overlooking Boston harbor, provides a 13-story tower for antennas jutting from the roof.

Both USN and USNR officers, including naval aviators, with background in mathematics, physics and electrical engineering may apply for the training.

The peacetime course will be under the cognizance of BuPers with a commanding officer at the Naval Training Schools, M.I.T. In the wartime period, the school graduated 4500 naval officers, many of whom served in aviation billets. One of the important recent contributions of the school was the training of officer-enlisted personnel teams for operation and maintenance of the AEW (Airborne Early Warning) system. Between 1 March and 15 November 1945 the AEW section instructed 70 officers and 191 enlisted men in airborne and shipboard units.

NAS SEATTLE—In order to stay within the budget limitations made by Congress the A&R shop of this activity closed down the last day of June. Civilian employees were given either other positions on the station or transferred to other air stations operating in the area.—Sand Point Station.



Ruins of a catapult for naval aircraft at Yokosuka, now a Marine Air Base in Japan



Its engine removed and instruments gone, a broken float plane no longer will fly

PULLING FANGS OF JAP AVIATION

DEMILITARIZATION of the birthplace of Japanese Naval Aviation has been completed after seven months of constant labor by the demolition team of Marine Aircraft Group 31. Once a bristling defensive point for heavily-defended Tokyo Bay, Yokosuka Naval Air base has been chopped down to a landing field for U. S. Marine planes.

The demolition program removed all possibility of a militaristic Japan rising from the ruins of defeat to make any use of war material once located at the base. Pictures accompanying this article from MAG-31 show how well the Marines carried out their destruction with explosives and acetylene torches.

When the job was done, the Marines had destroyed 6 wind tunnels, 240 aircraft engines, 170 torpedoes, 71 Baka bombs and 10 tons of mines and explosives.

Destruction of these war materials nullified 25 years of war preparation by the Jap naval air arm. In 1920, the Japanese Navy first began development of its own aircraft and a suitable air base was found necessary.

Yokosuka Naval Base was at that

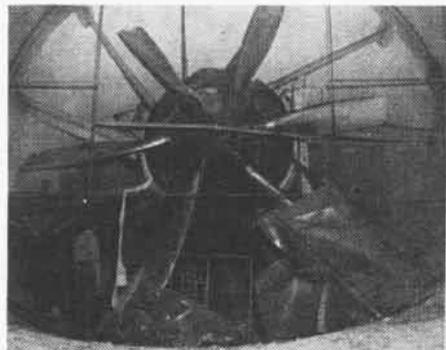


Boneyard of battered Jap aircraft engines in process of being destroyed by marines

time the oldest and most famous in Japan and it was here that the Navy established its experimental base. A huge program of land reclamation just north of the Naval Base was completed in 1926 and the First Technical Air Depot moved into its new home, Yokosuka Naval Air Base.

The study of foreign aircraft and advances in the field of float-type aircraft were the earliest developments. The latest and probably the most deadly were the Baka bomb and copies of German jet-propelled aircraft.

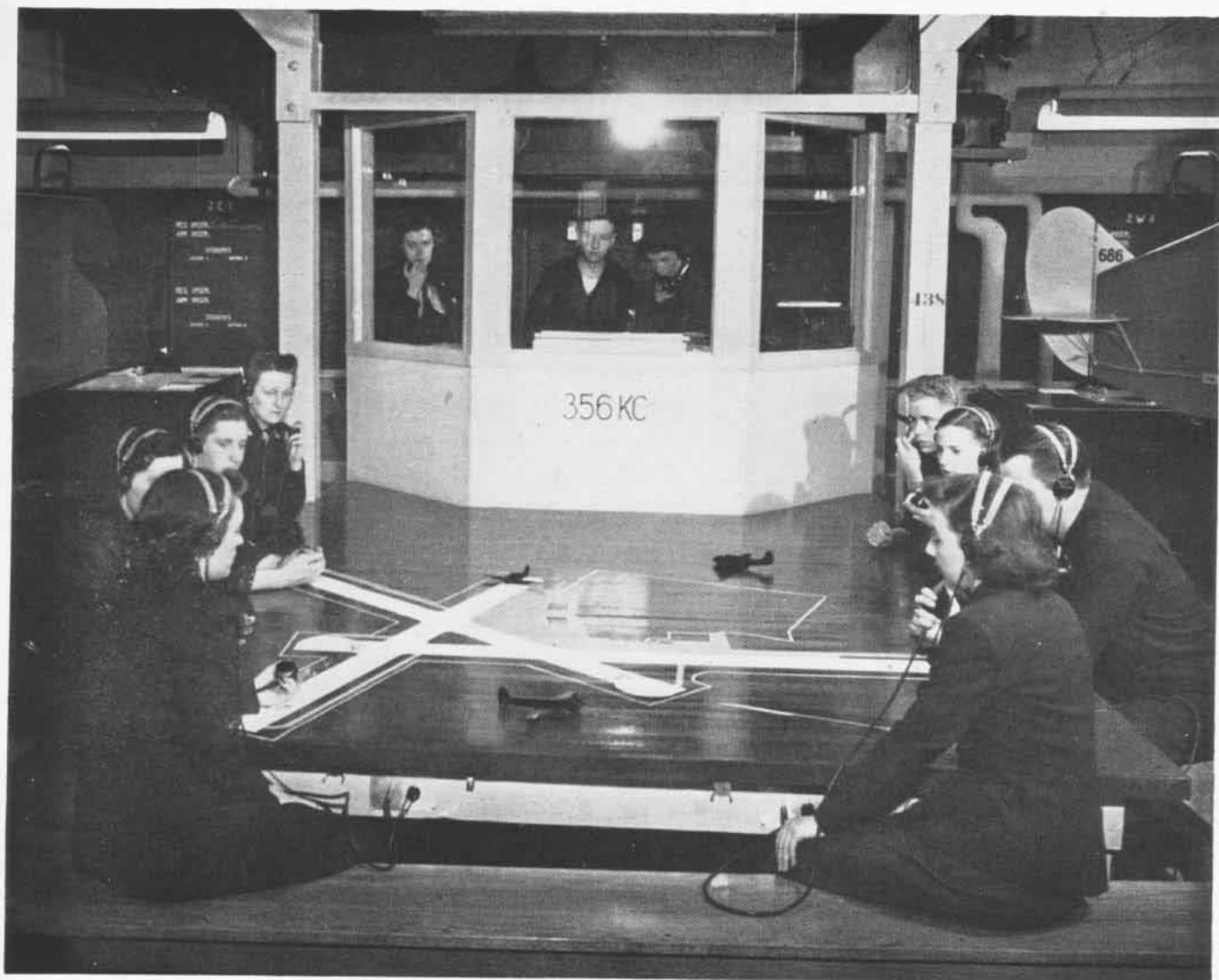
One of these, the *Shusui*, a rocket liquid-fuel plane, was a direct pattern of the Me-163. The *Kikka*, a twin-engined jet designed particularly for Kamikaze attacks, was a simplified version of the Me-262. Models of these were brought to U. S. for analysis by Navy technical air intelligence officers.



Propeller in one of the six wind tunnels destroyed by demolition teams at Yokosuka



This wrecked Jap Baka bomb will not end up on the deck of some attacking carrier



WARTIME CLASS OF WAVES AND ENLISTED MEN LEARN PROCEDURE USING MODEL AIRFIELD AND CONTROL TOWER AT ATLANTA SCHOOL

CONTROL TOWER OPERATORS

SUPPLYING adequately trained control tower operators to the Navy's aeronautical organization afloat and ashore is today one of the critical personnel problems faced by the Naval Air Technical Training Command.

The same school that trained 602 WAVE control tower operators and several hundred enlisted men, Marine WR's, Spars, and Naval and Marine officers for wartime duty is now training personnel for the peacetime Navy.

An activity of the Naval Air Technical Training Command, the control tower operators school at NAS ATLANTA, was moved in May to Jacksonville where it will operate as a part of the NATechTraCen organization. Classes of 33 enlisted men enter the school every two weeks for control tower operator training. Only members of the Regular Navy or Marine Corps or those persons having at least one year of obligated service are assigned.

A basic requirement is successful completion of the Naval School of Aviation Fundamentals at Jacksonville. BUPERS assigns personnel to the control tower operators school and supplies billets for all graduates.

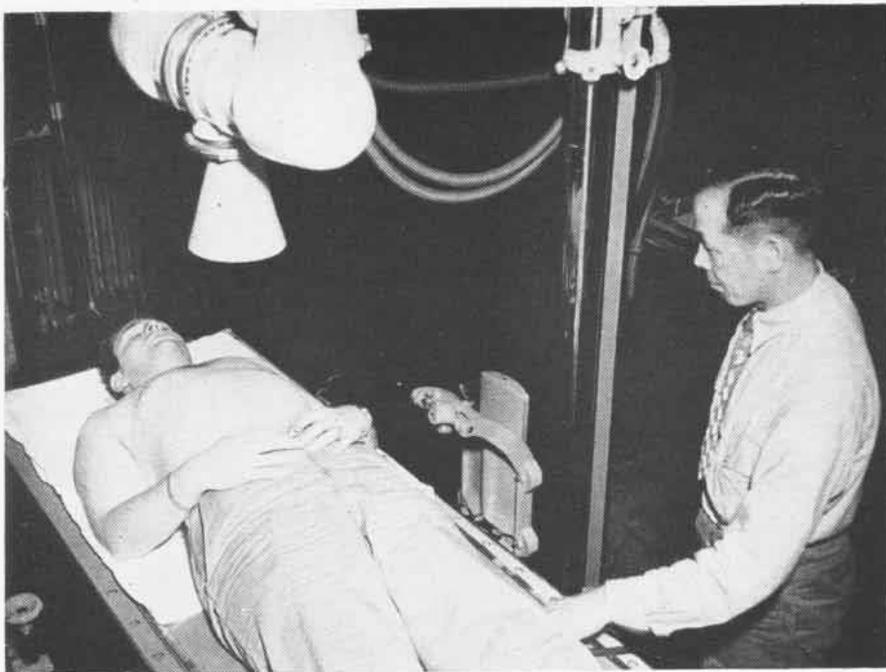
Virtually all reservists including the 600 WAVE control tower operators trained at Atlanta already have left the service or will have been separated by autumn. Many, as a result of their naval training, have qualified for civilian positions as control tower operators. During the war the CAA issued air traffic control tower operators certifi-

cates to graduates of the Atlanta course.

During the latter part of the war the control tower operators school at Atlanta worked in conjunction with the Link Instrument Trainer Instructors School. Equipment for the two activities was used together in simulating in the classroom airport and airway traffic control.

Minimum requirements for the control tower operators school include, besides the Aviation Fundamentals course, a general comprehension Test mark of not less than 55. Physical requirements include: hearing 15/15, eyes 20/20, and a voice that is clear unaccented and has no speech impediments. A high school education is a minimum. Applicants should be over 21 and be seamen or seamen strikers.

Control tower operators must master stiff ground school assignments including courses in aerology, airway traffic control, radio navigation, Link trainer work, airport traffic control, radio communications and code, Civil Air Regulations, recognition of service aircraft.



NEEDED X-RAY PICTURES ARE PRODUCED THANKS TO JAP TECHNICIAN AND HIS MACHINE

MAG 31 USING NIP TOOLS AS WELL AS JAPS

MARINE Air Group 31, now residing at Yokosuka Marine Air Base, has found occupation duty a bit more pleasant with the aid of technical and scientific instruments and personnel from the ranks of the Emperor's subjects.

With the aid of a Japanese technician of no mean skill, dispensary personnel have put to use a Nip-manufactured X-ray machine whose original consignment had been to the Jap Navy—now more in need of a bathysphere than an X-ray.

The machine operates on a 200 Kv power supply and resembles similar American equipment. The operation of the component Bucky-Plate Diaphragm, Fluoroscope, and Photo-

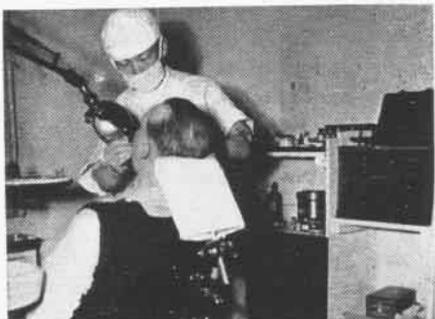
Fluoroscope has caused little difficulty in speed or flexibility of operation thanks to the diligence of the native assistant.

Sickbay has been aided in another way by addition of a Japanese dentist's chair. Until recently the group dentists operated the equipment, but demobilization has eliminated the dental officers from MAG 31's rolls.

Learning of the vacancy, a graduate of the Tokyo Dental College applied for the position and was hired merely for charting dentiform and cleaning the teeth. In time, however, as confidence in the Jap dentist increased, many of the MAG personnel asked for minor fillings and extractions to be performed.

The *Mag Rag*, base newspaper, is also published thanks to Japanese technicians and materials. Presses, cutting machines, stapling machines, and English type are all Japanese made.

Strangest of the elements responsible for the semi-weekly newspaper is the Jap staff of four printer's helpers who, never before experienced in printing work, carry out their duties without any knowledge of the English language.



YASUAKI SEKI DOES MARINES' DENTISTRY



JAP PRINTER'S DEVILS SET IN ENGLISH

Naval Aviation is Still Global Many Overseas Bases Continue Operating

Scores of the Navy's advanced bases, set up during the war on far-flung Pacific islands, African deserts or Caribbean areas, have been closed down but there still remain many aviation activities in distant places.

Some are only under caretakers, while others are fully operational and probably will remain so. A list of advanced bases, compiled by CNO Base Maintenance Section as of 15 July, shows the following spots about the world where Naval Aviation is still active (and where somebody is still getting duty).

NAF Antigua, B.W.I.; NAF Georgetown, British Guiana; NAS Coco Solo; NAF Galapagos Island; NAF Great Exuma, Bahamas; NAF Havana, Cuba; NAF Jamaica, B.W.I.; NAF St. Lucia, B.W.I.; NAS San Juan, Puerto Rico.

NAF Azores Islands; NAS Port Lyautey, Fr. Morocco; NAF Tutuila, Samoa; NAB Cebu, P.I.; NAB Samar, P.I. NAB Manila (Sanglepoint), P.I.

Puerto Princessa, Palawan, P.I.; MCAB Tientsin, China; NAF Argentina, Newfoundland; NAF Bermuda; Seaplane Facility Akutan Harbor, Alaska; NAF Atka I., Aleutians; NAB Attu, Aleutians; Landplane airfield Bettles, Alaska; NAB Dutch Harbor, Alaska; NAS Sitka, Alaska.

NAS Barbers Point, Hawaii; NAF Canton Island; MCAS Ewa, Hawaii; NAS Hilo Bay, Hawaii; NAF Honolulu; NAS Johnston Island; NAS Kahului, Hawaii; NAS Kaneohe Bay, Hawaii; NAS Midway Island; NAF Nawiliwili, Hawaii; NAS Palmyra Island; NAS Pearl Harbor; NAS Puuene, Hawaii.

NAB Ebeye, Kwajalein; NAB Eniwetok; NAB Guam; NAB Kwajalein; NAB Peleliu; NAB Roi-Namur; NAB Saipan; NAB Truk Island; NAB Wake; NAB Okinawa; MCAS Omura, Japan; NAB Yokosuku, Japan.

Men's Families Move to Majuro Palm Shaded Huts Form Modern Village

NAB MAJURO—Located near the beach on the seaward side of the island and under cover of shady coconut palms is a modern village which will house the families of 14 men who have succumbed to the lure of the tropics. The men have submitted applications to have their families shipped to this spot which the local press agent calls one of the most attractive for naval homesteaders in the Pacific area—almost like being at home.

The ground work began several months ago when the first plans for a family housing project were made. Since then the men have exhibited much talent and ability during free time in the erection of their future homes. The homes consist of prefabricated Dallas huts placed side by side to form three and four room buildings.

Each house is neatly designed and equipped with modern conveniences which would be the envy of families back in the states. Hot and cold running water, shower facilities, electric stoves and ice boxes, sinks and attractive household furniture will be enjoyed by all families living on Majuro.

Navy Seeks 2,000 Wave Recruits

Former Members Are Asked to Reenlist

The Navy wants 2,000 former WAVES to reenlist for service until 1 July 1947. Total quota for the Women's Reserve until that date is 5,500, the difference representing WAVES who are still in and who are remaining on duty.

Former WAVES in the following 14 rating groups are needed to fill the quota for the coming year: seamen, hospital apprentices, pharmacist's mates, storekeepers, storekeepers (V), telegraphers, parachute riggers, aerographer's mates, aviation machinist mates (I), specialists (T)LT and (T)LCNT, specialists (Y), specialists (G), and specialists (V).

Action is pending in Congress to establish a peacetime Women's Reserve. During the past four years there were 85,000 WAVES filling billets in United States and Hawaii. The last women assigned to Hawaii were returned to continental stations in August.

New director of the WAVES is Joy Bright Hancock, recently promoted from commander to captain to head the organization. Mrs. Hancock was editor of NAVAL AVIATION NEWS in pre-war days when it was called BUAE NEWS LETTER.

Seaplane Tender on Icy Cruise

Operation Nanook Explores the Arctic

A seaplane tender and PBM's with deicing gear are among the Naval Aviation units participating in Operation Nanook, a three-month Arctic cruise expected to return in October. The Norton Sound, AV-11, famous for its Pacific operations during the war, is accompanying the joint U.S. Navy-Coast Guard and Canadian project.

Purpose of the operation is to amplify existing knowledge of navigational and weather conditions and provide routine training for personnel. Planes will be used to inspect ice conditions ahead of the cruise ships. Two ice-breakers are also accompanying the trip.

The operation is the third in the Arctic zone recently, the U.S.S. Midway having cruised off Greenland last winter while Operation Muskox in central Canadian plains tested equipment and planes in land maneuvers.

MCAS EL TORO—Closing down of the A&R department leaves this station with an excellent plant for training men to work on Marine aircraft, as was done prior to the war. BUAE and MarCorps both have approved the idea, which makes possible good utilization of all equipment left here.

Restricted

IAP Success Hinges on A&R

NAVAL A&R shops, no matter what their size, hold the key to the success of the Integrated Aeronautics Program. On their ability to turn out loads which approach wartime peaks hinges the entire peacetime aircraft program now being set up by CNO.

Originally developed by the Radford Board in 1944, the IAP served to get new combat planes to areas where they were vitally needed. The program is now being streamlined to peacetime conditions in a senior informal board appointed by CNO. The system is dictated by economy and involves the storage of large numbers of aircraft.

Because of poor maintenance resulting from demobilization, many of these aircraft will have to go through A&R before storage. Operating life of combat and training planes has been extended by one period more than in the original plan, and these planes will require two major overhauls before retirement and salvage.

New aircraft will go directly from the factory to the fleet. After this tour of duty, they will go through overhaul and be sent to the operational training commands and fleet reforming squad-

rons. The large pool of aircraft left over from war production will be preserved for future use.

These stored aircraft will supplement new production until June 1950 and will include USNR and War Reserves. Planes will normally have two tours of duty between overhauls. Training units will get new types four years after they are assigned to the fleet.

Planning directives concerning overhaul of aircraft, pipelines and storage will be distributed soon. Commanding officers and all persons connected with A&R facilities must realize the importance of the program in order to insure its success, according to the board.

The senior board, headed by Rear Admiral T. S. Combs, appointed subboards in DCNO, BUAE and Supply to assist in arriving at a well balanced program. Representatives of all fleet commands testified in order to insure realistic results.

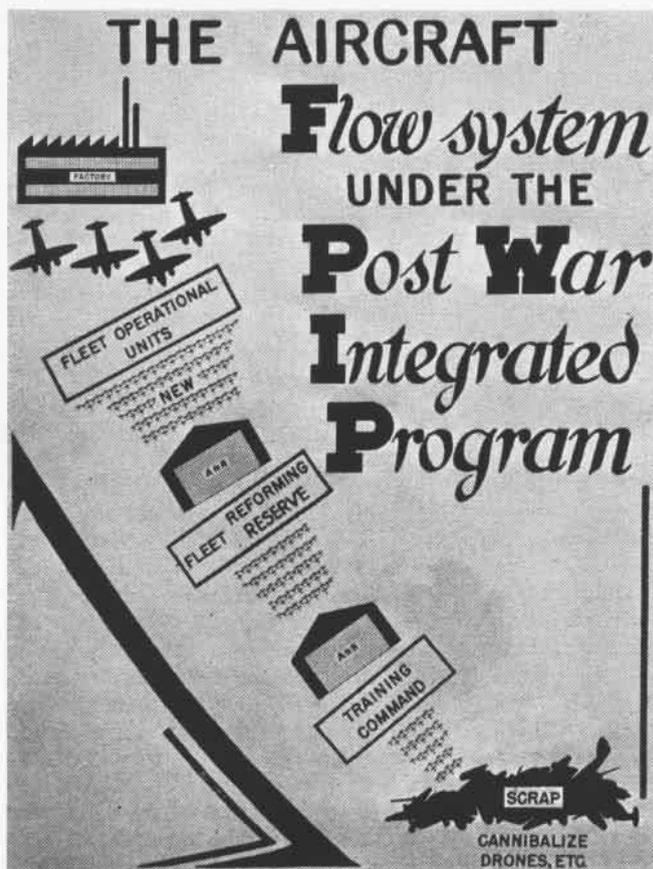
Under present tentative plans air groups will assume responsibility for aircraft, maintenance and operational availability. Fleet Air support squadrons will replace the former CASU, PATSU, CASD, SOSU and HEDRON.

Air groups and squadrons will become self-supporting for short periods of time.

The FASRON will permit shore-based logistic support for Fleet Air Units, and will be semi-mobile units stationed at a home port. This system will put enlisted men back into squadrons where all work will be under the supervision of squadron C.O.'s.

Assisting Rear Admiral Combs on the IAP board are Brig. Gen. W. L. McKittrick, USMC, Commodore J. E. Wood (sc), Capt. E. W. Clepton. Comdr. J. D. Arnold is recorder for the board.

The FASRON will be able to perform short period line maintenance.



Under tentative peacetime IAP, airplanes undergo two tours of duty between overhaul; storage of aircraft will increase A&R loads

CHUTE CHAT

1. In making a parachute jump over water you should:

- a. slide out of the chute at an altitude of 10 to 15 feet.
- b. *not* unbuckle any harness straps until you are in the water.
- c. remain in your harness at least until contact is made with the water.
- d. Inflate your life jacket before entering the water.

2. When the rip cord of a standard Army-Navy parachute is pulled, the canopy is pulled free of its container by:

- a. bungee ejectors.
- b. steel springs.
- c. the pilot chute.
- d. its own weight.

3. The primary purpose of a parachute is to decelerate a falling body to a velocity of about:

- a. 20 feet per second.
- b. 10 feet per second.
- c. 10 feet per minute.
- d. 20 feet per minute.

4. Before each flight the pilot should lift the inspection flap of his parachute and check the

- a. shroud lines for knots and snarls.
- b. canopy for mildew or dampness.
- c. locking pin for corrosion, bends and safety tying.
- d. springs ejectors for rust.

5. In bailing out of a single-engine plane you should:

- a. leave the plane in a headlong dive.
- b. leave the plane feet first.
- c. dive for the leading edge of the wing.
- d. stand up in the cockpit and pull the rip cord.

6. The **FIRST** thing to do after you bail out is to:

- a. pull the rip cord.
- b. make sure that you are clear of the airplane.
- c. double your body up.
- d. straighten your body out.

(Answers on Page 40)

VMF-115—A new use for worn-out airplanes was discovered by this squadron during early days of operation in the Peiping, China, area. The squadron was hard up for someplace to store its parachutes when not in use so it "requisitioned" an abandoned Army *n5c-1*. Parachute riggers installed a small coal stove in the forward end and also built a staircase on the aft section. The makeshift "building" worked successfully until Quonsets were put up.



NEW MODEL SIKORSKY HELICOPTER HOVERS OVER FLIGHT DECK OF SAIDOR AT BIKINI

FLYING WINDMILLS ON SAIDOR

U.S.S. SAIDOR—Preliminary operations of four HO4S-1 helicopters assigned to the *Saidor* for the atom bomb tests indicated the rotary wing aircraft have many tactical uses while operating from a carrier deck.

A few of the useful purposes to which they can be put include ship-to-shore liaison and transportation without disturbing deck spot, air/sea rescue, photography, and miscellaneous utility.

There are several factors which will influence use of a helicopter aboard Navy ships. Size, maintenance, performance and reliability are important. It should be limited in size by dimensions of the ship's handling equipment, cranes, and elevators. Main rotor blades must be as quickly and efficiently folded as the wings of a carrier-type aircraft.

It should be easily maintained by qualified fixed wing plane crew personnel with limited special training. The helicopter should be capable of operating from a restricted portion of the flight deck or other assigned area of the ship, with the required payload, under normal conditions of wind, temperature and weather. It should be as reliable as any Naval aircraft and be fitted with special equipment for shipboard handling.

Operational tests to date show the helicopter has utility, yet has its limitations also. The special flight characteristics are not yet consistently available. The ideal helicopter for shipboard use should be able to take off and ascend vertically for at least 500 feet, hover in high outside air temperature at altitudes up to about 1,000 feet and cruise

along at least at 100 miles an hour.

Such a helicopter should offer interesting possibilities as a VO-VS type aircraft for battleships, cruisers and other ships of the Navy. It could eliminate need for catapults, cranes, nets and other seaplane handling equipment.

The ability of the HO4S-1 to take off, operate and land from and in restricted areas makes it useful for installing instruments on small atolls otherwise difficult to reach. Moreover the speed range, 0 to 100 mph, permits it to approach the scene of the atom bomb explosion at slow speeds with sensitive instruments aboard to determine when radioactivity has subsided. After that, other planes and surface craft can approach for closer observation and inspection.

Squadron VX-3 was recently commissioned at NAS FLOYD BENNETT FIELD to expedite the evaluation and development of helicopter operating techniques.

The development program will consider the possibilities of using the flying windmills as a supplement to conventional observation and scouting planes aboard battleships and cruisers. This would eliminate dangerous and time-wasting recoveries from the water and decrease the need for catapults.

Another potential use being investigated is ship to ship and ship to shore liaison. Because of its hovering characteristics, the helicopter would only have to land on the parent vessel. Destroyers would no longer be needed for minor deliveries between major ships, and hazardous and time-losing maneuvering to get alongside would be eliminated.

Barin Link Operators Go Flying

Real Flights Give Waves Air Training

NAAS BARIN FIELD—Link trainer operators at this station get practical flight training along with their regular work, to fit them better for their jobs.

The navigation department worked out several problems based on flights from Barin to Jacksonville, Tallahassee or New Orleans. Specialists (T) under flight orders are briefed carefully before each hop in Squadron VN5-M's new SNB-2C. They are given the latest charts and weather information available, then work out flight plans.

The LTO's board the plane with earphones, charts and Mk IIIA plotting boards and track the plane through the cross-country part of the flight. After this is completed, the pilot demonstrates orientation, let-downs, and radio beam bracketing.

Giving the operators practical flight work gives them a keener insight into problems facing the pilot when he tries to fly Links. All pilots here fly two hours a month in latest model Links, so the quality of training obtained is expected to improve.

Squadrons-Ships-Stations

Are you getting too many copies of NAVAL AVIATION NEWS? Not enough? In adjusting its circulation to meet the needs of post-war Naval Aviation, NANews wants to be sure that copies are not being wasted. Effort is being made to keep circulation abreast with complement changes. A letter to Chief of Naval Operations, Naval Aviation News, Washington 25, D.C., will raise or lower copies sent you.

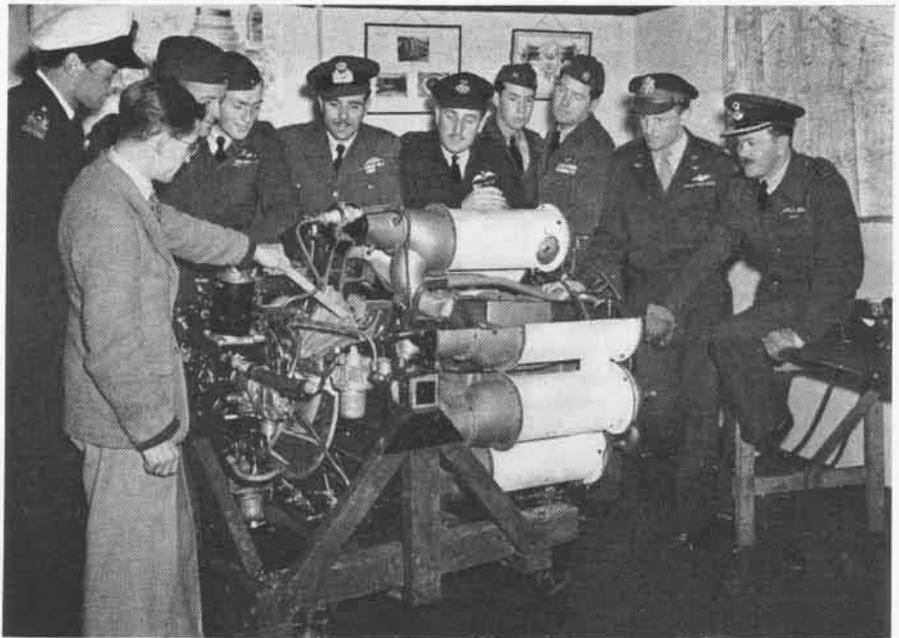
Simulates Attack on Jap Fleet

Squadron Smashes 'Enemy' Task Force

VP-123—This squadron in participation with the Army-Navy exercises sent 7 planes on a simulated attack of an enemy task force. Five planes took off at 0500 in conjunction with 5 planes from VP-124 and flew searches in 10-degree sectors for a distance of 500 miles.

After the simulated enemy was spotted, four of the ten planes rendezvoused at a predetermined point and made two successful simulated attacks on the enemy force. One attack was a high level bombing and the second was low level strafing and bombing.

Both attacks were in at the kill before enemy interceptors could clear the flight decks. The other two squadron planes were used to track the enemy task force from a safe distance. Radar, Loran, and IFF were used. A "well done" was received for the exercise.



WILSON (EXTREME RIGHT) AND NAVY PILOTS (CENTER) SEE GLOSTER METEOR JET ENGINE

NAVY MEN IN BRITISH SCHOOL

TWO U. S. NAVAL FORCES aviators and an Army Air pilot are among the students at the British Empire Test Pilots School near London, England, the only school of its kind in existence.

Called "one of the most futuristic, expensive and cosmopolitan schools in the world," it is operated by the R.A.F. and commanded by Group Captain H. J. Wilson, holder of the world's speed record of 606 mph in a Gloster Meteor. Navy pilots enrolled are Lt. Robert G. Gilbin of St. Paul, Minn., and Lt. Warren P. Smith of Atlanta. The Army pilot is Col. James J. Stone of Old Tappan, N. J. Two Navy pilots already have graduated from the course.

Besides the Americans and English in the school, pilots from France, Holland, Norway, China, Greece, Belgium, Australia, New Zealand, Canada and Union of South Africa also attend. Cost of the training course is £10,000 a student.

Students have available at the school 30 late-type aircraft, including jet Meteors and Vampires, new four-engined Lincoln bombers, Spitfires, Mosquitoes, Tempests, Fireflies and Oxforfs, plus U. S.-built Harvards and Dakotas. They fly present-day models so they can learn techniques which they can use in testing future designs of fighting aircraft.

In order to enter the course the student must pass rigid requirements, such as being able to withstand altitudes of 50,000 feet, speeds of 600 mph and dive pullouts of six to eight G's. They must be well-grounded in English, mathematics and aeronautical engineer-

ing and be pilots of "above average" rating. Many have had previous testing or teaching experience.

In connection with speed flying, Group Captain Wilson predicts that his record of 606 mph. will be broken "by the end of the year." He also believes that jet power plants are the coming thing, and that "within five years there will be very few aircraft that aren't basically jet."

THE TRAINING course consists of seven months at the school, a month at the Royal Aircraft Establishment and another visiting firms in the aircraft industry. In the first half of the course the pilot is instructed in principles and practice of current performance tests. He gains a reasonable understanding of all fundamental aerodynamic problems and appreciates why certain tests are carried out in a particular form.

A new feature of the course is the much greater amount of instruction in gas turbines, jet aircraft and high speed flight. In the second half of the course the student goes into such things as spinning trials, maneuverability tests, stalling speeds, cockpit layout and comfort.

During the course general subjects of high altitude flight, photography and its application to test operation, armament test work and civil aircraft are covered by lectures. At the end of the course a competition is held to select the best student. Pilots fly a new-type plane and write a handling report on it telling how it functioned.

NEW RADAR SET CV TYPE APS 19, TO GO TO FLEET

A NEW operational-type airborne radar, AN/APS-19, will make its debut in the fleet shortly. Its replacement of the CV plane type APS-4 search gear and night-fighter APS-6 is due to the lighter weight of the new electronics piece.

APS-19 is designed to be carried as a nacelle on a wing bomb rack, and, therefore, its external appearance more nearly resembles the APS-4 gear. Also like the APS-4 it is quickly removable and may be jettisoned in a short while leaving but a few pounds of equipment in the plane.

Lighter weight is secured in the APS-19 through improved electronic circuits and components, especially the tubes, packaging, and use of magnesium for mechanical parts wherever possible.

The ability to perform both search and intercept functions is a result of the new antenna design.

Both types of "scan" employed by APS-6 and APS-4 will be active in the new gear. The spiral APS-6 scan is improved by combining it with a greater average power output which results in greater intercept range.

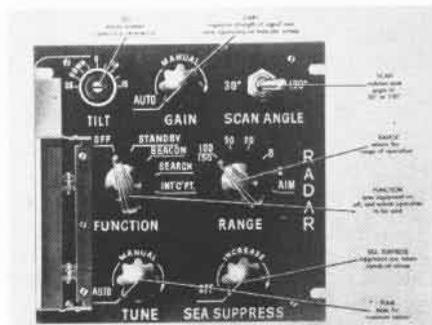
The sweeping APS-4 scan is modified to cover the area which extends from level with the plane to almost directly below the plane without tilting the antenna. Net result is improved search coverage and mapping without con-



COMPONENTS OF APS-19 MUCH LIGHTER

stant attention on the part of the operator as well as improved ranges on intercept functions.

Presentation on the two main functions is similar to that used on the older



CONTROL PANEL IS SIMPLE MAKE-UP JOB

equipments excepting that the gun-sight (Blind-firing) is the new "V" scan.

APS-19 will be processed so as to be available as stocks of the APS-4 and 6 are deleted. Some of the new equipment will be ready soon for fleet use.

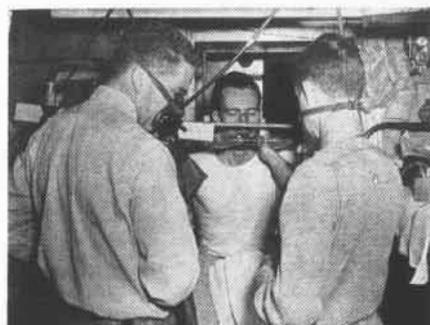
Pensacola Studies Oxygen Lack

Four Men Leave Chamber on August 1

NAS PENSACOLA—How would you like to fly at 29,000 feet without oxygen? Chances are you wouldn't last long, but four Navy volunteers spent more than a month at gradually increasing altitudes, figuratively speaking—they lived for five weeks in the high-altitude pressure chamber.

The test started on 28 June. The men were "raised" gradually from sea-level air pressure to the rarefied oxygen of 29,025 feet. An ordinary man would lose consciousness in less than five minutes at 27,000 unless he has supplemental oxygen, although experienced mountaineers have become used to it.

Since future wars probably will involve higher altitude flying than ever before, the test was launched here to find out some scientific facts about how the human body adapts itself to slowly increasing anoxia, or oxygen lack. Tests made during the month included analysis of the CO₂ and oxygen content of



TEST McNUTT'S WIND AFTER BIKE RIDE

the blood, cardiac studies during rest and exercise, metabolism, oxygen consumption, water and food intake.

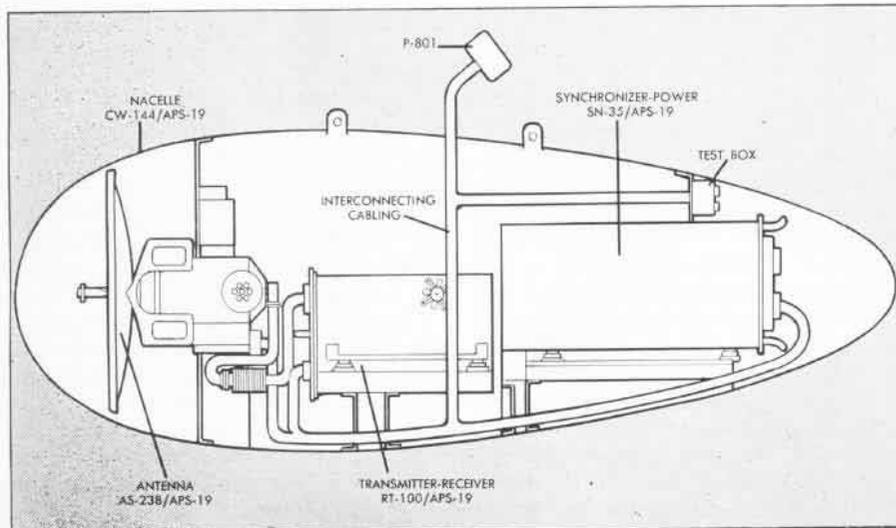
Men who made the test were Lt. (jg) Walter McNutt, Carlton Morris, HA1c, Earl D. Wilkins, HA1c, and Horace C. Hertel, PhM2c.

Baggage 'Bomber' Gets Off Easy

This One Is Hard to Believe, Eh Mates?

VB-82—There ought to be a moral in this yarn, but we can't think of it. A pilot was ferrying an SB2C-5 and put his personal gear in a canvas sling in the bomb bay. Near King City, Calif., while at 8,000 feet altitude, the bomb bay doors worked open when the hydraulic system failed. His val-a-pack bag fell out.

A month later a farmer reported finding the green bag while bulldozing one afternoon. He wanted to know how in 'aitch' it got there. Much to everyone's amazement, all items in the bag were in good condition, including an alarm clock which needed only a little winding to make it run again.



CUTAWAY OF NACELLE ACCENTUATES COMPACT STURDINESS OF GEAR ENCLOSED WITHIN



IN THESE DAYS OF FEWER MECHS, PILOTS MUST LEARN TO REPAIR THEIR OWN PLANES

Pilots Learn to Maintain Planes

WITH THE number of experienced maintenance men rapidly dwindling, many squadrons and air groups are giving pilots training in servicing their own planes. Line checks, inspections and even actual maintenance are becoming regular duties of pilots, both aboard carriers and at many air bases.

The system has worked so satisfactorily that many squadrons have sent in procedures to NANews that may be adaptable to other unmanned units:

● **VB-17**—Pilots of this squadron were assigned to check crews and the different CASU shops for five working days each, in two 16-pilot groups. These pilots were relieved of all squadron duties, and their work was accomplished by the group awaiting its turn in the hangars.

Eight pilots were assigned to check crews. An experienced CASU AMM was given either two pilots or one pilot and a striker as assistants. This way several extra crews were formed from the AMM's the CASU unit has at present.

Checks were completed as rapidly as those by all-CASU crews. VB pilots took active interest in getting the planes re-

paired. Usually in other squadrons, pilots have been assigned to fully-manned crews to learn how to check the planes they fly. Crews were practically always well organized and there was nothing for a pilot to do except stand around all day with a rag in his hand and a bewildered look on his face.

In this command 22 checks were completed in the 10 working days that pilots worked in check crews.

Four pilots were assigned to the hydraulic shop, but it was found that after one-half day's work the shop could keep only two or three busy. The remainder were sent to engine change.

Two pilots in the metal shop were able to aid crews in completing bureau changes in several downed planes. The squadron benefited considerably in the rapid repair and completion of checks, and in the experience gained by the pilots.

● **VF-20**—Greater cooperation between plane captains, line crew and pilots has been promoted in this squadron. Each week a squadron officer holds an informal discussion with the line crew on plane handling and general operations.

The officer presents the mistakes of the

crew observed by the pilots, and invites suggestions from the plane captains as to how pilots may help to remedy these errors. The system has worked well for VF-20.

● **VBF-82**—Lack of personnel in the CASU to maintain planes of this squadron has limited flying time, so that greater emphasis has been placed on a safety program for all hands.

First step was to indoctrinate all pilots in proper maintenance and making of inspections to insure it. Classes were held in which pilots went through complete aircraft inspection under an engineering chief. Lectures were given on various systems of the *Corsair*.

In connection with the maintenance program a system of six inspections for each aircraft was organized. The first is a pre-flight inspection made by the plane captain and recorded on the yellow sheet. Then the pilot makes a pre-flight inspection and signs the sheet. He also makes a post-flight inspection and notes discrepancies. Once a week an interim pilot's inspection is made, following a squadron inspection form. Pilots really get inside and see everything on or in an aircraft.

Fifth and sixth inspections are conducted by a permanent squadron inspection crew headed by an engineering officer. This crew inspects planes before and after 30- and 60-hour checks and notes whether discrepancies were corrected.

The second step in the safety program is more emphasis on proper briefing and planning of flights.

The third step was revision of all ordinance safety precautions into a comprehensive coverage of all phases of aircraft ordinance and munitions. These revised safety precautions were read by all pilots and the latest word obtained.

● **VB-17**—This squadron has adjusted its maintenance problems to meet the post-war situation of "not enough men" by having its own aircrewmembers make minor repairs on aircraft. These men act as plane captains and taxi signalmen and, assisted by three CASU line maintenance men, make all minor repairs such as tire changes, mixture control readjustment, changing of brake drums, replacement of push rod housing hoses, changing spark plugs and starters and minor radio repairs. Plane availability was raised from 36% to 61% by adopting this system.

● **MCAS El Toro**—Pilots these days have to do more than just fly planes. Demobilization cut personnel down so much that many are assisting enlisted men on the line maintaining aircraft. This is an excellent plan—it gives the pilot a chance to learn first hand the difficulties encountered in keeping their planes in the air. It is expected they will be more careful of their aircraft in the future with this training.

Bronze Powder Blinds SBW Pilot

CASU-22—Because it has been having trouble with breakage in flight, this activity has discontinued use of the Mk 2 slick marker bomb and gone back to the Mk 4 smoke light or drift signal for practice bombing and strafing on water.

The slick marker bomb, made of a clay composition, weighs about two pounds and contains a cupful of bronze powder. When released from a plane in flight, it breaks up and the powder spreads over the water and makes a good target. However, it has the disadvantage of being easily broken, with the consequent bad after effects.

Recently, an SBW had two such bombs in the pyrotechnic compartment, starboard of the rear seat. When the radioman reached down to remove the bomb for throwing overboard, it accidentally hit the side of the container due to the rough air. The bomb broke and bronze powder blew all over the rear compartment and into the pilot's compartment. Dust blew into the pilot's eyes, and could easily have blinded him. It covered the canopy, reducing visibility to zero. When the hatch was opened, the air turbulence caused more dust to penetrate the air.

Bearcat Stabilizers Reinforced

CASU 22—Continuous difficulty has been encountered in maintaining equipment on the F8F *Bearcat*. These planes have been returning from various gunnery hops with inboard stabilizers damaged by ejected links from both inboard and out-board guns.

The skin is sometimes penetrated and damage also occurs in the center flap hinge fairing and on the flap gap strip. Damage is not caused in isolated conditions, but occurs generally on strafing runs on towed sleeves and at various rates of speed.

Present corrective measure have proved inadequate. Forced link ejection is one; reinforced stabilizers is another.

This unit has also tried to solve the problem by stripping the fairing and bomb rack from the wing to provide a more even flow of air over the plane surface. A link chute similar to the one presently used on F4U type aircraft has also been tried. The chute extends approximately one inch below the wing surface.

► *BuAer Comment*—The contractor has been requested to prepare a service bulletin for the installation of a steel strip over the leading edge of the stabilizer to prevent it from being damaged by ejected .50 caliber cartridge cases. This will be a temporary fix pending development of a permanent remedy. A *BuAer Aircraft Bulletin* will be issued upon receipt of a service bulletin from the contractor.



GUARD ON SWITCH KEEPS FINGERS OFF IT

Guard Protects Ignition on F7F

Service activities have reported that the starboard ignition switch of an F7F-3 aircraft has been thrown accidentally to the "off" position by the pilot's hand when the landing gear was raised on take-off.

To preclude a recurrence of this accident, an ignition switch guard was designed and installed as shown in the accompanying photograph from MCAS EL TORO. *BuAer* recommends that all activities operating F7F aircraft install a similar guard to prevent further difficulty of this type.

Drill Press Cleans Spark Plugs

NAS MOFFETT FIELD—The A & R spark plug department has devised a new method of cleaning the ceramic barrels of spark plugs. Using a small nylon brush in a bench drill press, the dirt deposit from the harness filler is broken loose by the rotary action of the brush. The brush is dipped in alcohol after each plug is cleaned. One man-hour per 300 plugs is saved by this method.

Radar Is Unaffected by Climate

VMF(N) 533—Operating in climates ranging from the dry heat of El Centro to the high humidity of Okinawa and the cold of a North China winter, this squadron has had no difficulty with its AN/APS-6 radar gear.

The dual VRF ARC-1 radio installation has proved very satisfactory also, but continuous trouble has been encountered in keeping engine noise in the radios to a minimum.

► *BuAer Comment*—Application of P & W R-2800 Engine Bulletin 113 and TO 99-45 should reduce radio interference from the ignition system considerably.



F4U's Pylon Causes Buffeting

VBF-81—During rocket and glide bombing runs in excess of 220 knots this squadron found that the normal air flow under the wing of the F4U-4 was broken up by the belly tank and pylon and caused unusual pressure on the under side of the pilot's step in the right inboard wing flap.

Fairings were installed on the pylons and a metal plate was attached to the underside of the step in the wing. The technical representative of the Chance-Vought Corporation stated that the company in the future would make changes in the Pylon to remedy the situation.

► *BuAer Comment*—Attention of all F4U flight and maintenance personnel is invited to the following Bulletins on buffet characteristics and pylon maintenance:

F4U Aircraft Bulletin 158—"General-Bucking and Yawing with Droppable Fuel Tank or 1000-pound Bomb Installation on a Pylon."

F4U Aircraft Bulletin 222—"General-Buffeting and Control Difficulties with Various External Stores Installed."

F4U Aircraft Service Change 227—"Wings-Center Section-Inboard Flaps and Flap Gap Closing Door, Reinforcement of."

F4U-4, Chance Vought Service Bulletin 158-1—"Armament Provisions-Center Section Pylon Fairings, Strengthening of."

F4U-4, Chance Vought Service Bulletin 158-8—"Wing-Center Section Pylons-Mark 51 Bomb Rack Adapter, Installation of."

A new Mk. 51 Pylon is planned for production in the near future.

Plotting Board is Too Clumsy

VBF 81—Pilots have expressed much dissatisfaction with the present arrangement of the plotting board, both stowed and in use, in the F4U-4.

Several airmen have produced their own "Rube Goldberg" boards, including small knee-pad type boards.

► *BuAer Comment*—The F4U-5 is coming out with an improved chartboard design, which should solve the problem for all pilots.

Tunnel Window Aids Rec Photos

VT 89—This air group has had excellent results in photographic reconnaissance using the K-20 camera through photographic ports installed in the tunnel windows of the squadron's TBMs.

This installation allows free access for the camera eliminating the usual troubles of scratched or dirty windows.

The port is a four inch hole cut in the center of the tunnel window with edges reinforced inside and out with a three-quarter inch aluminum strip fastened to the plexiglas by bolts one inch apart.

Four of the bolts are mounted with wing nuts to hold a one-quarter inch thick plexiglas cover for the opening.

WATERPROOFING OF SONO-BUOY SWITCHES

THE NAVAL Research Laboratory at Anacostia has conducted tests of several methods of waterproofing switches on the AN/CRT-1B expendable radio sono-buoy to prevent corrosion and operational failure in the air/sea rescue program. During the war the buoys were used to help combat the U-boat campaign.

Consideration was given to the possibility of enclosing the entire switch and operating mechanism in a waterproof container. However, this would demand considerable redesign of the present top cap, and the method was subsequently dropped.

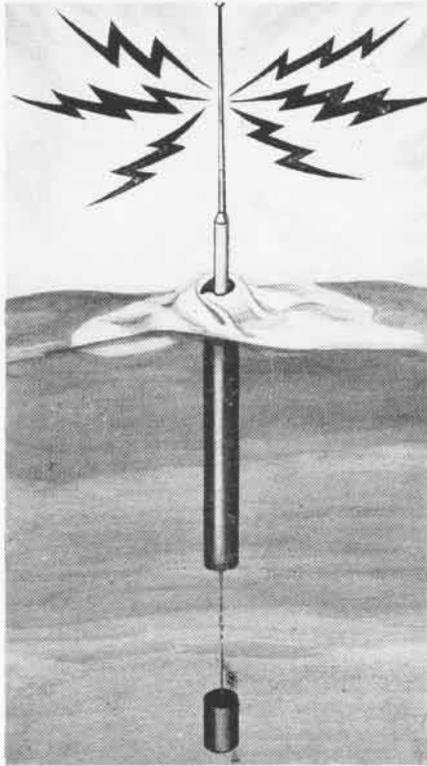
A search was made to find a replacement switch that was either waterproof or could be readily enclosed, but no satisfactory substitute could be found in standard switches.

Packing the entire switch with Dow Corning ignition compound was tried and though this would appear to be a logical solution, it was found that when sufficient compound was introduced to protect all the elements of the switch, the viscosity of the substance was so great as to prevent operation when the pin was pulled.

The prevention of rusting of the several springs, in particular the internal contact springs, is considered as important as inhibiting corrosion of the contacts. This indicates that whatever is introduced into the switch to seal out moisture must reach all the inner recesses of the assembly.

The waterproofing technique found to be the most satisfactory in meeting all the requirements by Naval Research Laboratory was a thorough lubrication method.

The switch mounting screws are removed from the sono-buoy and the unit withdrawn from the top cap to the limit of the leads. With the buoy resting horizontally, the switch unit is



A PARACHUTED SONO-BUOY IN OPERATION

flushed thoroughly with benzene or non-leaded gasoline. This is most easily accomplished by the use of an oil can.

After complete drying, a mixture of Navy lubricating oil ± 1120 to which has been added 3%, by weight or volume, of zinc naphthenate, is applied to the switch. It is necessary that this mixture gets to all internal parts of the unit switches.

Excess oil is then permitted to drain from the switch before reassembling in the buoy cap.

Zinc naphthenate, compounded with the lubricating oil, merely acts as a wetting agent to bring the oil into close contact with the metal switch surfaces.

If the agent is not used there is a probability that moisture can enter between the oil and metal surfaces.

The initial flushing with benzene clears all surfaces of any foreign material that may prevent the oil from freely flowing over all surfaces. Carbon tetrachloride is not suitable for this purpose.

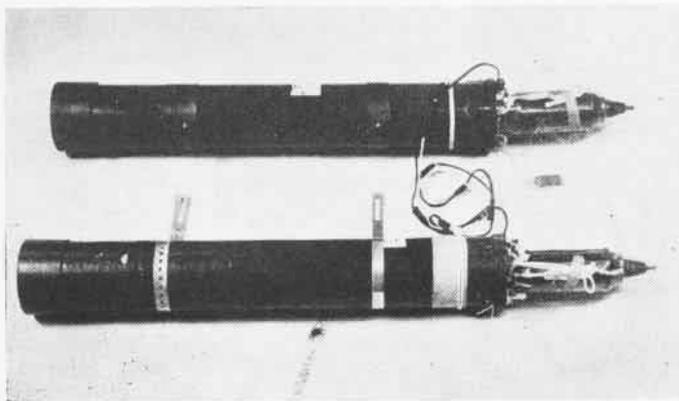
TO TEST the results of this lubrication method, three switches were prepared and subjected to abnormally high temperatures and moisture conditions. The waterproofed sono-buoys were exposed to a temperature of 150° F. and then immersed for eight hours in a 4% salt water solution and allowed to dry naturally for 16 hours.

This immersion-drying cycle was repeated four times after which the contact and leakage resistances were measured. The following results were obtained on three double-pole switches, a total of six circuits, and include resistance measurements on new, untreated switches.

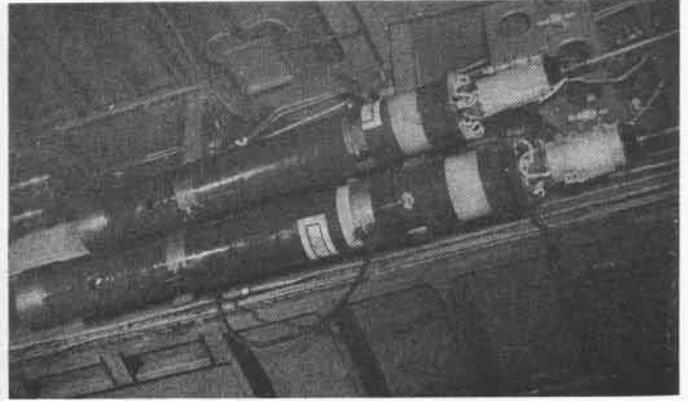
Circuit	Contact Resistance in Ohms		Leakage Resistance in Ohms	
	Start	End	Start	End
1	.032	.028	1000	80
2	.030	.240	1000	300
3	.020	.021	1000	22
4	.023	.044	1000	150
5	.035	.350	1000	150
6	.027	.270	1000	500

The laboratory tests are considered to be extremely more severe than would be expected in normal service where units in storage are exposed only to humid atmosphere and never complete immersion. Consequently this method is considered to be an acceptable means of protecting the units now held in storage for later service.

Future procurement of sono-buoys will incorporate a redesign of the top cap with a suitably protected switch.



EXPENDABLE SONO-BUOYS READY TO BE STOWED FOR FUTURE USE



ARMED AND PREPARED IN BOMB BAY FOR USE IN AIR SEA RESCUE

NAF Fixes PBY's For Storage

NAF PHILADELPHIA—Post war outlook for PBY airplanes indicates continued use for operational training purposes, so that Naval Aircraft Factory is continuing its overhaul of some airplanes for this purpose, while overhauling many others for storage.

The majority of PBY's brought to NAF are given a special overhaul preparatory to storage for future use. The overhaul emphasizes particularly preservation and corrosion resistance of the plane and its furnishings. The planes, which are all PBY-5A's, are flown direct from NAF to storage.

For the past year NAF has been engaged in overhaul of the -5's and -5A's. The program was built up from scratch to an output of 10 airplanes a month, an output which was maintained until V-J day. Although some activities were switched from overhaul to storage, it was expected that the program will be maintained at the old rate of 10 aircraft overhauled a month.

NAF had just completed manufacture of PBN-1 aircraft at the time the overhaul of PBY's was begun, so that it was able to launch the latter program with a minimum of difficulty. This "know-how" plus large stocks of material secured at NAF or Corpus Christi enabled the program to be. For a time NAF manufactured many parts for change kits.

Depth Readings Aid Atoll Taxiing

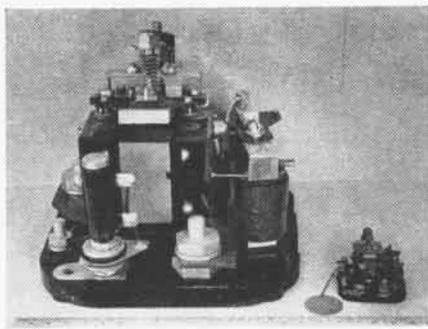
RESCUE SQUADRON 4—This squadron, now situated in the Marshall Islands, has found it necessary to send planes to island atolls about which very little is known. Many coral growths rising from the floors of the lagoons in irregular and hazardous patterns make landings and taxiing extremely dangerous, and the unusual clarity of the water make the judging of depths very tricky.

The problem was solved by adding an extra weight to an ordinary heaving line and placing a man in the starboard galley hatch to take readings. This allowed the pilot to taxi into water of 12-15 feet depth, the maximum that would allow a PBM anchor to hold on the hard coral bottom.

Reverse Current Relay Mock-Up

NATTC JACKSONVILLE—To facilitate instruction and make it easy for students to see and understand the component parts and circuits of the General Electric reverse current relay, 3GTR72C1A, a mock-up built on a four to one scale was constructed by the visual aid department of NTSCH(AEM) JACKSONVILLE.

Used by the instructor in front of a class, it shows to great advantage the small parts, adjustments, and operational features of the relay. With the



MOCK-UP AID TO INSTRUCTION ON RELAY

aid of a pointer the instructor can easily show the entire class each component as he carries on the demonstration and discussion of the unit. Since tracing of the complete circuit, with resultant armature and point actions, is made readily visible to students, time that would ordinarily be consumed in individual instruction is used later on in the course for actual trouble-shooting and adjustment of a "live" unit.

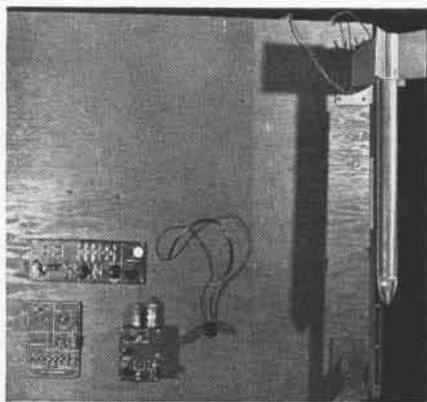
The mock-up, constructed mainly of wood, with metal hinge points and springs, is an exact replica of the original. Spring tensions may be adjusted, air gaps and point clearances checked, and the function and movement of the parts of each circuit clearly shown. Actual class room use of the mock-up has proved that in addition to increasing student perception and ease of instruction, the device greatly lessens the work and increases the efficiency of the instructor.

Rocket Panel Aids in Training

CASU-21 — Technical training ordinance has designed a rocket loading panel, illustrated here, to give ordnance men training in loading rockets and pilots a check out in loading and release procedure.

All parts to make up the model are salvaged. They were put on a piece of half-inch plywood and hooked up electrically.

The training division designed a SB2C hydraulic instruction panel from crashed surveyed planes. The mockup



CASU PANEL TRAINS FOR ROCKET LOADING

enables the student to see what takes place and is a good checkout for the pilot as well as the mechanic.

►CNO Comment—The rocket loading panel is an original idea. Complete mock-ups of every type of aircraft together with instructor personnel are available in the form of Naval Air Mobile Trainers upon request to CNATT. These contain panels of every plane system and are kept constantly up to date with all plane modifications.

How Not to Test Landing Gear

UTILITY WINGS PACIFIC FLEET—Dilbert and his crew arranged the setting for an accident in a squadron under this command which was engaged in routine drop tests of landing gear on JM-2 aircraft.

One man was ordered to stand in the nose wheel well in order to check visually the position of the locking pin when the nose wheel was fully retracted. It is the policy to disconnect one of the nose wheel doors prior to retracting the landing gear.

When the wheels came up, the steel reinforced doors started to shut, trapping the man in such a manner that he could not free himself. No pre-arranged signal had been adopted to stop or to lower the gear. Another member of the check crew was strong enough to spring the doors and enable the trapped man to escape before serious physical damage was done.

This accident would never have occurred if a set of signals had been arranged and if the crew chief had properly inspected the door to see if it was disconnected.

►BuAer Comment—This is a Grandpaw Pettibone boner of the month. Anyone dumb enough to get between the doors when the gear is to be tested would not be helped by all the advice in the world. The crew chief should be responsible for gross negligence.

Night Fighters Find F7F Rugged

VMF(N) 533—This squadron has found the F7F-2N rugged, reasonably easy to maintain and dependable. A very considerable amount of cross-wind operation has of necessity been conducted, and no untoward difficulty has been experienced in effecting landings at night on a 3900-foot runway with a 60-degree, 25-knot cross-wind.

►BuAer Comment—The tricycle landing gear probably has much to do with the ease of landing cross-wind.

VRJ-1—The first Navy plane to make a non-stop flight from Honolulu to Seattle and return non-stop from Kodiak to Honolulu recently racked up new honors for this NATS squadron. Admiral J. H. Towers made the flight to Seattle, in a plane commanded by Lt. Cdr. Plowman. Total flight time for the round-trip was 58.7 hours and elapsed time 5½ days.

PUBLICATIONS

The following Aviation Circular Letters, Technical Notes and Technical Orders have been issued since 1 July 1946. Copies are available on request to Publications Division, Bureau of Aeronautics.



AVIATION CIRCULAR LETTERS

- 102-46 (Confidential) Aircraft Model Designation XF7 U-1.
- 103-46 KD8G-1 Pilotless Aircraft Model Designation: Establishment of.
- 104-46 HTL-1 Aircraft Model Designation—Establishment of.
- 105-46 Number withdrawn, will not be reassigned.
- 106-46 Handbooks, Manuals, Catalogs, Specifications and Equipment—Revised classification of.
- 107-46 Unofficial Publications; Submission of.
- 108-46 Publicity.
- 109-46 GB—GH, JM-1, NH-1 and R50 Aircraft—Retention and Disposal of.
- 110-46 Maintenance and Overhaul of Aircraft Engines Used in Drone Types of Aircraft.
- 111-46 (Joint Letter) Supply of Bomb and Torpedo Handling Equipment, Smoke Screen Equipment, Tow Target Equipment, and Machine Gun Accessories under the Cognizance of the Bureau of Aeronautics—Responsibility for.
- 112-46 Aircraft Reporting System—Modification to include Winterization Program Information.
- 113-46 Aircraft Accidents Involving Minor (Class D) Damage; Reporting of.
- 114-46 Obliteration or Marking of A abandoned Wrecked Aircraft.
- 115-46 Mount Vernon—Flight Restrictions around.



TECHNICAL NOTES

- 19-46 Aircraft Armament Installations—Care in Operating, Maintaining and Servicing of.
- 20-46 Model F4U Type Airplane Spin Recovering Characteristics.
- 21-46 Gun Camera, Installation and Removal.



TECHNICAL ORDERS

- 22-46 Model JD-1 Airplanes—Restrictions to be observed in operation.
- 23-46 Model F2-1 and F2G-2 Airplanes Restrictions to be observed in operation.
- 24-46 Ignition Cable (Wire)—Instructions Governing Age Limits of.

Navy Needs Electronics Men Wars of Future to Require Training

Need for electronics officers is increasing daily with development of pilotless aircraft and missiles and the ever-growing use of electronics to make fighting planes more deadly. The Navy has launched a tentative plan to get men to fill the 737 electronics billets in the aeronautical organization.

BUAER and Operations recently made a survey on available electronics officers and decided steps should be taken to encourage naval aviators to go into that field. Present school quotas are not large enough to permit a sufficient number of trained officers to meet requirements. At the same time, due to lack of emphasis on need for such men, it was difficult to fill even those quotas.

According to late reports there were only 586 officers available to fill the 737 billets, those officers including 391 USN(T) officers as well as 76 reservists who are retained only until 1 July 1947. Only seven aviators qualified for the 15 billets open in the post graduate school at Annapolis. The number might have been larger had pilots made a second choice when filling out their request for extra training in P.G. school.

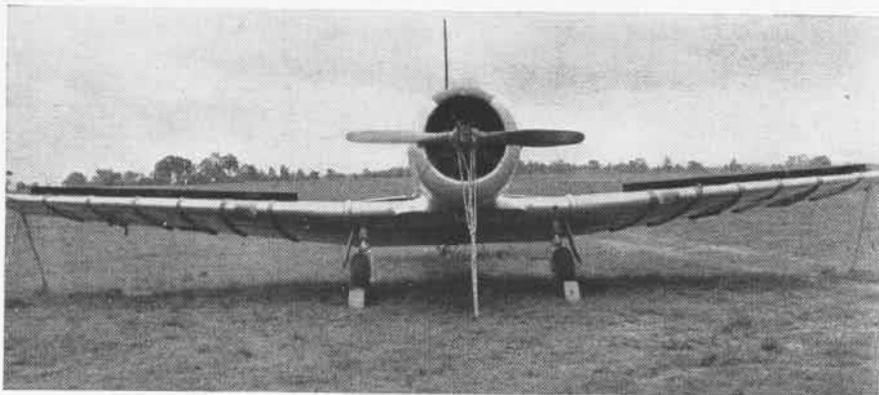
SNJ SECURING METHODS TESTED

TESTS have been completed on securing excess SNJ aircraft in the open for possible heavy weather during the 1946 hurricane season. The tests were conducted by Commander Naval Air Training Base at NAAS ELLYSON FIELD.

Several methods were used of which the most preferable was using four sandbags as support along the flanges between the roots of the wings, and the outboard section of the wings. An SNJ was lowered, wheels retracted, on

plane which tends to loosen securing lines. Furthermore, the angle of attack on the wing and upsetting moment arms are reduced. In addition, planes may be spotted in position with sandbags in place and in event of approaching hurricane, very little labor will be required to secure them. This method lends itself to small aircraft only.

As a secondary method and for larger type aircraft the following method was used. An SNJ was doubly secured with wheels extended. Battens



TIE-LINE AND WHEEL CHOCKS ARE A STABLE INFLUENCE IN SECURING BASIC TRAINERS

these supports. With the plane secured in this position it successfully withstood a wind up to 110 knots created by the propeller blast of a PBY and an SNJ placed directly in front of the plane. Only a tail flutter was noted. Otherwise, there was no other apparent rocking or vibration. An estimated seven man hours will be necessary to secure a plane in this position for approaching trouble.

Raising the wheels and lowering the aircraft on sandbags as described is considered preferable since aircraft appears to be more secure in this position. Sandbags form a more stable foundation than do oleos and tires. There should be less working of the

were used on all control surfaces and spoiler boards were secured on 75% of the leading edge of the wings. One SNJ was placed 15 feet directly in front of this plane. A wind blast was recorded of 55 knots on the anemometer. There was no movement or vibration apparent. One SNJ placed at the side of the plane at an angle of 45° and 15 feet away gave a blast reading of 80 knots. The plane did not rock and there was no tail flutter. An estimated six man-hours are necessary for securing this plane.

This method can be accomplished at the present time on excess or non-flyable aircraft and thus secured remain throughout the hurricane season.



COLLAPSING WHEELS ALLOW PLANE TO SIT ON SAND BAGS, PREVENT ROCKING IN STORM

EAGLE VALHALLA



THOUSANDS OF SURPLUS NAVY AIRCRAFT IN STORAGE OR PROCESS OF BEING DISASSEMBLED AND MELTED DOWN AT CLINTON, OKLA.

THE GREAT similarity between the current scene at the former NAS, CLINTON, Oklahoma, and the one of aircraft factories during wartime bears a deep ironical note.

No two reasonably similar scenes could be so divergent in nature as the two mentioned above. True enough, both pictures show great expanses of earth covered with glistening aircraft. Both pictures include an airfield.

But the year or two-year old photograph includes the activity of many men working on the planes. It shows some of the planes taxiing out, taking off, and landing.

The current Clinton picture does not. And for one reason. The vast expanses of Oklahoma land that comprise the ex-NAS have been selected as the "Arlington Cemetery" of the Navy's World War II fighting mechanical birds.

The eagles have come home to rest.

All of which is very fitting—in a way. In another and less sentimental manner, however, it is sad . . . disheartening . . . sickening. Like the act of striking battle damaged aircraft by giving them the "deep-six" off carriers in order that the sturdy might operate, it is a bad deal but one which cannot be avoided.

When a surplus Navy airplane is brought into Clinton it is dissembled or placed in preserved status in the shortest possible time.

To expedite the mass "re"-duction of the planes, a preserving fluid known as "rustban" is placed in the gas supply of the aircraft at its next to last stop. Such action deletes the necessity of draining the gas and yet does not allow rust to collect in the engine. "Rustban" does not appreciably hamper operating factors of the engine.

Airplanes with less than 100 hours flying time are pickled soon after receipt. Much as a mortuary assistant applies human preservative to a corpse, the Clinton work crews

inject the airplane "embalming fluid" into the engine. They go further and seal its pores with specially treated paint.

It is anticipated that this interment may end quite suddenly in a resurrection of the surplus planes in event a necessity for their operation springs up overnight.

For those planes which have more than 100 hours in the air the grace of undertakers' parlors does not exist. Instead, slaughterhouse tactics are used.

The abattoir for the obsolete flying machines is an open field that surrounds Clinton's runways. In this area, such speedy separation of the plane's components is accomplished as to make production lines of aircraft factories look slow by comparison. Tearing a plane down is easy.

FAST working crews, using the "dissembly" line method, can remove an engine from its mount in five minutes. Comparable times in other stripping activities are being made.

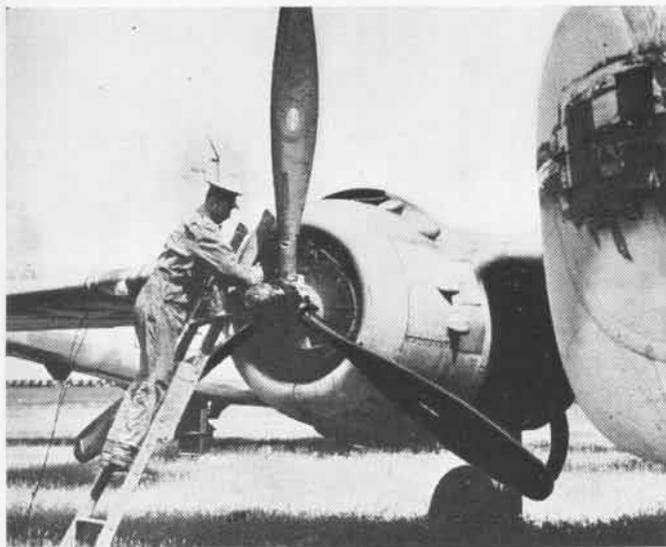
Engines and props are placed in an area of the ex-cow pasture in orderly rows, props being stacked in lines of three to afford support to the other two.

The fuselage of the dissected craft is scrapped and prepared for smelting into its original state—aluminum ingots.

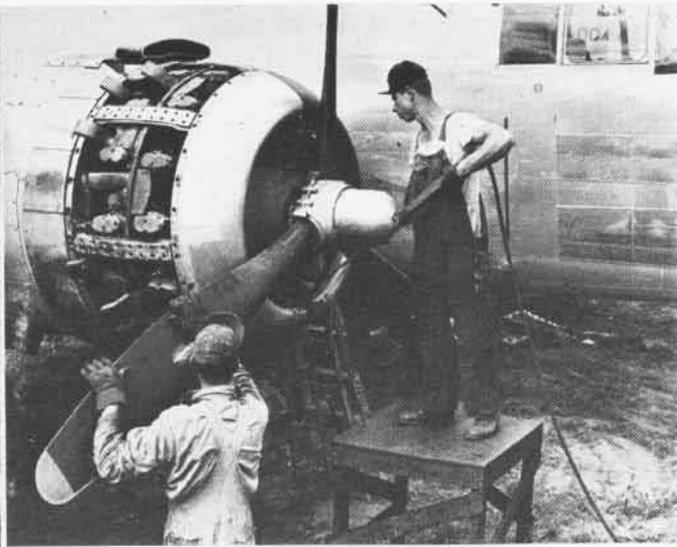
Some of the multi-engined aircraft which are delivered to the War Assets Administration in good shape are kept in "live" storage. In this set-up, the planes are covered only by the regular engine and hatch tarpaulins.

Once a week crews remove the covers and run up the engines, clear the plugs and ascertain the proper operating measure of the engines. The planes never move from their designated spot in the Valhalla.

This action is taken because most prospective buyers want to fly the planes away immediately after purchase. A



PAINTING THE PROPELLER AND ITS COMPONENTS PREVENTS RUST



EACH ENGINE WITH LESS THAN 100 HOURS IS PICKLED ON PLANE

few PB4Y's, PB2Y's and PV's are kept in this manner for ready sale to civilian purchasers who can keep them in gas.

MORE than 10,000 planes were delivered to Clinton for storage and disposition from April, 1945, to July, 1946. All types of Naval aircraft with the exception of seaplanes (which, incidentally, were disposed of at NAF PHILADELPHIA) were included in that number.

Movement of that large a number of planes called for many pilots and a fast transportation system which would provide speedy shuttling for the ferry pilots. A VRS-1 transport unit (R4D) with headquarters at Clinton answered this problem.

Prices for the stricken aircraft range from \$100 for a small plane to a town or school to \$12,000 for a new PB4Y sold to a private individual.

An interesting sidelight on this price item is the fact that an individual who purchased a surplus TBM for \$1200 paid the manufacturers \$14,000 to reconvert it for practical transport operation, ratio of the actual cost to reconversion expense being about 1 to 11.

Reasons for purchase of the excess property vary. A number of schools have purchased small training planes or fighter planes for use in instructing aviation and physics.

Some towns have come in and bought a plane which was

named after some local spot or the city itself. These planes are generally flown out by a citizen of the purchasing community who was a Naval Aviator familiar with that type aircraft. Upon arrival in the metropolis, the planes are adorned in a public place in a manner not exceeded by the bravest of Civil War generals.

PPRIVATE companies or individuals have been buying the multi-engined transports, thus constituting the largest part of the sales.

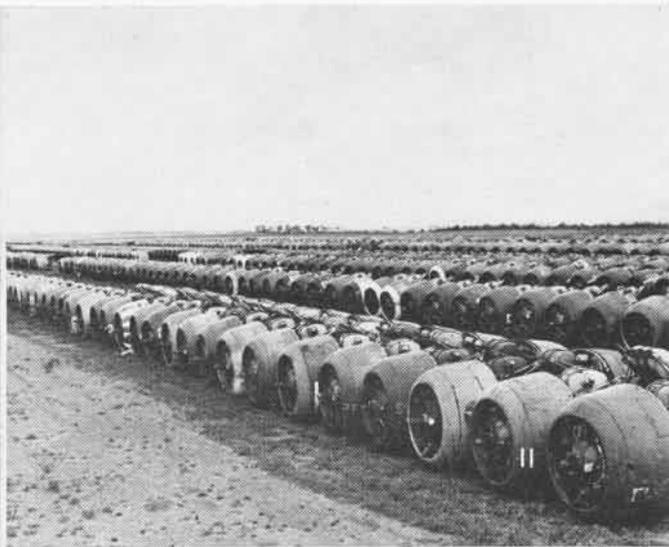
Numbers of the Navy's surplus planes have been in such desolate condition that movement would have been hazardous and impractical. Many of these have been torn down and stricken at their operating bases. The majority of the obsolete planes have been cut from Navy records at Clinton, however.

Purchase of any of the planes is made through the War Assets Administration at Clinton. Though the government agency takes care in trying to sell the best of their planes first, they will take no responsibility for purchases which don't pan out too well.

Delivery of surplus aircraft officially stopped going into Clinton 15 May, 1946. The base was put on inactive status on 1 June. The place is Naval Aviation's cemetery. Nothing's left now but the grounded eagles and their memories.



THIS IS ONE OF MANY ROWS OF PROPELLERS LINING THE FIELD



DISCARDED ENGINES BLANKET THE OKLAHOMA COUNTRYSIDE

SERVICE TEST

INTERIM REPORT DIGEST

This digest covers the 15 July Interim Reports of Service Test, NATC Patuxent, and does not necessarily reflect BuAer policy.

F4U-4B (63 Hours' Test)

MK 9 Mod 2 Rocket Launcher There have been six instances of the latch spring slipping off the head of the latch spring pin. An inadequate interim fix has been to crimp the end of the spring more closely about the head of the pin. There have been numerous broken pigtails, due to poor splicing of the pigtail by the ordnancemen who assembled the rockets.

The firing circuit of the outboard launchers was broken by the inboard ammunition cans of the inboard runs resting on the quick disconnect to those launchers. It is suggested the wires be rerouted or bracketed.

20 mm. Cannon Installation To date 26 simulated combat flights have been made. Stoppages of the 20mm. cannons M3(T31) have been frequent. Feed mechanism jams accounted for the greatest number for which cause was determined. There have been three instances of failure of the rear buffer lock plunger and two of case ejection chutes.

F8F-1 (77 Hours' Test)

Hydraulic System This hydraulic system is still unsatisfactory. Pressure lines fail whenever RPM is increased above 2500. When any unit of the system is operated an unloader squeal results.

Exhaust Troughs Spot welds in both troughs failed after 70 hours' operation, caused possibly by expansion between the trough itself and its reinforcing "doubler." All bad spot welds were fixed with steel rivets.

Carburetor, Stromberg Model PR-58-E2. This engine ran rough, losing 10-12 lbs. torque in auto lean only. Carburetor was cleaned and checked on a flow bench and the complete induction system checked after which flight test showed no improvement.

F8F-1B (52 Hours' Test)

Exhaust System The exhaust stack assembly broke at the welded junction of No. 1 and 17 cylinder pipes. Recommendation that both engine and aircraft manufacturer further improve the exhaust system so service life equals overhaul life of engine.

Horizontal Stabilizers Damaged when ejected

brass struck leading edge, cutting four holes 1 1/4" wide. Holes patched.

20 mm. Cannon T31 (M3) Numerous stoppages of the cannon. In 15 cases caused by broken belts, often found caused by belt jamming over end of shelf provided in the side of ammunition cans. Feed mechanism jams accounted for 14 stoppages. Maintenance of installation proved difficult, due to tight installation of these guns in wing.

Hydraulic Cannon Charger Four chargers, M7 (T9). Four chargers have been replaced lately, making a total of eight replacements. Failure to charge caused by driving lug slipping from lip of piston ram body, bending the lug and tearing and deforming slot in the body.

MK 9 Mod 2 Rocket Launchers Latch springs have slipped repeatedly off the latch spring pins, resulting in a failure of the pawl to release when the igniter is energized. This has resulted in deep scoring of launching plates and delays rearming.

XBT2C-1 (69 Hours' Test)

Exhaust Stack Clamp Bolts Top center bolt on port stacks sheared. Bolt was standard 5/16" AN bolt, torqued to 150 inch pounds and backed to 75 inch pounds. Both were replaced by 3/8" AN bolts torqued and backed the same.

Propeller Barrel Seals P/N HS-62190-A failed, causing oil leak. Seals were replaced with new seals, P/N HS-56364.

Alternate Air Door Actuator The actuator broke off at the mounting. Actuating arm failed to engage the open limit switch and the motor was torn from its mounting. Motor was replaced and actuating arm adjusted.

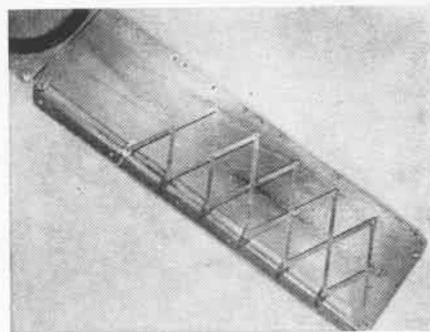
Positive Power Lead to AN/APN-1 radio altimeter found connected directly to battery terminal. This made battery continuously low although the main battery switch was always put in the "off" position when plane was secured. Lead was rerouted to cold side of radio power switch.

Right Landing Gear "O" Ring Seal AN 6227-52, developed leak. Removal showed complete break in two places.

Single Unit For DR Navigation

IFIS Instrument Used in Cross-Countries

A navigational device has been originated at the Instrument Flight Instructor's School, NAS ATLANTA, that will



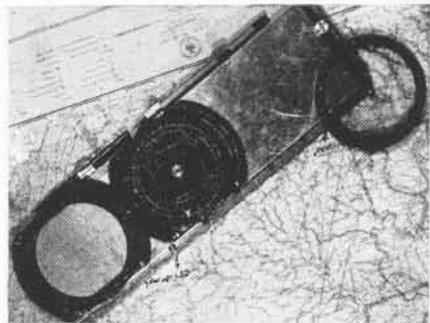
MULTIPLE DIVIDERS MARK GROUND SPEED

give a pilot his position at any moment during flight.

Frequently planes have become lost on routine or instrument cross-country hops, owing to the failure of the pilot to keep an accurate record of his fixes. The new "gadget" embodies all navigational instruments in one unit.

The following features have been included in the device:

1. Multiple dividers for marking off distance of travel into 10 minute increments of time, the pointers being at all times equidistant.
2. Straight edge and mileage scale for both sectional and regional maps.



COMPACT GADGET GIVES PILOT POSITION

3. A compass to facilitate the determination of headings, and for use with the RDF unit.

4. Flight log board for conveniently keeping a record of the flight.

5. A dead reckoning E6B computer, making a single navigation instrument for cross-country flying.

The E6B computer was taken apart and remounted so that both faces are on the same side of the instrument.

The back of the bottom plate is made of frosted plastic over a flight log form.

The idea was considered excellent by BUAE, and it has been suggested that a model be sent for testing.

[DEVELOPED BY LT. COMDR. MILTON S. WORLEY]

NAS CORPUS CHRISTI—A new Naval Air Transport Service link was set up at NAS the early part of June as a stopover point on east and west coast flights. Test flights were conducted during May and a positive control is being exercised by specifically designated bases along the flight new coast-to-coast line.—*The Beam*.



SUPPLY NEWS

FROM ASO AND SUPPLY DIVISION BUAER

PHOTOGRAPHY

Transfer of Ordnance Material

On 15 February 1946 BuOrd transferred to BUAER certain aviation ordnance material. This included about 25% of Class 1, a few items of Class 2, and almost 100% of Class 3. Major assemblies transferred are listed as Enclosure (B) to ACL No. 24-46 dated 13 February 1946.

Supply cognizance of this material was transferred to the Aviation Supply Office in accordance with BUAER instructions. A complete listing of all items transferred is being prepared and will be promulgated by an ACL in the near future. This list will include major assemblies and breakdown of major assemblies with former BuOrd stock numbers and new ASO stock numbers as well as a statement of supply procedures. All BuOrd letters, technical instructions, and allowance lists remain in force until superseded by BUAER ACL.

The following is a general list of items whose cognizance has been transferred from BuOrd to BUAER.

All aircraft tow target equipment used in aircraft installation, including the targets themselves, both air-to-air, and also that equipment used from aircraft to furnish targets for surface fire against aircraft.

Non-expendable pyrotechnic equipment, except those commonly known as guns, pistols, or similar devices.

Equipment used to suspend, release, hoist and handle bombs, aircraft torpedoes, mines, depth bombs, and associated equipment in the immediate vicinity of aircraft; intervalometers.

Containers for aircraft smoke screen and chemical equipment, provided the container is normally retained with the aircraft.

All aircraft mobile ordnance equipment used in direct arming of the aircraft.

All aircraft gun accessories, except those which are built into the gun or directly, immediately and continuously affect the operation or safety of the gun. Broad groupings of these items are: 1. non-recoil absorbing gun mounts and adapters; 2. chargers; 3. ammunition boxes, forward chutes, ejected case and link case; 4. heaters.

All aircraft rocket launchers, except those which are expended with the loads or which could properly be defined as a gun. Also rocket handling equipment used on shipboard or on shore to arm aircraft.

Gun and rocket containers, but only those components within the containers which have been mentioned previously.

Requisitions for aviation armanent materials shall be submitted in accordance with established procedures. (See ASO Circular Letter 155.)

Equipment From Stored Aircraft

Disposition of material to be removed from aircraft undergoing preservation and consigned to the storage pool is outlined in BUAER letter AER-MA-31-WFH, serial 36571, 14 May 1946. The list is given here, in part, for information of preservation personnel.

Spark plugs—Turn in to nearest Class A station as prospective Class 265 material.

Aircraft clocks—Turn in to nearest Class A station as prospective Class 276 material. This

includes clocks which have a "pilfer proof" installation.

Gun cameras—Turn in to nearest of following activities; NAS SAN DIEGO, JAX or NORFOLK.

First aid kits—Turn in to nearest Class A station as prospective Class 265 material.

Life rafts—Turn in to nearest Class A station as prospective 265 material. Allow pyrotechnics to remain in rafts.

Storage batteries—Turn in to nearest Class A station as prospective Class 265 material.

De-icer boots—Turn in to nearest Class A station as prospective Class 265 material.

Drop tanks—Remove from aircraft if necessary to facilitate plane handling. Store at storage activity.

Ordnance gear—All ordnance gear (excepting pyrotechnics) will remain with the aircraft during interim and permanent preservation. Reinstall upon completion of interim preservation. Disposition of pyrotechnics to be requested from BuOrd by storage activity.

Destructors—Remove from aircraft. Each storage activity is to ask instructions from BuOrd.

It is not anticipated that any equipment, other than that listed above, will be removed from aircraft either during interim or permanent preservation. This list will be revised by BUAER as necessary.

Salable Aircraft Items Listed

In accordance with the "Memorandum of Understanding between the War Assets Administration and the Navy Department" the Aviation Supply Office has prepared lists of commercially salable aircraft material. These are known as "Save Lists" and are being used by War Assets Administration Depot Clearance Division Representatives in the disposition of surplus naval aeronautical property as a guide for the retention of marketable aircraft material.

Disposition of property peculiar to aircraft is being accelerated at the various naval air activities by use of these "Save Lists" which have also been distributed to War Assets Administration Representatives stationed at these activities. ASO has prepared and distributed 80 different "Save Lists" which range from a single page each to the 156 page "Aircraft Hardware Save List" containing over 40,000 items.

More Technical Supply Bulletins

In a previous issue ASO indicated that the Technical Supply Bulletins would be limited, as an experimental post war project, to four series. However, after a survey of needs, the number is to be increased to the following:

Carrier Planes (for fighters, dive and torpedo bombers not covered by a specific series of bulletins); *Patrol, Utility & Transport Planes*; *Bearcat—F8F*; *Corsair—F4U*; *Mauler—AM-1* (formerly BTM); *Sky-raider—AD* (formerly BT2D); *Aerological Material*; *Aviation Equipage* (accessories, instruments, power plant and propellers, tools and ground handling gear, other equipage and bulk material); *Preservation — Packaging — Packing*; *Electronics*.

Photo Flash Bulbs Affected by Radar

Information has been received from the Army Air Forces that several fires have been caused in storehouses and two photographers have received serious burns as a result of photo flash bulbs being fired by radar sets operating in the vicinity.

Tests are presently being conducted on the effect of radar on photo flash bulbs and preliminary results indicate that all types of radar and all types of flash bulbs are involved. It is believed that the wires and folds in the flash bulbs can be so aligned as to act as a receiver and enough power is absorbed to cause the bulb to flash.

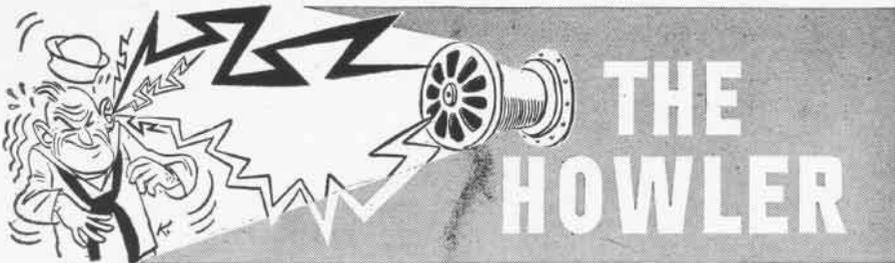
Until the phenomena is studied more thoroughly and more detailed conclusions are made, the following information is quoted from AAF Technical Order No. 10-1-150 so that activities may take precautions to avoid fires and accidents of this nature.

"All personnel connected with storage, shipment, handling, and use of all types of photo flash lamps are warned of the fire hazard which exists due to the lamps being inadvertently fired or exploded by radar beams. Preliminary tests indicate that the lamps can be so fired by radar sets at any distance up to 60 yards from the transmitter, and while unusual circumstances are necessary to cause a fire, the possibility exists. Broken bulbs in original cartons present the circumstances most likely to cause fires, as the flashing material is then in direct contact with the paper container, and can ignite the paper when flashing material fires."

As the lamps can be most easily fired by powerful ground radar sets used for aircraft detection, the following precautions are suggested:

1. Photo flash bulbs should be stored at least 100 yards away from active radar sets.
2. Operators of vehicles handling shipments of bulbs should avoid traveling within 100 yards of active radar sets.
3. Precautions can be taken by photographers using cameras in the vicinity of active radar sets by keeping the bulbs in their individual cartons until just before insertion in the flash gun, in order to prevent painful burns.

VP 32—To maintain high standards of patrol navigation, the Navigation Department has embarked on a new squadron training policy. All new pilots will take over navigational duties for the first three months, during which time they will be required to turn in 60 sun lines and 15 three-star fixes. Older members of the squadron will turn in 5 sun lines and 2 three-star fixes a month. This program was inaugurated when it was discovered that navigators were depending entirely on Loran in the western and central areas of the Pacific.



Inspect Control Linage. The pilot of an SB2C-5 made a normal take-off, but after climbing to about fifty feet he noticed a rapid drop in RPM and subsequent loss of power. An emergency landing followed, with considerable damage to the plane.

Investigation showed that the forward control rod on the propeller governor linkage became disconnected at the end adjacent to the bell crank on the forward side of the engine. The connecting nuts on both ends of the rod came loose, and the rod dropped off at the lower end. This caused the propeller to go into full high pitch and the RPM's to drop off rapidly.

All aircraft of the squadron were grounded after the accident, and an inspection of propeller linkages was made. Linkages on several planes were found to be loose. All pilots at the activity have been thoroughly instructed in inspecting the propeller governor linkage. Continued detailed instruction of inspection personnel emphasizes items liable to be overlooked.

Daily inspection of all power plant control linkage is considered the only adequate means of preventing failures of this nature.

Water in Cylinders. Cleaning engines and engine nacelles calls for care in the handling of the water hoses. Water where it doesn't belong means trouble. A recent PB4Y-2 RUDM states that the number 8 articulating rod, P/N 43924, in the number 2 engine bent in the cylinder. Rotation of the crankshaft was made impossible by the oil scraper ring locking below the cylinder skirt. This failure occurred on a pre-check turn up immediately after the plane had been washed. The engine was pulled through four complete revolutions by hand before the starter was engaged. When the engine locked, the lower front plugs were removed and a large amount of water was discovered in the cylinders.

A terse BUAER comment sums up the difficulty, "Water is like oil, incompressible." To prevent repetition of such trouble the reporting activity has manufactured carburetor air intake and oil cooler air duct plugs which are installed in all engines each time the plane is cleaned. BUAER recommends that all activities take such precautions when it is necessary to spray water on engines.

Wheels and Brakes A report has been received by BUAER of class "A" damage to an SNJ-4 due to improper maintenance of wheels and brakes, and failure of the pilot

to ground the plane when he noticed excessively tight right brake. Inspection disclosed that the wheel bearing adjusting nut was secured two turns loose and keyed, and the brake shoes were out of adjustment on right wheel varying from .006" to .043" of proper .010". Upon landing, the plane began to veer to the right. Left rudder did not halt the swerve, and the pilot's use of the left brake immediately flipped the plane over on its back. Skid marks indicated that the right brake had locked.

In any combination of tapered wheel bearings and shoe type brake, there is a definite relationship between brake and wheel adjustment. When wheel bearings are excessively loose and brake adjustment is made with the load off of the wheel, the brake drum tends to drop down onto the brake shoes. With clearances adjusted in this condition a change in clearance can be expected when the wheel is lowered to the ground. It is considered good maintenance practice to recheck brake shoe clearance after removing the wheel jack to determine that shoe clearance has not changed. If clearances change, condition and adjustment of wheel bearings should be checked.

Corsair Service Change #222 An aircraft Maintenance Field Representative has recently reported dangerous discrepancies in the incorporation of F4U/F3A/FC Aircraft Service Change #222. Of the discrepancies reported, omitting the notch in fitting P/N vs-42888 or failure to notch the fitting deeply enough has been found to be the most prevalent and is considered the most dangerous.

This notch must be made so that the safety latch cross member P/N vs-38608 will not be raised when the sliding section tends to slide forward. If this notch is not made, as specified, failure of the latch may result during crash landings. In approximately 25% of Corsairs assigned to four Air Groups, one or more of the following discrepancies were noted: (a) Omission of the 2 rivets AN426-AD6, which attaches assembly to top of track. (b) Notch in longeron, omitted or notch not cut deep enough. (c) Improper alignment between notch in longeron and latch. (d) Loss of tension in spring which holds latch in notch, in some cases end of spring was worn off from being stepped on. (e) Some aircraft had local safety latches installed which do not offer the safety features of those in Change #222.

BUAER considers Service Change #222 to be adequate when properly installed and maintained. In the interest of safety of flight it is suggested that service activi-

ties inspect installations of Change #222 for conformance with instructions contained therein.

Strict compliance, periodic inspections and proper maintenance should prevent recurrence of reported cases of enclosures closing during crash landing.

Navy Builds Radar Test Hangar Patuxent Building Is Completely Shielded

Completely shielded by fine mesh wire, a \$2,000,000 hangar is being erected at NATC PATUXENT to provide facilities for delicate tests on radar and other electronic devices. The building will permit testing of equipment after it has been installed in aircraft.

The one-eighth-inch galvanized mesh wire will completely shield the interior of the hangar and will be laid in double layers in the concrete floor. Four miles of soldering will bond all joints in the shield and necessary breaks in the doors will be joined by bronze spring contacts.

Wire mesh, which will screen out electronic disturbances, will also permit ventilation and lighting. The hangar, considered one of the largest shielded buildings in the world, will provide complete facilities for testing of the largest aircraft. The building will be 178' x 300', with 67' clearance.

Plane Wrecks to Be Destroyed Directive Assists Air Search Agencies

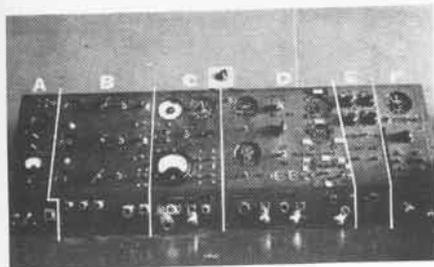
Naval salvage activities have been directed to assure that wrecks not considered salvageable shall be completely obliterated or spotted and photographed. Aviation Circular Letter No. 114-46 directs these tactics in order to assist air search agencies.

Destroying wrecked aircraft which have been abandoned will prevent further accumulation of sites where these planes have crashed. Wreckage shall be burned, according to this letter, and the residue buried when terrain permits. Dynamiting or bombing to scatter wreckage will be considered for sites where burial is impractical.

When neither procedure can be employed, the position of the wreck will be plotted and photographed from as low an altitude as practicable. All air search agencies will then be furnished all information and photographs showing the configuration of the wreckage.

This circular letter is the result of a joint Army-Navy agreement and supplements ACL N. 49-45.

VR-10—Darned clever, these car thieves in Manila. A NATS jeep was stolen and recovered a few weeks later by Shore Patrol. It had been lengthened 18 inches, blue cushion seats running lengthwise had been installed, a canopy top with fringe had been added, and a conservative paint job of brown, red and yellow put on.



SECTIONED PANEL TO TEST INSTRUMENTS

CASU Assembles Testing Units

CASU 6—This unit has greatly simplified the testing of some aircraft instruments in the CASU-6 instrument shop. By assembling many of the units used to test various instruments on one panel the time required for checking has been reduced and the master instruments and those under test have been safeguarded against the danger of faulty wiring and connections. The wiring on the test panel is all internal and the connecting leads to instruments under test has a distinctive cannon plug or is so labeled and arranged that erroneous connections are almost impossible to make.

Section A contains a 24-volt DC battery for tests on all instruments requiring 24 volts. A 115-volt AC circuit is connected in the same section for testing automatic pilots. Temperature gauges can be tested in Section B by comparing the indicated temperatures, produced by rheostats, with the temperature shown on the master instrument on the panel. Compasses can be plugged into section C by means of Cannon plugs and tested by use of the manually controlled master Magnysen indicator.

Output of inverters is measured by a specially calibrated voltmeter. Fuel indicators are compared with a master previously-calibrated instrument actuated by variable resistors in Section D. Position indicators for checking the position of flaps, wheels, etc. are tested by resistors in Section E. Tachometers, generators and indicators are tested in Section F against a master indicator actuated by a tachometer-generator bolted to the panel.

► **BuAer Comment**—This appears to be a neat and compact arrangement of various small testing devices into one larger unit. Various operating and service activities have hookups similar to this one but tailored to the needs of the individual using the test equipment. In the construction of a test panel such as this it must be remembered that the panel should be kept as simple and well-marked as possible.

Platform For Rudder Assembly

HEDRON FAW-3—Rudder assemblies of PBM aircraft are easily reached with the workstand designed at **HEDRON FAW-3**. The base is made of 2" gas



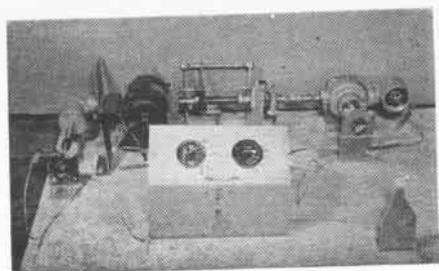
SIZE IS GIVEN FOR RUDDER WORKSTAND

pipe, with 1½" pipe used for the rest of the construction. Safety ropes are fastened along the sides to prevent accidents, or bars can be used in place of the ropes. The casters and self-locking stops put the stand where it's wanted and keep it there.

► **BuAer Comment**. This versatile item of equipment allows work to be performed on the entire rudder area without movement of the stand. However, it is suitable only for the PBM. BuAer has procured quantities of Aerostands for servicing tail surfaces of PB4Y-2 and PB2Y-3, in addition to engine servicing of several other large transport and patrol type aircraft. These stands were fully described in the September 1945 issue of *NavAer Maintenance* magazine and are available from ASO under stock number R89-P-406590.



UP IN THE AIR FOR WORK ON PBM RUDDER



SYNCHRONIZER USEFUL FOR INDICATORS

Machine Saves Man-Hours, Money

NAS CORPUS CHRISTI—A synchronizing machine, developed by an electrician at this activity under the Navy Employees' Suggestion Program, has effected a saving of time and money.

Rheostats and indicators for flaps and tabs on Beechcraft airplanes may be matched in pairs and calibrated on the machine, which duplicates actual working conditions. Using this machine, flap and tab indicators and rheostats may be adjusted for the ideal situation, thereby eliminating changing of instruments after their installation in aircraft.

The previous method was inaccurate where instruments had been installed and had to be replaced, which happened frequently. The loss of time for one man was approximately four hours and an additional one was used for the overall of the instrument.

Jax Makes Versatile Inspectors

Inspection department at **NAS JACKSONVILLE** is getting increased flexibility through a system of additional part-time training for all inspectors. The program, designed to eliminate any "indispensable man" bottlenecks, prepares inspectors to function equally well in several different jobs by increasing the scope of their inspection knowledge.

Step-by-step outlines of the work to be covered are furnished to the inspectors. The instructors, following these outlines, supply related information and also familiarize their students with the technical directives pertaining to the job. Each step in the outline is initiated both by the instructors and by the students as the training progresses.

When the outline forms are completed they are certified by the principal inspectors and entered into the inspectors' training records. The training process is repeated until each man has mastered several different inspection jobs. Records are maintained on a "Flexibility Chart" in such a manner that any inspector's qualifications can be determined at a glance.

Unforeseen changes, increase in work loads, or shortages of inspection personnel are readily adjusted by using the chart and the flexibility gained by this method of training for inspectors.

AVIATION ORDNANCE

INQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE

Casualties and Malfunctions of Aviation Ordnance

AN ANALYSIS of some of the casualties and malfunctions of aviation ordnance equipment during World War II and corrective action taken by Bureau of Ordnance has been made. In many instances, the action taken was a direct result of performance reports from the fleet and shore activities, and the Bureau wishes to reemphasize the value of such reports and encourage the continuance of submission of RUDAOE's from all activities. The following summary of reports received by this Bureau and the corrective action taken is disseminated for informational purposes:

CALIBER .30 BAM GUNS:

RUDAOE's received on caliber .30 BAM guns were few and varied. Most of the difficulties were occasioned by the use of guns with obsolete parts. When individual parts of the gun were changed or sufficiently modified to warrant declaring the replaced part obsolete, supply activities were advised to dispose of the obsolete items. However, it was impossible to assure that these obsolete parts were replaced in guns which were in the hands of operating activities until the guns were overhauled by an approved machine gun overhaul shop of the major air stations.

Mass production methods employed by aircraft machine gun manufacturers to meet the increased requirements for these weapons during the war occasionally permitted acceptance of guns with minor defects which were not revealed by the firing

of a minimum of 220 rounds during the acceptance tests at the manufacturers' plants. Most of the RUDAOE's received in this category proved to be isolated instances and were corrected locally.

CALIBER .50 BAM GUNS M2:

Retracting Slide Bracket. The first retracting slide brackets were improperly secured to the side plate of the gun and were light in construction. The redesigned bracket had additional holes tapped for securing screws and the forward end and area around the plunger hole strengthened to withstand charging.

Barrels. The caliber .50 barrel has undergone no radical change in design but has kept pace with advances in metallurgy. The present barrels will last longer, withstand longer firing bursts and need less cooling time between bursts. The latest barrel is a "threaded sleeve, banded, nitrided, plated bore with liner." The majority of RUDAOE's received by this Bureau covered barrels which were fired beyond their life expectancy, were fired with faulty ammunition, or were new and the bores found to be rusty or fouled with metal filings.

Oil Buffer Assembly. The principal difficulty encountered in the oil buffer assembly was improper securing of the filler screw and careless assembly by the manufacturer. Springs, shipped as spares, were often found to be rusty, indicating improper preservation for shipment. The

filler screw was redesigned, making it practically foolproof, and producers were cautioned as to the necessity for proper assembly, free of steel shavings, grit and other foreign matter.

Link Strippers and Cartridge Stops. As a result of stepped-up production, inspection was lax and a number of guns were sent out with these items "fitted" by hammer. The result was a series of broken pawl-holding pins when any attempt was made to remove them. This matter was pointed out to the manufacturer and immediately corrected.

Sear and Sear Slide. Guns from one manufacturer were received with the sear slide extending beyond the side of the bolt. When inserted, the sear slide partially depressed the sear, which then failed to hold the firing pin properly. Timing of the gun was impossible and firing was erratic. It was found that the sear slides were being checked on one side only, and these difficulties were eliminated by having both sides checked.

Retracting Slide Bracket Bolt. The retracting slide bracket bolt was found to be weak at the threaded portion. A bolt with solid threaded ends was designed and an OMI was issued containing instructions for combining it with the retracting slide assembly.

Cover Extracting Spring, Barrel Locking Spring, and Caliber .50 Switch. Reports received on each of the above indicated that the springs were weak, bent, and usually rusty, and the switch was found to be warped. All of these conditions were judged to have been the fault of poor inspection prior to shipping and a more careful inspection procedure was required.

Breech Lock. The breech lock of one manufacturer was found to be binding on the first part of recoil, resulting in jerky operation. This item was within the tolerance allowed, but as a result of investigation it was decided to increase the length of the forward bevel, and smooth functioning resulted.

Ejector Springs. A report of weak ejector springs resulted in the manufacture of a special test fixture for uniform measurements. It was further found necessary to add a straight extension, which prevented rotation and resultant sluggish operations.

Latch Covers. One report was received of a loose latch cover which bore on only one side, thus permitting the cover to "roll" on firing. This was corrected by having installed enlarged latches which would be hand fitted at the factory by grinding to size.

Bolt. There were two instances of bolt slides breaking in the after position. In both instances, metallic tests showed brittleness to be the cause, and action was taken to scrap the specific lot. The enlargement of firing pin holes was found in two cases to be the result of gas action and/or bent firing pins. It was decided that pierced or extended primers had initiated the trouble. A broken bolt reported in a RUDAOE was found to have been the result of extreme over-all brittleness following a "bluing" process, and the practice of testing all bolts following "bluing" was inaugurated. (Continued on next page)

Succeeds List of July 1, 1946

1 August 1946

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

Aircraft	Bulletin	Date	Change	Date
F6F.....	139	5-9-46	96	12-20-45
F4U-F3A-FG.....	279	5-6-46	247	7-11-46
F7F.....	32	5-23-46	37	7-11-46
F8F.....	21	6-24-46	16	6-20-46
FR.....	19	7-2-46	29	5-2-46
F2G.....	0	0	3	6-26-47
JRB-SNJ.....	50	5-23-46	27	3-20-46
PV.....	188	7-2-46	191	3-20-46
PBM.....	169	4-4-46	191	6-26-46
PBY.....	147	6-26-46	190	7-11-46
PB4Y.....	231	6-28-46	197	6-26-46
R5C.....	83	6-3-46	157	12-18-45
R4D.....	59	5-13-46	48	10-3-45
R5D.....	92	6-24-46	145	6-26-46
RY.....	91	4-19-46	38	6-4-46
SB2C-SBF-SBW.....	242	6-12-46	166	5-20-46
SC.....	103	6-6-46	51	4-10-46
TBF-TBM.....	221	3-15-46	249	7-23-46
TDD.....	3	7-3-46	0	0

For complete list of Aircraft Service Changes and Bulletins, see Naval Aeronautics Publication Index NAVAER 00-500 and Supplement 00-500A.

LATEST BULLETINS ENGINE, AUXILIARY POWER PLANT, ACCESSORY, PROPELLER Dated 1 July 1946

ENGINE	BULLETIN	DATE	SUBJECT	EXPLANATION
PRATT & WHITNEY				
R-985	189	6-18-46	<i>Roller Bearings, Crankshafts, Procurement of</i>	To change R-1340 Engine Bulletin No. 204 to 211
	Supp. 1			
R-1340	204	6-18-46	<i>Roller Bearings, Crankshafts, Procurement of</i>	To change R-1340 Engine Bulletin No. 204 to 211
	Supp. 1			
R-1830	410	6-12-46	<i>Spacers, Impeller Shaft, Front Ring Carrier</i>	To delete obsolescent engines from the "Application" of this bulletin and to include additional models.
	Rev. 1			To reduce oil leakage and to provide plugs which are more easily removed.
	455	6-16-46	<i>Plugs—Oil Passage</i>	To change R-1340 Engine Bulletin No. 204 to 211.
	460	6-18-46	<i>Roller Bearings, Crankshafts, Procurement of</i>	To increase the strength of subject brackets.
	Supp. 1			To improve lubrication.
	461	6-10-46	<i>Ignition Manifold, Supporting Brackets, Reinforcement of</i>	To prevent rear section oil pressure from dropping below the minimum requirement.
	462	6-14-46	<i>Hydraulic Pump Drive Gear Bearing Clearance</i>	To improve lubrication.
	463	6-20-46	<i>Oil Pressure—Rear Section</i>	To change R-1340 Engine Bulletin No. 204 to 211
R-2000	155	6-14-46	<i>Hydraulic Pump Drive Gear Bearing Clearance</i>	To improve lubrication.
	152	6-18-46	<i>Roller Bearings, Crankshafts, Procurement of</i>	To change R-1340 Engine Bulletin No. 204 to 211
	Supp. 1			
R-2800	114	6-26-46	<i>Generator Drive Gear Oil Seals—Installation of Liners to Prevent Spinning of</i>	To change instructions to provide for incorporation of this bulletin in all applicable engines not having Liner, Part No. 80252, installed.
	Rev. 2			To provide a more positive oil seal between the blower case and blower case liner.
	187	6-20-46	<i>Impeller Shaft Front and Oil Seal Ring Liner—Replacement of</i>	To clarify Part I of original bulletin.
	Rev. 1			
	250	6-18-46	<i>Clutch Assemblies—Information Concerning</i>	To improve the bond between the steel and lead plating.
	Supp. 1			To provide latest information regarding the basic differences between the R-4360 engine models and to modify instructions contained in the original issue of this bulletin concerning overhaul of R-4360-2, -2A engines.
R-4360	287	7-8-46	<i>Floating Counterweight Bushing and Rollers</i>	To provide more clearance between the scavenge oil pipe and the supercharger manual control assembly.
	2	6-26-46	<i>Basic Engine Differences</i>	To provide better seating for the heads of the gerotor scavenge pump attaching screws.
	Rev. 1			To facilitate removal of the hydraulic coupling covers.
R-4360	28	6-12-46	<i>Supercharger or Fan Manual Control Assembly Plugs</i>	
	29	6-18-46	<i>Gerotor Scavenge Pump Attaching Screws</i>	
	31	6-12-46	<i>Hydraulic Coupling Covers</i>	
GENERAL ENGINE BULLETINS				
	92	6-26-46	<i>Diaphragms in Stromberg Injection Carburetors—Use of</i>	To provide up-to-date information on diaphragms used in Stromberg injection carburetors.
HAMILTON STANDARD PROPELLERS				
	45	5-31-46	<i>Hamilton Standard Propeller Bulletin No. 106—Approval of</i>	To approve Hamilton Standard Propeller Bulletin No. 106
	46	6-6-46	<i>Hamilton Standard Propeller Blades, Design Nos. 6501A and 6541A—Utilization of</i>	To permit use of surplus stocks and to affect a measure or blade standardization.

BOMBSIGHT MARK 15:

A RUDAOE reported the receipt from a supply depot of bearings which had obviously been in previous use and which were entirely unsatisfactory for proper repair and operation of the bombsight, while three bearings received in plastic containers were in excellent condition. Since all new bombsight ball bearings being supplied at the time were individually packed in sealed lucite boxes, or sealed metal foil bags, often immersed in the proper operational lubricant, and a program had been initiated to have all bearings in stock inspected and repackaged in this type of container, the unsatisfactory bearings referred to in the report had evidently been from a group not yet inspected and repacked.

One RUDAOE reported the receipt of bearings which, although in new lucite containers, were defective because of corrosion. The boxes in which the bearings were received had not, however, been sealed with a neoprene gasket. A more careful inspection and closer adherence to new specifications were requested of the Inspector of Naval Material.

RUDAOE's reported the receipt of bombsight material in such a condition that extensive overhaul to put it back in service was required. Careless and faulty packing had resulted in much physical damage. Also, failure to give monthly warm-up runs had rendered sights unfit

for use. An ordnance circular letter was issued emphasizing the delicate nature of bombsight material, the ease with which it would be harmed by rough or improper handling, and the expense and labor involved in repair. Monthly warm-up runs were made mandatory.

(Next month: 20mm. guns)

SPECIAL NOTICE

Bulletins containing instructions involving modification or rework of engines and engine accessories hereafter will be published not as bulletins but as Modification Instructions, beginning with Modification Instruction No. 1 for each engine series.

These new instructions will form a manual to be designated NAVAER 02-10F-500 if Pratt & Whitney R-2000 series engines are involved, NAVAER 02-35G-500 for Wright R-1820 series engines, etc. That is, the first and middle symbol groups will correspond to the affected overhaul and service manuals, thus facilitating binding of modification instructions with these publications.

Use of the overhaul and service manual page form further will facilitate this procedure. The addition of the number 500 to the first and middle symbol groups covering engines will identify engine Modification Instruction Manuals in the system.

Instructions formerly issued as a supplement to bulletins involving modification or rework hereafter will be prepared as revision pages to the affected Modification Instruction Manual, just as revision pages now are published for overhaul and service manuals.

Engine bulletins and supplements not involving modification or rework will no longer be issued. However, their contents will continue to be published as revision pages to the applicable overhaul and/or service manuals.

Bulletins now in effect will remain in effect until cancelled or specifically superseded by Modification Instructions. General Engine Bulletins will continue to be issued as in the past.

VP-53, GUAM—Ever hear of a Navy airplane being grounded because it had worms? A PBV-6A belonging to this squadron had such a "catastrophe" when a dozen worms hatched out in the opening of the pitot tube during the night. They caused the air speed indicator to read about 50 knots too low when the plane was airborne.

After the plane returned to the parking area, a thorough check was made and the nest of worms found by the plane captain. It is assumed the female worm originally lived in the pitot cover and entered the tube when the plane was secured after a previous flight in the area.

LETTERS

SIRS:

Barin Field is claiming something of a record for presentation of awards at shore activities, following a recent presentation ceremony in which 15 awards and citations were given three officers attached here.

Lt. (jg) Harold J. Azbell received the DFC, temporary citation for Air Medal and two gold stars. Lt. (jg) William H. Elder, Jr., received the DFC and gold star, the Air Medal and four gold stars. Lt.



(jg) James R. A. Poepper was awarded the DFC, Air Medal and three gold stars. Poepper recently was awarded the Navy Cross.

All medals and awards were for combat service in Japanese waters.

FRENCH WAMPLER, JR., USN
COMMANDING OFFICER

NAAS BARIN FIELD

SIRS:

We enjoy your magazine very much out here. It is educational to all hands but we doubt if any one can improve their navigation by doing your sector search in the March 1946 issue. We find that the true air speed has been left out and therefore the problem is quite impossible to do.

We boys of 11 Baker are just bringing this to your attention to show you that some people are interested in your navigational problems and that we are pretty hard to be fooled. We would like a published acknowledgment that we in this preflight school are wide awake.

THE BOYS OF 11 BAKER

Preflight School, Ottumwa, Iowa
† The omitted true air speed was 140. Had the temperature (+25) been included, the true air speed would not have been such a secret. Let's see if you can work it now.

SIRS:

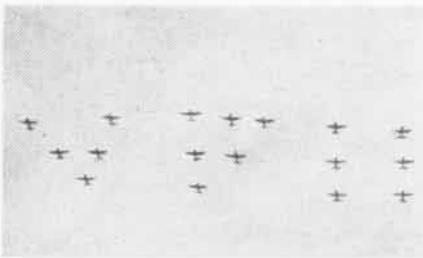
The U.S.S. *Lexington's* 160-page souvenir book "Tarawa to Tokyo" is now available. The price is \$4 a copy, which should be mailed as cash or a money

order to the publisher, Standard-Lithograph Co., 1409 W. 11th St., Los Angeles 15, Cal.

The book has many action photographs and a chart in four colors showing the *Lexington's* travels during the war. It contains a roster of officers and men and a complete history of the ship's career.

LT. C. E. HUNTINGTON

U.S.S. *Lexington*



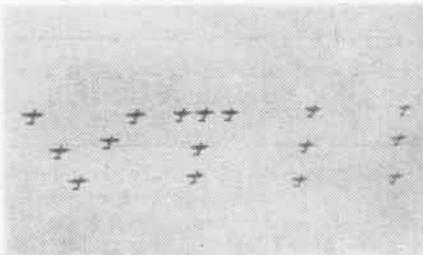
SIRS:

Fighting Squadron ELEVEN, keeping abreast with the current policy to publicize the United States Navy, has been doing extracurricular squadron formation flying with a novel twist.

The local inhabitants of the Island of Maui, Territory of Hawaii, have found the printing of VF-11 in the air with planes (see photo) the most awe inspiring. However, the islanders turn out enmasse to gaze at the squadron's "V's", "V of V's", "box of boxes", etc. It tickles the squadron's vanity to see such turn outs, as flying is no novelty here, what with NAS PUENENE and NAS KAHULUI having been hot-beds of Naval Aviation during the war.

Our flying has . . . created a little friendly rivalry. The foremost result, however, is the boost it has given our morale and the enlivening of squadron interest.

D. L. SOPER
COMMANDING OFFICER, VF-11



SIRS:

I believe that the readers of NAVAL AVIATION NEWS may be interested in the enclosed photograph.

The picture was taken as the TBMs of this squadron flew over the station spelling their designation and number while on practice maneuvers.

JOHN A. FIDEL
LIEUT. COMDR., USN



The Cover High in the air at Bikini Atoll a Navy Helicat mother plane flies by the towering atomic bomb column, waiting for its drone to emerge, in this composite picture. Three of four drones made flight successfully.

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ANSWERS TO QUIZZES

● GRAMPAW QUIZ (p. 6)

- Blue. Ref: Aviation Training Manual, "Flying the Weather."
- Above two-thirds of the distance from base to top. Ref: BuAer Technical Note #3-44.
- By a loss of manifold pressure while flying at a constant altitude and constant power setting.
- An aircraft "Mach Number" is a way of expressing the speed at which shock waves and compressibility will affect the control of the aircraft. It is expressed in terms of the ratio between the true air speed of the plane and the speed of sound at the airplane's altitude. BuAer Technical Note #20-44.
- (1) Shift to proper tank.
(2) Use auxiliary fuel pump.
(3) Retard throttle to one fourth open position. Ref: Flight Safety Bulletin #25-44.

● BEST ANSWERS (p. 24)

1-d, 2-c, 3-a, 4-c, 5-a, 6-b.

● NAVIGATION QUIZ (p. 11)

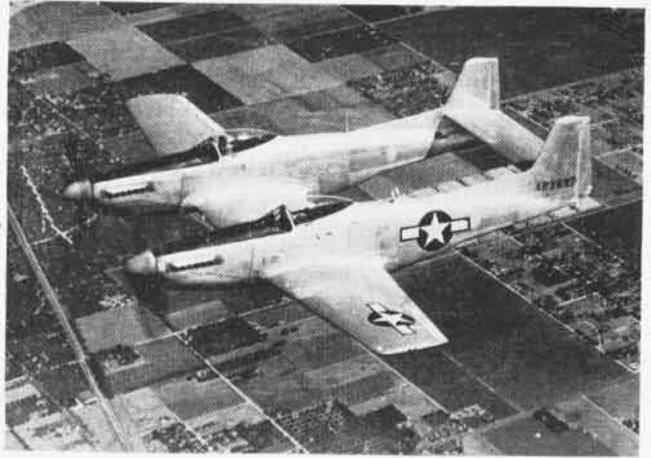
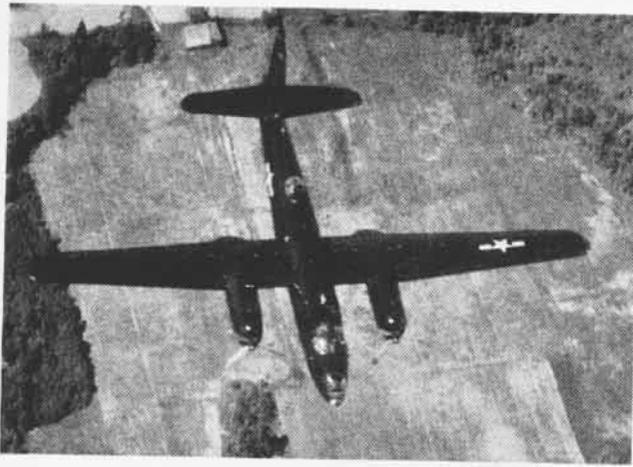
N 23° 42'
161° 25' W

● RECOGNITION QUIZ (inside back cover)

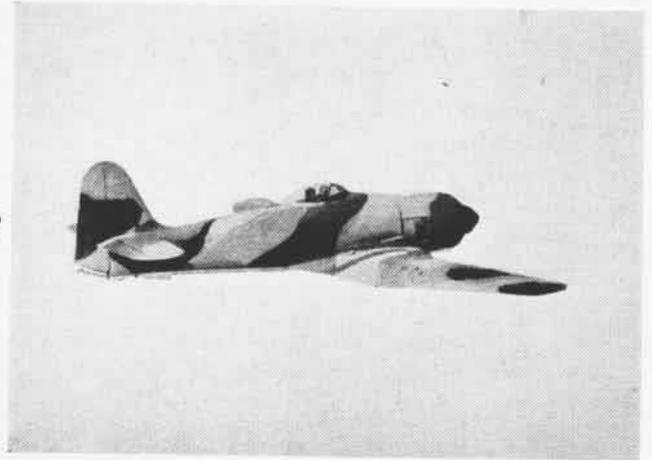
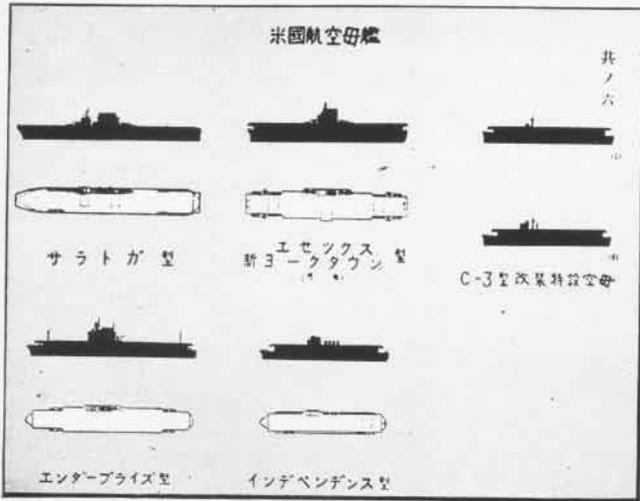
- P2V. 2. P-82. 3. Sea Fury (Br.).
- Yak-9 (Russian). 5. PE-2 (Russian)
- Lincoln (Br.)

NEWS

Published monthly by Chief of Naval Operations and Bureau of Aeronautics to disseminate safety, survival maintenance and technical data to the aeronautical organization. CONTRIBUTIONS INVITED. Air mail should be used where practicable to insure speediest delivery of material submitted for publication, addressed as follows: Chief of Naval Operations, Naval Aviation News, Navy Department, Washington 25, D. C.

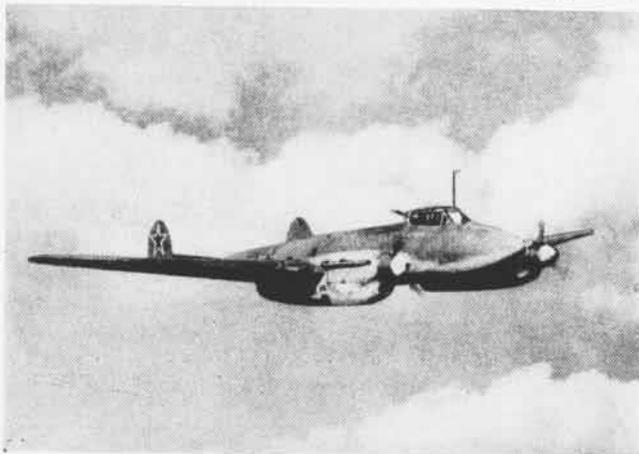
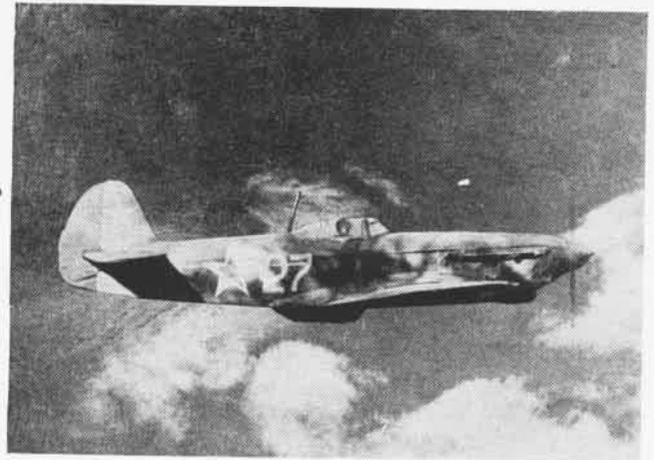


★ ★ ★ **RECOGNITION QUIZ** ★ ★ ★



**NEVER CEASING FLOW OF NEW PLANES
BRINGS ENDLESS NEED FOR RECOGNITION**

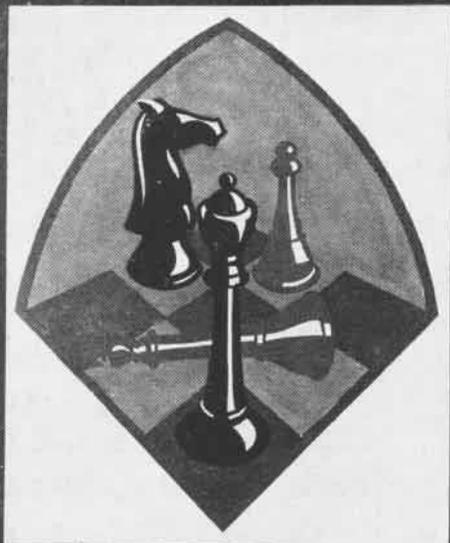
PICTURED here are some of the fastest planes in operation today. The faster they come the harder they are to see—and recognize. Practice makes for perfect. Can YOU name these? Answers are on page 40. Just above is the reproduction of a chart issued Jap pilots embarking on patrol hops. Five U.S. carriers are shown. If you had been a member of the 'slant-eyed' corps, could you have made proper use of the chart? The enemy was alert to recognition values. So, fortunately, were we. We must not slack off now. Recognition has diminished none in importance. Stay alert and stay alive.





SQUADRON INSIGNIA

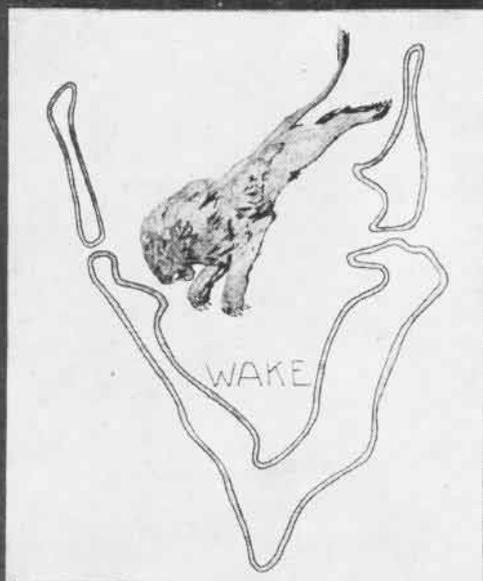
LATIN AMERICAN STUDENTS in flight training at Corpus Christi designed the distinctive "Saludos Amigos" insignia as a commemorative souvenir of their aerial education in "Los Estados Unidos." The V for Victory outline of Wake fringed in red was incorporated by VMF-211 in memory of those who died there. The swift destructive rush of the King of Beasts represents the attack of a fighter squadron. VBF-82 pictures a checkmate, signifying coordination and headwork, against a Navy background of blue and gold.



VBF-82



International Squadron



VMF-211



Night Development Squadron Pacific