

BUREAU OF AERONAUTICS
NAVY DEPARTMENT
NEWS LETTER

RESTRICTED

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BUREAU OF AERONAUTICS NOTES

FLIGHT

NAVMEMO--On the first and fifteenth of each month Headquarters Squadron, Fleet Air Wing Four, issues a "NAVMEMO" (Navigation Memorandum) containing current aeronautical and hydrographic data pertaining to the Wing's sector of operations.

Bureau Comment: The Bureau considers this an excellent method of publishing the pertinent data within a sector. Excessive duplication and the increasing load of distribution of publications by the Hydrographic Office will be considerably reduced by this procedure. It is recommended that other Headquarters Squadrons inaugurate a similar service.

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STATISTICS

Do You Make the Best Possible Use of Your Radio?--

Upon returning from a routine patrol just before dark, the pilot of a PV-3 approached the base on instruments, riding the beam through a heavy snow squall, and broke into the clear when approximately over the field. Upon sighting the field, the pilot started to drag the first runway he saw. Due to approaching darkness and lack of knowledge of the size of the snow squall which was rapidly closing in, he decided to land, although he realized his approach was somewhat downwind. The landing was long and fast with the result that the airplane suffered considerable damage when it skidded into an obstruction off the far end of the runway.

The squadron commander made the following comment on this accident: "The pilot did not have his voice radio adjusted for communicating with the base radio. Since he still had sufficient fuel to remain in the air at least another two and a half hours, some contact should have been made with the base station as soon as he reached the vicinity of the field. Had he so communicated, the ground control could have informed him of the extent of the snow squall, or could have directed him to an alternate field. This accident emphasizes the need for establishing and maintaining communications with a base station in reduced visibility conditions."



Gentlemen, meet an old-timer, P. S. ("Post Script") Pettibone, long since retired, but now back in parachute harness. He started flying back in the days when airplanes were built out of cigar boxes and baling wire; when an airplane was considered a success if the pilot could coax it 50 feet in the air, and a successful landing was anything you could walk away from.

The chances are, your squadron commander won't even remember P. S. Pettibone, but those steeped in the ancient lore of naval aviation will recall the many aeronautical exploits with which his name was intimately associated. His log book is studded with "firsts," dating back to such things as: "first to take off in a seaplane carrying 250 pounds of useful load" and "first to make a 4-hour endurance flight." In the last war he used to dogfight in a flying boat and use a Colt .45 to help out his combination gunner and bomber in the bow.

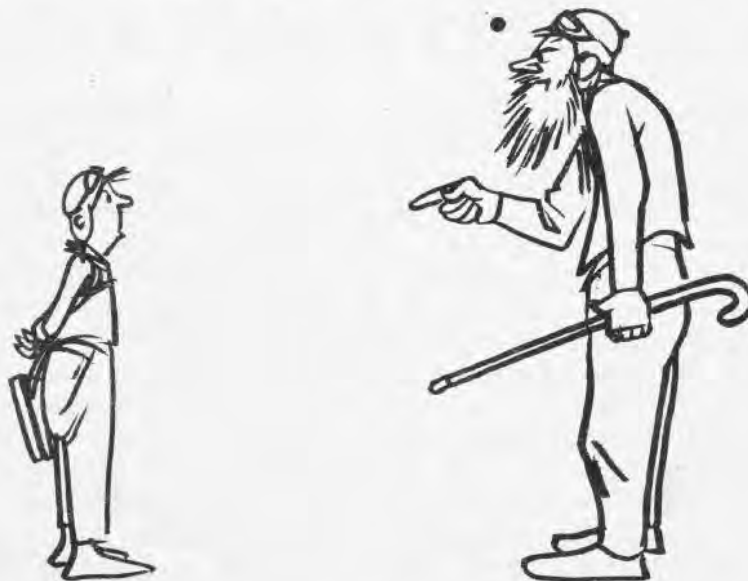
"Post Script" Pettibone was almost equally famous for his hair-trigger temper, affectionately referred to by his cronies as his low boiling point. These cronies never tired of getting a "rise" out of him by transforming his nickname into "After Thought" and other, less flattering, terms. He is still very able and eager to take care of himself, but because of his high blood pressure and his rheumatic back and out of respect for his venerable age and long, grey beard, we now defer to his desire to be called "Grampaw." Accordingly, Grampaw Pettibone it is--respectfully.

Grampaw is still a rabid aviation enthusiast, particularly where naval aviation is concerned. He has had more close calls and experiences than Eddie Rickenbacker and Dick Tracy combined. The last of Grampaw's aviation experiences came about through his love of fishing and was responsible for his return to duty. Grampaw claims fishing is the best thinking exercise in the world, so he used to spend much of his time at the river which runs through his farm, "fishing" up new ways to outwit his old Hun opponents. About ten days ago, while so engaged and just about the time he was "bagging" another Heinle, a student pilot crash-landed a few hundred yards away. Fortunately, the student wasn't injured, but the airplane caught fire and burned. The reminiscent smell of this burning airplane was too much for Grampaw. He stopped only long enough to locate his lucky helmet and returned with the student.



Now Grampaw couldn't begin to pass a physical exam, but he talked himself into a waiver; long, grey beard and all. He demanded a flight physical, but after listening to his asthmatic wheeze and visualizing his beard all tangled up in the cockpit controls, the medical board wisely turned him down. Grampaw claimed this board was biased and came to the Bureau to complain. He argued that because of his long flying experience he didn't need to be in perfect physical condition. He offered to take the Chief of the Bureau up for a hop and prove this to him, personally. He argued that because he had flown all types of planes and had had every kind of accident, he knew how to avoid them. The longer he talked, the clearer it became that it would be a shame to isolate him at any one station and not give all aviators the benefit of his vast experience. The result was, that despite his personal desire for "action," he is now occupying the chair of Aircraft Safety Counselor in the Bureau.

From this vantage seat he will reminisce and through the medium of the NEWS LETTER, point out "boners" and offer advice. Your personal flight-safety problems, if addressed to him, care of the NEWS LETTER, will receive his personal attention. He insists this is all a waste of time because aviators are too hard-headed to take advice, anyway. We disagree and entreat you to give him earnest heed, for he knows whereof he speaks. His is the real Voice of Experience. He learned the hard way--by trial and error. As he says, he has made all the errors; so there is no need for you to repeat them. May you profit by his mistakes!



Low Altitude Spins--Case 1. While circling low over a forced landing accident, the pilot of an SNJ-3 lost flying speed and spun in, killing both occupants.

Case 2. While chasing test torpedoes, the pilot of an N3N-1 made a tight turn to keep the torpedo in sight. While in this turn, the airplane went into a spin and crashed.

Case 3. The pilot of an OS2U, loaded with two depth bombs, while on anti-submarine patrol, circled low to investigate a strange object on the water. While thus engaged, he lost flying speed and crashed.

Case 4. The pilot of an SB2U-1 took off in a rather steep climb. Shortly after take-off his engine started missing. The pilot immediately lowered his nose and started a sharp turn to get back into the field. While in this turn, the airplane whipped into a spin and crashed.

Case 5. The pilot of an SBD, while coming in for a landing with a bomb load aboard, allowed his airplane to lose flying speed. It fell off, into a spin and crashed.

Bureau Comment: Many similar cases might be quoted, covering all models of airplanes. Most of these accidents are due solely to pilot error and, unfortunately, a large percentage of them are fatal. These accidents fall roughly into three general classes.

The first group, covered in Cases 1 to 3, usually occur during normal flight, while in a turn. Two major errors are noted to cause most of the spins in this category: (1) Pilots are so intent on observing something outside of their airplane that they neglect to fly their own airplane, and (2) Pilots fail to take into consideration that wings have less effective lift when banked than when level; therefore an airplane will stall and spin at a higher airspeed when banked than when in level flight. Likewise, the heavier a plane is loaded, the higher will be its stalling speed. These primary truths must be pounded home to students and must be continually remembered and acted upon by experienced pilots.

The second type of spins, those occurring immediately after take-off, is covered in Case 4. Everything which was previously said about spins is equally true of this group, with one important addition. The negative acceleration which a pilot feels when going from a steep climb to level flight gives him a false impression of the attitude of his airplane. This impression is so pronounced that he has the feeling of being in level flight when actually his airplane is still nose-high. It is readily seen why a turn with the airplane in this attitude so often results in a spin. A full realization of this danger and proper corrective action, will eliminate the majority of this type accident.

The third type of spins, those occurring during landing approaches, is typified by Case 5. Spins in this

category are usually due simply to "failure to maintain flying speed during the glide." The fact that your nose is below the horizon is not insurance that you have sufficient flying speed. With your engine idling and possibly a heavy load aboard, it is often necessary that a rather steep angle of glide be used to maintain flying speed. This requires an intimate knowledge of the flight characteristics of the particular airplane you are flying. The practice of pulling your nose up to stretch your glide, without adding a little throttle to compensate for this change of attitude, is a dangerous habit.

Attention is invited to Technical Note 17-37 on stalls; to Technical Order 20-39 on spin recovery.

Grampaw Pettibone says:- I see flying machines haven't changed much; when you get below stalling speed they still spin. Once you know this, however, and realize what a large percentage of accidents result from low altitude spins, it shouldn't take an overly bright chap to figure out the advantage of maintaining a little extra speed, say 5 or 10 knots, at low altitude. Remember the three basic flying rules: (1) don't stall! (2) Don't Stall!! (3) DON'T STALL!!!

There's also an old aviation paradox that is pertinent at this point. You might tack a copy of it above your best girl's picture as a continual reminder to keep plugging and learn all the angles of this flying game:

RECOGNIZE A FLIGHT HAZARD, IT ISN'T THERE;
FAIL TO RECOGNIZE IT, THERE IT IS.

Lost and Found Column--A primary student made the following statement after being found and returned to base: "At 0915 I left the main field on my third solo flight, to practice elementary maneuvers. The weather was misty and my knowledge of the surrounding territory was very limited. I became so engrossed in my flying that I lost sight of my landmarks. At 1100 I decided to land and obtain directions. I spotted a field and glided over it at 100 feet. It looked satisfactory, so I circled back and landed. After rolling approximately 50 feet, the landing gear struck a log hidden by the tall grass, causing the airplane to nose over."

Bureau Comment: This student is not the only pilot who has been lost at some time or other during his flight career. Many experienced pilots have a vivid memory of the time they got lost during their student days-- and even later. This student's nose-over was not an uncommon sequel to getting lost. The only medicine which will correct this trouble is better indoctrination. Primary students are usually so preoccupied in flying that their navigation is neglected. Instructors might profitably

spend a little time pointing out the location of conspicuous landmarks with relation to the home field; rivers, railroads and other prominent guides will help in this orientation. A good trick when practicing acrobatics and other air work is to start upwind as far as the designated area will permit, in order not to be drifted away while concentrating on maneuvers.

Grampaw Pettibone says:- Reminds me of the time I got lost. Landed, out of gas, in a cow pasture about sundown. When the farmer came out, he said, "Well son, we only got two beds. . .," but maybe I better not tell that story--might only lead to more young flyers getting lost. Better tell the one about Lindbergh. Seems like Lindy got lost the time he flew non-stop from Washington to Mexico City. Ran into considerable weather and was blown way off his course; off his map, in fact. He knew he must be somewhere near Mexico City, but he had no idea even in which direction it was. He finally spotted a small, stone church and immediately knew where he was. The reason was (and here's the nub) that he had studied his route so thoroughly that he knew all the landmarks within 50 miles of his course. Mark my word, it's hard to lose a chap like that, or, like Edison says, "Genius is 99.44 percent perspiration."

Luggage Fouled Rear Cockpit Controls--Upon coming in for a landing the pilot of an SNC-1 was unable to lower his flaps. After making three attempts to get into the field he landed far down the runway on his fourth try, necessitating an abrupt application of brakes to avoid running into obstacles at the end of the field. Excessive braking caused the airplane to nose over, resulting in major damage to both engine and aircraft.

An investigation of the rear cockpit disclosed that luggage which had been strapped in the rear seat had come loose and had jammed the flap control handle.

Bureau Comment: This pilot was fortunate that only the flap control was jammed. In small planes, when cross-country and ferry pilots are forced to use the rear cockpit as an auxiliary baggage compartment, great care must be taken before each flight to see that all gear is secure and that there is no likelihood of its jarring loose during flight. Remember this accident and don't let the same thing happen to you.

The following report of an aircraft accident, reported by the Army Air Forces, is reprinted herewith as of equal importance to Navy pilots:

"An accident in which an airplane was destroyed and the entire crew of three men was killed, occurred recently

under the following circumstances:

"A ferry crew was ordered to an air depot to obtain a B-24-D airplane and fly it to home station. Before turning the airplane over, the depot personnel serviced it with 1100 gallons of gasoline and flew it on a test flight for 80 minutes. The ferry pilot, prior to take-off for home at dusk, obtained an instrument clearance for an estimated flight of 2½ hours and made entry on the clearance form that he had sufficient fuel for 10 hours flying. He neglected, however, to check to insure that the airplane had been refueled, and departed from the depot before the operations ground crew could perform that service. He arrived over his home station at about 800 feet altitude and as he came in, the field boundary lights were lighted and the control tower cleared him as No. 1 to land. Instead of landing, however, he continued his flight over the field and immediately thereafter ran out of gasoline, crashing about six miles beyond. Before it crashed, the airplane had been flown the approximate length of time allowed by fuel consumption data.

"During the course of the investigation, evidence was introduced to show that the pilot was in an undue hurry to return home to attend a dance. This undoubtedly contributed to his neglect to make a check of his fuel, both at the time of his departure, and upon approaching his home station. This carelessness cost the pilot his life and caused the death of his two crew members."

Heat of Friction During Wheels-Up Landing Causes Bomb to Explode--Immediately after take-off, an SBD-3 experienced partial engine failure and was forced to land in an adjoining field. The wheels were not lowered and the airplane made a belly landing, skidding along the hard-surfaced runway on its bomb load for approximately 500 feet before coming to a stop. Just as the pilot and passenger were preparing to step out of the cockpit, the bomb exploded, disintegrating the center section and breaking the airplane in two at the pilot's cockpit.

The cause of the engine failure is undetermined; however, the high-low blower selector was found to be in the mid-position. If this were the case, it would have resulted in loss of power. The bomb explosion is believed to have been caused by the heat of friction while the plane was skidding along the runway. The bomb load consisted of a single 500-pound bomb with the nose and tail fuses both designed to produce upon impact a .01 delayed action detonation. The bomb nose fuse was found unexploded but the tail fuse was not found.

Bureau Comment: It is considered advisable to jettison bombs prior to any emergency landing, provided, of course, the bombs are released with the fuzes unarmed.

TRAINING

Flight Standardization Board--To maintain the high efficiency of the Navy's flight training stations under war pressure is the mission of the Flight Standardization Board. Although comparatively new, the trouble-shooting Board is credited with having solved numerous problems of the flying schools.

The Board was created in May 1942, but did not get into action until two months later. At its inception it was staffed by six officers, headed by Lieut. Comdr. F. M. Reeder, USN, as officer-in-charge. The group now is being enlarged to handle a multiplicity of duties.

One of its first acts was to visit each of the primary flight stations. Personnel, equipment and training procedures were surveyed with the aim of standardizing procedures in the flight instructors schools at Corpus Christi and Pensacola and at primary flight training stations. Members of the Board flew and talked with instructors to determine and check their teaching capabilities. Periodically, Board members will repeat these inspection trips.

Typical of the Board's activities is a recommendation revealed in its most recent report, centering mainly on the problem of ground loops. The Board said: "Our most recent observation on this problem has led us to believe that the principal difficulty lies in improper or insufficient instruction in off-wind landings. More time should be spent on this particular technique during the 'A' stage, possibly through the assignment at each base of an outlying field devoted exclusively to cross-wind landing practice." Such recommendations are designed to save men and equipment.

This was only one phase of the Board's suggestions to improve the flight training procedure. Others dealt with the "urgent need" of additional basic-type airplanes for instructors' practice and cross-country work and the installation of more effective and improved wind tees at most of the bases.

Headquarters of the board will be moved from Pensacola to Kansas City, Kansas, about January 28.

Naval Aviation Of The Press--A special Naval Aviation Issue of the magazine Flying is just off the press. Devoted to the work of Navy airmen in wartime, the issue has 34 articles, each of which deals with a phase of naval aviation. It has, perhaps, the most remarkable series of aviation photographs ever reproduced in any one publication.

This year's issue is similar to the Naval Aviation Issue prepared by the Bureau for the same magazine last year. As there was more time available for its preparation, the current edition is considerably larger--it contains 308 pages

compared to 258 last year. The Navy has ordered copies for special distribution to Naval Air Stations for study and training purposes. The Rockefeller Committee on Inter-American affairs is planning a special condensation of the issue for circulation in the Latin American countries.

The articles cover the aircraft carrier, all of the Navy's plane types, and also such subjects as "The Battles," "The Enemy," aerology, aviation medicine, photography, radio, the Marines, and the Coast Guard. Introductory statements have been written by Secretary Knox, Assistant Secretary Gates, Admiral King, Rear Admiral McCain, and Major General Mitchell. Other contributors include Rear Admiral Frederick C. Sherman (The Carrier); Commander James S. Thach (The Fighter Plane); Col. Ira Kimes (The Scout Bomber); Commander Clarence Schildhauer (The Transport Plane); Lieut. Joy B. Hancock (The WAVES).

The Missing Link--It's better to be a live pigeon than a statistic! Every pilot should know how to fly on instruments. At comparatively negligible cost in money and no cost in lives, instruction in instrument flying can be accomplished via the Link at any time. Whether primary instruction or merely a refresher, the Link is the answer. Recent crashes demonstrate the importance and tragic need for flying on instruments. Witness these cases:

Case 1. Not long ago two pilots flying F2A's were cleared on an instrument flight from Midland to Corpus Christi. Instrument conditions included a ceiling of 50 feet. Shortly after taking off, the senior pilot crashed in a ravine. Obviously he had attempted to maintain ground contact in hilly country. He had had 400 hours time and knew the danger of such an operation. Gambling, by contact flying, cost him his life and the Navy a plane.

In addition, he caused the death of the other pilot. Following the leader, the junior pilot also crashed, losing his life. Both fatalities were clearly preventable.

Case 2. On another occasion the junior member of a two-plane section, flying an OS2N, followed his leader into clouds at 1700 feet. Obviously, instrument flight conditions prevailed. On entering the cloud formation the leader noticed the other pilot make a shallow turn to the right and lost sight of him. A search by surface crews recovered only the aft part of the main float and life raft still in its container. An investigating board concluded that the pilot was a victim of vertigo and that his crash was the result of a spin. Spins occur when a pilot relies on his senses rather than the instrument panel.

Case 3. The leader of a two-plane section, flying an SBD-1, ran into a bank of clouds while descending. He lost control of the plane and, although having 800-1000 feet on emerging from the cloud bank, could not regain control,

and crashed. The pilot was killed, the plane demolished.

These cases emphasize the imperative need for instrument flying experience. It isn't enough to be able to fly on instruments. A pilot must have absolute faith in his instruments and must RELY on them even when his senses say they are wrong.

Day-Nite Flying Equipment--Long a problem in the training of naval aviators, the difficult question of night flying practice has been partially solved. By means of special filter goggles and a windshield cover which cuts off visibility of the student pilot, instrument flying and practice in night flying can be given during daylight hours with a decrease in the danger element.

Developed by the Bureau of Aeronautics, the equipment consists of red-filter goggles for the student pilot and a green-tinted film to cover the windshield. Through the red-filter goggles the student pilot can see the instrument board in the cockpit of the plane but the combination red-filter in his goggles and the green filter on the windshield greatly decreases or cuts off completely his visibility outside of the plane.

On the other hand, the instructor pilot, who wears no tinted goggles, can see clearly through the green film on the windshield. Therefore he is able to check practice landings made by the student pilot who is flying in simulated darkness.

The student's visibility outside of the plane can be increased or reduced simply by changing the light filters in the goggles. Two types of red goggles will be used with the same green filters. With the dark red or "blackout" goggles the student can see only the instruments--nothing outside the cockpit. The light red or "dark landing" goggles will reduce visibility to a point where depth perception is seriously impaired.

In connection with depth perception there is still some development work to be done. The equipment works very well in the case of water landings. However, landings on runways are not recommended until some additional aid (simulating a flare path) can be developed.

And Wouldn't Anybody--A fresh-water lieutenant in the Bureau of Aeronautics was detailed to Hollywood to write a script for some training films. He was entranced with the land of make-believe and the make-believers were entranced by his uniform. Shortly after his arrival he wandered through a set where there was being made a blood-and-thunder screamer about action in the North Atlantic.

Came the big tear-jerking scene when the body of a merchant seaman was to be consigned to a watery grave. Stooges shrieked for quiet. Extras near the set tip-toed. And our lieutenant, as awed as anybody, found himself about to see his first sea burial.

"Lieutenant," said the director, "is there anything wrong with this shot?" The lieutenant gulped, amazed and then hauled himself together, trying desperately to do right by the Navy.

"Why, yes," he stammered, groping gamely for an idea. "The flag draped over the body is wrong. The blue field should cover the heart."

With this he marched hurriedly off the set. His boyhood dream of stopping a whole Hollywood production had come true. Over his shoulder he heard the director yell "Hold it. Cut. Camera. Lights."

And later, as it turned out, the lieutenant found he was right!

Marine Glider Pilots Being Trained by CAA--

Enlisted co-pilots for large troop- and cargo-carrying gliders operated by the Marine Corps are being trained at Civilian Pilot Training Schools under the direction of the Civil Aeronautics Administration.

A total of 180 men now are in training. Sixty were in the first class which started November 15 and an equal number began their training on December 15 and January 15. At succeeding 8-week intervals similar classes will be started.

Upon completion of the 16-weeks training, graduates of the course will be assigned as co-pilots of large gliders with the rating of Naval Aviation Pilot (Glider). The glider training program is open to all men in the Marine Corps.

Enlisted Marines, private first class and above, may apply to the Commandant of the Marine Corps for the training. They must have the approval of their commanding officers, and are required to have had at least eight months of active service. In addition they must be under 32 years of age and "physically and temperamentally fit" as glider co-pilots. Upon completion of their training they will be given the rating of staff sergeants or retain their rate if it is already that of staff sergeant or better. Courses at the CPT schools will consist of 480 hours of ground school training, nearly 100 hours of flight instruction and training in specialized maneuvers of glider piloting.

Glider pilots who have completed the naval intermediate flight training will be commissioned Marine Corps aviators. Both the commissioned pilots and enlisted co-pilots will be sent to Marine Corps Glider Bases for further training and then to tactical glider organizations.

Technical Training Production is Up--The Navy's technical training schools which turn out the men behind the men in the cockpit are doing a land office business these days. The program is scheduled to produce 100,000 technicians this year--and greater numbers in succeeding years.

During the past year the capacity of the school at Jacksonville was increased to 9,500, and the schools at Chicago's Navy Pier, Memphis, Tennessee, and Norman, Oklahoma, were placed in operation. The capacity of each of these schools is individually greater than the total number of men under instruction in all schools of this type a year ago. Also, the schools now are located so that there is little interference with coastal operating activities.

Expansion and creating of new schools was designed to provide by July 1, 1944 all of the enlisted maintenance men required by the aircraft building program. However, acceleration of plane construction indicates the training program will have to be stepped up. Action already has been undertaken to expand facilities at the aviation maintenance schools at Norman and Memphis to permit operation on a two-shift basis.

Up to a year ago, little progress had been made in increasing the number of men under instruction at advanced technical schools because of the small number of men qualified to take such training and reluctance of operating activities to release men for such instruction. The new Chicago Vocational School was acquired last July. It has a training capacity of 3500 men for advanced mechanics. Students now are being routed there as rapidly as possible.

All of the other schools for training aviation radiomen, ordnancemen and various specialists also have been expanded and several small advance schools have been established to take care of special requirements. Arrangements have been made with most of the manufacturers turning out Navy aircraft and aviation equipment to permit the training of a number of key personnel at their manufacturing plants.

To relieve pilots at desk jobs for flight duties a program was launched to procure 12,000 non-flying officers to handle various ground duties. These non-flying officers are given general indoctrination training, followed in many cases by specialty training.

NAP Commissions Clarified--In the last issue of the NEWS LETTER, it was pointed out that all enlisted men who are eligible for flight training are eligible also for cadet training leading to commissioned status, provided they are high school graduates and unmarried. If they are not high school graduates, they may take a similar course and be commissioned as naval aviation pilots.

As NAP's they may be commissioned later upon recommendation of their commanding officers. NAP's in the Regular Navy with the rate of first class or chief may be commissioned in the Regular Navy. NAP's with similar rates in the Naval Reserve may be commissioned in the Reserve. The two are not interchangeable.

Training Manual Series Planned--Approximately two score of new manuals to aid naval aviators are being planned by the Bureau.

All of the pamphlets will be in the "sense" series and will follow the pattern of "Gunnery Sense," first of the new training manuals recently released. "Oxygen Sense," the second, will be off the press soon. It deals with the problems of high altitude flying. Others which will follow are "Dunking Sense," dealing with self-preservation after crashing or making forced landings at sea, and "Parachute Sense," which gives all the angles on baling out.

Other proposed subjects include: Radio operation and "chatter"; what to do if taken prisoner; navigation; air intelligence; how to live and work on a carrier; fuel saving; lighter-than-air rescues; operations in the jungle, arctic, desert and mountains; night flying; weather; abandon ship procedure; air crew teamwork; safety precautions; cadet instruction; maintenance; ground defense; physical fitness; anti-submarine duty; camouflage; swimming; formation flying; analysis of the enemy; Marine Corps aviation; torpedo-plane flying; take-offs; and recognition.

Any other suggestions for additional manuals will be welcomed by the Bureau.

Training Films--The following training films have been made available for distribution since the last NEWS LETTER:

MN-119a	Aerology--Icing Conditions
MC-385	Behavior of Light
SC-791b	Electricity and the Storage Battery
MB-854	Cable Laying
MN-938b	Metal Forming--Airplane Production Forming Methods
MC-1180	Optical Instruments
MA-1392	Physiology of High Altitude Flying
MB-1486	Fire Fighting
MC-1577	Electrons
MB-1621	Waste Not - Want Not
SG-1683	Multiple Cylinder Engines
SG-1689	The Lead Line
SG-1690	The Ignition System
SG-1694	Engine Lubricating System
MA-1706	Radio Transmitter--Principles and Typical Circuits
MC-2045	Yanks in Africa
MA-1626	Use of Natural Color and Concealment

MA-1713 Decontamination--Personnel and Areas
MA-1630 The Dodge 4x4 Truck Systematic Greasing and
Lubricating
MC-1364 Guardians of the Sea
MB-1619 Camouflage for All Arms
MA-1704 Radio Antennae Creation and Behavior of Radio Waves
SN-76a Painting Ships and Boats P + 1
SN-76b Painting Ships and Boats P + 11
SN-1351a Fire Control Mechanism - Differential Gear
SN-1351b Fire Control Mechanism - Telescopic Air Integrator
SN-1351c Fire Control Mechanism - Component Solver
SN-1351h Fire Control Mechanism - Reciprocal Can
SN-1351k Fire Control Mechanism - Limit Stops
SN-2038 1942 Army - Navy Game

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ENGINEERING
VOS-VSO DESIGN

An OS2U pilot is of the opinion that considerable loose thinking and reluctance among OS2U pilots regarding use of full flaps for landings centers around the belief that with full flaps you lose lateral control; and (in a horrified tone) that what little control you do have is gained by spoiling the lift on the up wing rather than by increasing lift on the down wing.

Going back to basic principles: Control, whether obtained by conventional ailerons or by spoiler devices such as on the OS2U, depends as always on airspeed. The use of full flaps greatly increases the gliding angle with the result that the plane, if speed is maintained, comes down very steeply, in a nose-down attitude. Failure to realize this and to let the plane descend at this increased rate may be the reason for pilots having difficulty in bringing the wing up after a turn. They were probably just on the point of spinning--trying to check their rapid descent by use of stick (pulling nose up) instead of adding throttle and keeping the nose down.

Pilots are further confusing the large movements of the stick necessary to control the plane when flaps are down with the loss of control which this signifies in the conventional biplane trainer.

One feature of the spoiler method of control is that it is an attempt to eliminate the "vicious circle" effect of the conventional aileron when used to bring up a wing in a slow turn. An aileron, in bringing up a low wing, does so by increasing the angle of attack, which brings the

wing nearer the stalling point. In this plane you are warned of the approaching stall by the slow response to the controls, but the instinctively applied correction (stick away over, which has probably killed many people by precipitating a stall) in this case does nothing to further stall the down wing. Hence there is a little more time to make the proper correction (opposite rudder and increased speed through change of attitude and power).

The OS2U pilot referred to during eight months time has never experienced an embarrassing landing with full flap, with and without charges, at night, in gusty weather, and cross-wind.

One may ask, "Why bother when you have much more sensitive control without them, and often such long runways that a short landing burns up all your rubber and gas?"

There are very definite reasons for their use, not the least of which is the matter of pride in your piloting ability and knowledge of your plane and what it can do. In these days of continued, rapid advancements in aviation, any pilot who neglects the fullest exploration of new techniques belongs back in the barnstorming days and should not be entrusted with anything more than a Cub. Further, the slower landing speed means there is less momentum to toy with after your wheels hit, and hence, less tendency to ground loop--an important factor considering the brakes on these planes.

Perhaps most important, in case of forced landing, is the development of the ability to land in the minimum space--to flutter slowly down over the trees into the cow pasture rather than barrelling in at no-flap speed and piling up among the trees at the windward side. And, similarly, in a water landing, although trees present no hazard, the slower you can land, the sooner your black eyes will clear up.

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ARMAMENT

Parachute Flares--The following accident resulted in the loss of the airplane involved and, under other circumstances, might have resulted in injuries or death to personnel.

The crew of the airplane, for the purpose of the mission involved, decided to carry 6 flares: 2 mounted in the regular flare racks, 1 on each wing rack in the Mk.41 Mod.2 bomb rack, and in addition, 2 more were placed in the rear cockpit. The plane was catapulted in a normal manner from the cruiser to which it was attached. Shortly after leaving the catapult, one of the rear seat flares became ignited, setting fire to the entire after section of the fuselage and eventually the empennage. The pilot immediately landed the plane but knocked off the left wing tip float and also

damaged the main float. At the same time, the other flare in the cockpit ignited, probably from heat, the plane slowly capsized and the fire was extinguished, but the plane sank in about an hour and a half. The personnel escaped in the rubber boat in which they floated around for 40 hours before finally being picked up.

The report of this accident emphasizes the fact that the handling of flares may be very hazardous unless the instructions issued by the Bureau of Ordnance are carefully adhered to. Flares should never be stowed anywhere but in the racks particularly designed for them. It is apparent that in this accident the ring in the flare tape or some of the loose static lines attached to the flare became entangled on one of the numerous projections around the bottom of the after cockpit, and that, from the force of the catapulting, this flare was forced backward and thus ignited. The Mk.5 parachute flare burns with intense heat and once ignited is difficult to extinguish. For this reason, it is recommended that personnel be instructed to use extreme care in the handling and stowage of these flares.

When ordnancemen are loading the continuous feed ammunition boxes for the side waist guns of the Model PBV-5 and PBV-5A airplanes, special precaution should be taken to see that the single loop end of the ammunition belt is placed at the lower inside edge of the box next to the ammunition chute through which it will ultimately travel. If this precaution is not taken, there is a possibility that the single loop of the last ammunition link will catch in the lightening holes of the false bottom as it travels across it, thus causing a stoppage with approximately 100 rounds of ammunition left in the chute and ammunition box.

Recently two depth bombs fell from the bomb racks of a Model PBV-5 airplane, exploding when they sank, causing several injuries and deaths, loss of the airplane, and damage to the surface vessel towing the airplane. The accident is believed to have occurred in the following manner:

While the airplane was being towed by the surface vessel, wind and waves caused the bow of the airplane to strike the propeller guard rail of the surface vessel several times with considerable force. Efforts of the crews of the airplane and surface vessel to fend the airplane off were unsuccessful. Since approximately four inches of movement of the bomb arming and releasing cables in the airplane will operate the bombrack mechanism, and since these cables terminate in bomb arming and releasing handles mounted in the

bow of the airplane, it is probable that the sharp blows on the bow of the airplane caused a movement of the arming and releasing cables which resulted in the arming and dropping of the two depth bombs into the water.

This incident once again demonstrates the dangers which are inherent in manual arming and releasing systems for bomb installations, particularly in large Class VPB airplanes. Accidental arming and dropping of bombs from Model PBY-5 airplanes have also been reported as having been caused by large wing deflections resulting from air loads while in a sharp turn in flight and by unintentional pulling of exposed cables in the airplane hull by body contact.

Although it is not likely that manual release systems will be eliminated because of the necessity for having a positive standby means of jettisoning the bomb load in a flight emergency, serious consideration is being given to the elimination of manual arming systems and the use of electric arming systems only. It is likely that early action to this end will be taken by the Bureau of Aeronautics.

* * * * *

INSTRUMENTS

Automatic Pilot Booklet--The Sperry Gyroscope Company, Brooklyn, New York, has recently published a pocket-size booklet on the Mark 4 automatic pilot with the title "Let Elmer Take Over." The Bureau is taking action to distribute this pamphlet to each naval aviator, to each officer graduating from an Intermediate Training School and to each VSB and VSO squadron in sufficient quantities to allow one for each airplane in the squadron. The booklet contains valuable information on the operation and maintenance of the Mark 4 pilot and is recommended reading for all naval personnel operating or maintaining these pilots.

A similar publication for the Mark 3 pilot will be distributed at an early date.

Automatic Pilot Shortage--A critical shortage of Mark 4 automatic pilots has necessitated their elimination from all Model SB2A and SBW-1 airplanes, from all Model SB2C-1 and -2 airplanes except serial numbers 00017 to 00040, inclusive, and from all but the first Model SO3C-1, -2, and -4 airplanes (serial numbers 4730 through 4894). Provision for installation of an automatic pilot is being made in all of these airplanes in the belief that sufficient quantities for service installation will be available approximately June 1, 1943. Until automatic pilots are again available, the airplanes will be delivered with AN standard directional gyro and gyro horizon indicators installed.

* * * * *

SHIPS' INSTALLATIONS

Attention is invited to the following arresting gear bulletins which have been issued to aircraft carriers, auxiliary aircraft carriers, U.S.S. WOLVERINE, and stations and units concerned with operation of arresting gear:

Arresting Gear Bulletin No. 1 dated 29 Oct. 1942 discusses airplane barrier height adjustment.

Arresting Gear Bulletin No. 2 dated 30 Nov. 1942 discusses yielding element operation during landings.

Arresting Gear Bulletin No. 3 dated 4 Jan. 1943 introduces a comparatively new method of arresting gear control and contains examples, performance production charts and other data of value to personnel concerned with arresting gear.

* * * * *

GENERAL

The story of Torpedo Squadron Eight is well known-- thirty men, fifteen planes, met the enemy in the Battle of Midway, June 4, 1942. One man came back.

The Bureau fortunately obtained a moving picture, in technicolor, of the Squadron personnel with their planes on the carrier deck just before take-off for the battle. Copies of this film were sent to the next of kin of the missing men.

Of the many inspiring letters received from these wives and parents, none expressed more patriotic devotion to the Nation's cause than this mother's, enclosing her son's last message. Both are reprinted with her permission:

"We have received the motion picture film of Squadron Eight.

"Words fail me when I try to express our gratitude to you and your Department. We feel we have been blessed above many families, and Bill wrote us such a fine last letter. Somehow I feel it stands for the kind of country we have."

* * * * *

This letter will be mailed only if I do not get through the battle, which we expect to come off almost any hour. I am making a request that this be mailed as soon as possible after I fail to return.

As you know, I am the gunner and radioman in a plane, so it is up to me to shoot first and best. I would not have it any different.

I want you all to know that I am not the least bit worried, and Mom you can be sure I have been praying

every day and am sure I will see you up there. Perhaps I have not always done the right thing. I only hope that you don't think too badly of my actions.

The best of luck to all of you and be seeing you all when life will be much different "up there."

Be sure and remember I am only one of many, and you also are only one of many.

* * * * *

Another son of this family has since joined the Navy.

Another warship of the United States Fleet will be christened with an historic Texas name as an honor to the patriotic citizens of Houston, and Harris County, Texas. This one will be an aircraft carrier--the U.S.S. SAN JACINTO.

On December 1, 1942, a group of Houston citizens undertook to sell in their own community \$36,100,000 of war bonds to cover the cost of replacing the cruiser U.S.S. HOUSTON, which went missing in action with all hands while gallantly opposing a Japanese fleet in the Java Sea.

Secretary of the Navy Frank Knox, visiting Houston on December 21, 1942, learned that the Texans had subscribed not \$36,100,000, but \$85,749,884.24--enough bonds not only to replace the HOUSTON, but also to cover the cost of a new aircraft carrier!

In appreciation, Secretary Knox announced on January 5, the Navy has assigned the name SAN JACINTO to an aircraft carrier now under construction.

The following officers have been awarded decorations by the President of the United States:

Commander William N. Updegraff, U.S.N., received the Navy Cross with the following citation:

"For extraordinary heroism and distinguished service as Commanding Officer, Naval Air Station, Dutch Harbor, prior to and during the attack on that station by enemy Japanese aerial forces. As a consequence of the thorough and comprehensive preparation for the defense of this important tactical post by Commander Updegraff, the damage and loss of life that occurred was held to a minimum. His coolness under fire, his calm and courageous bearing were a source of encouragement and inspiration to all who served with him. Despite damage incident to the attack, the Naval Air Station continued to function efficiently and maintained competent support for the operation of our planes and ships both during the attack and in the tense days of enemy proximity that followed. Commander Updegraff's judicious foresightedness and exemplary

devotion to duty were in keeping with the highest traditions of the United States Naval Service."

Lieutenant William F. Christie, U.S.N.R., was awarded the Navy Cross for his part in the battle of the Coral Sea, and the Gold Star in lieu of a second Navy Cross for heroism in the Battle of Midway.

His Navy Cross citation asserts:

"For extraordinary heroism and courageous perseverance as pilot of an airplane of a Bombing Squadron in dive-bombing attacks against enemy Japanese forces in Tulagi Harbor on May 4, and against two enemy aircraft carriers in the Coral Sea, on May 7 and 8, 1942. Pressing home these attacks in the face of tremendous anti-aircraft fire, and, on May 8, also harassed by heavy aircraft opposition, he assisted in the sinking of one carrier and in the sinking or severe damaging of the second carrier and other enemy vessels. His strict devotion to duty and gallant self-command against formidable odds contributed materially to the success of our forces in the Battle of the Coral Sea."

His Gold Star citation declares:

"For extraordinary heroism and outstanding devotion to duty as pilot of a plane in a Scouting Squadron in the Battle of Midway against enemy Japanese forces on June 6, 1942. With utter disregard for his own personal safety and in the face of intense anti-aircraft fire, Lieutenant Christie participated in determined and effective strafing and bombing attacks on fleeing Japanese forces, obtaining a successful hit amidships on a Japanese vessel which caused terrific explosions, thereby contributing to the destruction of that vessel and the victory achieved by our forces. Lieutenant Christie's courageous conduct on this occasion was in keeping with the highest traditions of the United States Naval Service."

Lieutenant (junior grade) John M. Clarke, U.S.N.R., was awarded the Navy Cross with the following citation:

"For extraordinary heroism and courageous devotion to duty as pilot of a dive bomber in action against enemy Japanese forces in the Battle of the Coral Sea, May 8, 1942. Despite machine-gun fire from an enemy dive bomber, Lieutenant (junior grade) Clarke boldly closed the range to attack and, directing his fire deliberately and accurately, shot down the enemy plane in flames. His determination and utter disregard for his own personal safety were in keeping with the highest traditions of the United States Naval Service."

Lieutenant Edgar E. Stebbins, U.S.N., was awarded the Distinguished Flying Cross by the President with the following citation:

"For heroism and extraordinary achievement in an aerial flight as pilot of an airplane in a scouting

squadron in action against enemy Japanese forces in the Battle of Midway on June 6, 1942. With utter disregard for his own personal safety, Lieutenant Stebbins participated in persistent bombing and strafing attacks against fleeing enemy forces in the face of tremendous anti-aircraft fire. His stern fortitude and resolute devotion to the accomplishment of a vastly important objective contributed to the victory achieved by our forces and were in keeping with the highest traditions of the United States Naval Service."

The President awarded the Distinguished Flying Cross to ten enlisted men for heroic performance of duty in the Battle of Midway. They are:

Floyd D. Adkins, AMM2/c, USN	Donald L. Hoff, Rm3/c, USN
Donald L. Canfield, AR1/c, USN	Clarence C. Kiley, AR1/c, USN
Clyde S. Mortensen, AR1/c, USN	Wilbur L. Woods, AR2/c, USN
George E. Ferguson, AR3/c, USN	William D. Horton, AR2/c, USN
William C. Humphrey, Jr., AR1/c, USN	
Wilfred N. McCoy, Sea2/c, USN.	

Adkins and Hoff received their awards with identical citations. The citations state:

"For extraordinary achievement in aerial combat as gunner of an airplane in action against enemy Japanese forces in the Battle of Midway June 4-6, 1942. With heroic and meritorious devotion to duty, he rendered valuable assistance to his pilot by detailing continuous specific and comprehensive information concerning the disposition and movements of enemy Japanese units. His courage and cool determination in carrying out this vital task in the face of furious and repeated enemy attacks were in keeping with the highest traditions of the United States Naval Service."

The citations of Canfield, Kiley, Mortensen, Woods, and Ferguson were identical. They read:

"For heroism and extraordinary achievement in an aerial flight as radioman and free machine gunner in an airplane in action against enemy Japanese forces in the Battle of Midway on June 6, 1942. Participating in persistent bombing and strafing attacks against fleeing enemy light forces in an airplane which obtained a bomb hit on an enemy vessel, he maintained calm and courageous conduct while attacking in the face of tremendous anti-aircraft fire. His grim fortitude and resolute devotion to the accomplishment of a vastly important mission contributed materially to the victory achieved by our forces and were in keeping with the highest traditions of the United States Naval Service."

Horton, Humphrey and McCoy were awarded their decorations with identical citations which read as follows:

"For extraordinary achievement and heroic conduct in aerial flight as free gunner and radio operator of an

airplane in action against enemy Japanese forces in the Battle of Midway, June 4-6, 1942. His unflinching devotion to duty and his courageous determination in returning the fire of enemy Japanese fighters enabled his pilot to press home an attack against concentrated anti-aircraft fire and violent fighter opposition. His marked integrity in maintaining continuous fire in the face of such tremendous odds and his complete disregard for his own personal safety were in keeping with the highest traditions of the United States Naval Service."

Lieutenant Edward V. Hardway, Jr., USNR, received a letter of commendation from the Secretary of the Navy for developing improved methods of gunnery training. His letter states:

"The Department has been informed that you have developed a number of methods of teaching gunnery, including a system of carefully prepared instruction cards known as Aerial Gunnery Training Cards, and a pamphlet on the subject of gunnery. The value of the cards prepared by you is evidenced by the fact that some 15,000 sets have been distributed within the Navy and a larger quantity within the Army for training purposes. For your ingenuity and perseverance in this matter, you are hereby commended."

On January 1, "Dauntless" dive-bombers (Douglas SBD) dropped bombs in the vicinity of Kokumbono, where Japanese headquarters on Guadalcanal Island are believed to be located. Dense jungle growth prevented observation of results.

"Marauder" medium bombers (Martin B-26), escorted by "Airacobra" (Bell P-39), "Lightning" (Lockheed P-38) and "Warhawk" (Curtiss P-40) fighters bombed the Munda area of New Georgia Island. All U. S. planes returned undamaged. Results of the raid were not reported.

On January 2, at 8:20 A.M. "Marauder" medium bombers (Martin B-26) and "Dauntless" dive bombers (Douglas SBD), escorted by "Wildcat" (Grumman F4F) "Airacobra" (Bell P-39) and "Warhawk" (Curtiss P-40) fighters, bombed the Japanese airfield at Munda on New Georgia Island. Hits were scored on anti-aircraft emplacements and other installations.

"Flying Fortress" heavy bombers (Boeing B-17), escorted by "Lightning" fighters (Lockheed P-38) bombed a formation of enemy destroyers 30 miles south of Shortland Island. No hits were observed.

At 6:00 P.M. "Dauntless" dive bombers escorted by "Wildcats" and "Lightnings" attacked a detachment of Japanese destroyers 30 miles northwest of Rendova Island in the New Georgia Group. The destroyers were protected by ten enemy fighters and one dive bomber. One of the enemy destroyers was left burning badly and another appeared to be sinking.

Patrol activity on Guadalcanal Island resulted in killing between 30 and 35 Japanese. U. S. positions on Guadalcanal Island were shelled by enemy artillery.

On January 3, at 7:25 A.M. "Dauntless" dive bombers with "Lightning," "Wildcat" and "Airacobra" escort attacked the enemy airport at Munda. No enemy planes were observed either in the air or on the field.

Hits were scored on three enemy guns. No U.S. planes were lost although some suffered minor damage.

On January 4, "Catalinas" (Consolidated PBV) and "Flying Fortresses" (Boeing B-17) executed a series of air attacks on the Munda area, in the New Georgia group. The same evening dive bombers, escorted by fighters, bombed anti-aircraft positions, taxi-ways and runways in the same area. Results of the raids were not reported. All of our planes returned.

Our troops on Guadalcanal attacked and gained high ground positions in the vicinity of Mount Austen, capturing an enemy field piece. Six enemy counter-attacks were repulsed with 150 Japanese killed. Patrols in other sectors killed 20 additional Japanese and captured howitzer mortars and light machine guns.

During the darkness of the early morning on January 5, a U. S. task force of surface units successfully bombarded the Japanese airfield at Munda on New Georgia Island. As the task force retired it was attacked by Japanese dive-bombers. Four "Wildcats" (Grumman F4F) intercepted and shot down four of the enemy dive-bombers and probably destroyed two more. All "Wildcats" returned safely after the remaining enemy planes had withdrawn.

"Marauder" medium bombers (Martin B-26) later attacked enemy installations at Munda. Results could not be observed.

During the afternoon "Flying Fortresses" (Boeing B-17), escorted by "Lightning" fighters (Lockheed P-38), attacked an enemy heavy cruiser at Buin on the island of Bougainville. Results were not observed. Our fighters were attacked by twenty-five "Zeros" and float-type biplanes. Three enemy planes were shot down and two others were probably destroyed. Two U. S. fighters were lost.

"Flying Fortresses" attacked and scored a bomb hit on a Japanese transport in the Shortland Island area.

During the day 84 Japanese were killed in mopping-up operations in the Mount Austen sector on Guadalcanal Island.

The following statement is a resume of a joint Army-Navy announcement of January 3, 1943:

In order that the general public may get a better idea of the character of military aircraft and more easily identify the planes mentioned in press dispatches from the

battle fronts and training schools, the Army and Navy have officially recognized the popular names which have become associated with the various models.

This practice has long been in effect in England. The names "Spitfire" and "Hurricane" have become almost household words both there and in this country. The British names for American-built aircraft have, with a few exceptions, been retained on this side of the water.

Since many of these planes have earned fame, it was felt that this practice should be maintained rather than attempt to plant new and perhaps conflicting names in the minds of the civilian population. Certain minor changes have been made, as in the instance of the Curtiss P-40 series, models which have been known as the "Tomahawk," "Kittyhawk," and "Warhawk," will now be known only as the "Warhawk."

One important exception to the rule of adopting the British name is the Grumman "Wildcat." In the Fleet Air Arm of the Royal Navy, this plane is called the "Martlet." Against the Japanese the "Wildcat" has made the reputation of being the best carrier-based fighter in the world. To help the American public follow this model's exploits in action with the Fleet Air Arm, as well as our own, the Royal Navy has been requested to consider adopting our name. Present indications are that this request will be approved.

In carrying out this plane-naming plan, the manufacturers' suggested names were given first consideration and, unless there was good reason, these suggestions were approved.

With a few exceptions, where manufacturers have not yet submitted suggested names, the following will be applied to American combat aircraft (technical designations are also given):

<u>Army</u>	<u>Navy & Marine Corps</u>	<u>Heavy Bombers</u>	<u>Name</u>
		<u>Original</u>	
		<u>Manufacturer</u>	
B-17		Boeing	Flying Fortress
B-24	PB4Y	Consolidated	Liberator
		<u>Medium Bombers</u>	
B-18		Douglas	Bolo
B-23		Douglas	Dragon
B-25	PBJ	North American	Mitchell
B-26		Martin	Marauder
B-34	PV	Vega	Ventura
		<u>Light Bombers</u>	
A-20	BD	Douglas	Havoc (Attack)
A-24	SBD	Douglas	Dauntless (Dive)
A-25	SB2C	Curtiss	Helldiver (Dive)
A-29	PBO	Lockheed	Hudson (Patrol)
A-34	SB2A	Brewster	Buccaneer (Dive)
A-35		Vultee	Vengeance (Dive)
	SB2U	Vought-Sikorsky	Vindicator (Dive)
	TED	Douglas	Devastator (Torpedo)
	TBF	Grumman	Avenger (Torpedo)

<u>Patrol Bombers (Flying Boats)</u>			
OA-10	PBY	Consolidated	Catalina
	PB2Y	Consolidated	Coronado
	PBM	Martin	Mariner
<u>Fighters</u>			
P-38		Lockheed	Lightning
P-39		Bell	Airacobra
P-40		Curtiss	Warhawk
P-43		Republic	Lancer
P-47		Republic	Thunderbolt
P-51		North American	Mustang
	F2A	Brewster	Buffalo
	F4F	Grumman	Wildcat
	F4U	Vought-Sikorsky	Corsair
<u>Scouting Observation (Seaplanes)</u>			
	SO3C	Curtiss	Seagull
	OS2U	Vought-Sikorsky	Kingfisher

A lone pilot from the British Fleet Air Arm, flying an American-built plane, captured an important North African airport during the early days of the United Nations' invasion.

The British assigned four "Martlets" to patrol the airports of Maison Blanche and Blida. This patrol, encountering anti-aircraft fire over these fields, returned the compliment vigorously. A relief patrol of "Martlets" assigned the same mission noticed the anti-aircraft fire had ceased, and that people were standing on the Blida field waving white handkerchiefs. Also noted was a white ground strip with "U.S." printed on it.

The British flyers suspected a trap, but finally Lt. B.H.C. Nation, R.N., decided to take a chance, and landed. A French general handed him a slip of paper on which was written: "Blida aerodrome is placed at the disposal of the Allied Armies."

Lt. Nation admits he felt some embarrassment, having on his hands a large airport and not knowing exactly what to do with it. While he pondered his next move, however, ground forces arrived and occupied the installation.

A Chinese youth, 15 years of age, has become an "admiral."

Thomas Lum, a high school student of Honolulu, Hawaii, built 50 model planes for the Navy in connection with its 500,000 model plane construction program, and thus became eligible for an Aircraftsman Commission as "Admiral."

Only four others have received this honor.

Six naval aviation officers have been awarded decorations for extraordinary heroism.

Commander Maxwell F. Leslie, USN, was awarded the Navy Cross, with the following citation:

"For extraordinary heroism as commanding officer of a bombing squadron in action against enemy Japanese forces in the Battle of Midway on June 4, 1943. Leading

his squadron in a vigorous dive-bombing assault against Japanese naval units, Commander Leslie, in the face of concentrated anti-aircraft fire and powerful fighter opposition, pressed home his attack with courageous aggressiveness and utter disregard for his own personal safety. His capable initiative and inspiring leadership contributed to the high state of combat efficiency which enabled his squadron to score at least five direct hits on an enemy aircraft carrier and other vessels. His conscientious devotion to duty was in keeping with the highest traditions of the United States Naval Service."

The Navy Cross was also awarded to Lieutenant (jg) Edward Howard Bayers, USN. His citation reads:

"For extraordinary heroism and distinguished service while participating as Section Leader of a combat patrol unit in an aerial flight against enemy Japanese forces in the Battle of Midway, June 4-6, 1942. Sighting two 'Zero' fighters on June 4, Lieutenant (jg) Bayers, with bold aggressiveness and great personal risk, pressed home a persistent attack against these enemy aircraft until he had shot the leader down in flames. While diving to escape the surviving wingman, who had out-maneuvered him and gained the offensive, he sighted a Japanese torpedo plane approaching the U.S.S. YORKTOWN. Too intent upon protecting our aircraft carrier to be deterred by the threatening proximity of the enemy fighter, he intercepted the torpedo plane and destroyed it. Again, on June 6, as member of an attack group assigned to repel a Japanese naval force, he defied a fierce barrage of concentrated anti-aircraft fire to strafe and seriously damage an enemy destroyer. His superb initiative and expert airmanship aided greatly in the success of our forces and were in keeping with the highest traditions of the United States Naval Service."

Lieutenant (jg) Walter A. Haas, USNR, was awarded the Gold Star in lieu of the second Navy Cross. He previously had received the Navy Cross for service during the Battle of the Coral Sea.

Lieutenant (jg) Haas' Gold Star citation declares:

"For extraordinary heroism as pilot of an airplane of a fighting squadron in action against enemy Japanese forces in the Battle of Midway on June 4, 1942. Taking off from the U.S.S. YORKTOWN to defend her against aerial torpedo attack by Japanese forces, Lieutenant (jg) Haas, due to circumstances which had rendered the fueling of his plane impossible, faced the hazardous prospect of aerial combat with only a small fraction of his gasoline capacity available. Despite the fact that his plane, shortly after becoming airborne, was severely damaged by anti-aircraft fire directed by our own ships against the

attacking enemy, he pressed home such a vigorous assault against a Japanese torpedo plane that it eventually swerved from its course and made a wild release of its torpedo. Following up his attack with determined persistence, he shortly afterwards observed the craft crash into the sea. His courageous devotion to duty, maintained at great personal risk against tremendous odds, was in keeping with the highest traditions of the United States Naval Service."

Ensign John B. Bain, USNR, was also awarded the Gold Star in lieu of the second Navy Cross, having previously been awarded the Navy Cross for action in the Battle of the Coral Sea. His citation reads:

"For extraordinary heroism as pilot of an airplane of a fighting squadron in action against enemy Japanese forces in the Battle of Midway on June 4, 1942. Inadvertently separated from his section leader during the course of an initial assault against a large number of Japanese fighters, Ensign Bain nevertheless pressed home six more consecutive attacks against numerically superior enemy fighters, shooting one down in flames and damaging or driving off the others. His gallant initiative and persistent devotion to duty, maintained at great personal risk against tremendous odds, were in keeping with the highest traditions of the United States Naval Service."

Ensign Harry B. Gibbs, USNR, was awarded the Navy Cross. He previously had been awarded the Distinguished Flying Cross for action in the Battle of the Coral Sea.

Ensign Gibbs' Navy Cross citation states:

"For extraordinary heroism as pilot of an airplane of a fighting squadron in action against enemy Japanese forces in the Battle of Midway on June 4, 1942. While flying combat air patrol over friendly surface ships, Ensign Gibbs engaged in an assault upon a formation of eighteen Japanese dive bombers and, by relentless pursuit and expert gunnery, shot down one. Continuing his attack with only a single gun firing, he caused another dive bomber to burst into flames and explode as it struck the sea. Later in the same day, while he was fighting to intercept an aerial torpedo attack upon the U.S.S. YORKTOWN, his plane was so badly damaged that he was forced to make a landing on the water, where he remained all night, partially submerged because of bullet holes in his rubber raft. His aggressive skill and courageous devotion to duty, maintained at great risk against tremendous odds, were in keeping with the highest traditions of the United States Naval Service."

Ensign Milton Tootle, IV, USNR, received the Navy Cross, with this citation:

"For extraordinary heroism as pilot of an airplane of a fighting squadron in action against enemy Japanese

forces in the Battle of Midway on June 4, 1942. While engaged in an assault against Japanese aerial forces about to attack his aircraft carrier, Ensign Tootle pursued a torpedo plane so relentlessly that he came under a fierce barrage of anti-aircraft fire from his own ship. Although the resultant damage to his plane caused the cockpit to become filled with smoke, he nevertheless pressed home the attack until his gunfire struck down the torpedo plane and sent it exploding into the sea. Despite the terrific hazard of flying his battered and smoking craft, he continued to carry on with grim determination and magnificent fortitude until ordered to crash-land in the water. As a last resort he was required to bail out and a short time afterwards was picked up by a friendly destroyer. His aggressive skill and courageous disregard of personal safety were in keeping with the highest traditions of the United States Naval Service."

Second Lieutenant Kenneth D. Frazier, USMC, shot down 11½ Jap planes over Guadalcanal in a "Seven-eleven" Wildcat fighter-plane--a plane No. 11 with an engine taken from plane No. 7. Then he switched to plane No. 10 and was shot down!

On his return from the battle zone, Lt. Frazier told this story:

"Operating from Henderson Field on Guadalcanal, I had been credited with 11½ Jap planes--six Zeros and five and one-half bombers. I got the half when a buddy and I teamed up on a Jap bomber.

"I decided to change to No. 10 and shortly was after another Zero. I stayed with that baby just a second too long, for another Zero got on my tail. Frankly, I never saw him. He creased right up the back of my plane. A shell exploded near my foot, and the plane caught fire. I made for a cloud and escaped him, but I couldn't escape the fire inside my fuselage.

"I knew it would be suicide to bail out over the island at that point, as the Japs had just landed additional troops there. I figured to take my chances with the water. I skidded into a slow glide to reduce the fire-spread as much as possible, and sailed out a couple of miles to sea. I started to jump at 8,000 feet.

"The wind suddenly grabbed me, and jerked me head over heels from the burning plane. The force was such that I inadvertently yanked my ripcord at 8,000 instead of falling several thousand feet so as to reduce the amount of time I would have to spend in the air as a potential target.

"The 'chute opened and, suddenly, I heard a snapping around my ears. I looked up and there was a Jap Zero coming straight for me. It looked like he couldn't miss me if he

tried. I could hardly get my breath at this point. His four machine guns opened up. I watched the bullets as they came at me.

"Somehow, he missed--a miracle. Then he was past me, stalling into a sharp bank to return as quickly as possible for another go. And the ocean was still thousands of feet below. Then I saw one of our planes. One burst from that Heaven-sent Wildcat set the Jap afire and he headed for home. I landed safely in the water, about two miles off shore and 15 miles from my airport."

Lieutenant Frazier still had danger to contend with. Collecting his wits while he kept afloat, he discovered that he had a giant, deadly sting-ray for a companion. The sting-ray, surfacing about 50 yards away, either failed to spot Frazier, or displayed the proper respect for Marine air power, for it did not molest the flyer, who shortly was picked up by a destroyer.

In the early fall a scouting squadron flew its "Dauntless" dive-bombers off the deck of a carrier to operate from the landing strips of Guadalcanal. After five weeks of dive-bombing, strafing, dog-fighting, scouting and rescue flights--'round the clock flying of any kind required--the pilots and gunners of the squadron left behind a strong bid for the record of having been the busiest squadron on that beleaguered isle.

Under the command of Lt. Cdr. L. J. (Bullet Lou) Kirn, the 21 pilots of the squadron carried through attacks on 94 enemy vessels--38 warships and six transports. Two pilots, Ensigns Oran Newton, Jr., and E. S. Wages, Jr., and four rear gunners are listed as missing.

Never did the full force of the squadron take part in any one attack. Many of the enemy warships had to raise their anti-aircraft against a lone "Dauntless" dive-bomber screaming down from the skies.

In all, attacks were made on 75 destroyers. One destroyer was strafed by Lt. R. M. Milner and another by Lts. (jg) E. C. Mildahn and Alfred Wright, Jr., with machine guns only. Six heavy and seven light cruisers, in addition to the six transports, also felt the blows of the dive bombers.

Many of the attacks on enemy warships were made at night, when navigation and flying difficulties added to the pilots' risks.

The damage inflicted on the Japanese was heavy. One destroyer and one transport definitely were sunk, four destroyers probably were sunk; two destroyers, five heavy cruisers and five light cruisers were damaged. Other damage was undoubtedly suffered by the enemy, but the specific extent could not be determined due to weather conditions or darkness.

The squadron worked under the adverse conditions prevailing at Guadalcanal throughout the five-week period. Frequently Jap naval forces shelled Henderson field heavily; enemy air raids were regular occurrences; the thunder of nearby night battles shattered the pilots' sleep. A constant state of "alert" was the order for pilots not in the air. Debilitating tropical illnesses, including dysentery, attacked members of the squadron.

Two major attacks and eight forays by search sections were conducted against enemy positions at Rekata Bay. Other major attacks included those against Viru Harbor on New Georgia Island, Moe Island in the Russels and San Jorge Island off Santa Isabel. In addition, enemy positions on Guadalcanal were bombed and strafed almost daily, and reconnaissance for operations by ground forces was provided. Five lost pilots from other units were found during scouting missions.

The daily search missions by single or two-plane sections were considered the most hazardous duty, for enemy planes were frequently encountered in decidedly superior numbers. Despite the opposing odds, two float biplanes and one land-based Zero were shot down during the conduct of these missions.

The squadron was well tempered for the Guadalcanal ordeal by its combat experiences of the period immediately preceding. It was part of the Air Group on a carrier which joined in the initial assault on the island, despite the fact that the "flat-top" had been at sea for nearly two months without touching port. Following the first landings, the squadron attacked the RYUZYU, an enemy carrier which they damaged badly, and possibly sank.

As focal point for some 35 separate training activities, Naval Air Technical Training Command faces a job of no small magnitude. The job is new. It developed in answer to the manpower needs of the wartime Navy.

Since the outbreak of the war, the pace of training officers and men for technical aviation duties has increased rapidly. All existing facilities have been taxed to capacity, many more have been brought into service. Old schools have been enlarged, new ones built from the ground up. NATTC was created to facilitate the administrative and training problems arising from such rapid growth. Established by the Secretary of the Navy on October 1, 1942, it comprises in general all schools giving naval air technical training except those which train flight students.

Rear Admiral A. C. Read, Chief of Naval Air Technical Training, is the direct representative of the Navy Department, including its bureaus and offices, in all matters affecting the activities of the Command. His immediate superior is the Vice Chief of Naval Operations.

Immediate members of Admiral Read's staff are: Capt. R. F. Whitehead, Chief of Staff; Cdr. F. W. Priestman, Flag Secretary and Administrative Officer; Lt. Cdr. Norman S. Gallison, Training Officer. Headquarters of NATTC are located at 3600 Board of Trade Building, Chicago, Illinois.

Training activities assigned NATTC are located in every section of the country. Norman, Memphis, Corpus Christi, Jacksonville, Chicago are just the big stops on the list of some 35. There are aviation maintenance schools for machinist mates, metalsmiths, ordnancemen, radiomen, as well as a special school of advanced aviation maintenance; schools giving instruction in bombsight, gunnery, recognition, airship, radar, and others teaching parachute materials, Link trainer, maintenance, aerography, photography, photo interpretation. This is just the bulk of the big job assigned NATTC. Still other schools take up work in air combat intelligence, indoctrination, operational flight control. There is also an important program which gives officers and men specialized study at some 24 aircraft factories.

The mission of NATTC is to produce technically trained personnel in the Naval Aeronautic Organization in such quantity and quality as the wartime Navy requires. To this end, the organization takes up the task of improving administration and quality of instruction in NATTC schools.



Warming up the engine seemed a nuisance to Dilbert



SHIPS

USS NASSAU

The USS NASSAU has received a beautiful cigarette humidor, the gift of the Duke and Duchess of Windsor. It is rumored that a ship's bell is also en route as a present to the ship's company.

SQUADRONS

A pilot of PATROL SQUADRON THIRTY-FOUR, flying a PBY-5, was forced to land in the open sea because of complete engine failure.

The plane was heavily loaded, having a set of beaching gear, 13 passengers, a large amount of baggage, 450 gallons of fuel, plus two Mk XXIX 650-pound depth charges. The depth charges, incidentally, were overlooked in the excitement of landing and were not released until take-off. At the time of engine stoppage, the plane was flying at an altitude of 1500 feet, headed into the wind, which was approximately 15 knots. The swells were about five feet high, perpendicular to the wind. A full-stall landing was effected into the wind, perpendicular to the swells.

The plane first touched the water on the crest of a swell and bounced into the air three times before staying down. An inspection showed that not a single rivet had been knocked out on the landing and that the main fuel valve on the starboard tank was safety wired in the closed position.

After the valve had been unwired and turned to the on position, the engines were started and all made ready for take-off. The take-off was made into the wind, perpendicular to the swells. While the plane bounced along at 30 or 35 knots, the two depth charges were released in an unarmed condition. Before gaining flying speed the plane was thrown into the air by a large swell and was dropped back three times before gaining sufficient speed to remain in the air.

At destination, inspection showed that the hull had been wrinkled between stations four and five on the port side, undoubtedly on the take-off.

The following procedure is submitted as an acceptable one for forced landings at night. It is prescribed by Fleet Air Wing Eleven and is squadron doctrine for VP-34.

Single Planes (Altitude 1500 Feet or Over)

1. As soon as a forced landing is indicated, turn downwind and release simultaneously a flare and several float lights at some altitude above 1000 feet when headed downwind. If two flares are available, release both--the first at 2000 feet and the second as soon as possible between 1000 and 1500 feet or when turn downwind is completed.

2. Continue downwind, releasing float lights at intervals, and maintain a fairly high speed until time to spiral into wind. Turn and approach lighted area, losing altitude rapidly in order to beat the flares to the water. When proceeding into the wind, turn a few degrees to right or left in order to facilitate lining up float lights. Prior to landing turn back into the wind.

This procedure is effective and should enable a full-stall landing to be made safely. It requires that float lights be available for instant use and that all personnel be thoroughly indoctrinated. It has been suggested that the plane having the forced landing reel out about 50 feet of antenna wire, the carrying away of which will be a good check on final altitude, but it is felt that watertight integrity of the compartment outweighs that advantage.

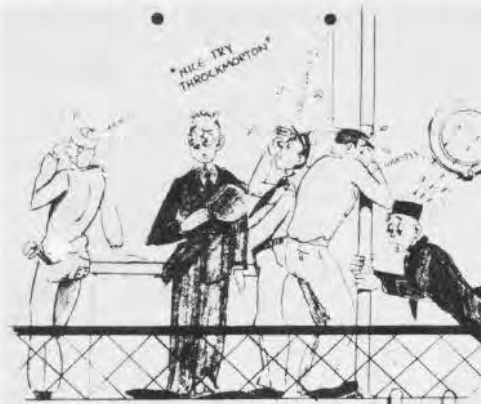
It should be remembered that as soon as a forced landing is imminent, whether it be at night or day, all depth charges and bombs should be jettisoned before landing.

Fortunately, Patrol Squadron Thirty-Four has yet to try the above procedure at night in actual practice, but they have it on good authority that it will work.

Bureau Comment: This occurrence emphasizes the necessity of adequate pre-flight inspection. Had this rule been followed in this case, checking suction on all tanks, the safety wiring would have been detected and the forced landing prevented.

FLEET AIR WING FOUR has been rather too busy and too scattered to contribute regularly to the Bureau's NEWS LETTER, much as it appreciates the contribution of other units, particularly those on the humorous side. The cartoons on page 35 have amused not only the personnel of Patrol Squadron Forty-Three, in which they originated, but the entire Wing, by which they are in great demand.

But the Wing has its serious moments, too. It would like to indicate the lengths some intelligence officers will go to in order to expose pilots to education. The reading room system of teaching identification has, incidentally, been successful where proper facilities exist, but is utterly without merit at such pioneer stations as this Wing's.



THE 2ND PILOT TRYS
A LANDING —



"M'GOD MR. SMITH--- A COUPLE O
STORKS ARE FLYING FORMATION
O' US"



FULL STALL!

"A LA VP-43"

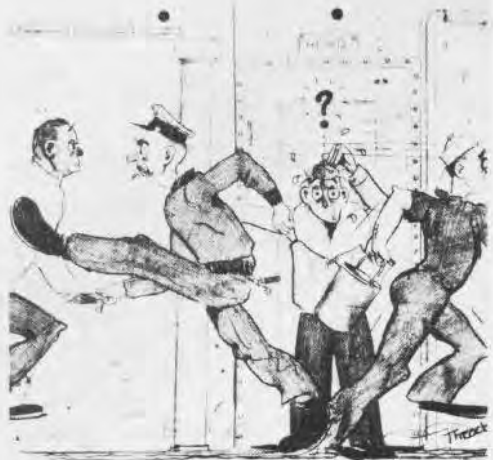
HERO WORSHIP



BRACE UP SIR - THEY'LL PROBABLY SEND
LT SMITH AFTER US —



"Tired and Weary after a long tedious
day in his P.B.Y., we find our hero
during the midnite oil with his
home work"



REPEATED CONVICTIONS

"GET THE HELL OUTA THE WAY BLO"

Fleet Air Wing Four received from an Army Fighter Squadron the following letter:

"We of this Fighter Squadron have greatly admired the bravery and courage with which the pilots and crews in your organization have performed their tasks since the beginning of our association with them since the latter part of May. We have often, during this time, seen many examples of service far beyond the call of normal duty.

"One of our pilots has written a poem expressing the fighter pilot's feelings toward the PBY pilots and crews. If possible, please forward this to those concerned."

APPRECIATION

I don't have much use for the Navy,
Being an Army man,
But I must take off my hat to some pilots,
Of this sea-faring clan.

These boys didn't give a damn for the weather,
And Jap lead meant even less.
I've seen 'em fly thru storms a-plenty,
Their plane a riddled mess.

I'll always remember the way they informed us,
Of the Jap's position at sea.
And how they told us almost to the minute,
The time an attack would be.

Then when we went on the offensive,
And flew with no land in sight,
We knew that in the clouds above us
A rescue plane watched the flight.

They even patrolled where we were fighting,
To save us if we fell.
They hid in the clouds from the "Zeroes,"
And the ack-ack could go to hell.

So here's to those boys of the Navy,
A bunch of damn-good guys.
And especially to those great pilots.
Who fly the PBY's.

Fleet Air Wing Four's rejoinder:

A NAVAL PILOT ANSWERS THE ARMY

The PBY's don't rule the skies--
But help to keep them free.
It's the fighter lads, with their tracered brads,
Who are paving the road to victory.

It's not too much to be launched from Dutch
In weather that's murky and foul,

'Cause we've got your support on a contact report
And the Nip, not us, must throw in the towel.

Zeroes, Mitsi's, and Ninety-Sevens--
How we scoff at their presence now--
They've been driven from places high in the
 heavens
By swift Army fighters who really know how.

Six guns ahead - all spouting lead--
Diving and climbing, and zooming--
Wingtip to wingtip in flak and out--
Who cares if the ack-ack is booming?

So what 'ere we do - we'll depend upon you
Just as you will depend upon us.
Together--our story will help keep "Old Glory"
Standing for freedom and everything just.

Auxiliary power units have up to the present time had many undesirable features. In order that faults not already corrected may be rectified, the practical experience of the personnel of PATROL SQUADRON FORTY-TWO has been accumulated to determine the desirable characteristics of an auxiliary power unit.

This squadron has used two types of auxiliary power unit, namely the Eclipse and the Lawrance. The Eclipse units have been an almost constant source of trouble, especially in PBY-5A aircraft where small space availability makes starting an especially difficult chore. This trouble is due to:

- (a) Location of starting pulley in an inaccessible hole.
- (b) Location of power unit so as to necessitate a right angle pull on the starting line.
- (c) Fouling of spark plugs after one or two unsuccessful starting attempts.

After a successful start, these units have shown a tendency to be undependable due to:

- (a) Fouling of the spark plugs.
- (b) Stoppages at carburetor strainers and auxiliary float chamber strainers.

Frequent breakage of drive shafts from rough running has further lessened the worth of these units. Any PBY-5A squadron which has attained completely satisfactory operation with its Eclipse auxiliary power units is requested to communicate with Patrol Squadron Forty-Two.

Bureau Comment: The two models of spark plugs available for the Eclipse unit, 6813 and LS-578 are

currently being delivered with the gap set at .018" instead of .012" as formerly. All plugs now installed should be checked and reset to .018 if required. A definite improvement should be noted with respect to fouling and missing.

Fuel stoppage is thought due to shortcomings in the installation. Steps are being taken to eliminate this bad feature.

Action has also been taken with respect to shaft breakage. Parts and instructions will shortly be issued to all activities which, it is believed, will put an end to this type of failure.

Criteria outlined are in line with present Bureau policy for all future auxiliary power plants.

More detailed information relative to this matter will be sent by letter to Patrol Squadron Forty-Two.

The Lawrance unit was used less than a year while this squadron was assigned PBV-5 aircraft, and consequently less experience has been derived in its operation and maintenance. The major fault found with this unit was unsatisfactory provisions for hand starting. Notwithstanding this fault, the Lawrance unit appeared to be a distinct step forward in the evolution of an ideal auxiliary power unit. The automatic CO₂ extinguisher integral with this installation was particularly appreciated.

The following requirements are considered to be minimum for future auxiliary power units:

- (a) Four-cycle operation to lessen spark plug fouling.
- (b) Twin ignition, to further lessen stoppages from spark plug fouling.
- (c) Accessible means of hand starting in addition to electric starting.
- (d) Leakproof exhaust system to insure that when plane is at rest with no means of forced ventilation all exhaust gases will be passed overboard.
- (e) A bilge pump capable of pumping gasoline.
- (f) Supercharging, if intended for high altitude operation.

In the Bureau of Aeronautics NEWS LETTER dated October 15, 1942, Page 44, under Naval Air Station, New Orleans, La., a mouth-watering description of a swing band attached to that station is given. After a few months away from civilization, most Service personnel come to the conclusion that organizations devoting their full time to making the boys at home happy are chiefly wasting their energies and missing the opportunity of a lifetime to render a needed service to physically well fed, but diversion and musically starved sailors and soldiers. The problem is not that there is a lack of such facilities and organizations, but rather that they are concentrated in the places where a

man can "pay his money and take his choice." Why not send those stations so isolated as to be entirely devoid of the sound of the cheering strains of music of any kind some of these bands of artists? It is true that short wave radio programs are being directed to the forces beyond the seas, but the number of radios and the times at which these programs are broadcast limit their listeners to a small percentage of those present. One orchestra at each large base could make the rounds of all the units and outposts about once or twice a month, thus keeping all hands in the mood to "Praise the Lord while passing the ammunition."

The number and quality of sixteen millimeter motion pictures at far away fronts, for which they were chiefly produced, is a fertile field for an energetic investigation. Patrol Squadron Forty-Two wants to make it clear that its morale is not low--it will challenge all comers to a duel of "Gleesome Threesomes." But it hopes that steps will be taken toward "sharing the wealth" of entertainment available among those who really need it.

Bureau Comment: The board which recently reviewed the report of the survey of the audio-visual needs of the Navy recognized the great desire found at practically all training stations and bases for morale-building films. As a result, the Chief of Naval Personnel has recommended that representatives of the Bureau of Aeronautics, the Director of Public Relations and the Training Division and Welfare Division of the Bureau of Naval Personnel be appointed to coordinate and supplement current morale-film production.

At 0900 on December 1, 1942, PATROL SQUADRON TWO HUNDRED SEVEN was commissioned. Thirty-one officers and 110 enlisted men were present at the commissioning ceremony, which took place at Breezy Point, U. S. Naval Air Station, Norfolk, Virginia.

PATROL SQUADRON TWO HUNDRED EIGHT believes that the cartoon on the following page will be sufficient to inform interested activities of the squadron commissioning.

SCOUTING SQUADRON 1-D4 has developed a system of towing aircraft target sleeves with the Model OS2U landplane which may be of interest to various other activities. The accompanying photographs indicate the attachments used for this installation.

The transverse bar is of 3/4-inch tubing and is secured at each end to the landing gear. A flat piece of 1/4-inch plate is welded to each end and attached to a right angle fitting secured to the top pin of the elbow on the oleo. This right angle fitting forms a clevis.



DER FRUEHER GETS DER "WORD."

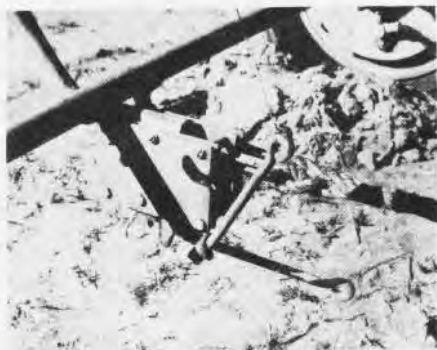
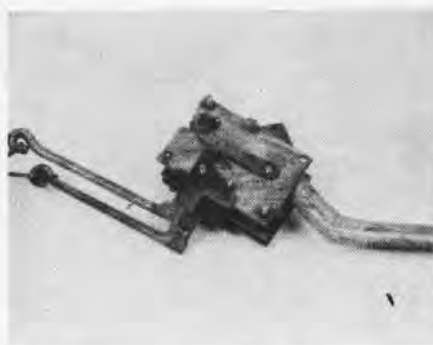
BERLIN, DEC. 15, 1942.

It was reported today that the Frueher was confined to bed by order of his physicians due to a nervous condition of undetermined origin.

Word was received here today that a new United States Patrol Squadron was officially commissioned at a Naval Air Station somewhere on the east coast of the United States.....



The fore and aft bar of the same tubing is secured at the forward end by flattening the tube and welding on two 1/4-inch steel plates in the form of a clevis, which is then bolted to the float fitting on the lower fuselage. This tube is secured to the center of the transverse bar by two angle braces. Holes are drilled through these angles and through the tube for attachment.



The release mechanism is composed of four identical slotted metal plates secured to the after projecting end of the fore and aft bar by 1/4-inch bolts, separated by spacers. The locking and release arms are installed between the plates so that when the pilot pulls up on the release arm, the locking arm allows the air tow ring to slip out of the slot. Further motion of the release arm is restricted by a bolt. A piece of bungee is tied around each

N. L. No. 186 1/15/43

of the release arms to prevent unintentional release while taxiing or in flight.

Bureau Comment: Additional material submitted by this squadron regarding ordnance equipment is being forwarded to the Bureau of Ordnance.

SCOUTING SQUADRON 5-D14 has not reported in this year of superlatives and excesses chiefly because it is so difficult to distinguish clearly between the extraordinary and routine.

In addition to flying regular patrols, which in themselves have provided many and varied experiences, the squadron has run a taxi service for admirals and seamen, second; generals and privates; an air express for tractor parts, telephone wire, radar hoci poci, jeep tires, and medical supplies. It has had a hand in "plane crash and salvage," aiding the pilots of various types of landplanes who suddenly found themselves "seaborne," and salvaging PBY's whose pilots were sublimely oblivious to "nigger heads" and coral reefs of local bays. It has run a jitney service for aerographers and photographers, for surgeons and chaplains. Emulating the Coast Guard, it has rescued aviators adrift in rubber boats, dropped food to those temporarily stranded, and brought the sick and injured in with some degree of regularity.

Now VS-5-D14 believes it has something to report and perhaps a record to claim.....

On proper authority a plane was sent to take to another island a doctor whose mission was to administer to the wife of someone who had been helpful to the American forces. Upon arrival the doctor found that the baby had arrived, but that the mother was in critical condition and needed immediate hospitalization.

Some pilots seem to have unlimited resourcefulness. This one got the very sick woman comfortably installed in an OS2U-3 airplane; then, by arranging pillows around the scarf-ring, he made a crib for the baby, stuffed the young passenger in, and took off for home.

As for parachutes, the mother didn't wear one, but from the pilot's account, it seems that the baby was already equipped with a new kind of three-cornered form-fitting affair.

Is there any previous record of a twelve-hour-old baby acting as rear seat gunner in a naval plane?

Warming up #8 plane, sir; what next?....

Bureau Comment: Unless a better claim is presented, this squadron holds the record.



ATLANTA, GEORGIA

Instrument Take-Off's As Taught At IFIS

The instrument take-off procedure will vary with different types of planes. The instrument take-off outlined, a method used with a single-engine aircraft of medium power, is to be performed in approximately a three-point attitude. This will result in a high initial rate of climb and the sure clearance of obstructions and a short take-off run.

PRIOR TO TAKE-OFF. Uncage horizon immediately after starting engine. (This is to permit gyro to erect to the true vertical.) Set the elevator and rudder trim tabs to correct take-off or normal climb position. Set and uncage the directional gyro when plane is headed into the wind, accurately aligned with the take-off runway. Adjust the miniature airplane on the gyro horizon so that it is close to the horizon bar so that the three-point attitude can be accurately maintained. (When the horizon bar is far below the miniature airplane, accurate maintenance of attitude is difficult.) Be sure horizon bar is horizontal before starting take-off.

ON THE GROUND, ACCURATE DIRECTIONAL CONTROL MUST BE MAINTAINED. The steerable tail wheel or rudder must be used to keep the directional gyro within a maximum of 2° of the original heading. Open the throttle slowly and steadily until take-off power has been reached. Concentrate on the directional gyro, with only occasional glances at the power-control instruments.

LATERAL AND DIRECTIONAL CONTROL ARE MAINTAINED, ONCE THE AIRPLANE IS AIRBORNE, BY KEEPING THE WINGS LEVEL BY THE GYRO HORIZON. The wings will stay level until the wheels leave the ground, therefore the stick should merely be centered until the airplane becomes airborne. The instant the wheels leave the ground, the pilot should divide his attention between the gyro horizon and directional gyro. Any wing-down tendency must be corrected immediately in order to keep accurate directional control.

LONGITUDINAL CONTROL CONSISTS IN KEEPING THE TAKE-OFF ATTITUDE (WITH THE NOSE SLIGHTLY BELOW THE THREE-POINT ATTITUDE) CONSTANT UNTIL ONE OR TWO HUNDRED FEET HAVE BEEN GAINED, AND THEN VERY GRADUALLY REDUCING NOSE-HIGH ATTITUDE UNTIL AIRSPEED PICKS UP TO NORMAL CLIMBING AIRSPEED. When

normal climbing airspeed has been attained, gradually reduce power to normal climbing values and assume normal climbing attitude. Care must be taken not to lower the nose too quickly, since at the reduced take-off airspeed this may result in serious loss of altitude.

COMMON FAULTS:

1. Swerving and failure to maintain accurate directional control on the ground. Remedy is to make small movements of the rudder pedals the instant the directional gyro shows a changed heading.
2. Assuming an extreme nose-high attitude immediately following take-off, that is, not maintaining the take-off attitude.
3. Tendency to nose-over too soon following take-off so that there is a serious loss of altitude.
4. Failure to hold the wings level following take-off as a result of not watching the gyro horizon. This is often caused by tenseness and by the pilot's pulling the stick or wheel to the right if he is using his right hand or to the left if he is using his left hand.

BERMUDA

Early in December, the long-awaited Construction Battalion arrived at this station. In a short time the SeaBees had set up their barracks, organized officers' and enlisted men's messes, broken ground for two new structures, finished a third, laid pipe, dug ditches, changed the positions of three roads and published the first edition of their own newspaper. One of the few remaining baseworkers summed up the impression everyone has of the battalion: "They could tear down and rebuild the pyramids before lunch."

This station wasn't able to wait until a unit from the USO arrived to provide holiday entertainment. Servicemen at Bermuda gave their own USO show in the hangar before capacity crowds and brought down the house. NAS Bermuda is fortunate in the talent it has available. There are singers, dancers, comedians and actors. Heretofore, the support of the U. S. Army's band, Bermuda's best orchestra, has provided the musical background. But their reign will soon be threatened. Instruments are now en route to the Air Station and a nucleus of an orchestra, lined up some time ago, is all ready for them.

But this station is having its troubles too. An island is defined as a body of land surrounded by water - but the water isn't doing Bermuda island much good. It's beautiful to look at, but NAS Bermuda is more interested in water to drink and water to bathe in. The water shortage is acute, despite the large water catchment that was made by shaving a hilltop down to coral rock. Water hours are being rigidly enforced, in the hope that the output of the

evaporators will catch up to the consumption. That possibility is remote. The evaporators were not planned to supply water for the number of men now aboard. Until rain comes to fill the catchment again, the station will be chanting "Water, water everywhere nor any a drop to drink," with a new understanding.

DALLAS, TEXAS

The following Squadron Flight Department organization has simplified scheduling large groups of students:

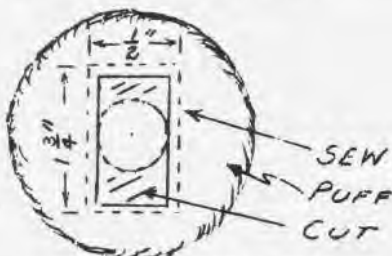
Assigned to the chief flight instructor are four assistants known as division officers; each is responsible for a flight division. To each division is assigned one-fourth of the instructors, one-fourth of the students, airplanes, two schedule makers, one schedule board and a complete set of charts and records. In this way no officer is burdened with administrative duties and a competition is developed between divisions. To work up an 800-hour-a-day schedule requires about one and one-half hours office work, and the result is flexible, since the individual student is a personality to the schedule-maker, rather than a number on a card.

The main purpose of the air "Instructor's School" is to improve the quality of instruction and keep it standardized. The school is composed of one permanent member and from three to seven auxiliary staff instructors. The syllabus is composed of three basic flights; namely, A, B, and C. All new instructors must ride each of these basic flights three times, plus a check on each stage, during his first eight weeks in the squadron. The results have shown fewer failures and extra time cases.

A plan has developed for modification and improvement of gosports for use in student instruction as follows:

Occasionally during instruction periods, the student was not able to hear the instructions as they were given. Upon investigation, it was found that the gosports were faulty, due to cotton clogging the hole through the powder puff, or holes not being opposite the wearer's ears.

The following modifications were made on the powder puff of the gosports, thus reducing the conditions described to a minimum:



1. Remove powder puff from gosport.
2. Sew powder puff as indicated in sketch.
3. Cut out inside of stitching leaving a rectangular opening.
4. Sew powder puff inside of helmet to being rectangular opening in line with the chinstraps.

Bureau Comment: The modification proposed with a large opening will provide a better fit on more individuals than the present small opening. If trouble is being experienced, the adoption of this enlarged opening in powder puffs may be beneficial.

The applicable specification is being modified in accordance with recommendations.

In line with the Navy Department's orders to conserve material, this base has developed an inexpensive but efficient smudge pot to be used as a wind indicator. The pot was made from a discarded oil drum. A wheelbarrow load of sawdust, saturated with discarded automobile cylinder oil, was found to give off an especially dense white smoke for a period of 10 hours.

DETROIT, MICHIGAN

Ideal conditions prevailed recently when Lt.(jg) Gockel made an emergency parachute landing near Newport. He was demonstrating an Immelman to an eager student, when much to the surprise of all concerned, Lt. Gockel and the plane suddenly parted company. Signaling to his amazed student that he was O.K., Gockel had just reached the ground when a couple of beautiful blonde 4H girls rushed to his rescue and helped him mightily with his parachute and excess gear.

For use in night flying, in place of the Very's pistol the engineering department has mounted an Aldis lamp on a portable but substantial metal frame which permits both vertical and horizontal adjustment.

Red, green, and white filters are mounted in a rotating frame which automatically locks at the desired color but is easily moved to change colors. The appearance of the assembly is somewhat similar to that of night-club spot light. It is easy to set up and simple to operate.

In actual use this device has proved very effective and economical.

During intermission at the performance of "Lady in the Dark," one of the newly commissioned "j.g.'s" stepped into the lounge for a quick smoke, when suddenly an anxious, sophisticated, elderly lady approached him with a request for reservations for the next week's performance.

Unfortunately, the officer did not understand what that lady wanted and asked her to repeat her question. Quite indignantly she shouted that she wanted tickets for the next week's performance and that he should get them for her, since he was an attendant at the theater. The "j.g." modestly informed her that he was a naval officer, not a theater attendant.

HUTCHINSON, KANSAS

Two additional classes of cadets, numbering 45 each, have reported from Pre-Flight School at Chapel Hill.

Landing mats are now surfaced and will soon be available for use. Barracks are also practically completed and temporary heat is on in the ground school buildings, which are rapidly shaping up. Other construction is proceeding according to schedule, especially inside work.

Any activity with a sure-fire method of removing ice and frost from wings of planes can promptly enter this station's Hall of Fame by passing this information on.

JACKSONVILLE, FLORIDA

It is believed that a training film for instruction in court martial procedure would be of great value in the course, "Naval Courts and Boards," at Ground School, for the indoctrination of newly commissioned officers. The film might be composed of three reels, the first showing a man being placed on report by an officer appearing before Captain's mast, and the routine procedure through a deck court. The second might show the court procedure in the case of a summary court martial, and the third the general court martial.

Bureau Comment: A training film, "Military Law and Naval Discipline," covering the items mentioned will be available shortly.

The effect upon the choice of duty of the students on seeing a comparatively modern service-type airplane was recently demonstrated when the desire for VF duty jumped to about 95% after the students of the Intermediate Specialized Carrier Squadron had seen an F4F and had a chance to look it over. A week or so later a TBF landed at Lee Field for a short stay. The students "looked her over," and the choice for VTB duty jumped to about 45%. The sight of an SBD-3 would inspire a number of students to ask for VSB duty.

On a station crowded with cadets, boots and recently rated enlisted personnel, amusing questions are not a rarity; however, the prize goes to a Lieutenant (jg), USNR. The young lieutenant, quite puzzled in trying to comprehend a set of dispatch orders, sought some assistance. After some few minutes of explanation he began to see the light. "Oh, I see," he said, "except for one thing--who in the ___ is 'PAREN N PAREN'?"

In order to facilitate the conversion of this station to Operational Training, a ferry flight office has

been established. Its job is to transfer out the planes formerly used in the primary and intermediate training squadrons and secure service-type planes. During October and November, planes were ferried to Naval Reserve Aviation Bases at Anacostia, Memphis, New Orleans, Kansas City, Detroit, St. Louis, Hutchinson, Dallas, Minneapolis, and Norman. Service-type planes were ferried from Corpus Christi, Miami, Norfolk, San Diego, New York, Anacostia, and Dallas. Station pilots ferried practically all planes leaving and many of the incoming planes. The experience in cross-country flying they received has been excellent training.

The Bureau of Naval Personnel recently initiated correspondence resulting in a mild state of quandary at this station; viz., BuPer letter Pers 3630 MD NA29(100) dated October 20, 1942, indicated that separate copies of the report of aviation cadets completing training were furnished BuAer by BuPers and that BuAer was confused by copies sent by stations. This station immediately stopped sending such copies. BuPers letter Pers-3630-MD, QR/P14-2(1977), dated November 17, 1942, furnished new forms for this report, and, lo and behold, at the bottom of the form is clearly printed, "Copy to Bu Aero." Has the Bureau changed its mind, or is "Copy to Bu Aero" in error?

Bureau Comment: "Copy to Bu Aero" is in error.

The other day a civilian telephoned to the Station excitedly, said he wanted to put in his application immediately for entry in the Aviation Free Gunnery School because it was free, and he didn't want to run the risk of having it filled up before he could be admitted.

The Post Office Department sent to this station, stamped "UNMAILABLE," a letter addressed by a bluejacket to "ADOLPH HITLER, Wilhemstrasse, Berlin, Germany," which read:

Dear Adolph:

You are under the impression that your Luftwaffe is good, that nothing can stop them - well, I can.

Mr. Hitler, this is a challenge, you send your best Luftwaffe ace over here and I'll get a .50-calibre ack ack and knock hell out of him.

Love and .50 cal. A.P.'s.

A Seaman Gunner.

This challenge of a seaman gunner to lick Adolph Hitler's "best Luftwaffe ace" single-handed is on a par with General Patton's challenge to Rommel to meet him in personal tank combat in the African desert.

MOFFETT FIELD, CALIFORNIA

Naval airship training activities have expanded rapidly at Moffett Field since the inception of the

Lighter-than-Air School on October 8, 1942. The first of the year found 60 cadets and 12 student officers well on their way toward becoming Naval Aviators (Airship). Enlisted men are being instructed in theory and practice to provide flight crewmen for the ships.

Cadets received their pre-flight training at either Iowa University or St. Mary's College. They came well indoctrinated and in excellent physical condition.

VERO BEACH, FLORIDA

Reprinted from the Station paper of the Naval Air Station, Vero Beach, Florida:

THOSE WHO STAY ON THE GROUND
We read of exploits, daring and bold,
Of the men who fly our planes,
And compare these flyers to knights of old
In combative skill and brains.
We laud them in story, praise them in song
And poets, the like of me,
Frequently write of the brave and the strong
Who fight over land and sea.
They merit the praise we freely bestow -
A payment woefully small -
But what of the ground crews who stay below
And get no credit at all?
They labor and slave in grease and in oil,
These true American sons,
Yet little is said of their valued toil
On stubborn motors and guns.
And if guns won't shoot and motors won't run
A flyer with worlds of skill
Hasn't a ghost of a chance with a Hun
Or a Jap who shoots to kill!
The next time a flyer attracts your gaze
Let your lusty cheers resound,
But save if you can a bit of your praise
For those who stay on the ground!



SAINT THOMAS, VIRGIN ISLANDS

Since there are still mechanics who fail to secure gas caps on aircraft fuel tanks, causing these necessary articles to be lost in flight, replacements for the caps (if not the mechanics) must continue to be devised. As a

consequence, it has been discovered that the circular inspection hole cover from the hull of a J2F-5 makes an excellent substitute for the fuel cap on an R4D-1, without modification.

Marine Scouting Squadron Three continues to experience brake failures on the OS2N-1 airplanes. The source of trouble has been due to leakage of brake fluid from the piston cups onto the brake shoe linings, and the resultant oil slick on the braking surface renders it ineffective. Maintenance requires washing the linings in carbon tetrachloride followed by roughening the surfaces with emory cloth. Brake pistons have been inserted in a vice to press out the cups for a better fitting to the cylinder wall. As this seems to be the only solution to the problem at present, suggestions from other organizations encountering similar trouble would be appreciated.

Bureau Comment: A change is now underway to remedy this trouble.



CHICAGO, ILLINOIS

Every enlistment rush usually produces, as well as hard work, several good stories. Two which happened during the pre-December 15 period bear re-telling.

The first concerns a young cadet who would let neither 175 miles, a smashup, a fire, nor a six-hour custody in the hands of state police interfere with his enlistment in V-5. His adventurous trek started when he was sent home the day before the deadline to obtain a necessary signature from his father. With no train connections available, the determined youngster decided to drive the 175 miles to Chicago. After a night of driving, he hit an icy curve some fifty miles outside the city, plowed into a gasoline station, knocked down three pumps and set the station on fire. State police arrived and, of course, had to hold the young man until the owners of the station could be reached. After calling the Selection Board, police officers became interested in the plight of the boy and interceded on his behalf with the gasoline company officials. The smashup was declared accidental and no charges were preferred. It was then afternoon with the deadline fast approaching. The benevolent State police drove the boy all the way into town and watched him get sworn in--a happy but very shaky youngster.

Story number two concerns a pair of absolutely identical twins who were enlisted on the day of the deadline.

evaporators will catch up to the consumption. That possibility is remote. The evaporators were not planned to supply water for the number of men now aboard. Until rain comes to fill the catchment again, the station will be chanting "Water, water everywhere nor any a drop to drink," with a new understanding.

DALLAS, TEXAS

The following Squadron Flight Department organization has simplified scheduling large groups of students:

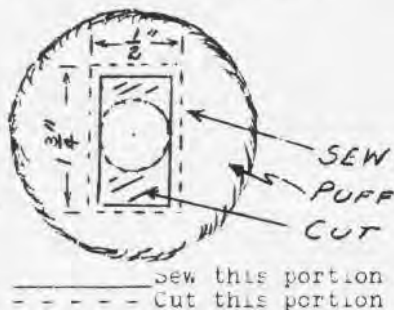
Assigned to the chief flight instructor are four assistants known as division officers; each is responsible for a flight division. To each division is assigned one-fourth of the instructors, one-fourth of the students, airplanes, two schedule makers, one schedule board and a complete set of charts and records. In this way no officer is burdened with administrative duties and a competition is developed between divisions. To work up an 800-hour-a-day schedule requires about one and one-half hours office work, and the result is flexible, since the individual student is a personality to the schedule-maker, rather than a number on a card.

The main purpose of the air "Instructor's School" is to improve the quality of instruction and keep it standardized. The school is composed of one permanent member and from three to seven auxiliary staff instructors. The syllabus is composed of three basic flights; namely, A, B, and C. All new instructors must ride each of these basic flights three times, plus a check on each stage, during his first eight weeks in the squadron. The results have shown fewer failures and extra time cases.

A plan has developed for modification and improvement of gosports for use in student instruction as follows:

Occasionally during instruction periods, the student was not able to hear the instructions as they were given. Upon investigation, it was found that the gosports were faulty, due to cotton clogging the hole through the powder puff, or holes not being opposite the wearer's ears.

The following modifications were made on the powder puff of the gosports, thus reducing the conditions described to a minimum:



1. Remove powder puff from gosport.
2. Sew powder puff as indicated in sketch.
3. Cut out inside of stitching leaving a rectangular opening.
4. Sew powder puff inside of helmet to being rectangular opening in line with the chinstraps.




THE FOLLOWING SHOWS THE NUMBER AND DATE OF ISSUE OF THE
LAST SERVICE AND OBSOLESCENT AIRPLANE BULLETINS AND CHANGES
(CONTRACT CHANGES ARE NOT RECORDED)

<u>AIRPLANE</u>	<u>BULLETIN</u>	<u>DATE</u>	<u>CHANGE</u>	<u>DATE</u>
BD-1	9	9-19-42	11	12-5-42
BD-2	2	10-2-42	11	12-4-42
BT-1	27	4-28-42	76	7-23-42
F2A-1	8	1-8-42	39	10-15-42
F2A-2	19	7-9-42	58	10-15-42
F2A-2P	7	7-9-42	20	10-15-42
F2A-3	23	8-20-42	56	10-15-42
F2A-3P	17	8-20-42	46	10-15-42
F3F-1	58	12-11-42	70	6-22-42
F3F-2	46	12-11-42	48	6-22-42
F3F-3	23	12-11-42	28	6-22-42
F4F-3	30	12-2-42	118	12-5-42
F4F-3A	25	12-2-42	95	12-14-42
F4F-4	21	12-9-42	68	12-16-42
F4F-7	2	12-2-42	25	12-5-42
FM-1	0	--	6	12-14-42
F4U-1	2	11-17-42	3	11-28-42
GB-1	10	11-2-42	11	10-23-42
GB-2	2	11-2-42	6	11-4-42
GH-1	0	--	1	7-22-42
J2F-1	38	7-27-42	54	10-23-42
J2F-2	19	9-11-42	35	10-23-42
J2F-2A	12	9-11-42	36	10-23-42
J2F-3	13	9-11-42	25	10-23-42
J2F-4	8	9-11-42	18	10-23-42
J2F-5	8	9-11-42	11	10-5-42
JRB-1	8	11-21-42	7	12-19-42
JRB-2	7	11-21-42	7	12-19-42
JRF-1	8	7-23-42	7	9-25-42
JRF-1A	8	7-23-42	8	9-25-42
JRF-4	4	7-23-42	5	9-25-42
JRF-5	4	7-23-42	3	9-25-42
JRS-1	21	6-18-41	54	9-4-42
JR2S-2	1	7-1-42	0	--
N3N-1	32	11-5-42	75	9-2-42
N3N-3	18	11-5-42	34	11-18-42
NJ-1	13	8-19-42	17	3-20-41
NP-1	13	9-31-42	16	12-26-42
NR-1	5	9-14-42	12	10-1-42