

# News Letter

**RESTRICTED**

This Pamphlet Will Be Destroyed  
When It Has Served Its Purpose

BUREAU OF AERONAUTICS NAVY DEPARTMENT



NO. 187



1 FEBRUARY 1943



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### FORMAT

Yes, your News Letter comes to you this time in a slightly different form.

It is the desire of the Bureau to include between the covers of this booklet any and all information which may prove interesting as well as educational to the officers and enlisted men of Naval aviation.

The News Letter was born in 1919. Its contents have been based on material contained in news letters compiled at various aeronautical establishments and from news and reports sent in from units scattered far and wide around the globe.

Items of general interest will continue to be incorporated in BuAer News Letters. As the News Letter is distributed to all fleet and shore units there is no need for copies of individual news letters to be sent directly to other stations. This practice clogs up correspondence systems and is a waste of paper and effort.

The News Letter serves as the clearing house for all news between squadrons, bases and the Bureau. Activities of groups in the tropics prove interesting to those in Alaska and items of interest provide fruitful sources of discussion among these isolated units. So do the latest aviation developments and technical findings. These will be included in the News Letter.

The News Letter will be as good as the material which is sent to it.

### SIDESLIPS

Passing into veritable extinction like the buffalo is the name "civilian," as well as the individual himself. Thus, the recent decision to change the name of Civilian Pilot Training, in which Navy aviation cadets are processed, to War Service Training..... Not every pilot has the good fortune to have his crack-up---if he's going to have one---near home. Aviation Cadet Henry A. McGinnis of East Falls Church, Va., experienced difficulty and crashed within a block of his residence on a routine hop from Anacostia. He was injured only slightly..... The Marine hymn now has been altered to be sung "in the air, on land and sea." And speaking of hymns, did you know that the Navy hymn has an aviation verse? Here's the way it goes:

"Lord, guard and guide the men who fly  
Through the greatest spaces of the sky,  
Be with them traversing the air,  
In dark'ning storms and sunlight fair--  
O, hear us when we lift our prayer  
For those in peril in the air."

Advice passed on by a merchant seaman: "If a shark annoys you, poke him in the eye." (You can take it for what it's worth depending on the temperament of the assailant). The seaman said he gauged his thumb into the eye of a shark when the big fish sneaked up behind him and clamped its jaws around his leg as he was clinging to a hatch cover out in the middle of ocean. The shark quickly let go the appendage and darted away.

# FLIGHT STATISTICS



With Comments by  
**GRAMPAW PETTIBONE**

Confusion Contributes to Fatal Midair Collision:- A six-plane flight of TBF-1 airplanes was practicing formation tactics. At 1500 feet, while flying in a Vee formation of two plane sections, the flight leader ordered by radio, "Assume defense formation". This maneuver had not been discussed in the pre-flight conference and the leaders of both the second and third sections were, accordingly, confused by the order and did not know what to do. After asking for a repeat, the leader of the second section noted that the third section seemed to be dropping back. He thereupon assumed that he was to form column between the first and third sections. While ma-

neuvering his section into this position, his wingman collided with the leader of the third section, resulting in the death of all three occupants of one of the airplanes.

Bureau Comment:- This accident was caused by poor planning and a serious error in judgment. The flight leader was blameworthy in that he failed to include a description of the defensive formation in his pre-flight conference. Had this been done, the confusion which led to the accident would have been avoided. However, the immediate cause of this accident was the fatal error in judgment of the section leader who led his section into such a position as to jeopardize the flight. The section leader's initial request for "Repeat" on the signal was correct, but should have been continued until the order was understood. There is no substitute for good, common sense in coping with unusual and unforeseen circumstances.

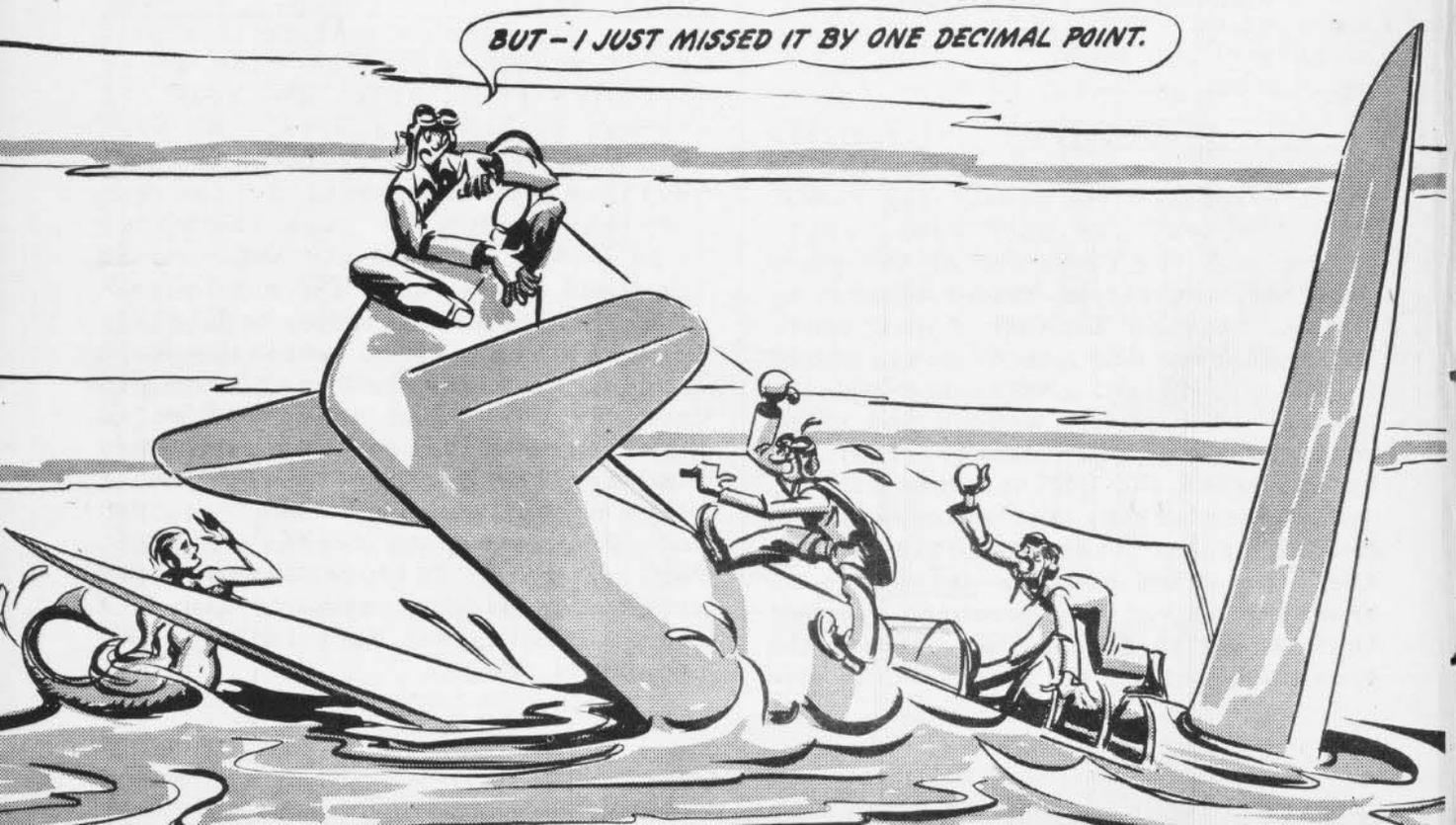
He Left Undone Those Things Which He Ought to Have Done and Did Those Things Which He Ought Not to Have Done.- Although estimating that part of his flight would be made after dark, the pilot of an SNC took off without parachute flares. He also neglected to obtain up-to-date radio navigational information. He was completely unaware that the radio range he was going to use had reversed its A and N quadrants two months previously. After becoming hopelessly lost, he managed to effect a safe landing at a small, local airport. Upon learning that he was 75 miles from his destination, he permitted his airplane to be refueled with a lower octane gasoline than required and then attempted further flight. Partial power failure immediately after a hazardous take-off caused a forced landing and definitely terminated this flight.

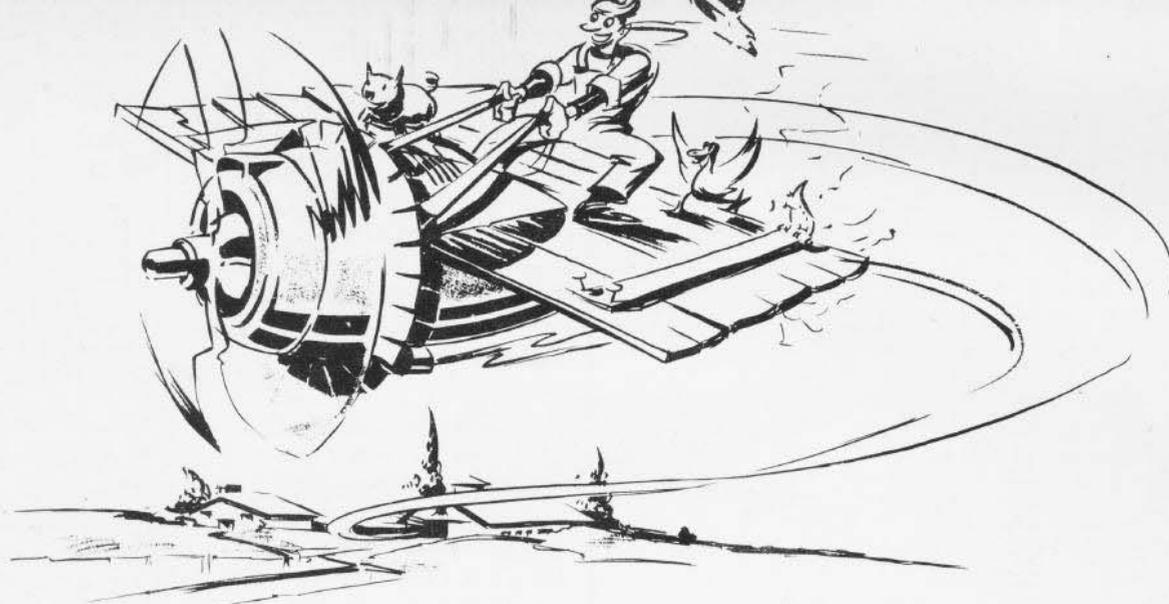
Bureau Comment: The negligence involved here is too obvious to require comment. With reference to the use of low octane gasoline, article 14-502, part (b), page 184, of Bureau of Aeronautics Manual, is hereby quoted for your review.

"Engines should normally be operated on gasoline of the octane number specified by the Bureau of Aeronautics in its operating instructions, as the fuels so specified are those necessary to prevent detonation during rated power operation; There is no objection to operating engines on a fuel of higher octane rating than that for which they are designed, while on the other hand, operating an engine at high output on a fuel of lower octane rating than that for which the engine is designed will cause detonation, which is followed almost invariably by serious damage causing engine failure. It should be borne in mind that any detonation or pre-ignition is injurious to an engine, and that severe detonation will completely destroy an engine in a period of seconds of full throttle operation."

In order to improve performance and range in recent engines, the carburetor is set as lean as possible throughout the operating range, based on the fuel for which the engine was designed; thus the use of fuel of a lower grade is likely to result in detonation and loss of power during any engine operation from cruise to take-off, inclusive. For this reason, fuel of a lower octane rating than specified in latest Bureau of Aeronautics Technical Instructions for each type engine should never be used unless required by wartime exigencies. If, in circumstances similar to the case above, you are unable to obtain the proper grade of gasoline locally, do not compromise with a lower grade; stay on the ground until you procure the correct fuel.

Inadvisable to Lower Flaps While in a Turn at Low Altitude:- The pilot of an F4F-4 was making an approach for a field carrier landing. While in the final turn, at an altitude of approximately 125 feet, he lowered his flaps. The airplane immediately stalled, fell out of control, and crashed.





### Something new has been added

**Bureau Comment:-** An understanding of the aerodynamics involved should readily convince any aviator of the danger of lowering his flaps while in a turn at low altitude. The following explanation of the flight characteristics concerned may help in a fuller appreciation of this danger.

In level flight, the lift vector is directed upward, exactly opposing the weight vector. In a turn, the direction of the lift vector is inclined inward with the angle of bank. Since the vertical component of the lift vector must remain constant and equal to the weight, it is necessary to increase the lift in a turn. This increase in lift may be obtained either from increased speed or by increasing the lift coefficient.

The increase in lift coefficient can be obtained either from increased angle of attack or from lowered flaps. Lowering the flaps, however, also introduces another factor -- drag; either in level flight or in a turn. Drag reduces speed. To compensate for this in level flight is not difficult but may be confusing in a gliding turn. The main cause of confusion at such times is the failure to appreciate the effect of increased drag with flaps down. This, in turn, results in failure to compensate for the increased

drag, either by steepening the glide path, or increasing the power, or both, as necessary to maintain flying speed. It may be impractical to further steepen the glide path at low altitude; in any event, to do so greatly modifies the approach path mentally selected by the pilot.

The best advice is to put your flaps down in the straight-away, or if you must put them down in a turn, know what the reaction will be. Use throttle, keep plenty of airspeed, and **DON'T STALL.**

See, also, Technical Note 42-36, "The Effect of Slots and Flaps in Take-Off and Landing".

**Use Full Runway:- Case 1.** Due to personal reasons the pilot of an SNC was late in reporting to the line. In order to make up for lost time, he elected to take off from mid-field instead of using the full runway. His haste must have impaired his technique for he had trouble in his take-off and ended up by crashing into obstructions at the end of the field.

**Case 2.** The pilot of an F4F, on coming in to land, noted that he was high and fast. Instead of going around again and making a proper approach, he tried to land. By side-

slipping over the edge of the field and fish-tailing violently, he was able to touch his wheels down slightly past mid-field, but still at excess speed. His brakes failed to keep him from running off the end of the runway, where he groundlooped and nosed over.

\* \* \* \*

Grampaw Pettibone says:- Not worth a tinker's damn, except in helicopters!

Crash Due to Accidental Movement of Master Switch:- At approximately 1000 feet, shortly after take-off in an SNB-1, a passenger moved through the pilot's cockpit in order to get to the bomber's compartment. Just about this time both engines cut out completely. Both pilots made a hasty check of all instruments, but failed to locate the trouble. A good, wheels-up landing was made in a near-by corn field. Upon more complete inspection, it was noted that the master switch was in the "off" position. It was determined that the metal adjusting clip on the passenger's QAC parachute harness had caught on this switch while he was passing through the cockpit. Both pilots had used this master switch and were familiar with it, but failed to

note, during their hasty check, that it had been switched off.

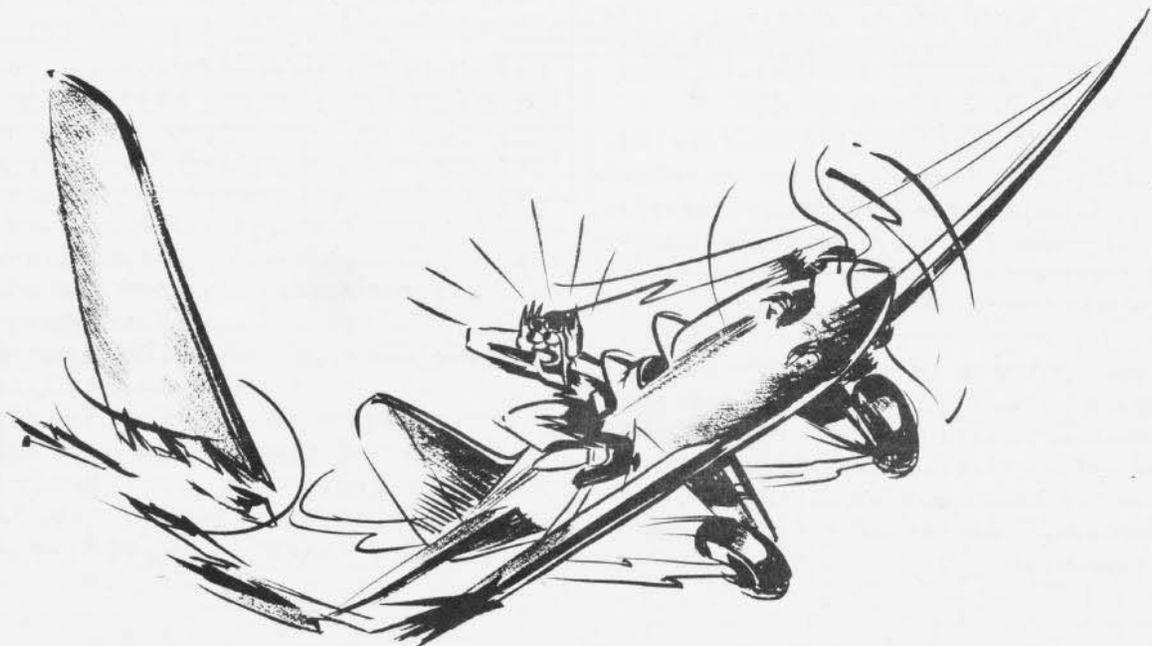
The squadron recommended that a more satisfactory guard be provided for this master switch and forwarded three-view photographs of a proposed guard.

Bureau Comment:- Fleet Air Photographic Squadron One is complimented on the simple and effective guard for the master switch which they designed. A bureau change order is being issued to incorporate this guard in all SNB-1 airplanes. In the meantime, personnel should be warned to be especially watchful not to accidentally trip this switch.

\* \* \* \*

Grampaw Pettibone says:- Do a thing right and you get results; do it wrong and you get consequences.

Frost on Wings Contributes to Take-Off Crash:- During a take-off at an outlying field immediately after sunrise, an N2S-1 was barely able to gain sufficient speed to become airborne. The engine was turning up normally but the airplane would not climb. A



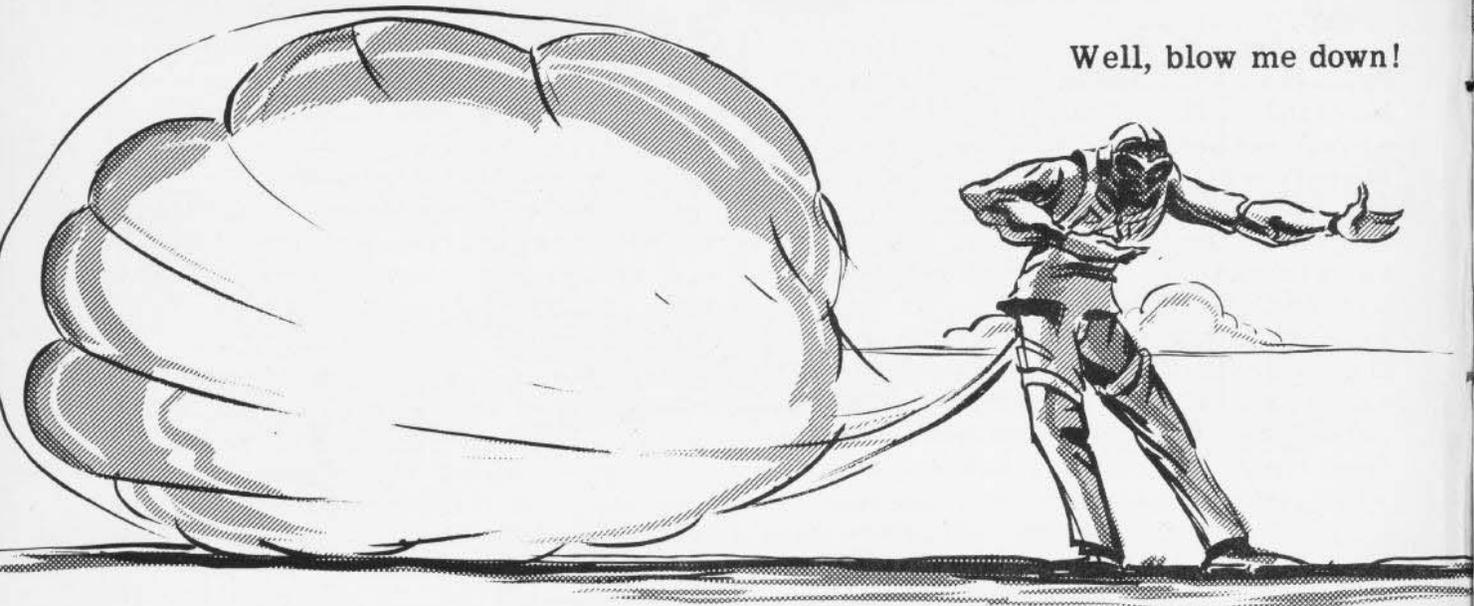


crash landing was then made in an adjoining field resulting in a washout of the trainer. Upon an immediate investigation, frost was found on the upper wing of the crashed plane.

The Trouble Board attributes this crash to the pilot's failure to heed the warning in Article 13-130 of the Bureau of Aeronautics Manual, which is as follows:

"Pilots are warned of the danger in attempted take-off with any kind of frost or ice deposit on the wings. A slight deposit that is barely visible may double the wing drag and greatly reduce available lift. This results in excessive take-off run and a marked reduction in path angle of climb after take-off. It is imperative that any frost or ice deposit be carefully and completely removed before attempting a take-off."

Watch Your Altitude:- The safety pilot of an SNV-1 took over the controls and climbed to approximately 2000 feet for the purpose of acquainting his passenger with the stall characteristics of this airplane. After demonstrating several stalls, the pilot attempted to show the effect of torque when power is suddenly applied at or near stalling speed. He pulled the airplane into a stall and then suddenly shoved on full throttle. The SNV rolled to the left about its longitudinal axis until it was almost inverted, at which time the pilot attempted recovery by dropping the nose and pulling through, as if in a split-S. Insufficient altitude remained to complete the maneuver and the airplane crashed into the ground. It is believed that altitude was gradually lost during the first few stalls and



Well, blow me down!

recoveries; the pilot apparently failing to take this into consideration before entering the final maneuver from which he crashed.

A similar crash recently occurred when an instructor became so absorbed in teaching acrobatics to a student that he neglected to observe his altitude. After stunting continuously for about 20 minutes, during which time altitude was lost with each successive maneuver, he was seen to crash from a falling leaf, entered at low altitude.

\* \* \* \*

Grampaw Pettibone says:- Such careless disrespect of basic flight hazards is astounding!

It has been said that a man's best friend is his dog, but any good aviator will tell you that when you're flying, a man's best friend is altitude -- and plenty of it.

Misjudging Wind Direction:- The pilot of an SNJ-4 proceeded to land at an outlying field where the only wind indicator was a small wind sock at one corner of the field. He

glanced at the sock and then landed parallel to it, but (alas, alack!) down wind. Result: Groundloop and noseover.

\* \* \* \*

Grampaw Pettibone says:- This fool maneuver has been going on ever since the first wind sock was invented. This indicates that Darwin's evolution business is working out mightly slow, at least as far as navy pilots are concerned. Better rely on the old rule-of-sock: FLY OUT OF THE SOCK, NOT INTO IT.

**NOT INTERESTING?**

On the contrary, others may find stories about where you are and what you're doing exciting. Send in - we'll judge!

# D I D Y O U K N O W ?

## Constellation Takes to Air

Of interest to aviation, generally, is the announcement that the giant high-speed, high-flying Lockheed Constellation has completed her ground tests and is expected to be in production shortly.

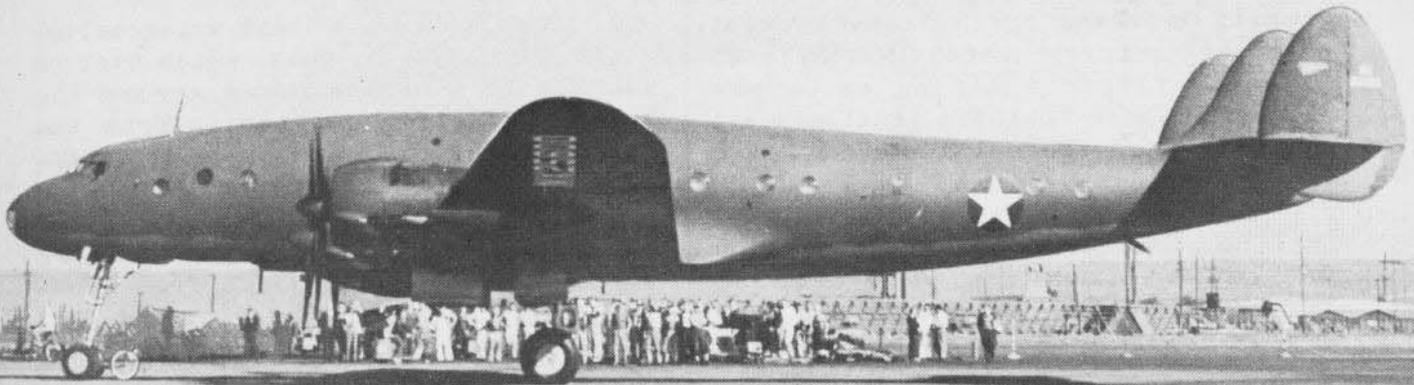
Designed by Lockheed Aircraft Corporation from original plans by Howard Hughes for TWA, this four-engine transport is reputed to be faster on the wing than a Japanese Zero; is powered by 2,000 H. P. Wright engines; is equipped with three-bladed Hamilton Standard quick-feathering hydromatic propellers; and has a landing speed of approximately 77 mph. It has been designated by the Army Air Forces as the C-69.

Although commercial development of the new plane is not possible at this time, Lockheed points out some of the characteristics that will enable them to operate it as a luxury

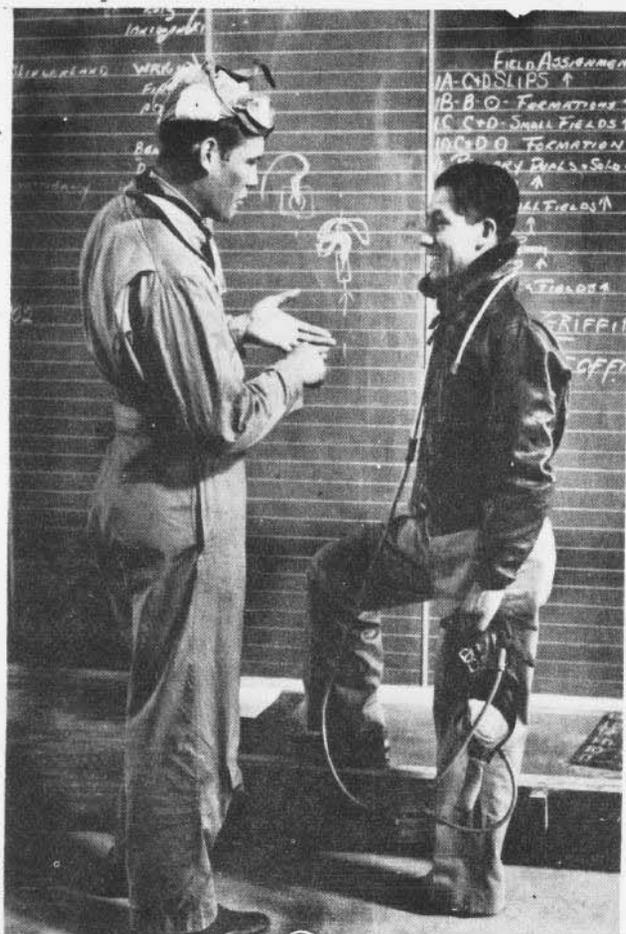
liner. The gigantic craft can carry 55 passengers non-stop from Los Angeles to New York and is able to cruise at 20,000 feet, above 10% of air disturbances. The pressurized cabin will maintain air density of the 8,000 foot level, while the plane itself can rise comfortably to 35,000 feet.

Among other features incorporated in the new plane are Fowler flaps, and a new maneuvering flap which gives the plane three distinct sets of performance characteristics. It will climb rapidly out of a short field, and maneuver at slow speed during icing conditions or in bad weather. It has a "hot wing" de-icer developed by Lockheed which employs the exhaust of the engine instead of the pulsating de-icing boots.

Her builders believe its great lifting power, high speed, and safety of operation will make this plane most desirable as a heavy transport.



The Constellation



### Latin American Students

If enthusiasm counts for anything, and we like to cling to this tenet, Inter-American relations should be greatly improved by the ten Peruvian naval officers who recently completed advanced flight training at Corpus Christi. These Southern gentlemen are definitely of the opinion that North America is tops.

How would you like a graduation present in the form of a trip to New York, dance with Margo and have Eddie Rickenbacker sign your "Short Snorter"? That wasn't all that Lt. Commander Robert M. Gavett had on the bill for these aviators. They also visited Annapolis, the Glenn L. Martin Aircraft factories, the Brooklyn Navy Yard, La Guardia Field and Norfolk.

Chile, Argentina, Uruguay, Cuba, Colombia, and Ecuador are also represented in the contingent of nearly a hundred South American flyers who are completing the eight-months' training program at Corpus Christi. The ten Peruvians who have just been graduated arrived in April and followed the exact curriculum established by the Navy's Bureau of Aeronautics for training American naval flyers. Each specialized in fighter, bomber, torpedo or flying boat operations. Each was allowed to choose his own specialty and had at least two months' intensive training in that field. When they completed the training course they had logged nearly 400 hours. Five were trained at Jacksonville and five at Corpus Christi.

All South Americans, after graduation, will return to their respective cities and train other flyers using North American methods. The tour was planned by the Navy Department and the Office of the Coordinator of Inter-American Affairs.

Other groups from Mexico and Brazil are scheduled to start their training early in March.

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### Total Eclipse

There will be a total solar eclipse on February 4-5, 1943, which will be visible in a narrow strip across the Northern Pacific stretching from the Island of Hokushu in Japan to the mainland of Alaska. Large partial phases of this eclipse will be visible in the Aleutian Islands. The path of the eclipse will vary in width from about 110 to 144 miles. It will extend from approximately 47 degrees North Latitude to 130 degrees East Longitude in Asia, where the sun will rise totally eclipsed, to approximately 67 degrees North Latitude 136 degrees West Longitude, near the Alaska-Canada boundary, where it will set totally eclipsed.

## Overseas Mail

Many ships have been loaded to the gunwales carrying bulky packages, second and third class matter, fresh eggs, cakes, bananas, and practically everything else to men overseas. Ships are groaning and there just isn't room enough to take care of everything.

Effective as of January 15, inappropriate second and third class matter is not forwarded to men overseas; parcel post packages cannot weigh more than 5 pounds and cannot measure more than 15 inches in length and 36 inches in length and girth combined; only one such package per week may be mailed out.

Attention is called to already existing orders of the Postmaster General which does not permit the forwarding via parcel post of any perishable matter to men overseas.



## Training Films



The following films have been made available for distribution since January 15th. Other films, of higher classification than restricted, have also been made available but cannot be listed in the News Letter.

MN-318	Oral Hygiene
MN-1138	Physical Fitness Program of the U.S. Navy
MC-1041b	The Surface Grinder
MC-1041c	The Grinding Wheel
SN-1090	The Pilot Meets the N2S
SN-1091	The Pilot Meets the NP1
SN-1092	The Pilot Meets the NE1
SN-1089	The Pilot Meets the N3N-3
MC-274	The Fall Guy
MC-275	Open for Inspection
MN-2031b	Vacuum Tubes
MN-1733	Fire Hose
MN-2021	Women at Arms



## SUMMARY OF TAX FACTS

### for Men in Service

Members of the armed services are subject to the Federal income tax laws, but enjoy several privileges provided for them by Congress. Some of the most important of these are (1) they may defer payment of taxes on their 1942 income, under certain conditions; (2) they will not have to pay the much-discussed Victory Tax on 1943 incomes until 1944; and (3) men at sea or on duty outside the States of the Union and District of Columbia may have payment of tax automatically deferred. This applies to officers and enlisted personnel in the Army, Navy, Marine Corps, Coast Guard, WAACS, WAVES, SPARS, Army Nurse Corps and Navy Nurse Corps.

Federal taxes due on March 15, 1943 will be based upon income received during 1942. For persons entering service during 1942, income is reckoned by adding civilian income to service pay.

Service men below the rank of commissioned officer enjoy an exclusion of \$250. This exclusion is made from military pay only. It does not apply to civilian income received prior to service. Service men receiving less than \$250 pay during 1942 may exclude only the amount received. For married men exclusion is \$300. To receive this special exclusion, a man must have been in service on December 31, 1942.

An income tax return must be filed by single persons who received \$500 during 1942 and by married persons whose income was \$1200.

This year a single civilian will pay Federal Income Tax on 1942 income of \$525.01 and above. Tax on this amount is \$1. Non-commissioned service men pay on \$775.01, tax being \$1. For married civilians living with spouses, having no dependents, income tax reckonings begin at \$1,275.01. Non-commissioned service men in this category begin their calculation with income at \$1,575.01. Tax on this amount is \$1.

These calculations presuppose using simplified 1040A form for income not exceeding \$3,000 derived from salary, wages, dividends, interest, annuities. Using this form, calculations become simple, the taxpayer being able to pick out his amount of tax from a chart. When form 1040 is used, tax computations are based upon net income rather than gross.

The Victory Tax, effective January 1, 1943, applies to all incomes above \$12 a week (\$624 a year) and is figured at the rate of 5%, regardless of marital status or dependents. The Victory Tax will not be withheld from pay of members of the armed services. They will pay it in 1944, at the time the regular Federal taxes become due on this year's income. The special exclusions of \$250 for single and \$300 for married persons of the armed forces apply also to the Victory tax.

### What American taxes

#### Do to the Axis



## TABLE FOR SIMPLIFIED TAX RETURNS UP TO \$3,000

(Optional tax schedule for use with Form 1040-A)

Gross income		Tax under Revenue Act of 1942				Gross income		Tax under Revenue Act of 1942			
Over	Not over	Single person (not head of family)	Married person making separate return	(1) Married person whose spouse has no gross income or (2) married person making joint return or (3) head of family	\$0	Over	Not over	Single person (not head of family)	Married person making separate return	(1) Married person whose spouse has no gross income or (2) married person making joint return or (3) head of family	\$0
	\$525	\$0	\$0	\$0	\$0	\$1,750	\$1,775	\$210	\$191	\$77	
\$0	550	1	0	0	0	1,775	1,800	214	195	81	
\$525	575	4	0	0	0	1,800	1,825	218	199	85	
\$550	600	7	0	0	0	1,825	1,850	223	204	90	
\$575	625	11	0	0	0	1,850	1,875	227	208	94	
\$600	650	15	0	0	0	1,875	1,900	231	212	98	
\$625	675	20	3	0	0	1,900	1,925	236	217	103	
\$650	700	24	6	0	0	1,925	1,950	240	221	107	
\$675	725	28	9	0	0	1,950	1,975	244	225	111	
\$700	750	33	14	0	0	1,975	2,000	249	230	116	
\$725	775	37	18	0	0	2,000	2,025	253	234	120	
\$750	800	41	22	0	0	2,025	2,050	257	238	124	
\$775	825	46	27	0	0	2,050	2,075	262	243	129	
\$800	850	50	31	0	0	2,075	2,100	266	247	133	
\$825	875	54	35	0	0	2,100	2,125	270	251	137	
\$850	900	59	40	0	0	2,125	2,150	275	256	142	
\$875	925	63	44	0	0	2,150	2,175	279	260	146	
\$900	950	67	48	0	0	2,175	2,200	283	264	150	
\$925	975	71	52	0	0	2,200	2,225	288	269	155	
\$950	1,000	76	57	0	0	2,225	2,250	292	273	159	
\$975	1,025	80	61	0	0	2,250	2,275	296	277	163	
\$1,000	1,050	84	65	0	0	2,275	2,300	301	282	168	
\$1,025	1,075	89	70	0	0	2,300	2,325	305	286	172	
\$1,050	1,100	93	74	0	0	2,325	2,350	309	290	176	
\$1,075	1,125	97	78	0	0	2,350	2,375	314	295	181	
\$1,100	1,150	102	83	0	0	2,375	2,400	318	299	185	
\$1,125	1,175	106	87	0	0	2,400	2,425	322	303	189	
\$1,150	1,200	110	91	0	0	2,425	2,450	327	308	194	
\$1,175	1,225	115	96	0	0	2,450	2,475	331	312	198	
\$1,200	1,250	119	100	0	0	2,475	2,500	335	316	202	
\$1,225	1,275	123	104	0	0	2,500	2,525	340	321	207	
\$1,250	1,300	128	109	1	1	2,525	2,550	344	325	211	
\$1,275	1,325	132	113	4	4	2,550	2,575	348	329	215	
\$1,300	1,350	136	117	7	7	2,575	2,600	353	334	220	
\$1,325	1,375	141	122	10	10	2,600	2,625	357	338	224	
\$1,350	1,400	145	126	14	14	2,625	2,650	361	342	228	
\$1,375	1,425	149	130	17	17	2,650	2,675	366	347	233	
\$1,400	1,450	154	135	21	21	2,675	2,700	371	351	237	
\$1,425	1,475	158	139	25	25	2,700	2,725	376	355	241	
\$1,450	1,500	162	143	29	29	2,725	2,750	381	359	245	
\$1,475	1,525	167	148	34	34	2,750	2,775	386	364	250	
\$1,500	1,550	171	152	38	38	2,775	2,800	391	369	254	
\$1,525	1,575	175	156	42	42	2,800	2,825	396	374	258	
\$1,550	1,600	180	161	47	47	2,825	2,850	401	379	263	
\$1,575	1,625	184	165	51	51	2,850	2,875	406	384	267	
\$1,600	1,650	188	169	55	55	2,875	2,900	411	389	271	
\$1,625	1,675	193	174	60	60	2,900	2,925	416	394	276	
\$1,650	1,700	197	178	64	64	2,925	2,950	421	399	280	
\$1,675	1,725	201	182	68	68	2,950	2,975	426	404	284	
\$1,700	1,750	206	187	73	73	2,975	3,000	431	409	289	

**SINGLE PERSON—NO DEPENDENTS**  
Personal exemption: \$500

Net income before personal exemption <sup>1</sup>	Amount of tax
\$500	
\$600	\$15
\$700	34
\$800	52
\$900	71
\$1,000	89
\$1,200	126
\$1,500	181
\$1,800	236
\$2,000	273
\$2,500	305
\$3,000	472
\$4,000	686
\$5,000	920
\$6,000	1,174
\$8,000	1,742
\$10,000	2,390
\$15,000	4,366
\$20,000	6,816
\$25,000	9,626
\$50,000	25,811
\$100,000	64,641

**MARRIED PERSON—NO DEPENDENTS**  
[Personal exemption: \$1,200]

Net income before personal exemption <sup>1</sup>	Amount of tax
\$1,200	
\$1,300	\$13
\$1,400	30
\$1,500	48
\$1,600	66
\$1,800	103
\$2,000	140
\$2,500	232
\$3,000	324
\$4,000	532
\$5,000	746
\$6,000	992
\$8,000	1,532
\$10,000	2,152
\$15,000	4,052
\$20,000	6,452
\$25,000	9,220
\$50,000	25,328
\$100,000	64,060

**MARRIED PERSON—TWO DEPENDENTS**  
Personal exemption: \$1,200; dependent credit: \$350

Net income before personal exemption <sup>1</sup>	Amount of tax
\$1,900	
\$2,000	\$13
\$2,100	26
\$2,200	44
\$2,300	62
\$2,400	81
\$2,500	99
\$3,000	191
\$4,000	378
\$5,000	592
\$6,000	810
\$8,000	1,322
\$10,000	1,914
\$15,000	3,758
\$20,000	6,088
\$25,000	8,814
\$50,000	24,845
\$100,000	63,479

<sup>1</sup> Maximum earned net income assumed for purposes of the earned income credit.

The following items may be excluded from taxable income: pensions, annuities on sick allowances following active service, amounts received for quarters and rations, and per diem subsistence payments. On the other hand, money deducted from his pay for dependents must be included as part of the income; but those on the receiving end need not report these funds if they file income returns. What the government adds to home contributions does not fall under the classification of taxable income.

Sums paid from personal income to purchase uniforms are not deductible. Uniform gratuities received from the government need not be reported.

Married persons living apart by agreement or law are single for purposes of tax. Single men may claim head-of-the-house exemptions if they maintain and support "one or more individuals closely connected by blood relationship, relationship by marriage or by adoption, and whose right to exercise family control and provide for these dependent individuals is based upon some moral or legal obligation."

Income tax payments are due in a lump sum March 15, 1943, or in four equal quarterly installments beginning March 15. Grace periods have been provided automatically covering men at sea or on duty outside the States of the Union and District of Columbia. In their case, a return must be filed and payment made on the 15th of the third month following the earliest of these three events: (1) Return to the U.S. (2) End of War (3) Appointment of administrator, etc. of taxpayer's estate.

The Soldier's and Sailor's act makes provision for men in the service whose ability to pay income tax has been materially impaired by serving in the armed forces. These cases may apply for permission to defer payment by letter to the Collector of Internal Revenue in the district concerned.



## HEAD GEAR

### Something new to buy, brother.

It's a new Navy garrison cap. You didn't plan on buying one when you bought your uniforms. You don't have to buy one now, but nevertheless you'll probably want one. As a change from the regulation visor cap, they'll give your skull a rest and they do look rather jaunty. Blue, white, khaki, and green to match the uniforms, the insignia of rank will appear on the right side of the cap - a miniature Navy Shield on the left side. If you're a commissioned officer, warrant officer, or chief petty officer you may wear one. If you're an aviator, miniature wings will replace the Navy Shield.

All of this comes high. From \$5 to \$8 complete. Probably Ship's Service is cheaper - undoubtedly Ship's Service is sold out. Five or eight bucks for a new cap is a good hunk out of the uniform allowance, but as we said they're "rather jaunty".

And while on the subject of uniforms, effective next New Years day, gold sleeve stripes on service blues will extend on the outside of the coat sleeves only from seam to seam---conservation of gold lace. As of the same date, all officers will wear caps with polished black visors and black chin straps. Officers of the rank of lieutenant commander and below may substitute a gold lace chin strap for the black braid strap on formal occasions. Officers of the rank of commander and above may wear on formal occasions caps with embroidered visors and gold lace chin straps.

## Save Your Body

One of the most challenging medical mysteries of this war has been immersion blast injury, suffered by a victim in the water when an underwater explosion occurs nearby. It results in damage to lungs and intestinal walls and the sufferer may be critically hurt even though external signs of violence are absent.

Recent research by doctors of the Naval Hospital at Pearl Harbor has revealed many hitherto unknown facts about immersion blast injury. Here are some highlights of helpful advice:

1. Conservative treatment should be followed; shock should be counteracted, with oxygen being administered and an adequate intake of fluids maintained.

2. Sulfa drugs may be used to combat infection and surgery resorted to only when absolutely necessary.

3. From a preventive standpoint, emphasis should be placed on the effectiveness of lifejackets to reduce the danger of blast injury. Men should be instructed to swim on their backs if the abdomen is not adequately protected. It has been found that men who have had their backs toward the blast or who were swimming on their backs suffered lung, rather than abdominal injury. The lifejacket is of utmost importance in protecting the abdomen, which is extremely vulnerable to this type of explosion.

In addition to the victim's position in the water and his distance from the detonation, another significant factor concerns the position of the mouth. Danger of serious injury is lessened when it is closed. Although the lifejacket tends to pull

up in water, it should be remembered that for best protection it should cover the abdomen. Crotch straps for lifejackets have been recommended by some to overcome this problem.

## Seabees Repair Carrier During Sea Battle

Battle-scarred from a recent engagement in the South Pacific, an aircraft carrier of the Fleet was placed in fighting condition by "Seabees" who effected emergency repairs at sea while the carrier was steaming to inflict new blows upon the enemy. Part of the repairs were actually completed while the carrier was in battle.

"Much of this work was accomplished at sea under the supervision of the officer in charge of the "Seabees" and his forces during the stress of operations against the enemy", the commanding officer of the carrier advised the Navy Department. "The emergency repairs accomplished by this skillful, well-trained, and enthusiastically energetic force have placed this vessel in condition for further action against the enemy."

Returning to a South Pacific port after an earlier battle, the carrier put in for repairs. A crew of 75 "Seabees" was put to work on her because adequate regular repair forces were lacking. While the work was under way, the commanding officer of the carrier received orders to put back to sea immediately and engage the enemy.

There was no time to wait for completion of repairs. The carrier sailed for the battle area with the "Seabees" still aboard, and the men of Construction Battalion kept right on working. Even after the carrier was in the midst of battle, the "Seabees" carried out their assigned tasks and effected all necessary repairs.

This remarkable job won the praise of Admiral William F. Halsey, Jr., commander of the South Pacific Area and the South Pacific Force, who sent a dispatch to the officer in of the "Seabees" saying:

"Your commander wishes to express to you and the men of the Construction Battalion serving under you his appreciation for the services rendered by you in effecting emergency repairs during action against the enemy. The repairs were completed by these men with speed and efficiency. I hereby commend them for their willingness, zeal, and capability."



### Barracks for WAVES

Ironing boards, clothes lines and laundry trays will add a feminine touch to barracks now being constructed at various Naval Training Stations. But they aren't for you, boys. These barracks, upon completion, will house WAVE officers and enlisted women.

Four barracks are now under construction at Norman, Okla., where enlisted WAVES will be trained as aviation machinist mates and aviation metalsmiths. Four being built at Memphis, Tenn., will house aviation machinist mates, while two under way at Atlanta, are for women being trained as Link trainer instructors. One at Lakehurst, N.J., will house aerographers' mates and parachute riggers.

Quarters for WAVES will follow a slightly modified version of typical military barracks for Navy men. Barracks for officers are designed to accommodate 58 women, some in single and some in double rooms. Each floor of the two-story buildings will have a small lobby and a recreation room.

Barracks for enlisted women are also two-story structures, planned to accommodate a full company of about 230 women. Each floor will have a large sleeping room with double-decker beds and a recreation room. Lockers and beds will be arranged to form cubicles, with three beds backed against a row of lockers. Thus, the sleeping quarters actually will be a typical barracks room, but the space will be broken up to give the effect of a number of smaller rooms.

### Homing Pigeons

A bird can't fly with one wing! It's quaint little facts like this that rate the pigeons aboard the Navy's lighter-than-air craft such meticulous care. During the present war this well upholstered bit of bones and feathers is earning its place in the sun.

All homing pigeons used on blimps or balloons by the Navy are trained at Lakehurst before being sent to the other stations. They are not kept in complete captivity but are released two or three times a day. A trainer "pipes" them back when their liberty expires.

Every time a blimp leaves on a routine, patrol or convoy flight six pigeons, crated, accompany it. When messages, which incidentally are coded, must be gotten to the home base, via pigeons, it means that strict radio silence must be maintained so as not to betray the presence of the craft to enemy vessels.



The Navy homing pigeon is a trained bird!

The success of the non-rigids against enemy subs has made the nation blimp-conscious. The day the Japanese attacked Pearl Harbor the Navy had few blimps and all were based at Lakehurst. While no actual figures can be revealed, it is safe to say that the increased number of blimps and stations is bad news to axis subs. Ordinarily messages are sent in black plastic capsules, aluminum no longer being used. Two of the birds bear a red-colored capsule for use only in emergencies. Thus, when the home base finds a bird with a red capsule that has winged back from the ship officers know something big is breaking out where the bird was released.

A handler takes a bird in both hands, snugly tucks its wings close to its body and throws it smartly from the blimp head first so that it will not be caught in the slip stream and bang a wing in the propeller blast. The birds are flown in pairs because they fly faster that way. They are given water aboard the blimps but no food. Page Dilbert for the answer to that one. Other idiosyncrasies include the fact that they are allergic to rain, darkness, and high tension wires.

About that darkness - If at 1500 a blimp was 50 or 60 miles from shore and the prevailing wind velocity was 29 knots the skipper would probably not send his pigeons out unless the message was urgent. They fly at about 30 knots but under these conditions would make good only about 10 knots ground speed. Darkness would be all over the delta by the time they reached their station.

In addition to patrolling to detect the presence of enemy subs the blimp has effected heroic rescues of men stranded on life rafts. When feasible the blimp comes as low as possible and hovers over the raft with ladder for the survivors to be brought

aboard. Otherwise, food, cigarettes, first aid kits and the like are lowered by rope and the two pigeons, each carrying the duplicate message, wing back to the home station which will arrange to have a vessel pick them up. Of the birds carried on the flight all but two may be used for messages of this type but the remaining two must always be held in reserve for the sending of vital messages in time of actual combat.

## Yorktown Launched

Ready to avenge her predecessor and namesake, as well as carriers Lexington, Wasp, and Hornet, our new aircraft carrier Yorktown slid into the James River at Newport, Va., January 21, 1943.

Construction of the new Yorktown struck a new building record for carriers as the vessel was launched less than 14 months after her keel was laid on December 1, 1941. And shaving time down to the split second, this 25,000-ton vessel broke off the traditional launching ceremonies by unexpectedly sliding down the ways five minutes ahead of schedule.

Other "capital ship" carriers launched since last July include the 25,000-ton Essex, Bunker Hill, and new Lexington. Smaller, but high-speed carriers having been launched in the last year include the Independence, Princeton, Belleau Wood, and Cowpens built on 10,000 ton cruiser hulls. Numerous smaller and slower carriers, converted from freighter hulls, also have been launched.

As these new ships with their hundreds of destruction-bearing planes seek out the enemy, we are again reminded of the heroic achievements of their predecessors. The USS Hornet, identified by the Navy Department as the aircraft carrier lost October 26 in the Battle of the Santa Cruz

Islands, wrote her valedictory in blazing gunfire. On the day she perished, the Navy task force of which she was a part shot down 156 Japanese warplanes. But even the Hornet's final attainment pales when placed alongside the devastation she logged in the five months preceding her sinking.

Delivering even more destruction to the enemy were the blows the Hornet struck at warships and auxiliaries. Her squadrons, Scouting Eight, Bombing Eight, Torpedo Eight, and Fighting Eight, at Midway and Santa Cruz, produced the following minimum results;

- At least one torpedo hit on a carrier.
- Two 1,000-pound and one 500-pound bomb hits and two 1,000-pound near misses on battleships.
- One 1,000-pound bomb hit on a heavy cruiser, later seen gutted with survivors abandoning ship.
- Six 1,000-pound bomb hits on another cruiser.
- Two 500-pound bomb hits on a cruiser.
- One 1,000 and one 500-pound bomb hits on destroyers.
- One destroyer strafed by fighters.

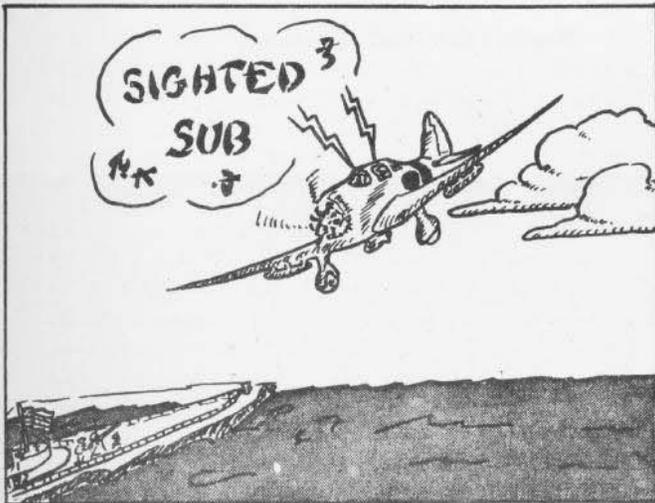
Seven 1,000-pound bomb hits on a carrier, larger than any American carrier, which was last seen blazing from stem to stern, and crosswind in the water.

Four 10,000-ton transports, with a capacity of approximately 5,000 men each, sunk

Between the Midway and Santa Cruz battles, the Hornet launched an attack on the Buin-Faisi area, scoring hits on a tanker, a light cruiser, and two cargo ships. Several enemy planes were shot down and the Kahili airfield bombed. They also made another raid at Rekata Bay, where two beached transports were hit and burned, landing barges and supplies burned, fuel dumps and anti-aircraft installations destroyed, and 12 seaplanes shot down.

The Japs paid dearly for her sinking. In the final analysis they couldn't sink her. She survived attack after attack until she was taken in tow and began to leave the battle area. Subsequent attacks damaged her badly.

Finally, after 10 hours under attack, the order was given to torpedo the Hornet to preclude any possibility of her falling into enemy hands. Two destroyers were ordered to sink her. As dusk crept over the South Pacific, the Hornet slid beneath the surface. Other vessels rescued all but 129 of her complement of 2,900 men.



### Clarity of Orders

Endorsements, recommendations, orders, etc., resulting in the transfer of Naval Personnel under the cognizance of the Bureau of Aeronautics, should be specific as to whether an officer is being ordered to duty on a staff of an organization or ordered to an organization for further assignment.

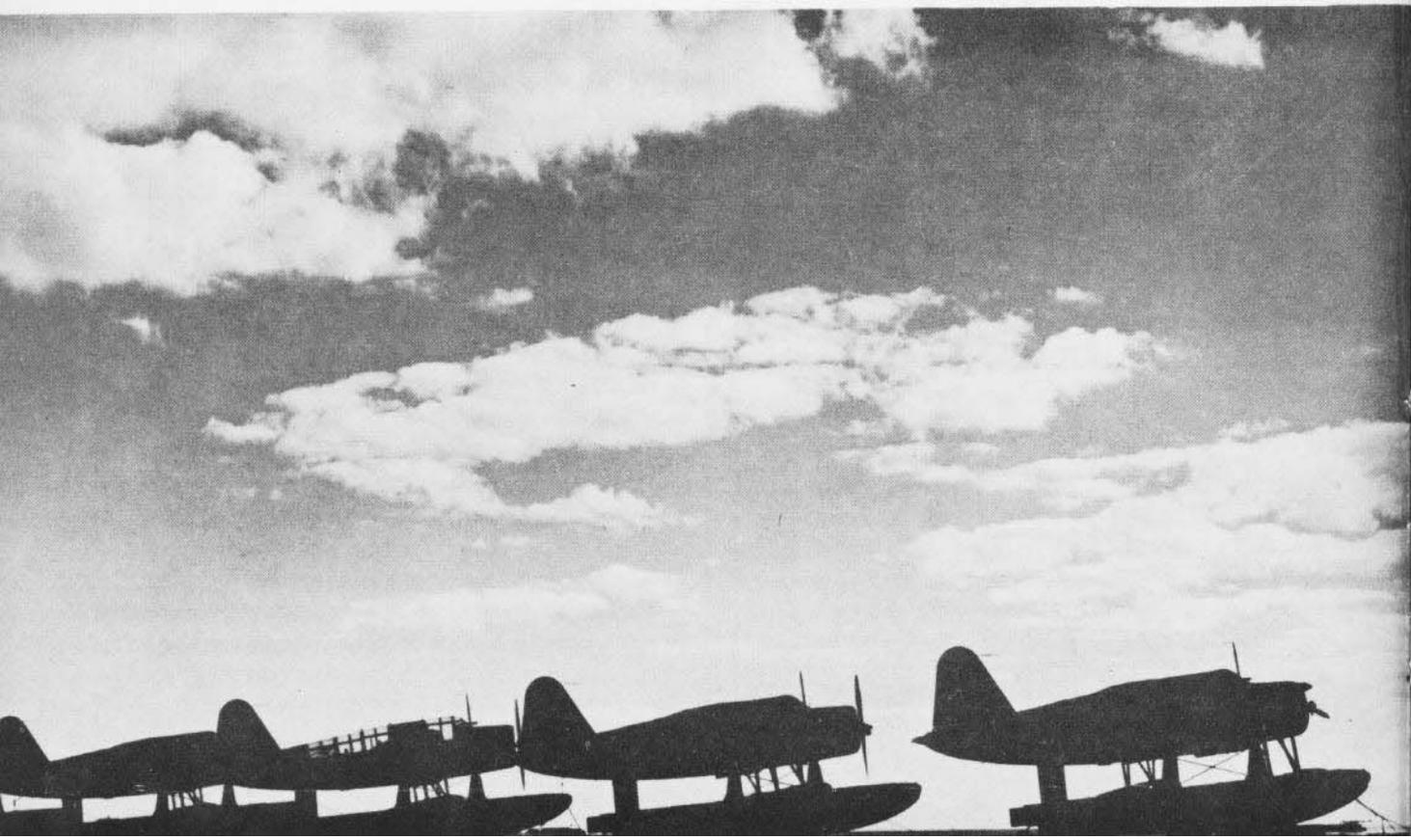
Example: FleetAirWing 900, Staff or FleetAirWing 900, For Further Assignment. Never to FleetAirWing 900. Copies of the above on being forwarded to the Bureau of Aeronautics should be legible.

## “ CALLING THE NAVY ”

The office of War Information broadcasts a fifteen minute radio program, Monday through Saturday, to naval personnel all over the world. It is entitled "Calling the Navy" and is made up of news items of interest to naval personnel.

The schedule is as follows:

<u>TIME (EWT)</u>	<u>STATION</u>	<u>KILOCYCLES</u>	<u>METERS</u>	<u>AREA</u>
0615	WGEO	9650	31	} South Pacific and Australia
	WJQ	10010	30	
0845	WGEO	15330	19.6	} India and Scandanavia
	WBOS	15210	19.7	
1415	WRUL	11790	24.4	North Atlantic and Great Britain
	WRUW	15354	19.5	} South Atlantic and Indian Ocean
	WCW	15850	18.9	
1900	WCL	9390	32	Greenland and Iceland



# NAVAL AIR STATIONS, etc.

## Hutchinson, Kan.

Unpredictable weather has slowed construction progress here, but landing mats have been completed and soon will be ready for use. Barracks are nearing the completion stage and heat has been turned on in the ground school buildings. Interior work is progressing satisfactorily.

After careful instruction in their use, duty sections have been armed with riot guns and .38 automatics. A number of Thompson sub-machine guns have been added to the armory, and a supply of Very's and Sedgley Mark 5 signal pistols were received to equip all planes.

According to present plans, some departments were scheduled to begin occupying their new offices and quarters at the base about February 1. Planes have been using the runways and landing mat for several weeks.

## Whidbey Island, Wash.

Flying activity has begun at nearby Clover Valley, the landplane base, although there is still much mud and unfinished construction. Only two months ago pheasants were flying around there with no competition.

## Anacostia, D. C. (NRAB)

Weather has played havoc with the flight training schedule. Flight time for December was 5,602.7 hours in 4,160 flights. In comparison with 1941 it is, however, a decided improvement. In December 1941, 1,066.6 hours were flown in 1212 flights. To date we have completed 451 students through Stage "B".

During 1942, the number of officers attached to the Base increased 444%, crew 645%, and cadets, 606%, and we are still growing.

## Peru, Indiana

In order to mark landing areas for spot landings in the snow, a new method has been devised on this base. A dye consisting of one gallon of black paint to 55 gallons of kerosene is sprayed by a system mounted on a truck. In five minutes a two-hundred foot circle two and one-half feet wide can be spread. An advantage of the mixture is that it soaks through any snowfall. It has been found that an initial application will withstand as many as three snows and remain clearly visible.

From December 16th to December 30th, inclusive, there were 2831 instruction hours and 70.6 operation hours. On December 16th an all-time high was achieved when a total of 504.5 flying hours went into the record. Considering the foul weather that confronted us during the month of December this record is rather impressive. According to local weather bureaus and newspaper articles, the weather during December was the worst in the history of this locality.

## Iowa Pre-Flight School

It takes cold, impersonal facts and figures to really tell the story of what the pre-flight schools do for an aviation cadet. Statistics compiled here show the average cadet to be 5 feet 9 inches tall; weigh 156 pounds; have a 36-inch chest and 29.75 inch waist measurement; and able to do 17 pushups and 5½ "chins".

Amazingly, after three months of training the average cadet is nearly a half inch taller, weighs two pounds more, (many cadets are overweight on entering, their weight loss bringing down the average gain) has expanded his chest half an inch and reduced his waistline by three-quarters of an inch. He now can do 24 pushups and 8.75 chins.

## Purcell, Okla. (NGAS)

Although the Naval Air Gunners School here has been operating only since last Oct. 15, three classes have been graduated and four now are under instruction. The present officer compliment totals 40, of whom 27 are instructors. The enlisted personnel numbers close to 150.

The three machine gun ranges equipped with moving targets were expected to be ready in January. Students have been firing on a familiarization range at fixed, pendulum and moving targets.

In what is believed to be the most unusual guard procedure at any naval station in the United States, enlisted

personnel on horseback do patrol duty. Many of the men on guard duty have been recruited from the locality. The mounted guard has been found more effective in guarding the outlying boundaries than afoot or in a jeep because occasionally the red mud of Central Oklahoma bests even the stoutest jeeps.

## Memphis, Tenn.

During the last weeks in December, Squadron H203 flew 3486.8 hours in spite of 3½ days lost because of foul weather and ceiling. The flight schedule boys have a new slogan: "Fly every plane every hour from dawn to dusk." They are doing just this and crying for more planes. A new high of 344.4 hours flown in one day was recorded and this did not include a night period.

By removing and installing the engine completely mounted, the A. & R. department has found that only a minimum of time is lost in making engine changes, in N2S airplanes. A flat truck on casters was manufactured to accommodate the engine mount. The power plant installation forward of the fire wall was then completely assembled in the shop. One mechanic with a recruit as helper completed the installation in one hour and ten minutes. Unquestionably this time will be lowered as the men become more proficient.

This station made its first sale of salvage materials turned over to the Navy by the Officer in Charge of Construction, to further aid the War Conservation Program. It consisted of approximately: 18 tons of used parts; 5 tons of tin and sheet metal; 5 tons of wire rope; and 150 lbs. of copper.

Cadet training in gunnery has discontinued except for a two hour period during indoctrination and such time as may be available during foul weather. It is possible that there

### Check-itis



may be a short period available for gunnery training for the cadets after they have finished their ground school work. The target carriers in the indoor small-bore range have 8800 charge. The wire target carriers were unsatisfactory as they were unstable and the trolley wires were being weakened by hits. The new target carriers are small trolleys supported on steel rails hung near the ceiling, eliminating wires and swinging targets. The Seaman Guard are now field stripping and assembling the .45 Colt automatic pistol. Every man of the sixty can do the stripping and assembly in less than two minutes. The best time is fifty-five seconds.

### Lakehurst, N. J.

The largest class ever to begin training as blimp pilots has begun at Lakehurst. Ninety-three members comprise the group.

In addition to being the largest class, it is also the first in which enlisted men will be given training leading to the rating of Aviation Pilot (Airship). The class is made up of 20 officers, 60 aviation cadets and 13 enlisted men.

Qualifications for enlisted pilot training, which are generally the same as for heavier-than-air, also include graduation from the Enlisted Airship Training School, and at least six months of service with an airship patrol squadron.

The Aerographers' School, which has been in operation at Lakehurst since 1929, moved into new quarters recently. The unit now occupies the former Newman School for Boys, on the outskirts of Lakewood. Five buildings and grounds, consisting of more than 175 acres, were taken over and converted to Navy use. At present, approximately 225 enlisted men of the Navy and Marine Corps are enrolled. This figure is expected to be increased to 300 in the

near future. It is also expected that, beginning in February, 25 WAVES will be added to the school each month.

Of considerable importance to Lakehurst was the recent announcement that construction would begin soon on more than 100 dwellings. The homes will be constructed by a civilian contracting firm on land made available by the Borough of Lakehurst. Land has been cleared and excavation of basements begun. The homes will be single bungalow-type units of five and six rooms with bath. Each will have individual furnaces. Construction of the homes will help alleviate the housing shortage brought on by rapid expansion of the station.



### CLOSING DATES for next issues of News Letter

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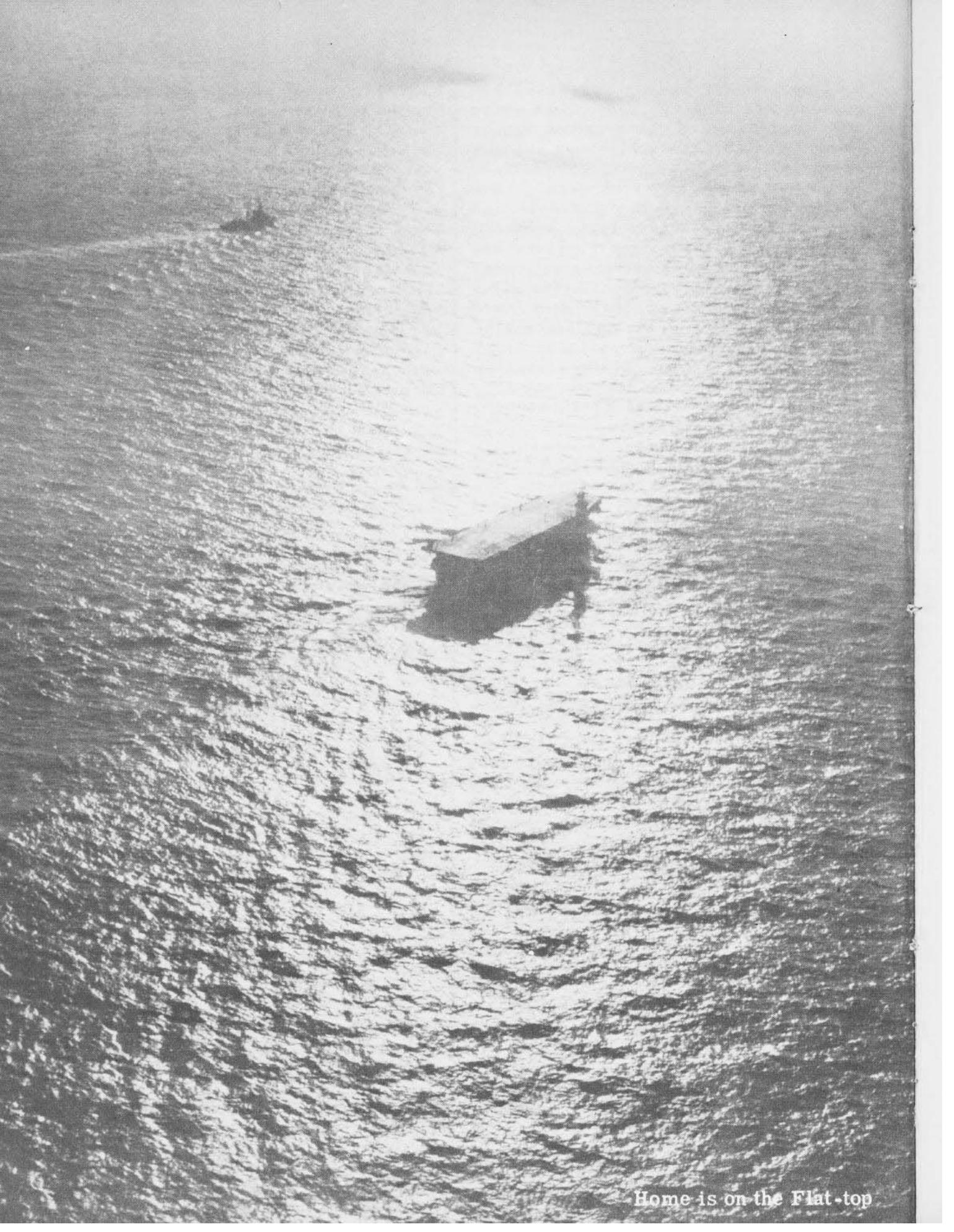
FEB. 5th for FEB. 15th issue

FEB. 19th for MAR. 1st issue

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Illustrations, including photographs and drawings, should be sent with copy when they improve or contribute to better understanding of text.

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Home is on the Flat-top

### Oakland, Calif.

A systematic lining up of planes here makes it possible to refuel as many as 170 aircraft in eight minutes. This is accomplished by placing two rows of five planes each around the gasoline pipe line outlets. Refueling hoses run from a trough or slot which is covered with a steel plate. This trough is only of sufficient width to accommodate the hose and nozzle. Wear and tear of the hoses caused by coiling or rolling is eliminated by this method.

To give flying cadets a chance to study while on the flight line and not engaged in flying operations, bunks were removed from a lower wing of barracks near the operations office and a study hall was established.

Added to the athletic obstacle course is a platform, 40 feet high, with a Jacob's ladder and several ropes. Climbing aboard is done by means of the Jacob's ladder and abandoning ship is accomplished by sliding down single ropes. This not only adds interest to the obstacle course but is believed to be of practical value.

### Grosse Ile, Michigan

On a recent extra cold day, fourteen cases of frost bitten cheeks among students and instructors were reported. This caused the medical department flight surgeons to expend countless hours in the air using themselves as human guinea pigs to determine the relative merits of various and sundry masks. Their findings indicated that the most satisfactory mask is made by cutting the top from an ordinary watch cap, stitching it to prevent raveling, and placing it around the lower part of the face. Many of the fliers found the standard felt masks impracticable because glasses steamed up too much.

### Los Alamitos, Calif.

On December 1, 1942, Utility Squadron Eight was commissioned here, adding to the shortage of space problem, but which was taken care of some by obtaining the use of 40,000 square feet of deck in the hangar. Another outlying field was completed last month, giving the base two now in use. A third is virtually completed and will be followed soon by a fourth. Negotiations are continuing for the acquisition of a fifth outlying field.

Rear Admiral Elliott Buckmaster, Chief of the Air Primary Training Command, and his staff, recently made a complete inspection of operating and training facilities. Chief of Staff, Captain D. W. Tomlinson, personally checked out pilots in night flying, employing a lighting system successful at the Naval Reserve Aviation Base, Olathe Kansas, consisting of four kerosene road flares set at intervals of 200 feet on the runway.

Names of base streets have been changed from the conventional "First, Second, etc." to those of aircraft carriers. The new designations include Lexington Drive, Ranger Circle, and Saratoga, Yorktown, Enterprise, Essex, Langley, Intrepid, Hornet, Wasp, and Independence Roads.

### The Latest Junkers

The Ju. 288 fighter-bomber (two 1600-hp. BMW 801 radial engines) is believed to be coming into operational service with the Luftwaffe, says the magazine, Aeroplane Spotter. Its wing span is reportedly 60 ft. and length 47 ft. During past few weeks the Luftwaffe has put into use high-level bombers for individual daylight raids. One of the types used is apparently the Junkers Ju. 86P2, experimental modification of the old Ju. 86K, now fitted with 1000-h.p. Junkers Jumo 207 diesel engines and a pressure cabin.

## WHAT HO! THE "BUTCHER"

*Here is a piece of remonstrance from a civilian pilot against service aviators who ride roughshod over the traffic rules at civilian air terminals. His particular peeve is against an Army pilot whom he caught in flagrante delicto, but it easily could have been a Navy pilot. The author of the article from which this digest has been taken is Fred Smith, test pilot for Sperry and Curtiss Propellor. It appeared originally in the magazine, U. S. Air Services.*

\* \* \*

One evening when La Guardia Field was reporting a 700 foot ceiling and one mile visibility, airline planes were coming in from all directions, save the south, and there were stacks of ships over the several outer markers and intersections. From 8 p.m. until 9:30 the procession into landing-sequence was orderly and efficient with landings at about ten-minute intervals. Then along came the "butcher"-- an Army pilot east-bound into Mitchel Field with no evident regard for the airliners or his service-pilot brethren also present in the control area.

This pilot, apparently at full-cruise throttle, came hammering into the whole orderly system, singing out check-points to the various range stations, but seldom acknowledging the frantically repeated instructions given him by Airways Traffic Control. Since the approach control frequency is universally used by all scheduled operators, this agency's endeavors to reach the recalcitrant caused a kind of impatiently polite bedlam. Of course, until the plane definitely was plotted for position, and a promise extracted from him that he would play ball for safety's sake, the whole system was tied up effectively.

This man's selfishness cost plenty: in precious gasoline, in payroll, and time in terribly needed airplane hours. The case mentioned would not be worth picturing if it were an isolated example, but it is NOT. It is, rather, a typical one with repetition occurring every day at traffic centers along the airways.

The plain fact is that there are men in the skies at this moment who possess no realization or conscience regarding the collision-prospects of their loose flying manners. Some of the Army and Navy offenders are gentlemen through act of Congress, but in the air they behave abominably. They are the jaybirds of the air -- and beware!

In all fairness...broad root of the evil is the Civil Air Regulations, written by lawyers, and unsupplemented by the completely explanatory note; "Hell, fellers -- all we want to know is where you're going, along what route and at what altitude. Leave your radio on so we can reach you, and acknowledge all messages by repeating all clearances and instructions." Could it be more streamlined? Do the Regulations' numbered and cross-indexed sub-paragraphs accomplish more?

Another reason for recurrent infractions in the air is the downright laziness of some pilots in preparing and holding to their Flight Plans.

If you want to make your hours in the cockpit more pleasant, take the time when next you fly the airways to make a flight plan that will keep you out of the cloud layers, if possible. If not, please adhere to your selected or awarded altitude while "on instruments." When you enter the airway or the control areas keep the receiver turned to a sufficient volume that will assure your receiving further orders or advices. Write down the clearance and acknowledge it clearly.

## Patrol Squadron Eighty-Three U. S. Atlantic Fleet

This squadron has recently said its final farewells to tent life, and not without nostalgia. It was in early April of 1942 that the first division of six planes arrived at their new Home to set up operations. This division pioneered in the wilderness, setting up tents in somewhat orderly rows, throwing together wooden floors against the playful ravages of "the rainy season", building crude furniture to hold the glasses, and so forth. Shortly after our arrival, it was promised by the builders we would move into the new barracks "in a couple of weeks."

Life was elemental during our first months here. The tents were near the down-wing edge of the field, and the earth was made of sand. There is always a wind in this area. So the rains were a blessing of sorts. They prevented the sand from *blowing* into every corner of our lives; instead, they *washed* the sand into the tents, leaving it in neat eddies on the floor when the floods subsided. When it came time to sweep it out, the effect was the same as if it had blown it in the first place.

The medico condemned the fresh meat supply in those early days, and we existed weeks on canned ham and corned beef. What we called the mess hall was later broken up for kindling wood. Like the Manderley mansion in "Rebecca", it had seen enough of human misery, and fire was its due.

A parrot and parakeet craze went round the camp during the early days, breaking up old friendships and turning brother against brother in grim civil war. Rumor hath it that the squadron cooks, during a typical food shortage, solved the problem in their own way, to the satisfaction of all. Come to think of it, that chicken fricassee on the Fourth of July *did* seem awfully tough.

The second division joined us in June, and life in tent city grew in intensity (no pun intended.) We were definitely assured that the new barracks would be ready "in a couple of weeks" then, so all plans were made on a temporary basis.

The camp was honored with a visit from SecNav, who shared our tents and broke our humble bread. The task force commander paid frequent visits and assured us we were "living better than anyone in the task force."

Wendell Wilkie came through, on his way to China. We felt somewhat closer to home when Eastern Air Lines opened a new route, bringing us occasionally the doings of Lil Abner and Blondie only three days late.

TWA followed suit, and tales came over from the Army Air Transport Command about "17-hour trips to the United States." We began to feel less out of things. Besides, the end of tent life seemed to be in the offing, for the new barracks were to be ready "in a couple of weeks."

Along in October the great day came to pass. The barracks were ready. We moved. The tents were taken down, the floors broken up for the lumber. The old camp site had no other landmarks, and returned to the dust. The day we moved in, the painting of the barracks began, but fortunately it was quick-drying paint, and in two or three days we were able to use the shelves and closets.

The administration of the squadron remained in tents until a few weeks ago, when with a certain amount of ceremony and deep feeling we commissioned the tactics building, designed entirely by the squadron, and built with the unfailing co-operation of the Airport Development Program builders. The tactics room, large, cool and airy, with its wonderful

charts on all sides, is the place we meet by spontaneous consent, after the movies at night, or when those terse and welcome messages flash through from the planes in the air. This room, more than anything else, has driven home the realization that the tent days are gone.

Life is comfortable now, with running water for showers, and Ypiranga flushing toilet bowls ('tis said they won a ribbon at the Queen Victoria exposition in '75), and the meat ban lifted. It's not like the old days anymore, for a city has sprung up in the desert. We can only say, in looking back upon that which has been and shall never be again, "Farewell to tent city."

**Grand Strategy**



**NAS - New York**

The following was submitted by Scouting Squadron Twenty Four's Flight Officer; shortly after the squadron was commissioned on December 31, 1942:

*I*

*I think, in nineteen seventy-three  
When Grandson climbs upon my knee  
I'll tell of winter, cold and bleak  
Of frightened "Boots" so mild and meek,  
Of empty hangers mocking mildly  
The step of Ensigns seeking wildly  
Scouting Squadron Twenty Four.*

*II*

*But if my tale, it is so plodding  
That my Grandson now is nodding  
To arouse him, I will mention  
Blue clad ranks at stiff attention  
While the "Skipper" reads his mission  
Gravely placely in commission  
Scouting Squadron Twenty Four.*

*III*

*The hustling, bustling here and yon  
For things to write or sit upon  
For liberty cards and station passes  
And any way to pay the masses -  
"Salty Chiefs" and "Boots" galore, in  
Scouting Squadron Twenty Four.*

*IV*

*No doubt my Grandson's doleful pan  
Recalls the face of the "Old Man"  
Who said, to his apprentice seamen,  
"Give me gunners, mechs and he-men.  
Supermen I need by scores - in  
Scouting Squadron Twenty Four."*

*V*

*Mayhap in nineteen seventy-four  
Grandson will wish to near some more  
Of deeds in nineteen forty-three  
Then he will laugh and shout with me  
At rebuilt hangars, crowded lanes  
And still no flying "airyplanes" - for  
Scouting Squadron Twenty Four.*

VI

Sometime perhaps my offspring's son  
Will ask my part in victories won  
I'll say to him with prideful roar  
"Why Boy! My outfit won the war  
I flew and worked and flew some more - in  
Scouting Squadron Twenty Four."

### Torpedo Squadron Nine

Isaac Walton fans take notice. An officer from Torpedo Squadron Nine has developed a set of equipment used to stock the Type "S" rubber life rafts used by this squadron in TBE-1 aircraft. Wouldn't all squadrons like to check this set?

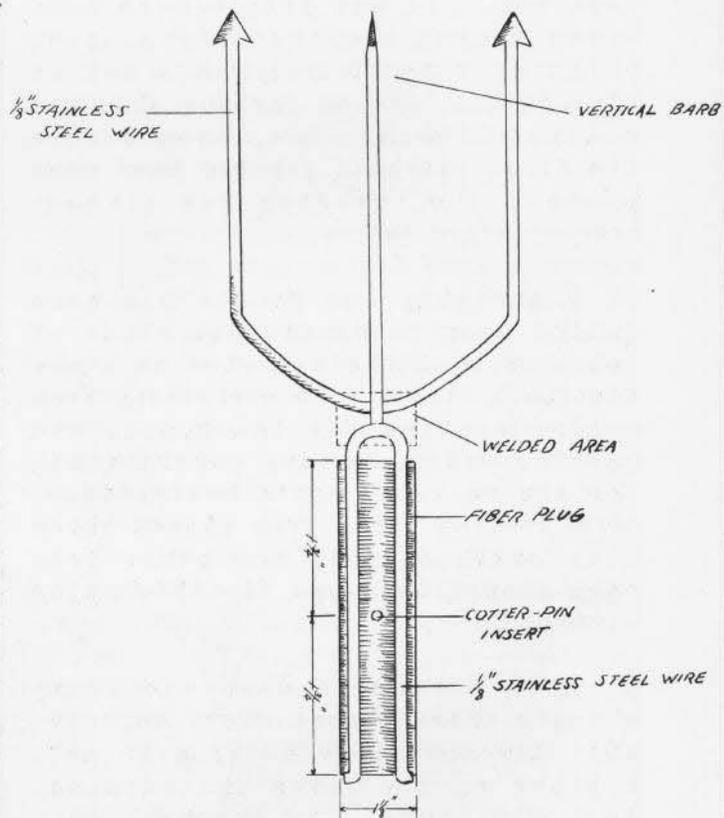
The equipment carried in the raft and in the container follows:

- (a) 4 wooden plugs (bullet)
- (b) 1 reflector
- (c) 1 whistle
- (d) 1 sheet canvas (24 inches x 24 inches)
- (e) 10 feet heavy line
- (f) 1 pump (air)
- (g) 2 oars
- (h) 1 patching outfit
- (i) 2 balls fish line (heavy)
- (j) 1 jack-knife
- (k) 1 small compass
- (l) 1 fish gig (with 4 cotter pins safety-wired to it - see sketch)
- (m) 1 large shark hook with wire leader
- (n) 6 small hooks
- (o) 1 jar fish bait
- (p) 1 fluorescine sea marker (with steel clip holder)
- (q) 1 first aid kit
- (r) 4 packages food ration
- (s) 8 cans water
- (t) 1 jar malted milk tablets
- (u) 1 Army type canteen with canvas cover.

Items (a) through (h) should be stowed in the pockets of the raft and items (i) through (t) in the emergency container thus distributing the total weight of 21 pounds.

The fish gig shown in the sketch was suggested by the thirty-four day cruise of a rubber boat. The experience of this crew motivated his invention, and they ought to know. There were plenty of fish but spearing them with a knife was next to impossible owing to the fact that the shadow cast by the hand scared the fish. The shark hook and leaders also were inspired by this inventor. He stated that while sharks would take the hook all right their sharp teeth would snap the line, indicating the need for a long, very tough leader.

This enterprising squadron lists other equipment for emergency use: a hunting knife which can be secured either to the leg or the belt; a leather shoulder holster for the pistol, which, while flying, is more comfortable and convenient.



Instruction has been held in the use of all this equipment. Abandon ship and "ditching" drills have been held. Torpedo Squadron Nine feels that it is therefore equipped to cope with any emergency.

*Bureau Comment:* BuAer Technical Note 54-42 outlines the equipment to be carried with the life raft. The development of a life raft fish spear to be used in conjunction with the life raft oar has been completed and a quantity is being procured. When available all service activities will be notified.

### NAS - Bermuda

Another first is being added to the list of accomplishments at this rapidly-growing station. The first airplane to be completely overhauled here is just about set to leave the Assembly and Repair shop on its test hop. It was little more than seven months ago that the A. & R. building existed only on a set of blueprints. Ground for the shop was not yet broken. Now, even before the first overhaul job has been completed, the building has already been enlarged twice.

Assembly and Repair has been called upon to handle all kinds of jobs, as might be expected at a new station. It has done everything from making napkins for the B.O.C. and manufacturing a heavy punching bag for the enlisted men's boxing team, to salvaging parts from planes which have crashed. All the other jobs were simply warm-ups for this major overhaul.

In Bermuda's damp and salty climate where almost every conceivable atmospheric condition is met, a plane really lives the hard way in 2,000 hours. An overhaul on a corroded plane is no easy job.

### Ode to Cake Eater

(Tradition on a carrier decrees that the pilot to make each even thousandth landing is presented a large cake. Needless to say, pomp and ceremony of varying degrees accompany the cake presentation and cutting. The following anonymous brain-throb is published as of possible interest to carrier pilots, past and present.)

*You may get a Zero; boy whata thrill!  
Or even a carrier and that's better still.  
But the thrill that puts goose pimples on  
your hide  
Is the thrill of your thoughts on that  
homeward ride.*

*Will you make that thousandth landing today?  
Will you win the cake they give away?  
Perhaps you won't, then again you might;  
It's that thousand to one chance brings you  
home each night.*

*You take her in slowly and land her with care,  
For bounces don't count, if you aren't there.  
As you drop her in, you ask for the dope,  
If they shake their heads, it means "no soap".*

*You then get briefed on your Zeros and vessels,  
And are told you're in line for a chest full of  
medals,  
But you push them aside and make a break;  
All you want to know is "Who won the cake"?*

*When they tell you the score is 989,  
It sends you to bed then, still feeling fine,  
For tomorrow you'll give it another try;  
You're sure to win a cake, by and by.*

\* \* \* \* \*

*Wake up mister, get hep to yourself;  
Why all this yearning after pelf?  
It's just a come-on, just a quack;  
It's a carrier's trick to get her pilots back.*

## Japs Have New Fighters

The Japanese are using two new fighter planes over China which are superior to the Zero type. This was revealed at a Washington press conference by Maj. David L. "Tex" Hill of the AAF. One is the 97-2, which is similar in appearance to the German Messerschmitt 109 except that it is air-cooled. It has an indicated speed of 230 mph., approximately 20 miles faster than the old Zero. Actual speeds at certain favorable levels will exceed the indicated speed by about 50 mph. The other is the twin-engined I-45, which is similar to the appearance of the Messerschmitt 110 except that it also is air-cooled. Major Hill formerly was with the AVG and later with the AAF in China.

## German Fighter Interception Tactics

This summary describes an encounter between a formation of nine B-24's and six Messerschmitt 110's, outlining the method of attack and evasive tactics used. The action occurred in the North African theater of operations. The American formation was on a mission to attack an Axis convoy and the encounter took place approximately 700 miles from the bombers' base. Summary was obtained by interview with a pilot of one of the B-24's concerned, who was wounded in the action and later hospitalized in the United States.

While on this mission, the formation of nine B-24's flying in an irregular Vee of Vee's, was attacked by six Messerschmitt 110's. The six Messerschmitts, flying in two Vee elements, were first observed approximately 4,000 feet below, proceeding in the same direction as the bombers. They appeared to operate in teams of two-plane elements, and in their attacks on American formation assumed a line astern. Their first attack on the B-24's was from about one o'clock position and from an

elevation somewhat above the height of 10,000 feet at which the B-24's were flying. They followed each other into the attack at just sufficient intervals to prevent their machine guns firing upon their own fighter planes, and attacked either the wing ship of the Vee of Vee's or the leader of the wing element. Sometimes they would initiate their attack upon the leader of the wing element, and as they pulled away they also got in a burst on the extreme wing ship.

The ME's made subsequent attacks from an eleven o'clock position, and later they tried a few attacks from below the formation and from the rear. They constantly opened up with their machine guns and cannon at about 400 yards range and pressed their attacks very closely, breaking off fire at about 100 yards range, at which point they seemed to side-slip away from the American formation. On this particular attack, they were using both cannon and machine guns, some of the machine gun bullets being of armor-piercing variety, made up with a hard steel center and a lead outer covering. Their fire appeared to be concentrated against the pilot's compartment and motors of the bombers.

This particular action lasted for about thirty minutes and approximately six concerted attacks were made. It is not known whether the German planes had reached their limit of endurance or were simply satisfied that they had broken up the mission of the American bombers. Two of the Messerschmitts were shot down.

In evading the attack, the B-24's jettisoned their bombs, tightened their formation, and lost altitude until they were flying directly over the water. When they had reached this very low level, the German aircraft broke off their attack and withdrew.

2

The camouflage employed by the Germans on the Me-110's was very effective. It appeared to be a sort of bluish grey that blended with the sky so that as soon as a German plane broke its attack and slipped away it was extremely difficult to locate. The extreme tips of the wings of the Me-110's in some cases appeared to be painted white and the Swastika was noted only on the tail of the German fighter planes.

### Dornier Do. 217E2 -- Some Additional Details

A part-sectioned drawing of the Do. 217E2 appearing in the magazine Flight shows practically every feature of this aircraft and its equipment. Apart from the BMW 801 engines, two of the most interesting features of this aircraft are the grouping of the entire crew in the nose of the fuselage and the "umbrella-type" diving brake in the tail.

Several other features merit close study. At what has been estimated to be its maximum loaded weight of 33,500 lb., the wing loading reaches the surprisingly high figure of 54.9 lb./sq. ft. In view of the fact that the take-off run at that weight, with the engines developing a short-period take-off power of 1580 b.hp. each, is not far short of one mile, it is fairly obvious that when loaded to the limit, the Do. 217E2 needs some form of assisted take-off. A nose hook and a tail support on captured specimens appear to confirm this view. It is thought the maximum bomb load is in the neighborhood of 6600 lb.

### Flight - Test Recorder

After 14 months experimenting, Vultee Aircraft, Inc., announces a radio flight-test recorder has been perfected. Harry Woodhead, president, says it will save "months of precious time for the aircraft industry." It was invented by H.D. Griffin, former Hollywood motion picture sound engineer and developed by him in conjunction with Vultee technicians.

From now on, when an untested plane is wheeled out to the flight ramp, it will be studded from stem to stern and from wing tip to wing tip with 70 radio pick-up devices. Every strategic part of the craft will be so equipped. When the ship takes the air, every one of these devices will be carrying messages of significance to a group of engineers in a Vultee laboratory, studying charts on which will be recorded the mechanical observations on the plane's performance.

Such factors as flutters, vibrations, stresses, strains, temperatures, speed and altitude will be duly inscribed for the engineers to study at leisure, Mr. Woodhead explained. Thus one flight, he observed, will provide accurately a mass of data which it might take a test pilot many hours of flying time to acquire.

"In some instances," Mr. Woodhead said, "the device might save a year of engineering development which would be lost in the event of a crash during a test flight. In such a case the defects causing the crash would have been faithfully recorded." And crashes can actually be averted by the flight-test recorder, he said. During a flight the engineers, perhaps miles away, know more about the plane's performance than does the pilot, and can warn him by 2-way radio of approaching difficulties.



### Rocket Planes Next?

Applied to an airplane, the rocket has tremendous possibilities, according to Eugene Saenger, German Scientist, who published his findings in the German magazine "Flug", an English translation of which was recently issued by the N.A.C.A. as Tech. Memo. No. 10 12.

The German Scientist envisions a small fighter plane, specially streamlined for speeds greater than that of sound, burning gasoline and carrying liquid oxygen to support combustion and with very small wings in proportion to its weight. Most of the interior is occupied by fuel and oxygen tanks. The rocket motor is merely a spherical combustion chamber and a nozzle in the rear of the plane. Size and weight are insignificant compared with other engines. Yet it develops 100,000 horsepower for a short time, giving 500 horsepower for each round of its weight, as compared with 2000 horsepower of our large bomber engines,

giving one horsepower for each pound of weight.

While it is shown that planes without propellers or engines are still only dreams for future, immediate and practical uses do exist for high power rockets in war. German planes shot down during Battle of Britain disclosed fittings of rockets under their wings. Heinkel 111K used two rockets, said to provide 3000 h.p. for three minutes, long enough to assist at take-off and up to 3000 feet. This plane is powered with 1300 h.p. engines, so that rocket assistance was equivalent to more than two extra engines.

### Camouflage

The RAF Fighter Command reported recently a German FW 190 has been seen with part of the top of its nose painted yellow in a manner so as to resemble from above and at a distance the nose of a Spitfire. It also had a yellow tail. Its fuselage was a uniform gray.

### Flame Throwers

An unconfirmed story recently was published in the Russian newspaper, "Red Star" stating the Germans have been using flame throwers against Starmovik bombers, apparently in an attempt to undermine pilot morale. It was stated the flame throwers produce columns of fire ranging from 160 to 230 feet. So far they have not succeeded in inflicting any losses on the Russian Air Force. One pilot declared that he saw a long sheet of flame of about 500 feet while operating in the vicinity of Dieppe.

### Yellow Rings

During the combined offensive operations in North Africa both British and American planes carried a yellow circle painted around their regular insignia---the U. S. white star on a blue background and the RAF tri-color circle. Planes on our carriers had the circle painted on them while enroute to battle, as a means of identification of Allied aircraft.

### Safety Clutches

The Assembly and Repair department at NAS, Los Alamitos, Calif., has devised a means of testing safety clutches on starters that has resulted in a substantial reduction in broken starter gears. By using the device to test the pressure at which repaired clutches kick out, it is possible to set the clutch at the proper releasing point before the starter is assembled in the plane, thus virtually eliminating the old problem of discovering that clutches release too easily or too hard after they are in the plane and have torn the teeth off some gears, or perhaps broken the arm of some careless man on the starter crank. This device consists of a workstand upon which the starter can be mounted. A tachometer indicates the rpm's of the flywheel. Los Alamitos will be glad to provide additional information.

### The Mosquito -- "Out of the Bag"

First official revelation of the existence of a new British bomber was made when De Havilland Mosquito two-engine light bombers were used to attack Oslo last Fall. No details of design or speed are given. Mosquitoes bombed their targets in bright sunshine during the afternoon from a height of about 100 feet.

"Announcement that the Mosquitoes raided the Gestapo headquarters in Oslo marks the emergence of a fast bomber for use on raids beyond the range of fighters turned bombers". said Aeroplane Magazine. "The event is of high importance. Of four Mosquitoes which shared the raid, three returned safely to their distant base . . . Until we know why one Mosquito fell a victim to the enemy, we can arrive at no final conclusion as to the place which must be given to speed in the scale of bomber defense . . . We describe the event as of high importance because of the part which the day bomber will play in the offensive against Germany, if it should prove a success.

"With the arrival of the Mosquito, one of the most exciting experiments of the War is about to be worked out. If it should succeed, the promise of the 24-hour bombing offensive against Germany will be within sight of redemption."



" I BALED OUT - - - "

Personal Experiences of an RAF Pilot who Jumped  
 . . . and Some Good Advice to any Airman

---

"I was at about 5,000 feet and 10 miles out at sea when circumstances necessitated baling out, it being most inadvisable to try to put a fighter of the Hurricane Tomahawk variety down on the sea, unless, of course, the pilot has had plenty of experience in submarines. Having decided to bale out, I followed the rules to the letter.

"First, I made certain of locking the hood back, disconnected my oxygen tube and radio transmitter wire, turned the plane on its back and completed the maneuver by simultaneously pushing the stick forward and pulling at the sutton harness pin. My radio was dead or I would have announced that I intended to become a member of the caterpillar club.

"The sensation of getting out was extremely pleasant. I left the aircraft at 4,000 feet. I had no fear of being hit on the head with the tail unit, as I seemed to be shot out of the aircraft very forcibly. I floated down to about 1,500 feet before pulling the ripcord and grasped it with my right hand. There was no need to fumble or become panicky. I didn't roll myself up in a ball as I knew my parachute straps were a shade on the loose side. Instead, I straightened my back.

"The chute opened almost as soon as I pulled the ripcord and I suffered no inconvenience from the slight jerk of the straps. When descending onto the sea, the quick release box should be turned to red when about 30 feet

up, and should be banged hard just as the feet enter or are about to enter the water. This is easier to do than it sounds, but the big thing to do is not too soon, as altitude is very hard to judge when over the sea. Hold your nose with your left hand, elbow well into your side and remember, keep your feet together.

"I was lucky in having a parachute dinghy and had put it on properly, the lanyard being attached to my Mae West. The parachute started to float away, dragging the harness, but I was able, by using the lanyard, to reach the dinghy and pull it out of its canvas case. I turned on the compressed air bottle very slowly because if it is turned on like a tap it freezes up at once, leaving only the hand pump, which may be broken. My dinghy inflated beautifully and I had no need to use the hand pump during the whole of my four and a quarter hours at sea.

"One excellent piece of advice given me, which is worth passing on: However hot it is, wear leather gauntlets; shorts and short sleeved shirts are hopeless if there is a fire--and that is always a possibility. A pair of light overalls, or a long sleeved golfing jacket and a pair of slacks fastened at the ankle or inside flying boots would quite likely enable you to make a successful 'bale-out' by giving you both protection and confidence. It is not a bad idea to carry a full flask. I did and used it too."



**Maintenance crews dislodge PB4Y stuck fast in Aleutian snows**

### PATWING 4 OVER THE ALEUTIANS

*Out of Aleutian fogs comes another fine story of Naval Aviation.*

In this region where flyers must battle some of the worst weather the North is capable of manufacturing, with blizzards, pea-soup fog, sub-zero temperatures, and icy winds the order of the day, the plane designed for each type of fighting operation is almost essential. However, when the Japanese moved against the Aleutians, early last June, there was only one air group available to oppose them. It was Patwing 4, equipped with *Catalina* flying boats designed for long range scouting service. A good many of the pilots of this unit had arrived in Alaska only a day or two before.

Obviously, though, with an enemy task force moving in there was no time to worry about trivia like having no bombers or fighter planes. Patwing 4 took the air. First of all, it got word that Jap carriers had been sighted only 400 miles from Alaska. Fully loaded, Patwing 4 flew out to greet them. Using their patrol planes as bombers, the pilots and crews of this remarkable outfit added to the mounting misery of Hirohito by the following action: direct hits on a large transport, a destroyer, and three cruisers, and near misses on another transport, a destroyer, and two cruisers. A total of 65,000 tons of enemy warships and transports felt the sting of these "scouts".

For two uninterrupted weeks the flyers kept hammering the invasion force at Kiska, often through incredibly bad weather and sheets of anti-aircraft fire. In addition, they maintained constant patrol over thousands of square miles of ocean and did a little work, on the side, as fighters, knocking down a number of Jap aircraft. The damage done at Kiska included a radio station bombed and several supply dumps blown up.

Often the flyers returned to their base with their plane riddled by hundreds of bullet holes. In many instances, they fought and patrolled until their fuel was gone, knowing they would be forced down at sea. The ground crews matched the tenacity of the flyers; confronted with the thorny problem of directing operations against an enemy force hidden by dense fogs and swirling snows,

these persons sometimes stood watches as long as 40 hours without relief. The men who serviced the planes bore their share of the strain. The crew of one seaplane tender once worked without rest for 36 hours, refueling the Catalinas as they came in. Several men literally dropped from exhaustion.

For its gallant and successful opposition of the Jap invasion force, two officers, Lt. Comdr. Charles E. Perkins and Lt. Lucius D. Campbell were awarded the Navy Cross and 25 additional officers were awarded other decorations.

Commenting on the performance of his command, Captain Leslie E. Gehres, Commander of Patwing 4, made the following statement: "Every flight was a flight that the crew should not have returned from. Every man knew this and yet none wavered.



Bomb loading in sub-zero weather at an Aleutian air base

## Atlanta Produces Instrument Instructors

To fill the expected need for approximately 1500 instrument instructors in the training establishments, the Instrument Flight Instructors School at Atlanta, Ga., rapidly is gaining momentum which should carry it to peak production by mid-summer. The school opened last June 10 with but five students and one instructor. Those graduates who prove to be the best instructors are being retained at the school to build up the staff necessary to turn out 150 graduates a month by July.

It is one thing to be able to fly on instruments, and another to be able to instruct in instrument flying. The latest special training devices are used at the school to turn out efficient instructors for this important phase of flying on which rests, not only the fate of men and planes, but the most important projected tactical developments.

The student-instructors are taught in the classroom, on the Link trainer and in actual flight. Their training is supplemented by sound-slide training films, six of which now are in use. A total of 18 of these films eventually will be available to all instrument training activities. Under development is an automatic radio range for the Link trainer which will eliminate the necessity of the instructor having to manually adjust changes in radio signals. The change in signals occurs automatically, dependent upon the position of the mechanical crab relative to the station. Similar developments are underway to automatically simulate YE, YG and YB ranges and to automatically produce DF (null) signals.

New instruction manuals covering instrument flying radio navigation and Link trainer operation also are being prepared at Atlanta. The instrument flying manual is ready to print and will be ready for distribution in February.

## BuAer Personnel Section Wants Information

The Personnel Section of the Bureau of Aeronautics herewith issues two memoranda to all aviation activities. One pertains to the submission of rosters and the other to the clarity of orders on the transfer of naval personnel.

### SUBMISSION OF ROSTERS

Current directives require that, all activities submit a copy of the monthly roster to the Bureau of Aeronautics as of the first of each month. Many activities at present are not complying with this requirement.

While it is recognized that in many instances strict compliance is not feasible, it is the desire of this bureau to point out that submission of rosters as promptly as possible is necessary in order to maintain accurate records of the location of officers attached to the Aeronautic Organization and to maintain proper distribution of the officers.

All activities under the cognizance of the Bureau of Aeronautics should submit as of the first of each month, rosters of their organization to the Bureau of Aeronautics.

As officers are given a change of duty by commands, other than the Bureau of Aeronautics, it is most important that the following information be included in the roster:

File or jacket number.

Classification, (i. e., U. S. N., A-V (S), A-V (RS), A-V (T), A-V (N), etc.).

Duty involving flying - (indicate by asterisk, etc., with explanation on roster).

Designated naval aviator - (indicate by asterisk, etc., with explanation on roster).

Months on board.

On temporary or permanent duty.

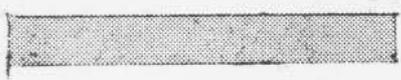
# NOTICE

## Bulletins & Changes ★ Technical Notes & Orders

### LIST OF THE LATEST NUMBERS OF ENGINE BULLETINS AND CHANGES (Succeeds list dated 26 December 1942)

26 January 1943

ENGINE	PRATT & WHITNEY BULLETIN CHANGE	WRIGHT BULLETIN CHANGE	DATE
R-985	170		Being issued
R-1830	297		1-12-43
R-1830	298		Being issued
R-1830	299		" "
R-1830	300		" "
R-2000	17		1-12-43
R-2000	18		Being issued
R-2800	38		12-21-42
R-2800	39		1-8-43
R-2800	40		1-11-43
R-2800	41		1-13-43
R-2800	42		Being issued
R-2800	43		" "
R-2800	44		" "
R-760		76	Being issued
R-790		8	" "
R-975		16	" "
R-1820		315	" "
R-1820		316	" "
R-1820		317	" "
R-2600		70	" "
R-2600		71	" "
R-3350		12	" "
R-3350		13	" "
R-3350		14	" "



## Aircraft Propulsion Systems

Possibilities of the combustion gas turbine, especially as a power unit for aircraft, are being examined, says the magazine, *Flight*. Research on the combustion gas turbine follows two schools of thought; one advocates combustion of fuel on the "constant volume" cycle and the other on the "constant pressure" system.

"There is a compromise system which, at least in the present stage of development, possesses certain attractive possibilities", the magazine states. "A reciprocating diesel engine is very highly supercharged by a compressor driven directly from the engine crankshaft. The engine is proportioned so that all the mechanical power delivered is utilized in driving the supercharging compressor. Effluent gases from the engine cylinders drive the turbine and provide the sole source of useful energy of the complete unit. This, incidentally, is tantamount to an admission that in a reciprocating engine more energy escapes by way of the exhaust pipe than is delivered at the engine shaft.

"The Swiss firm of Sulzer Bros. has supercharged diesel engines to operate at the remarkable high mean effective pressure of 225 lb/sq.in. It is not essential to employ a conventional engine and compressor and, in fact, some advantage may be gained by diesel-operated, free-piston compressors of the Junkers or Pescara types. These reciprocating units have no connecting rods or crankshafts. The two opposed engine pistons each carry a compressor piston and the motion is cushioned by air in coaxial compressor cylinders. Only a light linkage is necessary to synchronize the piston motion."

Recent developments in gas flow and airfoils have enabled more efficient rotary components to be built and examples are seen in the Brown-Boveri axial compressor with adjustable pitch blading.

As a power unit for aircraft, the gas turbine plane may be adapted for either propeller or jet propulsion systems. While using the same two basic units, the air compressor and the turbine, the two systems necessitate the development of divergent types of plants.

For ultra-high speeds or stratosphere flight, jet propulsion would seem to be the logical method. Turbine-driven propellers, by using the existing highly developed technique, would possibly be more quickly realizable. Some of the projected schemes of various countries are examined briefly.

## Temperamental Engines

Temperature surveys being run on the R-2600-12 engines as installed in PBM-3C airplanes have uncovered some surprising revelations covering the "Temperamental" reactions of these engines to a variety of operating conditions. Indications are that thermocouple installations will again have to become multiple to provide for selection of the critical head in each of -- warm-up, taxi, level flight, and climb conditions.

*Bureau Comment:* Tests are being conducted with modified engine cowling to improve PBM-3C engine cooling. When results are known engine thermocouples will be connected to the cylinders which are hottest during taxiing, cruising and climbing.



If Dilbert had gotten more sleep he might have flown better.

## Radio Static

The following, taken largely from Army Air Forces' Technical Order No. 08-5-34 (modified to cover U.S. Navy aircraft radio equipment), is for information and guidance:

- (a) Radio Static on aircraft in the form of a continual roar or squeal of changing pitch is called by various names: "Precipitation Static," "Rain-and-Snow Static," or "Corona Static." It is caused by electrical charges in clouds, and is distinct in cause and behavior from thunder storm static which causes a clicking, or brief crashing sound in the radio when lightening flashes somewhere nearby, followed by periods of clear reception of the radio signal. Past experience has shown some ways to reduce corona static and these are given herein.
- (b) Instrument flight should be avoided when possible where the temperature is between minus 4°C and plus 1°C (24.8°F and 33.8°F). Corona static usually occurs in clouds or rain or snow where the temperature is near freezing. It is particularly advisable to avoid flying parallel with a cold front in this temperature range.
- (c) As corona forms more readily at low pressures than at high, slow engine speeds are advisable since less pressure reduction will be encountered at the propeller tips. The faster the engine speed the greater is the reduction in pressure encountered at the propeller tips. In the vicinity of charged clouds, it is usually on the propeller tips

that the corona first begins. It is visible as a faint bluish white "St. Elmo's fire," at night, but cannot be seen in the daylight. Corona forms more easily at low pressures than at high, and slow engine speeds result in more pressure near the propeller tips than high engine speed.

- (d) In corona static conditions, use loop antennas with receivers, or the Army and commercial type radio compasses as available in airplane installations in one of the maximum signal positions of the loop. Corona anywhere on the airplane produces a radio wave nearby which is most intense in its electric component whereas the loop antenna is responsive only to a magnetic component. Operation of the ZB equipment will not be effected.
- (e) The trailing antenna can be grounded and then unreeled to 50 to 100 feet. It is important to ground the antenna prior to unreeling to prevent electric shocks to persons near the antenna and inside the cabin. The trailing antenna terminal should be grounded with a piece of wire or some metal object. The trailing antenna will help in some cases.
- (f) If the airplane is provided with an anti-static discharge wire, it should be released. These have been found to reduce corona static in some cases.
- (g) High cumulus clouds in which there is strong turbulence and rain or snow should be avoided if possible. The corona

static encountered in these is not usually of long duration but it can be very intense. Strikes of static electricity may hit the airplane which are disconcerting to the pilot but no case is known where such a strike damaged any essential part of the structure.

- (h) When on instruments at night, if the corona static is increasing to a serious intensity, the pilot should keep his eyes on the instruments. The static electricity strikes cause a very bright white light which can temporarily blind a pilot looking out the window. Since these are also conditions of considerable turbulence, it is necessary that the pilot be able to see his instruments at all times. The Service will be further instructed by Bureau of Aeronautics' Technical Note when additional data becomes available.

### Put Your Wheels Down!

"Wheels up" landings are a problem with which many air stations are concerned. Jacksonville specifically asked for remedial suggestions from the Bureau. At present, at this station a responsible man, equipped with signal flags, is stationed at each field where landings are being made without radio control. He gives a "wave-off" to any plane attempting a "wheels up" landing. On one occasion an "instructor" flew his signalman to one of the outlying fields so the man could carry out his duties, and made a "wheels up" landing. N3N's or NE's now are being used to ferry these signalmen to their stations. These measures have been criticized by some as developing a tendency in the student to depend too much upon others. It is felt at Jacksonville that if the student can be brought through his carrier intermediate specialized course and through the familiarization stage in service types F4F etc., his chances of landing

with wheels up will be greatly reduced.

After that stage, all operations are as a division with an instructor leading. The carrier breakup procedure is used. From that time on, the student is taught the carrier doctrine of all pilots in a division checking each other for wheels down. No pilot lands with wheels up intentionally and the student who is putting everything he has into flying the plane, performing new evolutions, or flying a new plane for his first few hours is far more liable to forget his wheels than older pilots, yet older experienced pilots have been guilty of this oversight.

*Bureau Comment.* The question of a "wheels-up" landing unfortunately remains with us. When retractable landing gear was first adopted, it was to be expected that pilots occasionally would forget to lower their wheels. Even airline pilots were known to make this error. Their solution to this problem was to have the field control tower remind the pilot of each incoming plane to "lower wheels". Since this system was adopted rarely, if ever, have there been recurrences of this difficulty in the airlines. Navy pilots, on the other hand, probably make three times more landings than a transport pilot, and practice should make perfect. However, even the more experienced pilots are guilty of this mistake, and it occurs altogether too frequently among students. When the mechanical controls of aircraft became complex, the check-off system was established, and the number of accidents this has prevented undoubtedly is countless. It appears that our basic problem, if we are to eliminate the "wheels-up" landing, is to indoctrinate our pilots to make use of the check-off system rather than emphasize the fact that he should lower his wheels. This list covers every item which must be adjusted for a landing, and every pilot should realize that his mind will be unburdened if he will do just one thing - "USE THE CHECK-OFF LIST" Every unnecessary crash is one plane checked off to the Axis.

## Life Rafts

Life rafts in service and under procurement are equipped with a chromium plated steel mirror for use as a signalling device. In order to obtain a more effective and positive means of centering the flashes from this mirror on rescuers, the following procedure is suggested:

(a) Observer should face a point about half-way between the sun and the observed object.

(b) Hold the mirror in one hand about 4 inches from the face and sight the object to be signalled through the hole in the mirror.

(c) Hold the other hand about 12 inches behind the mirror in a line with the sun and the hole through the mirror, so that a small spot of light appears on the hand. The small spot of light on the hand is reflected on the back face of the mirror (side toward the observer).

(d) Then tilt the mirror so that the spot of light on the back face of the mirror disappears through the hole in the mirror, at the same time keeping the observed object sighted through the hole in the mirror. With the mirror in this position, the light rays from the sun will be reflected to the observed object.

NOTE: When the angle between the sun and the observed object is small, the spot of light will appear on the face of the observer, thus allowing both hands to be used in tilting the mirror.

It is realized that the centering of flashes on a target from a raft may be difficult when a heavy sea is running. However, it is believed that the use of this method will insure more positive results than if a haphazard procedure of flashing is employed.

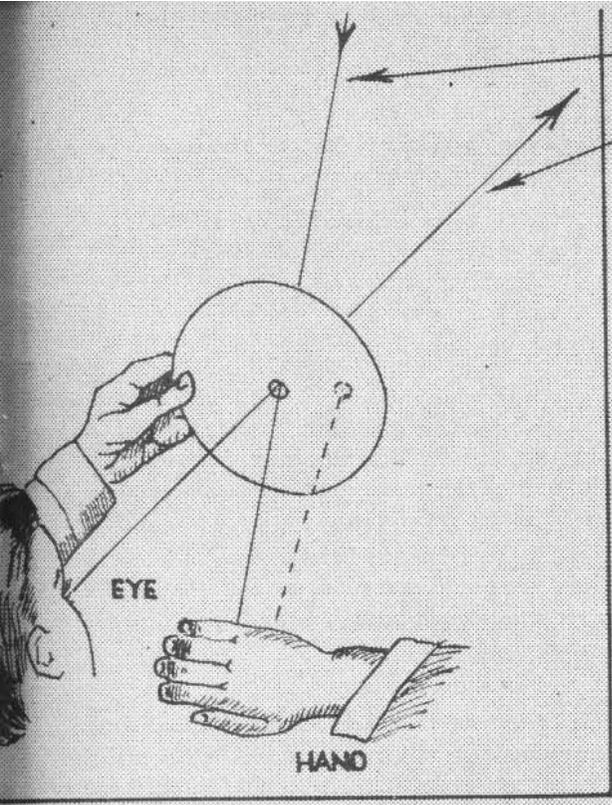
It should be noted that all life raft reflectors in service are provided with a 1/8-inch hole near the edge of the mirror which can be used in sighting the object. However, with a hole in the center of the mirror flashes can be directed more easily. It is, however, recommended that all activities drill a 3/16-inch hole in the center of the reflectors now stowed in the rafts and also those in stock. After drilling, the edges of the hole should be coated with a suitable lacquer such as Specification M-376, to prevent corrosion. It is suggested that the 1/8 inch diameter hole on the edge of the reflector be utilized to provide a means of securing the mirror by lanyard to prevent possible loss.

## Power Plant Design

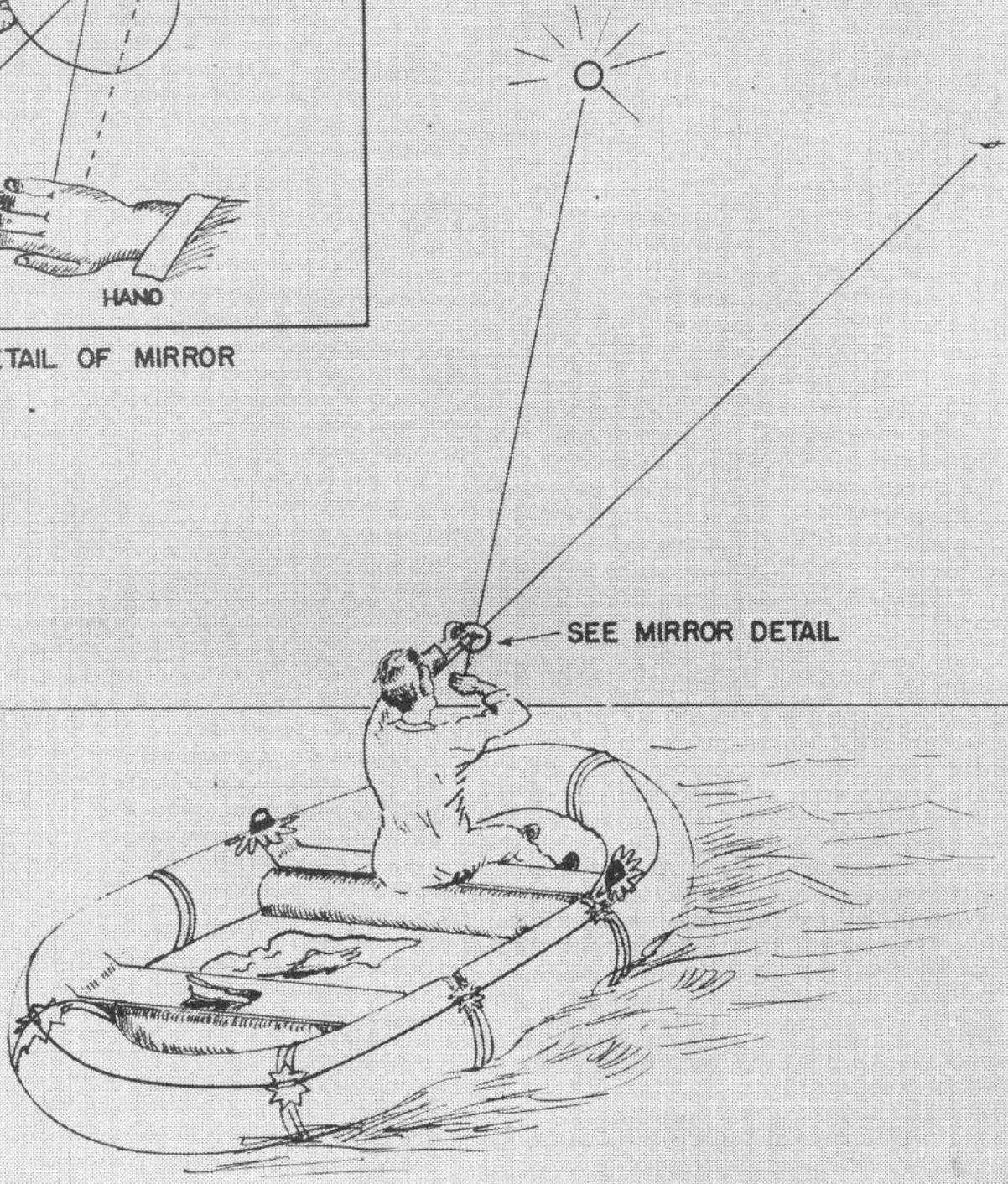
An increasing number of airplane crashes due to engine failure attributed to indeterminate causes have been noted recently. While it is perfectly true that in most of these cases the immediate cause is not determinate, it is also obvious that war time operation is an underlying reason for increased engine failures. Peace time operation at reasonably low average power outputs have led the Fleet to believe that engines are thoroughly reliable under any treatment. War time operation at high powers and at excessive powers are certain to reduce the reliability as well as durability of the engines and to markedly increase engine failures. While the bureau has no intention of forbidding any pilot to use all the power available in the engine when he needs it, it must be realized that in every case where this results in the use of excessive powers (i.e., full throttle below the engine rated altitude), the pilot must weigh the chances of engine failure against

LIGHT BEAM FROM SUN  
LINE OF SIGHT ON CRAFT BEING  
SIGNALLED

REFLECTED LIGHT SPOT FROM SUN



DETAIL OF MIRROR



SEE MIRROR DETAIL

the chances of getting shot down. In the case of carrier airplanes, the results are likely to be the same in either case, i.e., a ride in a rubber boat if he gets it out in time. The pilot should also realize that if he habitually abuses his engine by full power operation at times or for longer periods than are absolutely essential, he is practically insuring himself of engine failure when he needs the engine most.

Another point worthy of consideration in this respect is that modern engines are being rated closer and closer to their ultimate limits, and must necessarily be so rated to obtain reasonable airplane performance. As a consequence, later engines will stand considerably less abuse, that is high powers at high engine temperatures, than engines now in service. Since the airplane performance with the newer engine is so considerably better than that of older airplanes, it should be a corollary that there will be no excuse for abusing the engines. After all, the maximum performance of the airplane, except in range, is not essential except in the presence of the enemy.

In summation if you must use full throttle to extricate yourself from a tough spot by all means do so, if possible engine failure is the lesser of two evils. But do not use full throttle or excessive power just to see if the engine will take it or because you like to go fast. Remember that engine damage can be cumulative, and an overheated valve today may let you down tomorrow. Let your mechanic know you have exceeded the limitations so he can give the engine a good going over. The British have a must order that engines be changed in every case of overpower operation. It is probable that our engines are more durable than that but again overpower operation is cumulative and is certain to lead to eventual trouble.

## NOSE WHEEL FAILURE

### Procedure for Temporary Repair for Flight in Event of Nose Wheel Failure on PB4Y's

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The following is quoted from a Field Service Memorandum based upon the report of a Navigator of the Consolidated Aircraft Corporation. It is intended to provide instructions for the emergency repair of the nose wheel to hold it in the down and locked position.

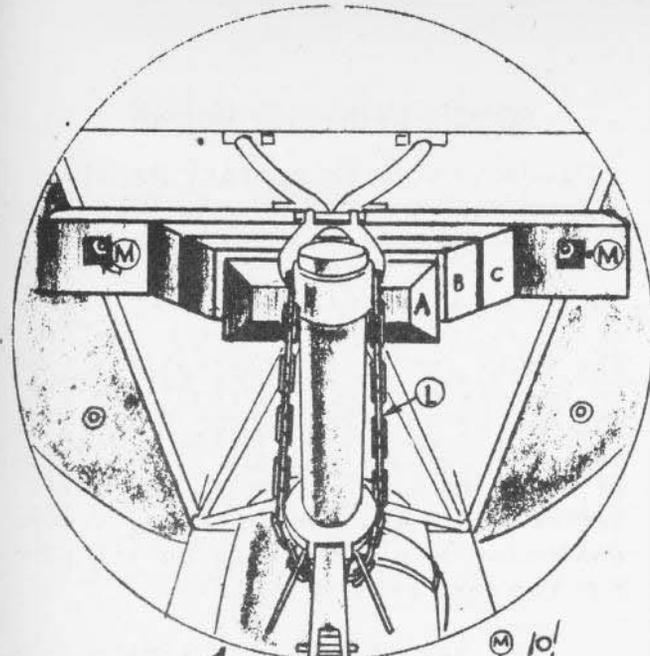
"So far as could be ascertained, the oleo shock absorber on the nose wheel strut had become "frozen" or stuck. While taxiing the ship and when the brakes were applied, the nose wheel locking gear knuckle arm tore loose from its fastenings on the under side of the flight deck. The gear and the fastenings of the main arm which swings the wheel into the well remained undamaged, with the exception of the hydraulic plunger, which was bent and torn loose and which, therefore, rendered the wheel unretractable hydraulically.

"It was decided to repair the torn out fastenings, and as an added precaution, to put wooden shores back of the wheel gear to lock the wheel in a down position. The nose was cleared of broken and unnecessary parts, the nose of the ship was jacked up, and the torn fastenings of the locking arm were refastened in their former places, so the wheel was in the normal "down" position.

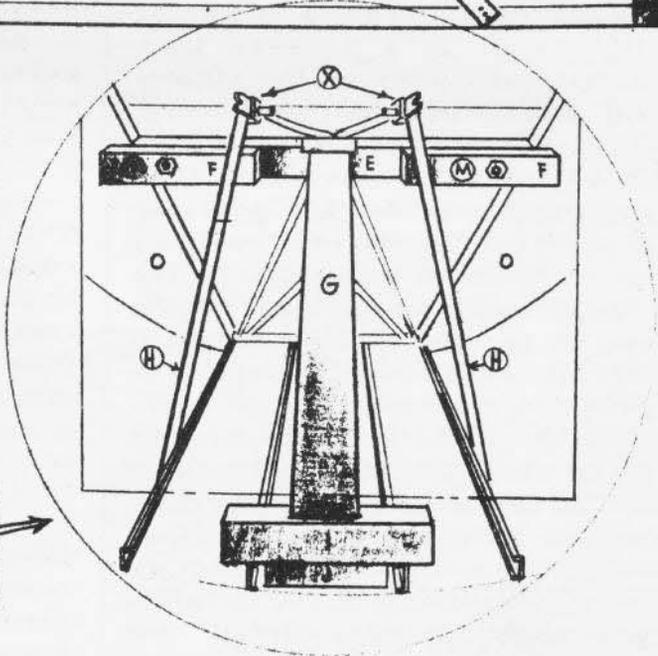
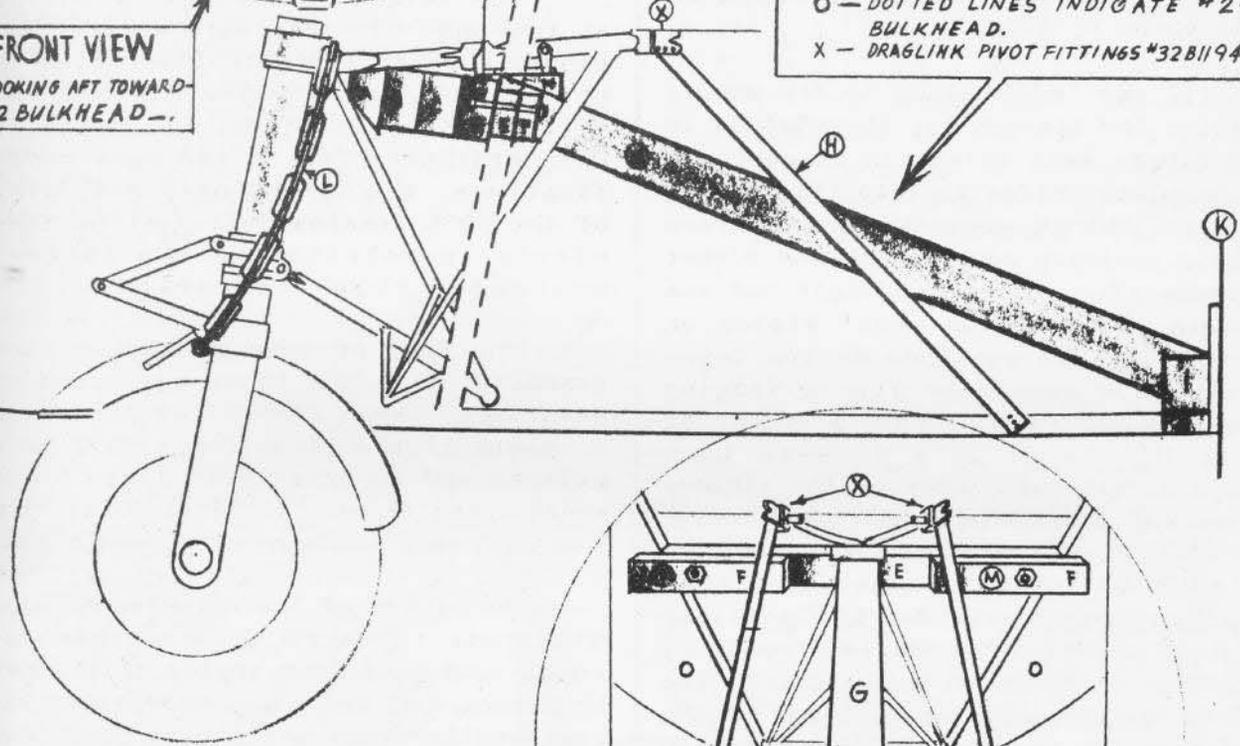
"A 4" x 6" timber, cut to proper length and notched at certain places to clear hydraulic lines, was clamped with what bolts were available to the forward side of frame #3.0 slightly below the level of the middle of the

# SIDE VIEW

- ABCD - 4"X6" TIMBERS, FRONT OF #2 BULKHEAD SECURED TOGETHER WITH LONG BOLTS.
- E - TIMBER SERVING AS BRACE BETWEEN (D) AND (F).
- F - 2"X 4" TIMBERS (TWO) AFT. SIDE OF BULKHEAD #2.
- G - 4"X6" TIMBER.
- H - ANGLE IRONS (TWO) ATTACHED AT TOP TO (X) EXPOSED DRAGLINK PIVOT FITTINGS #32 B1194, AND BELOW TO CHANNELS.
- I - 4"X 6" TIMBER BRACING (S).
- J - 2"X 4" TIMBER RESTING BETWEEN 2 CENTER CHANNELS - HOLDING (I) SECURE.
- K - STA. 4.1.
- L - CHAIN.
- M - COUNTERSUNK BOLTS, CONNECTING (D) WITH (F).
- N - WOODEN BRACE.
- O - DOTTED LINES INDICATE #2 BULKHEAD.
- X - DRAGLINK PIVOT FITTINGS #32 B1194.



**FRONT VIEW**  
LOOKING AFT TOWARD #2 BULKHEAD...



**REAR VIEW**  
LOOKING FORWARD TOWARD #2 BULKHEAD...

DRAWN	DWEISSMANN
APPROVED	
APPROVED	

**TEMPORARY REPAIR, FOR FLIGHT, IN  
EVENT OF NOSE WHEEL FAILURE**

CONSOLIDATED AIRCRAFT CORPORATION  
LINDBERGH FIELD • SAN DIEGO, CALIFORNIA

PART NUMBER

oleo shock cylinder. This timber was then built up with two shorter 4" x 6" leveled to fit the space between the gear and running the same way as the main timber, until the entire space to the oleo cylinder was filled. This was to hold the nose wheel in its "down" position.

"A short 4" x 6" covering butted against several longitudinal members was then laid athwart ship at the bottom and forward side of frame #4.1. From this a 4" x 6" approximately seven feet long, notched and one-half inch longer than the measurement of the space, was wedged into place to the after side of the timber clamped on frame #3.0.

"It was found, owing to the angles at which the timbers lay in relation to each other, that this main brace could not be placed directly into its intended position, but it was necessary to drive it into position sidewise on the timber on frame #3.0, while the other end was held in place on the short timber on frame #4.1. It was then driven downward with a hammer to give a wedging effect and take up slack. A number of short blocks of 2" x 4" were then spiked at various places on the timbers to prevent their shifting.

"To prevent the oleo shock from remaining fully extended and possibly having a repetition of this trouble, a length of tire chain was run from the bottom of the plunger to the top of the cylinder, so the plunger would remain about half extended when the wheel was hanging free. This chain was safety-wired loosely to the cylinder top and plunger, so that it would not break or interfere with the shock action when the wheel was moving on the ground."

### SO3C'S in the Dog House?

Many adverse criticisms of the flying characteristics of the SO3C-1 have been heard, and were expected. Most of them have been rather vague such as -- "after getting in a turn the airplane wants to take charge". The basis for these observations lies in the low degree of directional stability of the airplane, and it is believed that an analysis of the situation as it affects flying characteristics will remove any tendency toward confusion and uneasiness on the part of inexperienced pilots.

The weight and size limitations as they apply to shipboard observation planes make it a difficult problem to obtain satisfactory performance and flying characteristics. In spite of extraordinary efforts and many modifications, the directional stability of the SO3C remains deficient particularly in relation to the lateral stability which is marked.

The root of this situation lies essentially in the short tail, and an abnormally large fin is required. As a result of the large fin, small propeller, and comparatively large blade angles, the changes in directional trim with speed and power are large.

The effect of low directional stability is to cause the plane to yaw easily and to larger angles than would be the case if the plane were stiff directionally. However, there is sufficient stability to prevent reaching dangerously large angles of yaw.

Inadvertent yaw results from improper use of the rudder and from errors in rudder trim tab setting, and it is admittedly difficult to keep the rudder trimmed for reasons given above. The airplane is quite stable laterally. Therefore, when yaw develops, the airplane tends to bank to correct it and aileron force is required to maintain a steady attitude.

#### PICTURES, TOO?

Yes, send 'em along to tone up copy material you'd like to have glanced at for publication in NEWS LETTER.

A typical sequence of events is as follows: In a left turn the airplane is either out of trim directionally or pilot pushes too much left rudder; therefore the plane yaws (skids) and the low wing becomes heavy. He now feels uncomfortable because top aileron is required to hold a steady bank, and he feels as if he might run out of aileron for getting the low wing up. The feeling is actually erroneous, because top rudder will reverse the situation and the lateral stability will then add to the aileron control and the wing will roll up fast.

This is an example of poor coordination of lateral and directional stability. There would probably be less criticism if lateral stability were less marked, but the airplane would not then be as controllable or as safe as it is now. The basic correction for the foregoing troubles is to keep the bubble in the middle with the rudder.

As a corollary to that keep the rudder fixed in neutral during turns, (thus providing additional fixed vertical tail surface); and do the rest with ailerons and elevators. The rudder is not an essential control anyway where there is proper directional stability, and there is enough with rudder fixed.

Bureau Comment: The basic reason for most of the difficulties being experienced with VSO-VOS aircraft is the stringency of the limitations existing in the cruisers and battleships. The dimensions of the aircraft are established by elevator, hangar, and crane clearances, and the gross weight is restricted by the hoists and elevators. The surface vessels do not lend themselves to substantial relief from these restrictions.

↓ “Ach, Adolph! Vat did ve vant mit Dakar, anyway!”



## MCAS - Parris Island, South Carolina

Installation is being completed of a field lighting control panel, which with the use of the present tower equipment will facilitate handling of both day and night traffic. Recent expansion of activities includes the Link Trainer Department, which now is operating two trainers.

## MCAS - Eagle Mountain Lake, Texas Marine Glider Group 71

It won't be long before things will be humming at this new glider base. Cub trainers and 15-place troop carrying gliders are filtering in, and the first runway, shops and hangars will be ready before long. The main items lacking are tow planes for the troop-cargo carriers.

Squadron 711 is instituting an officer training program in the absence of glider trainees. Officers will be given a chance to familiarize themselves with various departments at the station through brief assignment to them.



Squadron mascot at a Florida base, this "sky terrier" wears wings

# Carrier Take-off Technique

Since there is considerable difference of opinion on carrier takeoff technique, the Bureau has made a study of the effects of certain variables on takeoff run. Anacostia has been requested to conduct actual takeoff tests to substantiate and amplify the results of the study, and to serve as the basis for a Technical Note. In the meantime, the preliminary findings appear to be of sufficient general interest to justify publishing in the News Letter.

The investigation was based on a TBF-1 airplane at a high gross weight (16,000 lb.), but it is generally applicable to all carrier types. For the purposes of this study takeoff distance is defined as the distance required to accelerate to a speed such that the airplane would leave the deck in level flight if it were placed in the 3 point attitude. Partial flap takeoffs were not considered since TBF flaps are two position flaps, and, moreover, full flap gives optimum takeoff in the TBF. A general discussion of the use of flaps during takeoff appears in Technical Note 42-36. Discussions with respect to specific types appear in Technical Orders and Notes and Pilot's Handbooks.

The results of this study of various takeoff procedures are tabulated below.

<u>TAKEOFF PROCEDURE</u>	<u>TAKEOFF DIST. IN 25 KT. WIND</u>	<u>% CHANGE AS COM- PARED WITH ANA- COSTIA TAKEOFF</u>
(a) Anacostia takeoff. Tail up early in run (but pulling tail down to 3 point attitude on reaching takeoff speed).	323 ft.	
(b) Tail wheel on or near deck for entire run	406 ft.	+ 25%
(c) Effect on Anacostia takeoff distance of adding drag of full down elevator for entire run. (Takeoff otherwise same as (a)).	331 ft.	+ 2½%
(d) Effect of leaving flaps up until reaching 75% takeoff speed (Takeoff otherwise same as (a)).	302 ft.	- 6½%
(e) Tail low takeoff with flaps up until reaching 75% takeoff speed (Takeoff otherwise same as (b)).	333 ft.	+ 3%

It is noted that the effect of drag of full down elevator, even if held for the entire run, is nearly negligible. However, failure to get the tail up is found to increase the run by 25%, a serious loss in takeoff performances.



Take-off seen from below flight deck aboard carrier

Lowering the flaps late in the run decreases the Anacostia takeoff distance by about 6%. However, except in the case of VF types with conveniently located flap controls, it would appear generally undesirable to use this technique since it places an additional burden on the pilot.

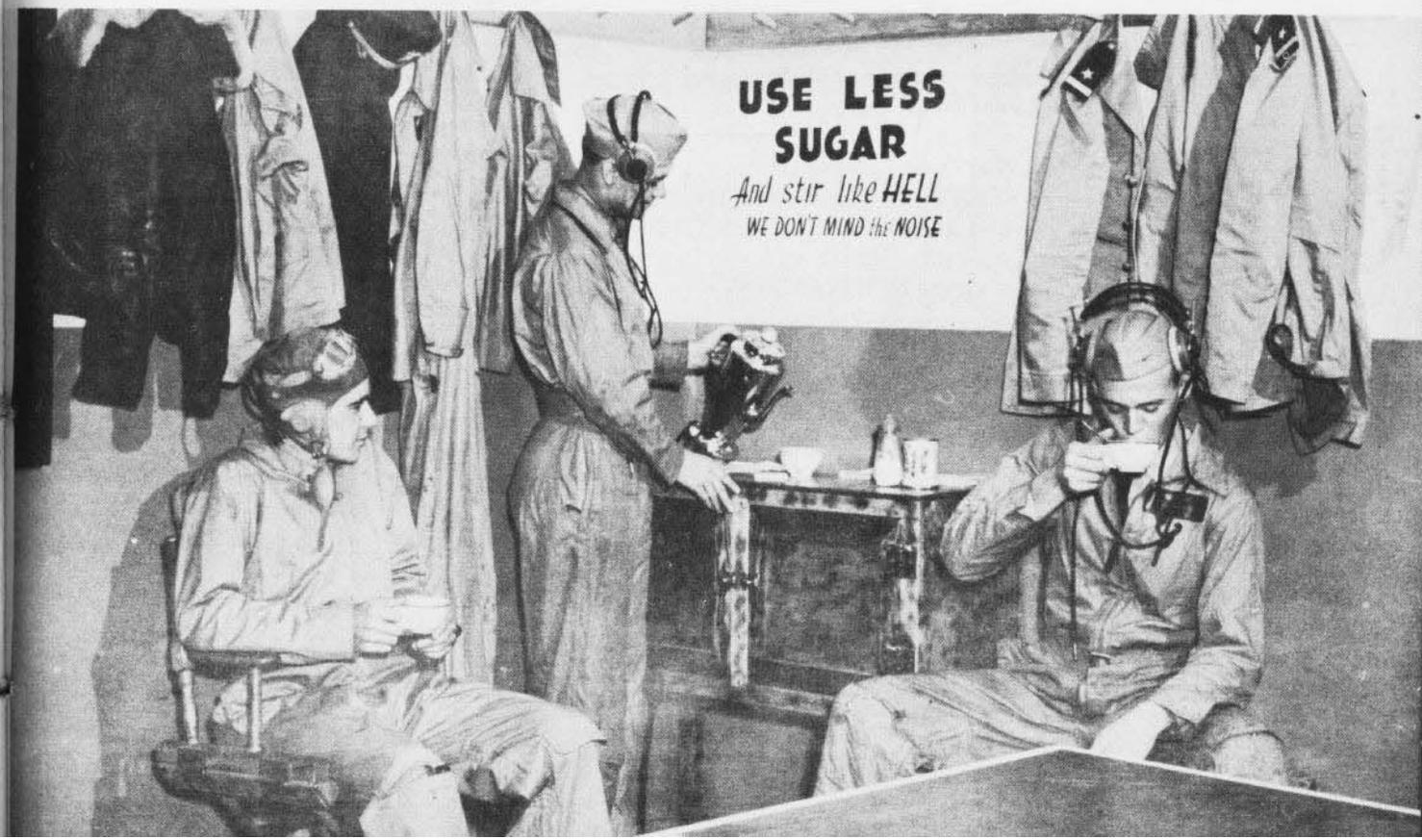
Consideration of the takeoff problem, in the light of the above information, suggests that generally good service takeoffs will probably result from the following procedure:

- (a) Hold the brakes until takeoff horsepower is developed.
- (b) Get the tail up as early as possible, holding full forward stick if necessary, (In some cases such as the F4F directional Control limitations do not permit immediate lifting of the tail.)
- (c) Accelerate with the thrust line approximately level.
- (d) On approaching the bow smoothly increase angle of attack at such a rate that a 3 point attitude would be reached at about the bow if the airplane were not to leave the deck before that time.
- (e) On becoming airborne pick up speed rather than climb, until at a comfortable margin above stalling speed. Continue operation of the engine at high power, up to rated takeoff power, as necessary to permit early retraction of the flaps.
- (f) Retract landing gear as soon as practicable, and raise flaps as soon as speed and altitude permit. Raise flaps in increments, in airplanes fitted with variable position flaps.

The above technique does not require the pilot to leave the deck at the earliest possible instant. Hauling off the deck at the minimum flying speed when not necessary appears to be undesirable, because of relatively poor control and acceleration characteristics of the airplane in this condition.

Getting the airplane off the deck before it passes the bow does not appear to be necessary. If the airplane were to roll off with adequate speed but with the tail in an exaggeratedly high position, the situation would be similar to that of a catapulted seaplane.

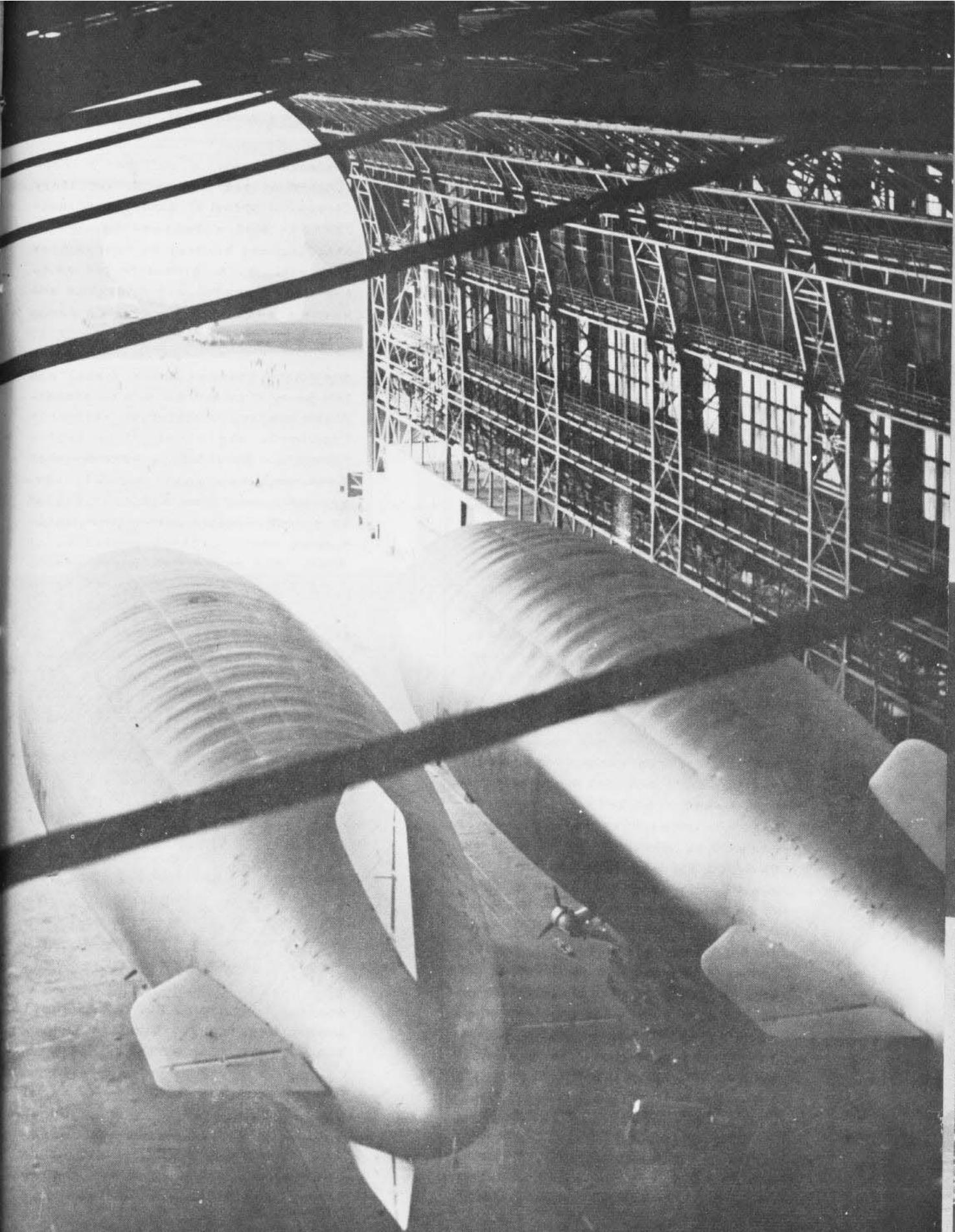
Dipping or loss of altitude over the bow should not in itself be regarded as dangerous provided the pilot is fully aware of the attitude and altitude of his airplane with respect to the water. It is axiomatic that such a loss of altitude produces a more rapid increase in airspeed. However, when a dip occurs after a tail low takeoff, it tends to indicate the approach to critically low takeoff speed. Deck observers may be best qualified to analyze this action of airplanes at takeoff. All operating personnel should have a clear understanding of the relation between the ground angle at 3 points and the stall angle for each type. In most types there is a considerable margin of safety between the two. Such airplanes may reach the bow at an airspeed less than that necessary to maintain level flight at the angle of attack corresponding to the 3 point attitude but with an airspeed safely above the stalling speed; the airplane will then sink or dip slightly until the angle of attack increases sufficiently to maintain level flight. In a few types, however, there is a little or no margin between the 3 point angle and the stalling angle of attack. Recovery from a dip, should be made smoothly to keep acceleration at a minimum -- thus avoiding appreciable increase in stalling speed.



1943

## AIR WARFARE DIARY

- Jan. 6 - In the North Pacific, "Liberators" distinguished themselves by scoring one direct hit and two near hits on an enemy ship southeast of Kiska. A force of the same type aircraft also dropped bombs on shore installations in this same area. Clouds prevented observation of results. In the South Pacific, activity included an attack on a Japanese transport in the Shortland Island area, "Flying Fortresses", with "Lightning" and "Warhawk" escort, dropping the bombs. Result: possible hit on the stern of the ship. Working on the theory that "if a little bit will help, a lot should cure", U. S. aircraft bombed the airfield at Kahili near Buin, which is 300 nautical miles northwest of Guadalcanal airfield. Haze prevented observation of results. In the afternoon the airfield at Munda, 180 nautical miles northwest of Guadalcanal airfield, was bombed.
- Jan. 7 - For a morning follow-up on the above named areas, a force of "Flying Fortresses" dished out eggs to the enemy. Twelve Japanese "Zeros" attacked the "Fortresses". Two "Zeros" were downed. No U. S. planes were lost. A force of "Marauders" (B-26) "worked" on Munda, dropping bombs on the airfield and installations. No results were reported. Another force of "Marauders", with "Airacobra" escort, attacked enemy installations, started fires and damaged two enemy float-type planes. Anti-aircraft fire knocked down two of our planes. In the north Pacific, a force of "Liberators" were engaged in the bombing of enemy positions at Kiska. Results were not reported.
- Jan. 8 - The forenoon saw "Marauder" bombers, and 9 - escorted by "Airacobras", attack the airfield at Munda. Results unreported. Both the night of the 8th and 9th U.S. aircraft again bombed
- this same enemy area, reporting a probable hit on an anti-aircraft battery on Munda Point.
- Jan. 10 - Guadalcanal Island suffered a coordinated attack from U. S. artillery forces, dumping of bombs by "Dauntlesses" and a follow-through of strafing and bombing by "Airacobra" fighters. U. S. ground forces finding enemy resistance to these advances weak, marched into enemy territory.
- Jan. 11 - Somewhere between Santa Isabel and New Georgia Island a force of "Dauntless" planes, escorted by "Wildcat" fighters, was attacked by twelve "Zeros". Results: 4 "Zeros" shot down and two more possibly destroyed; only one "Wildcat" failed to return. "Marauders" with "Airacobra" escort attack positions at Munda this same day. Heavy clouds over target areas prevented accurate bombing and observation of results.
- Jan. 13 - A force of "Marauders" with "Airacobra" and "Lightning" escort bombed enemy installations at Rekata Pay and the Japanese airfield at Munda. No air opposition was encountered but anti-aircraft batteries were active. No results were reported with the exception of the blissful knowledge that all our planes returned. U. S. ground forces on Guadalcanal Island, supported by air forces, continued their advance. Small scale offensive operations against enemy outposts are still progressing and several small enemy positions have been isolated.
- During the night U. S. aircraft bombed Japanese positions at Munda. Results were not reported.
- Jan. 14 - Early morning bombings were staged against a Japanese village three miles east of the airfield on the southern end of Buka Island. A few hours later enemy planes bombed U. S. positions on Guadalcanal



Scene at Naval Air Station, Lakehurst, N.J.

Island. U. S. forces suffered some casualties but no damage to installations resulted. U. S. troops on the Island, despite stiff enemy resistance, continued to make advances.

Jan. 15 - It's days like this that make us want to continue writing a diary on air warfare. At least, it can never be said, "Nothing ever happens here." From dawn to dark the South Pacific area was a scene of unrelentless bombing. Early morning activity included an attack by a "Catalina" reconnaissance plane on a group of five Japanese destroyers. One direct and two near hits damaged one of the destroyers, which was left burning. A force of "Dauntless" planes escorted by "Wildcats" and "Airacobras" attacked nine Japanese destroyers. Eight out of twelve "Zeros" intercepting the attack were shot down. One of our dive bombers was forced down and five of our fighters failed to return. The "Dauntlesses" pressed home the attack and seriously damaged two of the enemy destroyers. A U. S. plane patrolling the vicinity of Guadalcanal shot down three "Zeros."

"Flying Fortresses" accompanied by "Lightnings" and "Airacobras" and "Warhawks" attacked five enemy destroyers. No hits were scored on enemy vessels but 12 of the Jap floating type biplanes which intercepted the attack were shot down. No U. S. planes were lost.

Just to make a final touch to "the end of a perfect day", a force of dive bombers with "Wildcat" and "Airacobra" escort attacked an enemy cargo ship 37 miles northwest of Munda. Two direct hits and four near hits were scored and the ship was left burning. Out of twelve enemy "Zeros" which attempted to intercept the attack, seven were shot down. One U. S. fighter failed to return. The

"Catalinas" followed up the attack and started additional fires, then moved on to enemy positions on New Georgia Island.

Two large fires were observed after an attack made by "Flying Fortress" bombers in the Japanese-held Kahili area. Later, these same type bombers let 'em have it on Pallale Island in the Shortland area. Seeming incensed at this, enemy planes bombed U. S. positions, inflicted minor material damage and some casualties among our troops. However, U. S. ground forces continued to advance slowly against determined enemy resistance.

During the period from January 13 to 17 inclusive, 1032 Japanese were killed in various actions between U. S. and enemy forces on Guadalcanal Island.

Jan. 16 - During the afternoon Ballale Island was attacked again by "Flying Fortresses" and fires visible for 50 miles were started. The same afternoon a force of "Marauders" with "Airacobra" and "Warhawk" escort bombed Japanese positions at Munda. A number of hits were scored in the target area. U.S. ground troops continued mopping up pockets of enemy resistance. Approximately 150 Japanese were killed and a number taken prisoner. Their equipment was destroyed.

Jan. 18 - A Japanese cargo ship, anchored in the Shortland area, was the target of bombs that were dropped from a force of "Flying Fortresses" escorted by fighters. Although one of our fighters failed to return two hits were scored on the vessel and two enemy float-type "Zeros" were shot down.

Jan. 19 - Japanese positions at Munda were subjected to an air striking group of U. S. planes but no results were reported.

