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Smashing Feature
By DAVID MARTIN

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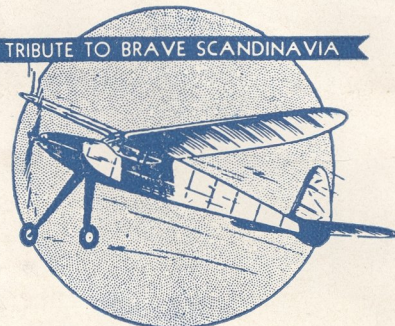
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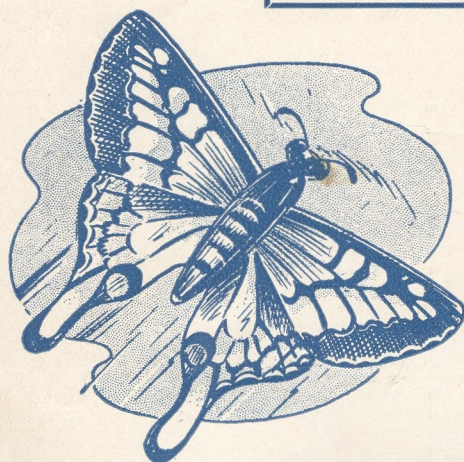
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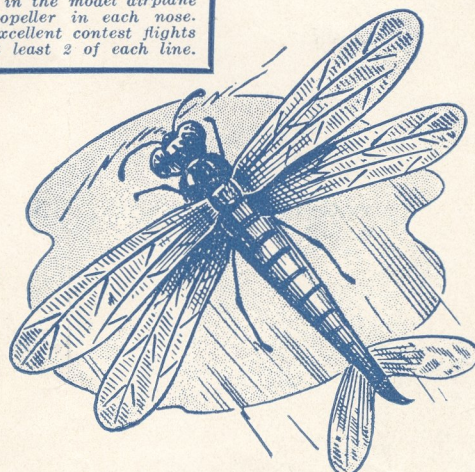
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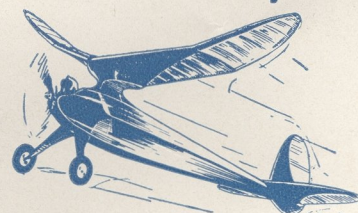
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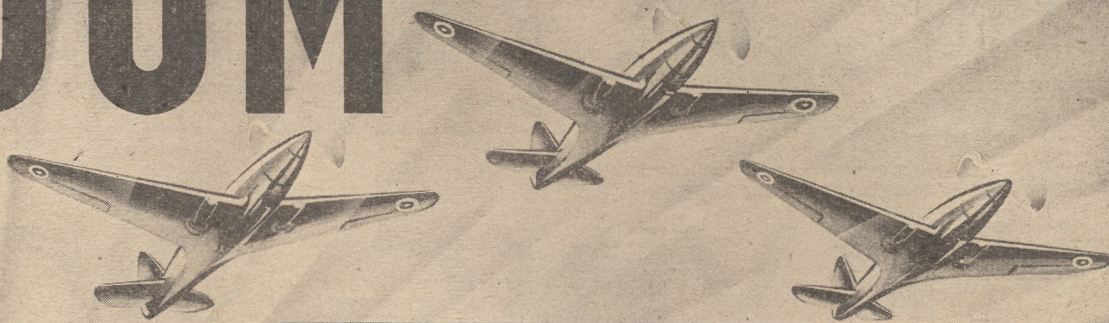
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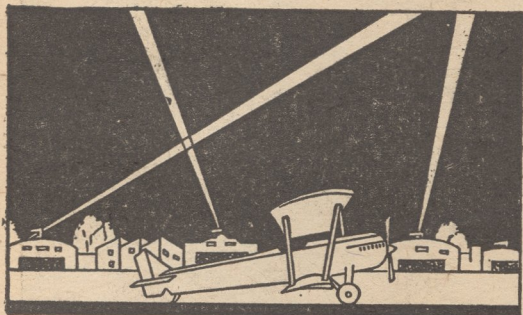
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VOLUME XXXVI

OCTOBER, 1940

NUMBER 3

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Civil Air Training Plan in National Defense (Requirements for enrollment—procedure of applicant—training plans.)	Lt. Col. Harold E. Hartney, Commander of First Pursuit Group, A. E. F.
Ground Training	Dr. Sanford A. Moss, Consulting Engineer, General Electric Co., formerly instructor, U. of California
Field Regulations for Flight—Inspection of Plane Before Flight	Dr. Jean F. Picard, Professor of Aeronautical Engineering, U. of Minn.
Safety Measures in Air	Col. Roger Q. Williams, Aviation Pioneer, Lecturer
Primary Flight Training	Maj. Augustus Post, Gordon Bennett Trophy Winner
Advanced Flight Training	E. A. Link, Inventor, The Link Trainer
Meteorology, Navigation and Instruments	C. G. Taylor, President, Tayercraft Aviation Corp.
Practical Meteorology	Capt. Fred Smith, Canadian Colonial Airways
Principles of Navigation	Louis P. Harrison, U. S. Weather Bureau
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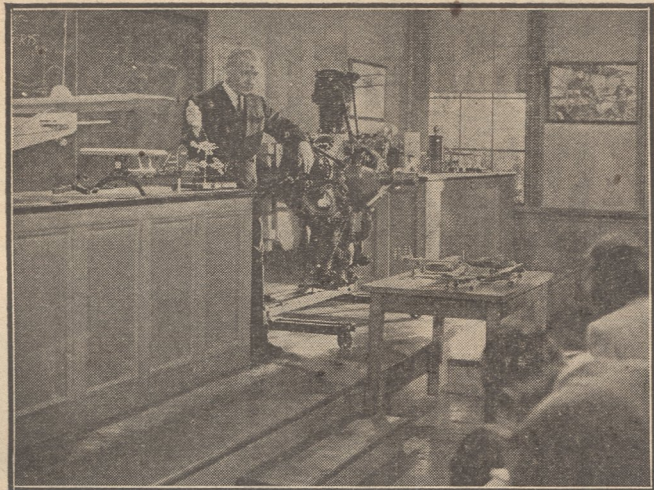
City State

CAA—

Aviation in this country has at last "come of age" and more active flight training is going on than ever before. Here David Martin tells what your chances are under the CAA.

By David Martin

Author of "Is Our Air Force Ready for War?" "Italy's Boot Boasts Wings," etc.



BY JULY 1, 1941, there will be 45,000 pilots available for the posts of importance in the United States Air Services. To take care of these flyers, we should have at least 60,000 first-line planes of all categories. Each ship will require at least two and possibly three skilled mechanics to service it, and a squadron of twelve craft will require, in addition, administration officers, meteorologists, instrument experts, tactical officers, armament workers, and communications men.

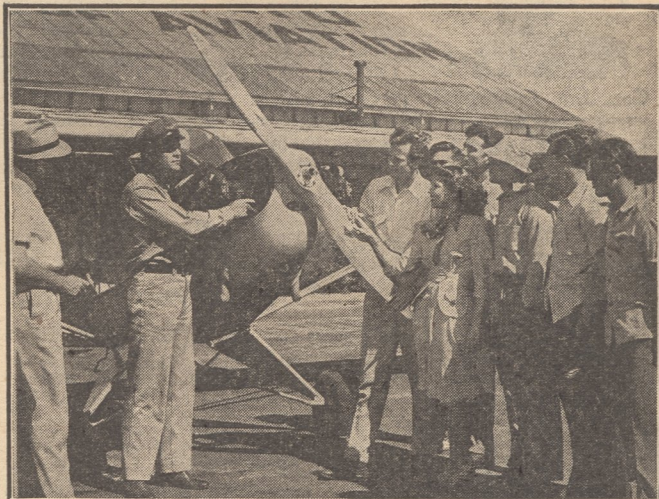
You can't complain any longer that aviation has no place for you. The CAA plan can take care of half a million young Americans within the next eighteen months. You have fifty openings from a Second Class mechanic to a Squadron Commander with twelve planes and a dozen pilots under his wing.

You can pilot a giant four-engined bomber or a 400 m.p.h. fighter. You can fly a long-range flying boat or be catapulted at 80-m.p.h. from the buffers of a cruiser. You can become a single-seat Ace or a skilled flight instructor. And you don't have to be a college graduate, either! More than 15% of those accepted will be non-college lads. All that matters for the time being is that you are a citizen and between the ages of 18 and 26.

We used to hear the squawk that those who had spent money to buy their own aviation training were to be left out in the cold. But this no longer holds true, for the plan has been enlarged to include those who have already had training. It plans to offer special courses to about 5,000 active and inactive pilots with commercial ratings, giving them 25-hour refresher periods. There are an additional 5,000 solo-rating pilots who will be offered 25-hour courses, and those who have progressed as far as private ratings will have the opportunity of getting an additional 15-hours under the guidance of skilled and carefully-selected Government re-rated instructors.

Above: In the film, "Young America Flies," Actor Henry O'Neill portrays a CAA instructor. He's seen here in the classroom with a group of students.

Right: Donald Woods explains the fine points of a Cub to his eager fledglings. That interested lass is Jean Parker, W.B. feature star.



And notice the wording. They will be *offered* the chance. It is all voluntary. No one with a license *has* to accept the training! In other words, the United States is offering the opportunity to take active part in the building up of America's air defenses. Free-born people have the right to select their place in the scheme of these things; and if you are really interested in doing your bit in an emergency, here is your chance. There are no strings attached—you simply have to be an American.

But you will say: "I've read about all this in the newspapers. I know that a certain select group of university men have been taught to fly. What is it really all about and how does one get into it?"

There's nothing intricate or mysterious about the CAA plan. The Government at this writing has put up \$37,000,000 for an expanded civilian pilot training program. *You* are the man it is aimed at. *You* are the one it was designed for, and since it is already in force *you* have all the opportunity in the world to be in on it.

BUT let us now take a look behind the scenes and see what it's all about: First, if you are between 18 and 26 years of age and have had two

years of university training, you should make formal application to Robert Hinckley, Chairman of the CAA, Washington, D.C. If you are not a college man but have had a high school education, you may still apply—but it would be well to state in your application the details of your course and what work you have pursued since graduating.

Once your application has been received, your name is placed on file. If you are attending college, your school may already be listed with the CAA and you are in on the ground floor. If not, you simply change over at your own convenience and get your instruction at the nearest registered ground school. At present, about 15,000 such students are completing their primary flying course and a new session will be starting by the time this appears in print.

There are small charges, of course—mainly of a personal nature. You will first of all be insured against accident or death. There will be small transportation charges in some sections and other charges for textbooks. The cost appears to average about \$60, depending upon the area in which the candidate takes his training.

Nothing quite like this for fairness and efficiency has been evolved any-

THE AMERICAN WAY

where in the world. You are a volunteer and there is no smell of conscription in any phase of the plan.

A typical case might be found where a suitable group of college men are selected in a certain area. There will be a small percentage of non-college men in that section who will be selected and who will attend the same ground school classes as the registered university students. A certain number of hours every week will be devoted to ground school work. This will include theory of flight, meteorology, primary instruments, primary aviation, rules of the air, and engine mechanics. Licensed instructors will give these courses, which will be equal in most respects to those given to Army Air Corps Cadets at Randolph Field.

Along with the ground instruction, arranged mainly for weather conditions and for the most efficient program considering the number of planes available, there will be actual flight courses. This will be carried out at some nearby field by a fully-licensed operator and a staff of instructors, many of which will be Air

they toss me out, or am I pulled into the Army Air Corps as a mechanic or something? Just *what* does all this lead to?"

There are no particular strings attached to this training plan. Naturally, the CAA assumes that if you accept the training, you do so for one particular reason: You want to do something about national defense along the lines of military aviation.

The plans of the CAA at present are wide and varied. For instance, about 3,000 of the 15,000 primary pilots trained over the Fall semester will be given the secondary course at once, and the 1,000 instructors who trained the original 15,000 will get an additional 15-hour refresher courses which no doubt will include more advanced features.

At present the operators get \$290 per student, but this fee will be raised to enable them to pay their civilian instructors better wages. It has also been pointed out that the Southern states, which naturally offer more months of suitable flying weather, will not get any more student quota areas than the Northern states. As

a matter of fact, good military pilots should have plenty of both Summer and Winter flying experience.

For the benefit of our readers, we will here give full details of the training districts and quotas:

First District—Pennsylvania, New York, West Virginia, Virginia, Delaware, Maryland, and the

District of Columbia—under the direction of Earl Southree, Roosevelt Field, N. Y. Quota: 2,800 college and 690 non-college men.

Second District—North and South Carolina, Georgia, Florida, Tennessee, Mississippi, and Alabama—under the direction of E.C. Nilson, P.O. Box 4327, Atlanta, Ga. Quota: 1,850 college and 300 non-college men.

Third District—Ohio, Indiana, Illinois, Kentucky, Michigan, Wisconsin, Minnesota, and North Dakota—under the direction of Charles Cox, Jr., 1204 New Post Office Building, Chicago, Ill. Quota: 2,700 college and 480 non-college men.

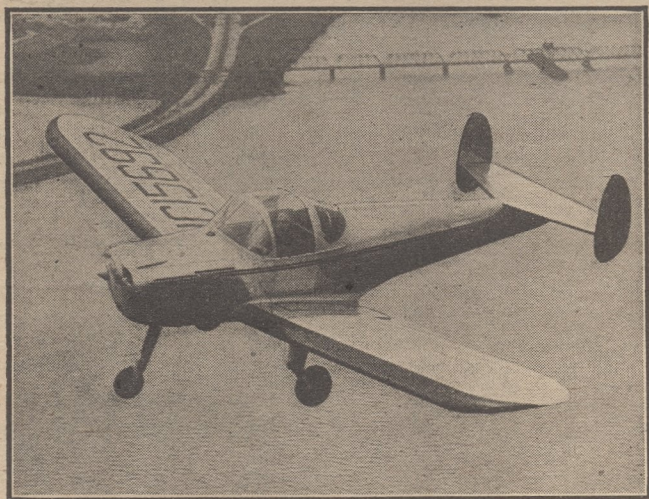
Fourth District—Arkansas, Louisiana, Oklahoma, Texas, and New Mexico—under the direction of Ralph DeVore, P.O. Box 1689, Fort Worth, Texas. Quota: 1,550 college and 150 non-college men.

Fifth District—Iowa, Missouri, South Dakota, Nebraska, Kansas, Wyoming, and Colorado—under the direction of John Morris, City Hall, Kansas City, Mo. Quota: 1,650 college and 240 non-college men.

Sixth District—Utah, Nevada, Arizona, and California—under the direction of Carl Lienesch, P.O. Box 1010, Santa Monica, Calif. Quota: 1,500 college and 210 non-college men.

Seventh District—Montana, Idaho, Oregon, and Washington—under the direction of Wiley Wright, King County Airport, Seattle, Washington. Quota: 600 college and 120 non-college men.

It will be noted that New Jersey and Rhode Island are not mentioned, but it must be assumed that they are listed in the First District. Officials of the CAA have stated that there will be no partiality shown in the selections of the candidates, and in many instances non-college men will



Corps officers of various ranks.

Eventually, you will get enough dual and solo time on first class trainers to take your private license examination. This means you will have logged approximately 35 hours of actual flying time over a period of about three months. After that, you will be offered the opportunity of taking an additional 45 flying hours in the secondary stage. The CAA states that this amount of instruction is equal to the primary training courses of the Army and the Navy.

The point most readers will ask here is: "But what happens to me when I have reached this stage? Do

Above: This Continental-powered, tri-cycle Ercoupe has won approving nods from the CAA. Craft of this design may shortly be used for training purposes.

Right: "Easy does it!" Up in the control tower, instructor Don Woods watches a first-soloer. He's giving advice through that microphone to the new airman.



take their training at commercial airports in their areas where both ground school and flight training will be available.

THE SAME physical requirements demanded for the CAA pilot ratings will be accepted in this plan. We cannot assume to state whether or not you can pass the tests since, as we have said so many times, we are not the examining doctors. Any questions on this subject should be referred to some local physician.

On the whole, however, if you have good eyesight, no organic diseases or physical disability you should have no fears. Also, you must have normal hearing, since the delicate features of the ear drums control the elements of balance. The loss of a limb will, of course, prevent you from taking the course, but the loss of a finger need not prevent you from becoming a good pilot. But these are matters for the CAA physician to decide. A fair consideration for the physical requirements of the ordinary active service soldier or sailor will give one a better idea of the whole physical requirements situation.

This, then, is the CAA—the American way of producing airmen to man the warplanes Uncle Sam intends to build within the next eighteen months. All kinds of pilots will be required. It is a far better plan than relying upon the enthusiasm always apparent on the eve of the outbreak of war. Men are then selected either through their fraternal or political affiliation, or because they *think* they want to get into the Air Services. In the other World War, men were accepted under such conditions and the whole scheme went awry. Thousands of men who had no physical or mental aptitude for flying hurried into the Air Force because it was the service of romance and adventure. The fact that all flying men were commissioned also had much to do with the popularity of the air arm. It was the service *de luxe* because the exploits



Actor Bill Lundigan crosses his fingers before his first lone hop aloft. He's in the rear seat of light Piper Cub, of course.

of a few had been boosted to the top.

Unfortunately, few who decided for themselves that they were ripe material for the Air Service actually justified the money that was spent on them. This does not mean college men alone, either. Many who had seen what trench fighting was like, or suffered the woes of hard physical labor in the artillery or infantry, decided for themselves that perhaps the Air Service was easier. The reaction was natural—but unfortunately it did not work to the improvement of our fighting squadrons. Only the glorious side of the First World War has been told. The list of thousands who never made the grade or who helped to pile up the training camp casualties has only been glossed over.

All that must never happen again. It is not the *real* American way. We must select the men now while we have time. It must be fair and selective. We want the *best* pilots in the world, not necessarily the *greatest* number. The best for them is none too good, and the CAA plan, if properly carried out, will assure us of the finest in the world.

In the past twelve months we have

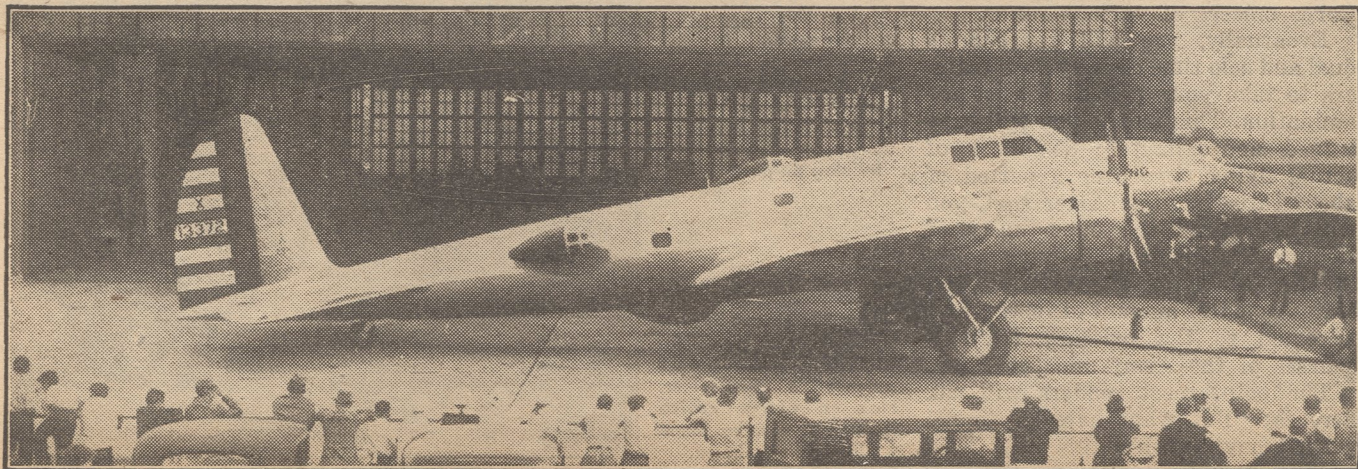
seen what has happened abroad as the result of the fiendish use of a strong Air Arm. To combat such a threat we must provide a stronger and harder-striking defensive Air Service. This is an even greater task than that of producing an attacking force, because the attacker has the whole coast-line to select from to carry out his proposed raids. For that reason, we must have a defensive air force that can cover the full distance of our shores and borders. One small efficient force of raiders, selecting its own point of attack, can do as much damage per bomber as ten defenders who have to fly many miles to intercept them. Some of the raiders will be intercepted, of course, but a percentage of them will get through and drop their explosives—and every bomb is a menace to something.

Attack by air is a comparatively simple matter if you have men, machines, and bombs. One simply has to select the proper time, fly to the objective, and release the explosives. If all the enemy planes are shot down, a certain amount of damage has still been done. Only a complete defensive force can cope with such tactics, and the most efficient defensive force is one complete from man to machine.

The CAA plan at least provides the opportunity for men who are willing to volunteer. It also selects the best available and trains them accordingly. The plan, as it stands now, will bring out the best in every man within a few weeks of his starting the course. From that point on, he will be carefully guided along the proper channels until he eventually climbs aboard a ship to fly with his own license. That's the CAA—the American way!

Incidentally, Warner Brothers recently released a two-reel motion picture on the CAA program entitled "Young America Flies," which is reviewed elsewhere in this issue. Four of the six photographs used to illustrate this article are "stills" from that movie.

Below: Many CAA graduates may soon be flying ships like this Boeing Army B-17.



Eye of the Air Corps

ACCORDING to some authorities, the major duty of an air force is to act as the Eyes of the Army. Supremacy in the air, they claim, refers to that situation where one side is able to keep enough machines in the skies to control the ground movements of the enemy. Generally speaking, the side holding control of the air is able to spot the movements of the other side and thus frustrate their efforts to complete any plan of attack.

Our cover this month graphically displays the workings of an American observation flight working against a war-game ground force moving along a road. In the picture will be seen a number of tanks and armored cars. The plane, a North American O-47A Army Observation machine, banking and diving to make possible an angle shot of the activity below. Other observation planes are keeping guard, "protecting" the actual camera ship, and standing by to take up should the leader be picked off by "hostile" fire from below.

The air camera is probably doing more to make the Air Force efficient than any instrument designed for aerial war work. In the old days, observers, usually men lacking pilot ability, were still keen to fly and so they were given the unsatisfactory duties of action as the second men aboard two-seaters. These flyers were not trained or skilled observers in the strictest sense. They often were young officers borrowed from cavalry, infantry, or artillery units on the assumption that if they understood the movements of these military organizations on the ground, they would be able to interpret their movements from the air.

This was not always realized. These men, skilled in their duties while in a stabilized position on the ground, often made grave errors in their observations and interpretations of the movements of the enemy when they studied them from the air.

To offset this, trained observers were required and there were schools of military observation set up to tutor men for this particular work. But even so, mistakes were made, and very often these errors were costly. The observers either over-estimated conditions or under-estimated them. They would see a regiment marching along a road and report it as a brigade or a division. They saw ordinary transports from upwards of 6,000

feet and mistook them for artillery.

The only answer to the problem was to photograph the points of interest and then study the situation coldly with microscopes and under more favorable conditions.

Clever photographers may be able to make cameras lie, but they must be allowed access to the plates or films after they have been exposed. An Army observer is now furnished with a camera. He takes his pictures, either from an oblique angle or from directly above, brings the camera back, and his work is finished. He reports where he has been and what he *thinks* he saw—but the film pack is developed and printed a few minutes after he lands, and there in the photographic room they can tell him *what* he has seen and *where* he has seen it.

In the first place, modern air cameras have several special recording

U. S. Army Pilots

"Go to War"—

With Cameras!

devices set into them. When a picture has been exposed, it records the actual time the photo was taken, the height at which it was snapped, and the true "North" direction disclosed.

From this, the photo readers know how to check for shadows—because if it was taken well before noon and the plane was flying North, the real shadows would be long and bearing toward the West. The camouflage artists have no trick up their sleeves which can overcome this. Once the readers have established that point, they then check the position with an accepted map and find out where it was taken. The movements of troops, the new workings, road activity, and the hundred-and-one other points understood by skilled observers brings out the real details of all ground activity where they can be "read" and interpreted under ideal conditions.

The camera is also used to check results of bombers. No longer may young and enthusiastic bomber-officers take-off and then return with

glowing accounts of what they have hit and destroyed. They always take a camera plane along with them, whose duty it is to sit over the scene of action and record the results. A good bombardment officer can read these pictures and decide the amount of actual damage that has been done.

But the Eyes of the Air Force are not limited to observation and bombardment squadrons. They are now being fitted to modern military fighters. British machines in particular are now carrying small but very efficient motion picture cameras fitted into their wings. Thus, when they engage in air battles with enemy craft, the camera actually records the full details of the fight.

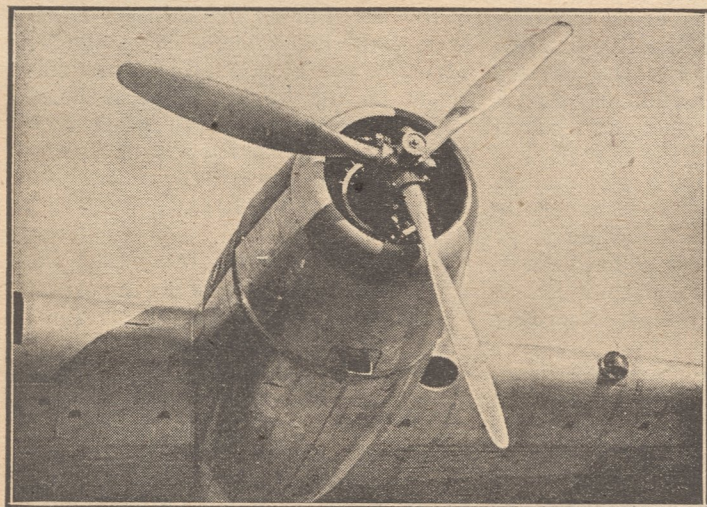
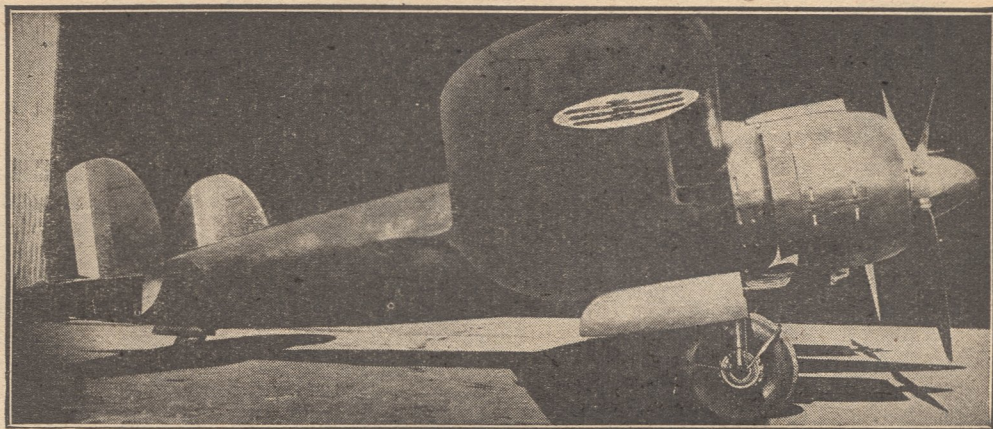
IT WILL be seen, then, that the camera has become an important piece of equipment in any air force and that the flyers who handle them are highly valuable. By the same token, also, the men who service these cameras and run the high-speed photographic studios that handle the film and prints are also worthy members of the service. And those who have no hopes of Acedom in the air, but who wish to play an important part in national defense, might consider this very important service branch.

But the plane designed for this work is most interesting and probably demands more of the military designer than any type demanded by the air services. The North American O-47A shown on the cover, is a typical example of such equipment.

Here we have an all-metal, semi-monocoque machine with a top speed of over 240 m.p.h. It can be flown, however, at 218 or slower for certain delicate work. It may be landed at 67 m.p.h. on the most crude field, such as are usually encountered under active service conditions. The O-47A carries a crew of three—a pilot, gunner, and observer who also doubles in avigation and can take over the radio table. All told, then, his machine and its crew represents the best in skill and design. The plane must fill many service conditions, be able to operate at high or low speeds, and take care of itself at altitudes from the hedge-hopping level all the way up to 28,500 feet.

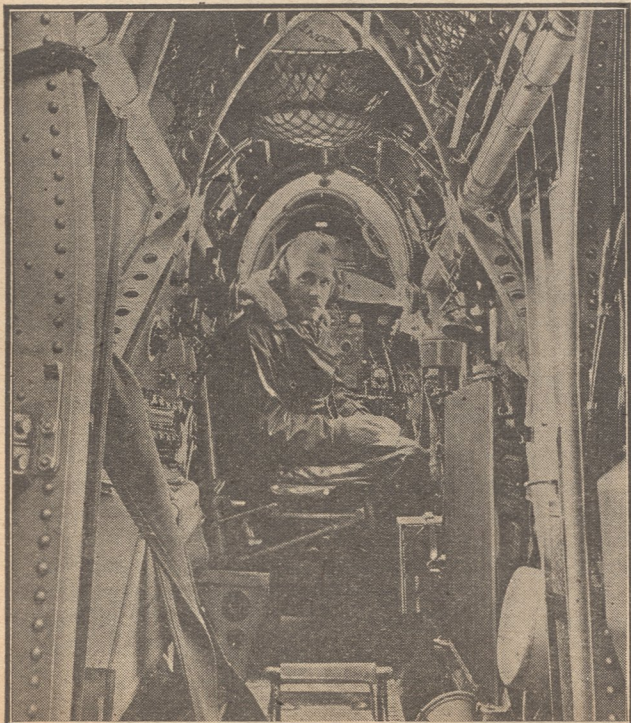
These figures, if analyzed carefully, disclose that the equipment includes a very wide range of armament, plenty of space for cameras, radio, avigation equipment, and oxygen apparatus for high altitude activity.

Right: Powered with two Piaggio P.XI.RC.40 engines of 1,000 h.p., this Italian Breda-88 is a mainstay of Mussolini's air force. Although not a new ship, this bomber-fighter is very speedy, having turned in over 321 m.p.h.

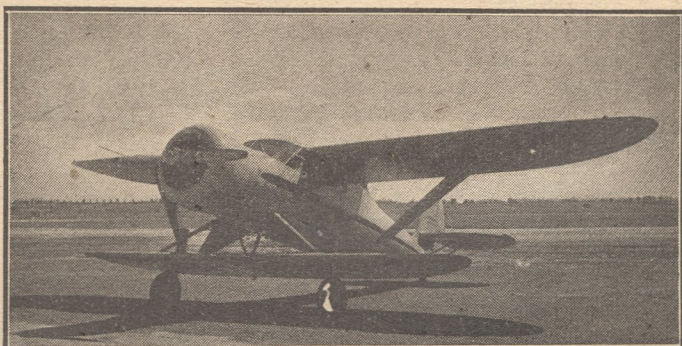


The powerplant—one of them, at least—aboard Boeing's XB-15 super-flying fortress. There's 1,050 h.p. tucked away in that sleek nacelle. Note the black paint on top of the cowl to prevent sun reflection. (Kulick photo)

Below: Gadgets galore! This R.A.F. radio man is seated among his maze of instruments and equipment which completely surround him. The fish-net webbing directly above the airman holds a collapsible raft. (British Combine)



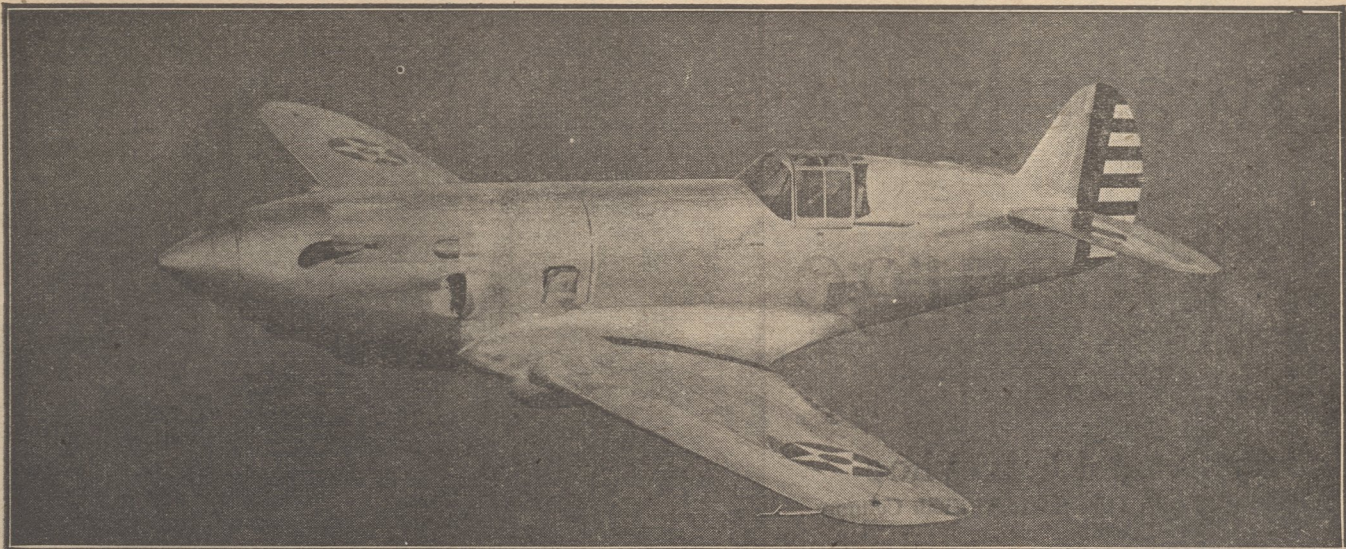
FLYING INTO FOCUS



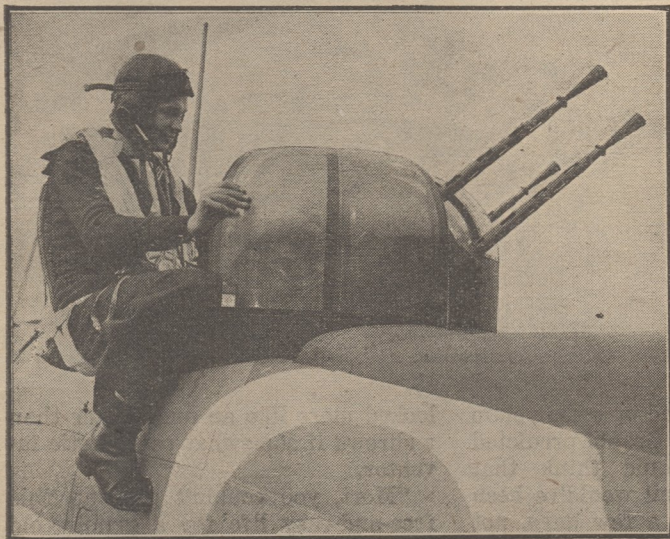
Looking quite similar to a Beechcraft, this Brown-Young Experimental is one of the latest private jobs. Power is supplied by a 225 h.p. Jacobs.

Below: These four girls, employed by AA, have flown a total of 3,225,000 miles, which is equal to 129 times around the world. Miss Weld, second from left, has chalked up 1,000,000 miles herself. Just a nice Sunday afternoon walk!

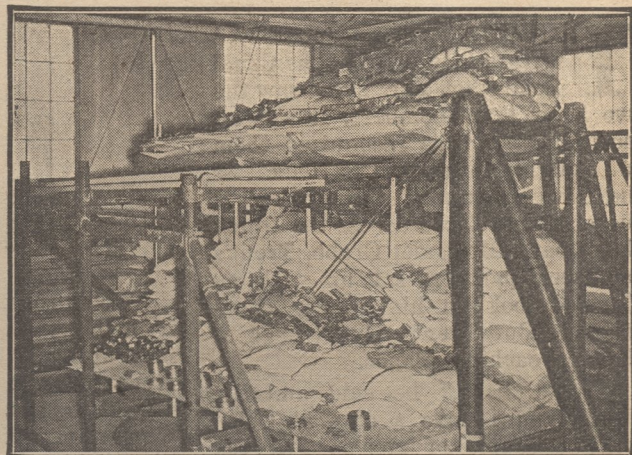




Above: Powered with an Allison V-1790-C6 of 1,000 h.p. at 2,600 r.p.m., this Curtiss P-37 is one of the latest pursuit ships in Army service. Top speed is rated by the War Department as "Over 400." Below: A Beechcraft wing built in 1936 is here seen undergoing a static load to test deteriorating influences of age. The experiment was highly successful and the wing withstood a 900% overload.



Above: Climbing confidently into his Blackburn Roc power turret, this young R.A.F. gunner is all set for another foray against Goering's Luftwaffe. Incidentally, the Bolton & Paul Defiant carries a rear fortress similar to this. (British Combine photo)



Right: Ground training for sky fighters! Here we see a group of British fledgling-gunners watching with interest as another chap swings his power-driven turret to fire at a released clay pigeon. This is a new slant on Skeet shooting. (British Combine



Swastika Scourge

★ ★ ★

By Donald E. Keyhoe

Author of "Death Flies South," "Fifth Column
Cockpits," etc.

Illustrated by Ed Smalle

CHAPTER I

FALSE COLORS

THE BIG Fokker seaplane was within fifty miles of the Canal Zone when Eric Trent saw the two Navy scout-bombers. It was almost dusk, but he recognized them as Vought-Sikorsky OS2U-1's. As they swung toward the Fokker, a rocket signal flared across the Dutch ship's path. Mortimer Crabb, Trent's sad-faced partner, sat up with an alarmed look on his gloomy countenance. But Trent only grinned at the approaching planes.

"Sorry, boys," he said amiably. "Mort and I have a date at Colon with a couple of steaks. See you later."

With a mock salute, he zoomed the T-4 into the clouds under which they had been cruising since they left the Colombian coast. A burst of tracer smoke passed one wing, then the clouds hid the pursuing craft.

"Now you've done it," Crabb said dismally. "Those ships were on Neutrality Patrol. They'll radio an alarm, and the whole Patrol will be on our tail."

An amused gleam came into Trent's dark eyes.

"At least, that'll be a change from Hitler's lads. Don't get me wrong, Mort—I wasn't snooting our Navy friends. But with the radio dead, we'd have had to fool around with a lot of wig-wag and red-tape, explaining why we're flying a Dutch military seaplane over here in the Western Hemisphere. And the inner man is growling too loudly for one of those juicy steaks at the Strangers' Club."

"We'll probably end up eating slum in a Navy brig," Crabb predicted mournfully. "I should think that fracas back in Brazil would've been enough to last you a few days, not to mention just getting out of Europe by the skin of our teeth."

A solemn look momentarily replaced Trent's habitual devil-may-care expression.

"Mort, old man, I'm through with war. All I want is a little farm, slippers by the fireside—"

"Don't try to be funny," Crabb said acidly. "You'll hop from one scrape into another until you get shot—or maybe hung. But you can bank on this—Mortimer Crabb won't be with you. I'm going back to my factory in Vermont. We'll split the money you phenagled out of the Nazis on those trick inventions of mine—and that ends our partnership. After all I've been through, it'll take a year to get my stomach back into shape."

Trent switched on the gyro-pilot, glanced at his partner. Crabb was dismally chewing gum, his protuberant Adam's-apple working up and down in time with his jaws. With his long, gloomy visage and the rusty black suit he always wore, he

looked more like an undertaker than a shrewd if somewhat pessimistic inventor.

"Mort, you couldn't give up this free-and-easy life for a grubby old factory," Trent said reproachfully. "Think of the gay adventures we've had—"

"Dodging bullets," snorted Crabb. "—all the countries we've seen together—"

"—one jump ahead of a firing-squad."

"And what about those magician tricks you wanted me to show you? It'll take a year to teach you all those—"

Trent broke off suddenly, as the Fokker came through the top of the cloud. Another plane was visible through the thinning cloud-mists, and for a moment he thought one of the Navy scout-bombers had trapped them. Then, as the wisps of cloud cleared completely, he saw that it was a foreign seaplane, with Colombian registry letters. The ship banked sharply as the T-4 appeared, and with a quick surprise Trent noted the cantilever high mid-wing and double-rudder. It was a German Blohm and Voss Ha.140, a type set on twin



SMASHING NEW ERIC TRENT MYSTERY



floats, powered with two 800-h.p. B.M.W. engines. And although it bore Colombian registry, it appeared to have been flying in from some point at sea, instead of along the coast.

"NOW WHAT?" howled Crabb, as Trent abruptly channelled and switched on the nose-turret guns.

"Get forward!" Trent said hurriedly. "There's something queer about that—"

"Look! The insignia's peeling off!" exclaimed Crabb. He dived from the co-pilot's seat, scrambled forward. Trent whipped into a right turn, staring across at the other ship. Long strips of dried paint were fluttering back in the slipstream, showing where the Colombian registry letters had been placed to hide another marking—the Nazi swastika!

The German plane had started to dive into the clouds, but suddenly it pulled into a tight climbing turn. Two guns blazed from the aft turret and the already bullet-scarred T-4 quivered under a blast that riddled one wing. Before the gunner could jerk his weapons around to rake the cockpit, Trent plunged under the Nazi ship, came up in a furious zoom. Crabb loosed a barrage

from the nose-turret guns and Trent saw the tracers hit the side of the other craft.

"Nice work, Mort!" Trent shouted. "Look out for that bow-gunner!"

The revolving turret in the nose of the Ha.140 whirled toward the Fokker and a vicious torrent flamed toward the T-4's tail. Trent snapped into a split-turn, hurdled the Nazi. His left pontoon was aimed directly at the mystery plane's double rudder and he had a flashing glimpse of the pilot's beak-nosed profile as the Nazi frantically nosed down. Then the Ha.140 disappeared, diving headlong into the clouds.

"Just a couple of steaks at the Strangers' Club"—that's all swashbuckling Eric Trent and sad-faced Mortimer Crabb were seeking in Colon. But Fate had planned a bigger bite for the intrepid Yank skymen—one peppered profusely with Nazi nuggets of hate. For as they hurtled that Fokker T-4 through the dusk-shrouded Canal-Zone skies, a grim German juggernaut blasted hell-bent from the clouds. And the Fifth Column plotter flying that ship was—a trusted Government employee!

Trent backsticked, ruddered swiftly as the Ha.140 spun toward the Fokker. And just as Crabb's guns flamed, he saw two American scout-bombers hurtling into the fray—straight for the Fokker!

Trent swung off to one side, dived at full throttle.

"You idiot!" Crabb yelled. "You're liable to hit him in this stuff!"

"Get your trigger finger set, Daniel Boone!" Trent flung back. He chuckled as he saw Crabb shake his fist, hanging onto the gun with his other hand. Then the T-4 plunged into the clear beneath the clouds.

They had emerged not far from the headland at Point Manzanillo and Trent had a split-second glimpse of the San Blas Mountains and the dark jungle beyond. The Nazi ship had pulled out of its dive, was zooming back for the protection of the clouds, and heading toward shore. Trent backsticked, ruddered swiftly as the aft-turret m.g.'s of the Ha.140 spun toward the Fokker. Just as Crabb's guns flamed out in fierce answer to the Nazi's fusillade, something at one side caught Trent's eye. He flicked a glance to the left, soundlessly pursed his lips. The two Navy scout-bombers were charging into the fight, hastily warming their Brownings!

"If only they see that Nazi

insignia," he said to himself. But without an instant's hesitation, the two Vought-Sikorskys darted toward the T-4. Trent held to the pursuit of the Nazi ship a moment longer, though the scout-bombers were almost in range. A burst of tracers from the German aft-turret guns grazed the top of his cockpit, ripping away the panels above his head. Crabb pitched a blast into the side of the Nazi, then with a yell of alarm swung his guns around as the first Vought-Sikorsky opened fire.

"Hold it, Mort!" shouted Trent. "That's our Navy friends."

"Friends?" bawled Crabb as Trent reversed and streaked for the clouds. "I'd hate to have—now what on earth's hit them?"

As suddenly as they had attacked, the two scout-bombers fled, zooming into the clouds after the Ha.140. Trent looked back and saw tracers smoking within a hundred feet of his left wing. Three Vought-Sikorskys were spreading out to intercept the Fokker. A flare-pistol was thrust from the rear pit of the leading ship and a crimson rocket flashed directly in front of Trent.

"Mort, I think they mean business," Trent said, as he nosed down. "Maybe we'd better postpone that date with the steaks."

"A jam like this and you can still think of food," Crabb said gloomily. He climbed back into the co-pilot's seat. "You idiot, do you realize they'll think we were firing on those other Navy ships? The German plane was in the clouds before they were close enough to see it."

"Doesn't it strike you as a bit odd, the way those two Vought-Sikorskys ran for it?" queried Trent.

"What's odd about it?" Crabb said morosely. "They saw these three had us cornered, so they dug after the Nazi."

"Maybe it's just my generally suspicious nature," observed Trent, "but I'd say there was a faint odor of the fish-market about that business."

The three scout-bombers had by this time closed in to within a hundred feet of the Fokker. While two of them rode the tail of the T-4, the third carefully drew alongside the right wing. The pilot pointed to his earphones, but Trent shook his head. After a glance at his compass, the Navy man motioned for them to fly parallel, then headed across Point Manzanillo toward the Atlantic end of the Canal.

With the Fokker leading, the two Vought-Sikorskys followed cautiously, close behind.

IT WAS almost twilight when Trent glided down inside the west breakwater at Limon Bay. The leader of the Vought-Sikorskys taxied ahead to a mooring buoy, after signaling Trent to approach one nearby. Two minutes later, Trent and Crabb climbed into a speedboat which drew alongside the battle-scarred Fokker. A middle-aged Navy commander, pompous and rather florid of face, curtly motioned them into the vessel. Two bluejackets with drawn .45's kept Trent and Crabb covered as the speedboat headed across to the first of the three seaplanes. The commander fixed a frosty eye on Trent.

"All right, let's have the story," he barked.

"All of it?" said Trent.

"Certainly!" snapped the Navy man.

"I was born in Cincinnati, of poor but honest parents," Trent began in a singsong voice. "At the age of three I had curly hair, which fortunately I outgrew—"

"You insolent beggar!" roared the commander. "I'll put you in irons—"

"I was merely following your orders," Trent said amiably. "Maybe we can shorten it. Suppose you play Professor Quiz and I'll bet you three to one I can get the answers."

The commander turned a violent purple and one of the bluejackets choked, trying to hide a snicker. Mortimer Crabb interposed before the officer could regain his breath.

"Don't pay any attention to this young lunatic," he said mournfully. "I'll tell you anything you want to know."

"Who are you—and what are you doing with that Dutch plane?" grated the commander.

"We're refugees from Europe," Crabb replied gloomily. "We're also American citizens."

My name's Mortimer Crabb. You'll find me listed in Dun and Bradstreet's business directory."

"He's quite a reputable person, commander," Trent put in pleasantly. "A bit of a pessimist, given to looking on the sad side of life, but otherwise—"

"Shut up!" barked the Navy man. "I'll get the straight of this without your help. Coxswain, swing in and take off Lieutenant Jackson and his gunner."

The boat thumped against the Vought-Sikorsky's single float. The pilot, a chunky, red-headed man about twenty-eight years of age, stepped

aboard, followed by his gunner-observer.

"I see you got my message, Commander Little," Jackson said quickly. "I knew it was a matter for Naval Intelligence."

"All I received was a garbled report," Little said tartly. "Something about this Dutch seaplane attacking Patrol planes. Just what happened?"

"We came on the Fokker as we were returning to the base," explained Jackson. "It was in a fight with two OS2U-1's. I think there was another ship, too, but it ducked into the clouds. The OS2U-1's climbed into the clouds, too, as though they were following another plane."

"They'll probably be in soon with a report," growled Commander Little. "What happened then?"

"We signaled the Fokker to head for Limon Bay, and that's all there is to it," said Jackson. "These birds didn't put up any fight. We had them cold."

"They're probably spies," Little said grimly. "That fellow in the black suit says he's an American business man named Crabb. The other one wouldn't talk."

Trent looked at him with mild reproach. "Now, Commander, I'd say that was departing somewhat from the truth. I attempted to hold up my end of the conversation, but you—"

"I'll give you one chance to answer straight questions," snapped Little. "What's your name? Where'd you get that plane? Why were you fighting with those OS2U-1's?"

"Answering in reverse order," Trent said airily, "they were fighting with us—we were proceeding peacefully when attacked. We borrowed the Fokker at Rotterdam, in making a hasty exit from Holland after a slight misunderstanding with Hitler's boy scouts. And the name is Eric Trent—Mister Trent to you."

"Eric Trent?" rasped the commander. "Now I know you're spies. Naval Intelligence got an official list of American casualties and Eric Trent was killed somewhere in Belgium."

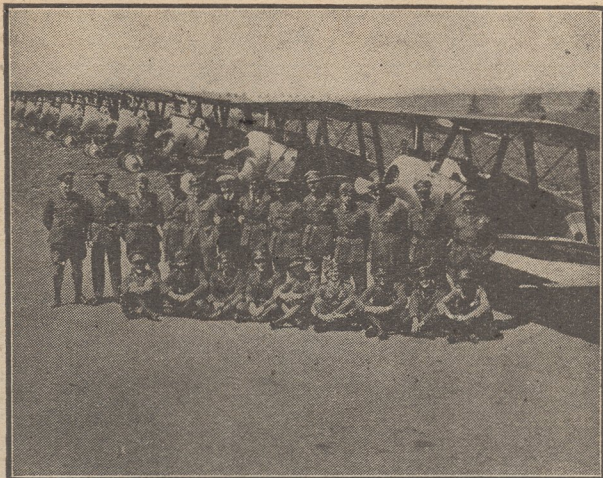
"I wish you'd broken it more gently," Trent said with a pained look. "It's a shock, suddenly finding out you're dead. By the way, where am I buried?"

"I'll take the smartness out of you when we get ashore," Little promised savagely. He gave the coxswain an order and the speedboat curved in toward the Cristobal docks.

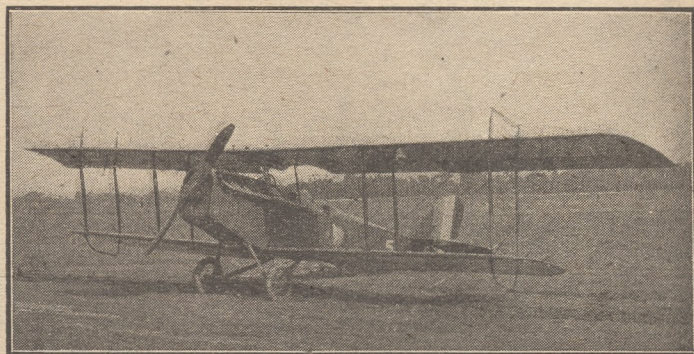
"You come along, too, Jackson," Little directed as the bluejackets marshaled Trent and Crabb from the boat. "I'm taking these men up to temporary O.N.I. headquarters. I want you to make out a full report

(Continued on page 56)



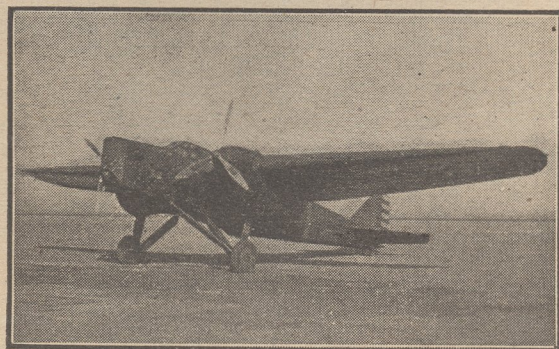
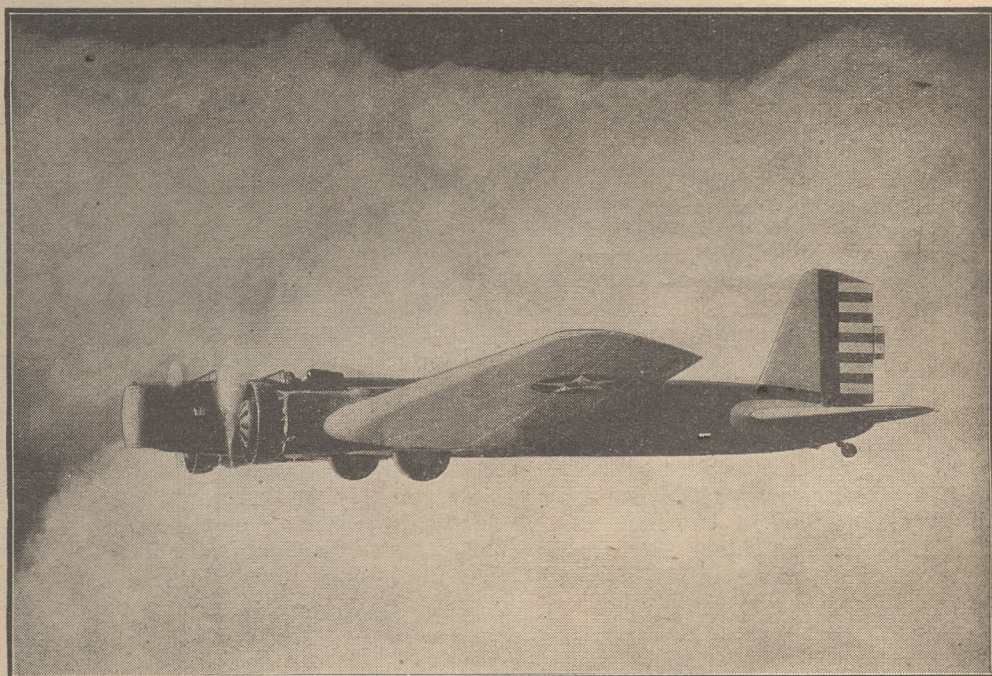


Left: In the "other war," British pilots were flying Sopwith Camels—and doing very well, thank you. In this picture we see a famous Ace with his merry gang, all set for a patrol. The blue-uniformed flyer is none other than Ray Collishaw. (Puglisi photo) Below: You seldom see a good photo of the Curtiss JN-4, but here's an old "Jenny" we dug up from an old file. Look at that Lafayette Escadrille insignia grinning on her side! Yes, she's funny-looking now, but she was a big factor in building up America's Air Force many years ago.



Down Memory's Runway

Developed from the Monomail, this Boeing "Death Angel" Army B-9 was probably the most formidable military bomber in the world in its day. It was the first low-wing, bi-motored ship ever accepted by the Air Corps and was the first craft of its kind to carry a retractable landing gear. The fuselage was long and slim, and the "eggs" were carried in the center section. Top speed was 136 m.p.h.



Above: American airmen fought Fokkers on the Western Front in 1918—and then a few years later were flying Fokkers themselves! This is the twin-engined O-27 of 1932. It was powered with two Curtiss Conqueror G1V-1570-E's, rated at 625 h.p. each. (Nieto photo) Right: Back in 1928, this Ireland Amphiblane was all the rage. Many of them may still be found in the South American gold fields where ordinary planes are not able to stand the gaff. Power was supplied by a Wright Whirlwind.



Straight Chuting

Most flyers never find it necessary to "hit the silk," but this one tried it just for the thrill. But instead of a thrill, he found out that a pilot's best friend is his "umbrella"—even though it always lets him down!

By S. Goutal Leone

THERE MIGHT have been a "nothing to it" inflection in my voice when I told inquirers that chute jumping was the same as diving from a high board. I was positive that holding the ripcord instead of my nose would not be the only difference—but I didn't want to admit it then. And I talked in this fashion because I was afraid I would have to explain that this was my first drop.

Bailing out hits a new high in thrills—supposedly. It is a unique experience. But since most of the effect is psychological, much of the sensation may be imagined. That is, you never really know that you are *actually* falling through space until the chute opens. It just seems that a strong gust of wind is blowing and that the plane is moving away from you.

But whatever had me in its clutches as I prepared to leave the steps of that Stinson, two thousand feet up, made me more than just uneasy. All I could think of was

what had been said about the would-be jumpers who had backed out at this stage. The fellow who can do that, incidentally, earns my sincere admiration. For it takes less nerve to drop several thousand feet with nothing but silk for protection than it does to change your mind, scramble back into the plane, and then face the disgruntled thrill-hunters who wait below. They may not call it moral courage—but that's just what it really is!

Even though I would have felt justified in going back now, I couldn't get up enough nerve. What's more, the guy at the stick called back, "Come on, friend. Let's get this over with." I nodded, took a deep breath—and then stepped off!

WHAT had been placid Southern scenery suddenly smeared itself all over the sky. The neat little patches of farmland ran into each other like water colors on the wrong kind of paper. It should take about a second and a half to drop clear of the plane. From this altitude, it would take only nine seconds to connect with Mother Earth. That is, if I carried on without the chute. Oh, how could I judge how long a second was anyway? Say your name casually, I had been told, as if introducing yourself. But I felt

about as casual as if I had suddenly been dunked into icy water!

S. Goutal Le—my teeth clicked together. The chute already opened! . . . somewhere between the S. and Goutal, I guess. The earth jerked itself into an orderly position once more. Surprising, not to feel the terrific jolt I had expected. . . .

The release pulls all the way out in an Irvin. Mustn't lose that. It's worth ten dollars. I slipped the rectangular "ring," over my wrist like a girl's bracelet.

It didn't seem that I could be traveling down at 11 m.p.h. This was swell—just like sinking into something very soft.

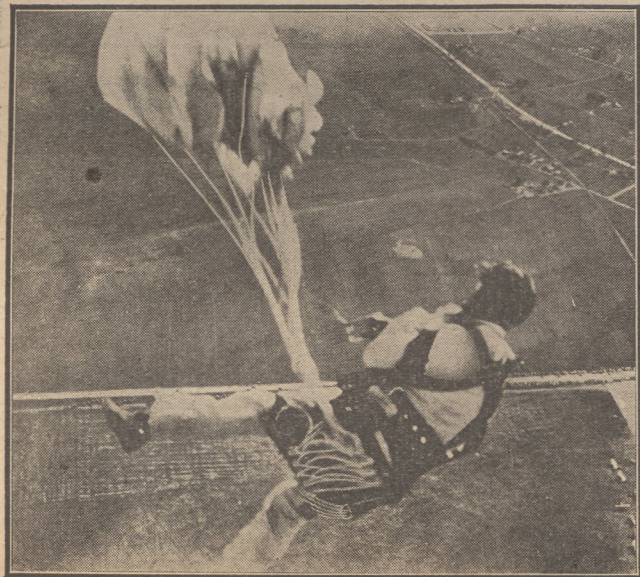
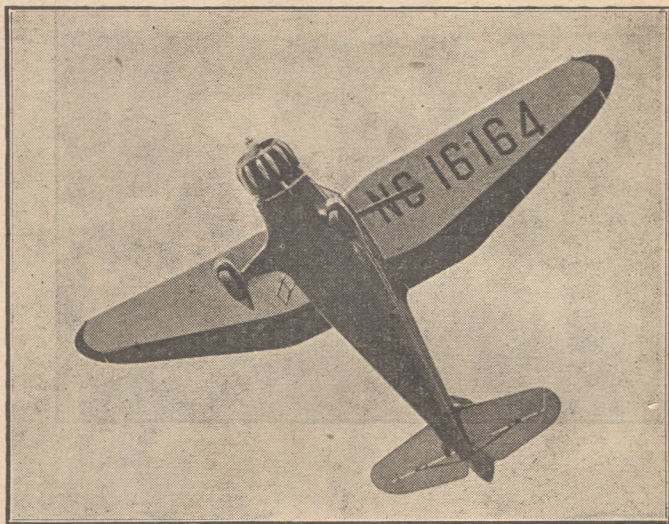
I wonder if everyone who jumps realizes how truly beautiful it is. There is something spine chilling about the stillness with which the earth moves slowly up, as if you were standing still. My eyes focused on what was below.

Was that tiny green plot over there the airport? Must be, for I could make out the cars clustered around it. The altitude I had would give me ample time to drift over there, I calculated. My immediate worry was the harness. It had been pulled up when the chute opened and its blunt edges were beginning to pinch. I reached over and tugged at the leg straps.

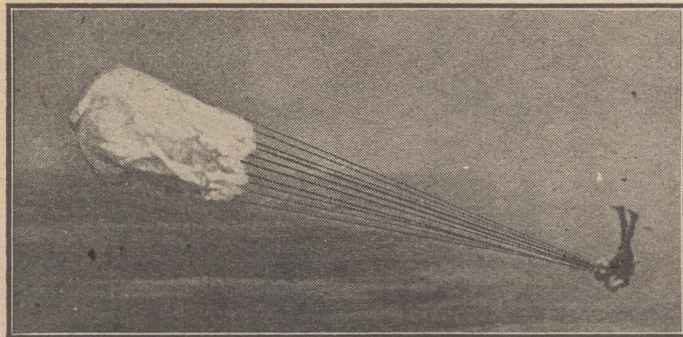
Maybe that was what did it. The ground swayed, almost imperceptibly at first. A cool gust, just a brush of air on my forehead, told me all I wanted to know. I had been warned about this! I was oscillating.

INSTRCTIONS flooded my mind. I pulled the left riser toward me as I began to move away from it. That was supposed to create an opposite moment and counteract the swinging. If it gained speed, it would become dangerous. It seemed to stop. I glanced down to make sure.

"Up went the Stinson, climbing steadily and steeply to the 2,000-ft. level."



"I pulled the ripcord and the Irvin started to unfold from the pack, billowing upward like a gigantic mushroom!"



"Bang! The chute opened with a jerk, stopping my rapid descent. From now on, sailing would be smooth and even—I thought!"

looked up and saw me here.

"Helloooo!" I called down. The effect wasn't what I

Only a few more hundred feet to go. I'd undershoot the airport. That was obvious now; must have been too slow in climbing down the Stinson's steps.

The chute rustled like a person sighing. Again! I was moving back and forth this time, gaining speed rapidly. Had a breeze come up or had I merely transferred the motion when I tried to correct it?

Disturbed air whistled around me. The last time I heard that sound it had been caused by flying wires and the instructor had bawled me out for diving too steeply. I wondered if anyone on the ground could notice my predicament.

If I reached over at the wrong second, it would only increase my momentum. Seconds counted, but my motions felt as heavy and listless as if they were being performed underwater. Missed again! The chute wasn't above me the last time I looked. Swinging in more than an eighty degree arc would be enjoyable if the ground wasn't so uncomfortably close.

A warm glow oozed over me. Hands and risers had finally connected at the right time. Losing speed would be much slower than the process of gaining it had been, but at least I wouldn't slam into the ground at anywhere near 50 m.p.h. The leg straps were cutting grooves into my legs but I couldn't let go now.

A long, mournful howl startled my eardrums. Now what! That couldn't be *my* voice. There weren't any echoes up here. . . . A dog only eighty feet under me was pulling frantically at the rope that held him. Someone slammed a screen door. Such earthly sounds seemed strange as I thought I was still too high to hear them. People were quietly going about their business. It didn't seem right. They were too calm. Bet they'd be surprised if they

expected. I had swung forward and the wind pushed my voice back into my larynx. The result was a thin, choking falsetto which I hoped no one had heard.

How ferocious that dog looked! . . . glad I was up here. Gosh, no, I wasn't either! Not when I saw that directly in my path was the kind of an oak tree that an artist might admire. From my angle I could see gray massive branches at the very top. No doubt a bolt of lightning had struck there in some long-ago storm. Sharp, leafless, ugly looking branches. They could well have spelled journey's end for me in more than one sense of the word. Slipping the chute to steer it away might increase the oscillation that had dwindled to just a slight swing. Nothing to do but wait—maybe I'd clear. I had to! I did, by such a scant margin that I could have reached over and picked off a twig!

A wheatfield ahead. That plowed ground should be soft. Forty feet, thirty-five, twenty—something must be wrong. The ground was coming up much too fast! It was being thrown at me and I couldn't duck! Something crunched as my right leg hit the crest of a furrow. I threw myself backward and tumbled into a

ditch. But why did I have to feel so sick?

Then I began to lose that feeling. It had been as if I had come to an abrupt stop after traveling many floors in an express elevator. Odd feeling; just like your stomach trying to say hello to your throat.

THE man with the microphone over on the airport was giving me some sort of ballyhoo, for I could hear the automobile horns tooting. People would be in a hurry to leave now that the exhibition was over. Odd, not to hear any motors starting.

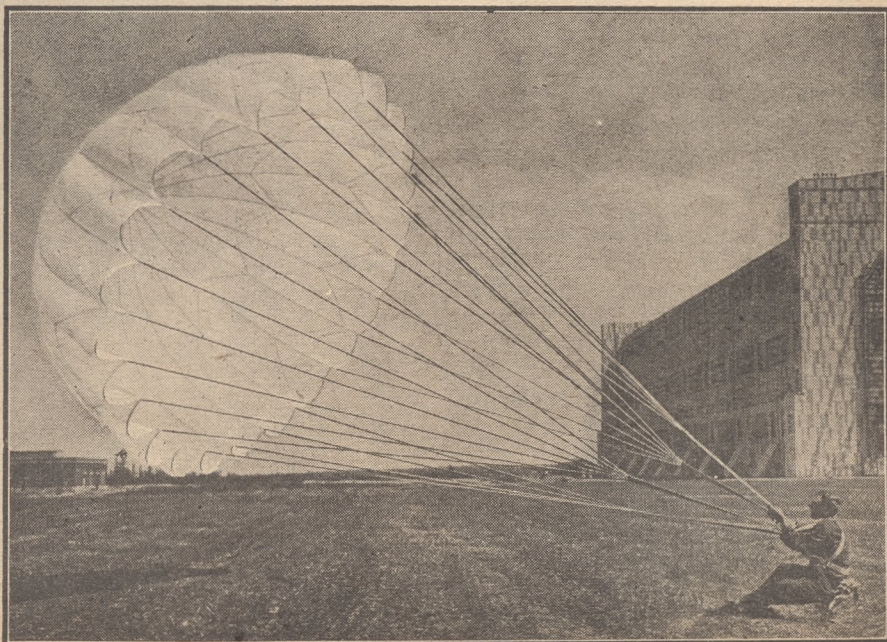
Someone was running toward me I wished he would go away, and then immediately I was glad to see him. As he helped me up, I could see people swarming all over the field. No wonder I hadn't heard any cars drive away.

Unreasonable resentment swept over me. All those people must know that it wasn't in their power to do any good. They didn't want to miss any of the show, though—even perhaps the gruesome details. Anyway, I was still in one piece.

"Well, you know how to pull a ripcord!" It was the jumper whose chute I had used. It had nearly snagged on the plane, he explained with infinite patience. And I thought I had been so careful about waiting!

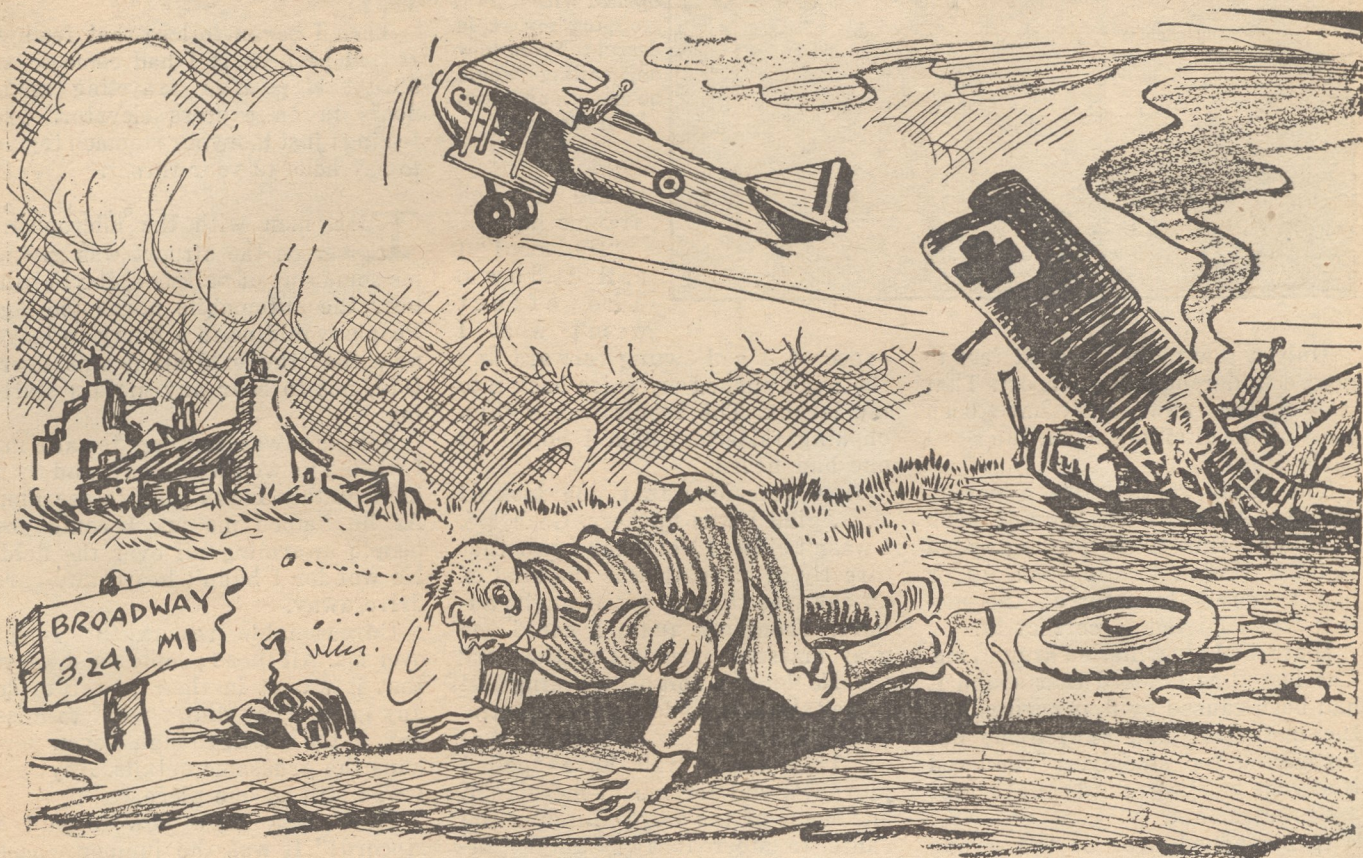
Moments passed as we made our way to the airport. Things happened so slowly down here.

Well, that's about all there was to it. That first jump taught me plenty about aviation—more than actual flying had. And now, even though I got banged up some on the landing, I know that—if you haven't a chute when you need it, you'll never need it again!



Irvin Air Chutes are standard equipment for the U.S. Air Services, Great Britain, and twenty-nine other governments. Here we see a Navy man at Lakehurst "inflating" his silk to test for defects which may have cropped up.

Phineas saw the Pfalz crash on a strip of rugged linoleum where even he would not dare venture.



The Foil Guy

★ ★ ★

PHINEAS PINKHAM had the Pfalz scout dead to rights. The Boonetown miracle man had dropped out of a cloud and had been more than surprised to see a German lined up in his ring sights. Vickers gravel had got into the throat of the Pfalz and the Mercedes coughed and hacked and shook the crate's fuselage from prop boss to rudder post.

"This bum," Phineas chortled, "is my nineteenth *descendu* in the *guerre*. I don't see how I do it." He banged out another burst for good measure and followed the gimpy Pfalz down a long air lane. The sun flashed on wings over his noggin. Phineas squinted at the newcomer and tagged it as a Spad. A few seconds later, as the plane winged over and slid down, Phineas waxed torrid with indignation. The insignia on the French ship needled him and mocked him. It was the trade mark of *Capitaine* Alphonse DeBri who hived up on a drome near Valmy. Alphonse claimed to be the greatest Boche sky-buggy bagger of the sector. He was credited with twenty victories, four of which, according to the U.S. Ninth Pursuit squadron, were more than dubious.

"He will try and steal this one, too—that snail fiend!" Phineas yelped. "I will get down on the real estate and stand right beside that von and stake him like a mining claim. It is the only chance an honest pilot has got. Get away, you bum, as this is my crate!"

Phineas saw the Pfalz crash on a strip of rugged linoleum where even he would not dare to venture. He flew over the spot and eased back on the stick, and as he climbed he got a glimpse of DeBri's Spad circling over the spot marked "X." Major Rufus Garrity's pain-in-the-neck hurried to Bar-Le-Duc to arrange for a confirmation. He made a sloppy landing and when he got the Spad stopped he was not more than three yards from the doorway of Squadron Headquarters.

"I knocked off another!" Phineas called out as he hopped into Operations. "Over Triaucourt. It is number nineteen, which puts me only one

behind that fat-headed Frog. He come in just after I smacked the Heinie—but even his own pals won't rob me of this one! I put that Pfalz down in a woods in front of where that French outfit is. Haw-w-w-w-w! Who has coneyac? We will celebrate."

Major Rufus Garrity sniffed and banged dottle out of his pipe. "Anybody who watched you knock that crate down have a camera? Have you got your slugs marked with your initials? If not, you better stop crowing and get a good lawyer, ha-a-ah! This DeBri claims anything that is shot down upstairs if he can prove he was not sitting in a bistro at the time it happened!" The Old Man glared at Phineas. "The next time you try to bring a Spad right inside this office, I'll ground you down for thirty days!"

"If I am robbed of this Heinie," Phineas retorted, "I will fix that DeBri's wagon! He can only cheat a Pinkham so far and then it is a fight to the finish. But I will get credit for this one as when DeBri came in, the Pfalz was doing stunts like a duck filled with buckshot. Haw-w-w-w-w-w-w! Boys, you should have seen that Boche buccaneer."

By Joe Archibald

Author of "Horse of Another Cocarde,"
"Dawn Patrol," etc.

Illustrated by the Author

PHINEAS PULLS A D'ARTAGNAN FOR THE NINTH

TWENTY-FOUR hours later, the news came into the Ninth Pursuit Squadron. *Capitaine* Alphonse DeBri, that intrepid Ace, that able successor to Nungesser and Guynemer, had shot down his twenty-first Boche over Souilly. A Frog infantry unit had confirmed the victory. Phineas went into tantrums and he demanded that he be allowed to go over to the Frog drome and personally beat DeBri's brains out.

As much as the personnel of the Ninth Pursuit Squadron liked to rib the great Pinkham, they sympathized with him to a man. It was their aim to pile up the largest number of victories of any outfit in the sector. Each buzzard looked forward to the day when he could brag about the Ninth Pursuit Squadron to his offspring. But *Le Troisième Groupes, Avions de chasse*, French Army, was eight confirmations ahead of them.

"It is robbery!" Phineas iterated for the fiftieth time. "I will get that Frenchy!"

"You better," Bump Gillis sniffed. "When he knocks off von Lieberstraum you will have to stick to the second violin for keeps. You better keep away from this DeBri as he is the champion swordsman of Europe or didn't you hear?"

Major Rufus Garrity paced the floor of his sanctum, his blood boiling until the sound of it could be heard outside the door. For once in his life he agreed with Phineas. At that moment he was twice as mad at the sons of Lafayette as he was at the tools of the Hohenzollerns. He decided to go to Valmy and have it out with a certain French Squadron Commander. He took Phineas and Captain Howell, leader of "A" Flight, with him.

The Frenchmen greeted the emissaries from the Yank drome with all the politeness of their race. But Major Rufus Garrity was not fooled by the reception, for he knew that the cordiality was only skin deep. He refused a snort of grape extract and stabbed a big digit close to the nose of the French Spad boss.

"We was robbed and you know it, Major!" Garrity howled. "Lieutenant Pinkham shot that Pfalz down and I will see he gets credit for it *compree*? U.S. troops in an ammo train saw

Capitaine Alphonse DeBri was the Grim Rapier of the Western Front. But when he plucked that Prussian smack from under Phineas' probiscus he found himself on the wrong side of the fence. Yes, Le Capitaine had made more than one "touche" with his Vickers. But when the Boonetown Bam and Babette knocked noggins to brew a bowl of skullduggery, DeBri had to—
duel or die!

him do it! We won't stand for no more of this funny business, see?"

"Some American soldiers zey see ze air battle, *oui*?" the French C.O. smiled and tweaked the ends of his lip fringe. "An' what eez such proof against an entire French division?"

"They are a whole division of liars," Garrity yelled!

"Yeah!" Phineas snorted. "They are worst! Where is DeBri, huh? I will tell him to his puss! That French heel!"

"So? You weel fin' *Capitaine* DeBri in ze upstairs room, Lieutenant. He eez practice weez ze foils. Ha!"

Phineas' face fell a trifle. "Yeah? He would knife a guy as that is the way he fights. Tell him I will fight him with my dukes as man to man!"

"Bah!"

"Don't you ba-a-a me, you rabbit-faced crumb!" the C.O. of the Ninth roared. "I'll—!"

"To ze Lieutenant I say eet, *m'sieu*! Peeg! *Chien*! I also call heem—!"

The agitated French C.O. had a glass of wine in his hands. The giggle

water splashed the front of Major Garrity's tunic and even if it had not been deliberate it looked that way.

Kerwhop!

Major Garrity's fist merged with the Frenchman's nose. Phineas saw a French pilot make a threatening gesture and he waded into him and pushed him right through a window. Frenchies yelled for help. "*Allons enfants! De la Patrie—!*"

Major Rufus Garrity, Captain Howell, and Phineas Pinkham waged a battle royal with a score of French Spad pilots. The C.O.

of the outfit crawled into a fireplace and huddled there in ashes up to his belt-line. The three Yanks from Bar-Le-Duc held their own until French ackemmas moved toward headquarters in a solid front. Phineas saw them coming and he tossed something against a wall. It broke up with a loud chucking sound and then a terrible odor permeated the place.

"Gas! *Allez vite! Sacre bleu! Mon Dieu!*" a French pilot yelled. "Ah-h-h-h-h—ugh! Aw-w-w-w-wk!"

"Out the winder!" Phineas yelled at the C.O. and Captain Howell. "Follow me! Boys, what a scrap! We will all be doughs in the A.M. But it was worth—!"

The three Yanks reached the squadron car. Sticks and stones and everything that was not nailed down was thrown at the U.S. boiler as it sped across the field. Something spit through the fabric top and took a piece out of Phineas' right ear. The Boonetown flyer looked up at the sharp point of a duelling sword and he knew then that France and all



DeBri's pants went to half-mast and his undercarriage was stymied! Then Phineas yipped lustily and took off part of the Frog's right ear!

Europe was not big enough to hold both Capitaine DeBri and himself.

"That dirty bum!" Phineas yelled. "Throwin' knives at me. Oh-h-h-h I'll—Howell, go faster can't you? Them rocks are still hittin'—"

"I'm goin' forty now, you crackpot!" Howell threw back. "Huh, they call us the Allies!"

Five miles beyond Valmy, Major Rufus Garrity cooled off. He thought of the consequences that were sure to follow the brawl and he blamed Phineas.

"Y-you got me into this, you imitation of a human being!" he howled. "I'll fix you!"

"Who threw the first punch, huh?" the Boonetown flyer cracked. "Just tell me! I'll leave it to Howell."

"I—I didn't see the C.O. hit nobody," the leader of "A" Flight said guardedly. "You got them frogs mad an'—"

"Fair weather friends, huh!" Phineas yelled. "You are goin' to let me hold the bag! I will not even ride in the same car. Let me out!"

"Yeah—stop the car, Captain. It's still a long walk to Barley Duck," the C.O. said. "We'll see if he'll call our bluff, this loud mouth!"

Phineas did. He got out and sat down alongside the road and watched the squadron car lurch out of sight. "You can't trust nobody," Phineas growled as he got up and started along the French highway on shank's mare.

As the crow flies, it is close to thirty miles from Valmy to Bar-Le-Duc. As Phineas walked, it seemed to him to be over two hundred miles. He had plodded ten of them when a truck picked him up. He arrived in Bar-Le-Duc at midnight, sore of foot and dry of throat. He turned into the first *estaminet* that met his tired glimmers.

PHINEAS lubricated his throat and then went out into the night once more. A familiar voice called his name as he crossed the cobblestones. It was a dulcet tone, strictly feminine. The Pinkham ticker increased its tempo and he whirled to look into the deep dark eyes of Babette.

"Why—er—it is voose," Phineas said. "Out so late *ce swar*? Oh, you had a date with a garcong, huh? Awright, tell me it is all over between us as what I have been through of late should not happen to a dog. All my pals crossed me so why not voose?"

"Ah Pheenyas, *mon brave soldat*," Babette cooed. "*Eet ees* not so, Nev-

air! You hurt *votre petite* Babette, *oui*. You tell Babette what ees wrong. *Eet ees* I cannot sleep as the Boche ees expect' to drop ze eggs like you say, *non*?"

"Let us *allez* back into the barroom an' have ze coneyac, *mon petit*," Phineas grinned. "Boys, have I got ze troubles, wee wee! Do you know a *Capitaine* Alphonse DeBri? He ees in *mon* hair an' I mus' buy ze fin' comb an' get heem out."

Babette had heard of DeBri. She told Phineas that it was a very sad story all around. It seems that DeBri, just as the *guerre* had started, had been given the stand-off by a very comely French mademoiselle in *Paree*. *Capitaine* DeBri had been a tough loser.

"He ees so much in love with Mademoiselle Lily Donselle who ees on ze stage," Babette told Phineas. "When she say she weel not marry heem he

from ze grass!" She threw everything that had been on the table at the doorway through which Phineas made his exit. She tried to throw the table but it was nailed to the floor.

Phineas started toward the Ninth Pursuit Squadron in high dudgeon. His undercarriage became wobbly and he sat down under a tree to think things out.

"Yeah," the Boonetown jokesmith said. "A bum who wants to go West can't lose by takin' chances. But I got some interest in the future, such as it is. H-Huh!" Phineas snapped his fingers. Over his bucolic countenance there came an expression that boded trouble for his fellow men. The Pinkham brain assembly was more than warmed up. It was at the limit of its r.p.m.'s.

"It is worth a try," Phineas told himself. "They will learn to try and outwit me! It will help the Allies and save the reputation of the Ninth at the same time. Not thinking of how it will change complexions for yours truly. Haw-w-w-w-w!"

The Old Man kept the skies well represented with Ninth Pursuit Spads all the next day. Garrity was gambling that his buzzards might do something spectacular and thereby smooth things over with the brass hats from Chaumont. Phineas did have a brush with the great von Lieberstraum, but he did not come within a city-of-Paree-block of knocking off the high born Kraut. In fact, Phineas just made friendly territory in a Spad that appeared to have been inhabited for fully six months by termites with tape worms. He rode into the drome at dusk in the side-

car of a motor-cycle and was told that the expected brass hats—a brigadier and two colonels—had arrived.

"They are still talkin' to the C.O.," Bump Gillis said solemnly. "I hope them wheelbarrows in Blois ain't iron ones."

"Y-yeah. We will git our pants burned awright," Phineas agreed. "But—but—er—say, Bump—have you got them old copies of *La Vie Parisienne* yet? You had a stack of them."

"I have got most of them as I am savin' them to read until I learn French, better." Bump said. "There is some hot stuff in them I cannot understand yet. You can look them over but don't you dare steal none!"

"That is how you got them,"
(Continued on page 76)



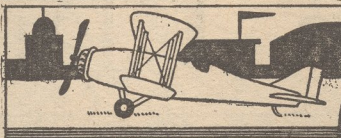
say he weel join ze escadrille an' fight an' fight unteel he ees shot down. *Eet ees* why he ees such a great fightair, *mon ami*. He does not care eef he lives or don't *oui*! So zat is why he have shoot down more German planes as voose, Pheenyas. Ah, he ees such a brave *homme* an' so han'some, too. Eef a man like heem ask Babette to marry heem—oo-la-la!"

"Oh yeah? I knew you was fickle. You are just like all the other fair weather pals!" Phineas tossed at Babette. "Awright, I will go it alone as a Pinkham don't need nò help. You can even pay for ze own dreenk. Adoo—forever!"

"Crackpots!" Babette screeched. "I am only makin' ze joke! Ze air you geeve me, *oui*? Peeg! *Chien*! Snake

HAPPY LANDINGS

BY ARCH WHITEHOUSE



The Aviation Bottle-Neck

IF WE are to have an Air Force worthy of the name we must have ultra-smooth progress of all production and training. If we are to prepare a system of aerial defense, everything must move with greased efficiency. And if we are to defend this nation with the best we can build, we must have no bottle-necks to hold up production.

A short time ago there were 300 Curtiss P-40 fighters standing useless at the Buffalo plant because there were no available Allison engines to put into them. One of the greatest machine gun manufacturing companies in the United States has been making bakelite products instead of machine guns. The same factory was put completely out of action two years ago by a flood which reached well above the second story work benches. Since that time, nothing has been done about moving the factory to higher ground, and it might so happen that another flood this Fall will do the same thing all over again.

Factories that manufacture aircraft, aviation, and meteorological instruments see the possibility of increased demands, but none of them care—or seem to care—about building greater plants to make bottle-necks impossible.

The case of the 300 planes in Buffalo, while at present is not important, is at least illustrative of the situation which may possibly become acute. Three hundred of the finest pursuit craft made in this country were standing idle because there were no Allison engines to put into them. By now, Curtiss may have received motors and the ships may have been flown away—but the fact remains that there is a bottle-neck and unless it is removed all the design effort in the country will not be able to provide our airmen with planes with which to defend our shores.

It may be machine guns or instruments next. Who knows but that it might be trained instructors or suit-

able aviation fuel. It may be all very well to laugh at that, but a few months ago we would have laughed at the idea of three hundred pursuit planes standing useless on a factory floor because they had no engines.

WHY was that particular bottle-neck created just at that time? We had been told time and time again that the Allison was now perfect and that the factory could turn out ten engines a day. In five weeks, if that was true, they should have had those 300 engines and they should have been installed in the P-40's.

Why is it that the Packard Motor Car Company has contracted to build 9,000 British Rolls-Royce engines? Does this mean that American designers have taken this move

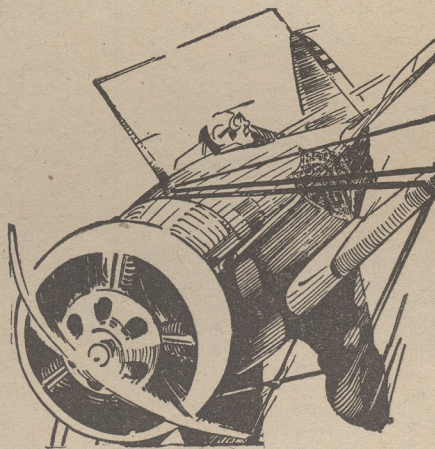
a foreign motor and build it in wholesale lots. Of the 9,000 Rolls-Royces to be constructed by the Packard firm, one-third are for the United States and the rest for England.

The situation is all the more puzzling when we learn that Great Britain has all the planes she can use now and discovers that she could use more trained pilots, gunners, and observers. The British have a pilot bottle-neck and we have an engine bottle-neck. The British, on the other hand, who were supposed to be woefully weak in aircraft, now find their hangars and shops filled with new and unused equipment—but there are not enough pilots to fly them. Their shadow factory scheme is working splendidly and they are getting Lockheed Hudsons, N. A. trainers, and the promise of fighters and bombers from the United States.

It all adds up to something serious. We had better do something about this engine bottle-neck and make certain that when we get all the planes and engines we want we shall have enough pilots, gunners, and mechanics to man them. We had better speed up the CAA pilot training plan and we had better seek something to put into the noses of our pursuits—an almost-obsolete Rolls-Royce is not good enough.

That British engine is good, yes, but it is being replaced on the other side with one that is much better, and the 6,000 engines that will be built for them over here will either be used in advanced trainers or—what might be worse—sold to the United States, whose engine bottle-neck may still be in force twelve months from now!

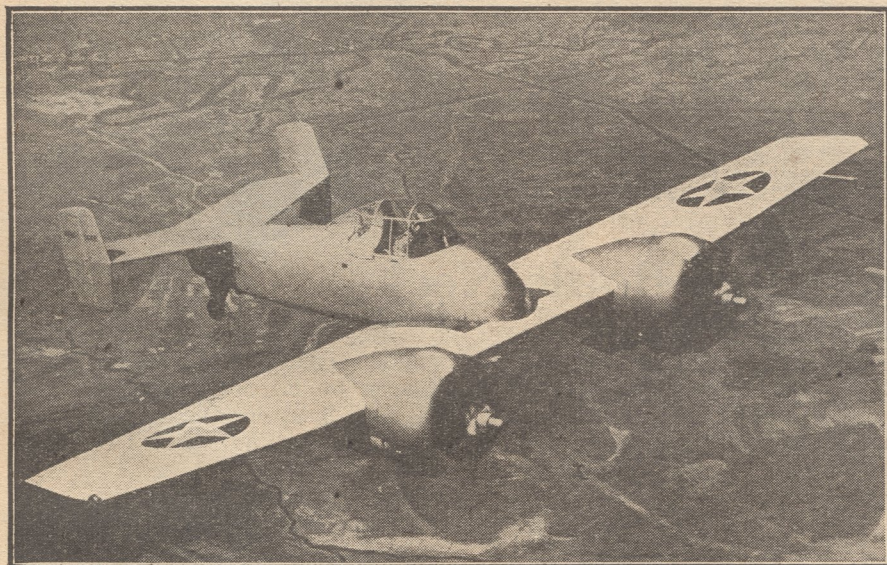
So let's do something about these bottle-necks—and darn soon. For if the same situation continues to exist, we may be completely out in the cold when our needs are greatest. And don't think that it *can't* happen here, for that Curtiss case was just an example!



to assure a number of in-line engines to put into American pursuit planes—just in case?

America builds the finest radial engines in the world, but, as others have pointed out before, we haven't built a good in-line engine since back in 1928 and we've done nothing much about research along that line. Now that we have discovered that we must have a *good* high-power in-line engine to keep up with modern pursuit or fighter plane design, we suddenly find it necessary to import

Modern Planes Album



GRUMMAN SKYROCKET

GRUMMAN SKYROCKET
THE MOST unusual military plane of the year is the new Grumman Skyrocket, a single-seater interceptor fighter whose Navy trade designation is XF5F-1. It is said to do 450 m.p.h., climb at the rate of more than 6,000 feet per minute, and

carry four machine guns and two air cannon. These figures are not official but are based on statements made by Government officials.

The plane in its original form was being put together for certain tests at the Grumman company some years ago, which gives you an idea just

how long it takes to lift an airplane from the original blueprint stage to the first actual test-hop. The machine is an all metal, mid-wing monoplane. It is powered with two 1,200-h.p. Wright double-row radials of the GR-2600-A5D designation, but in a proposed Army pursuit model it will be powered with two 1,000-plus Allison engines.

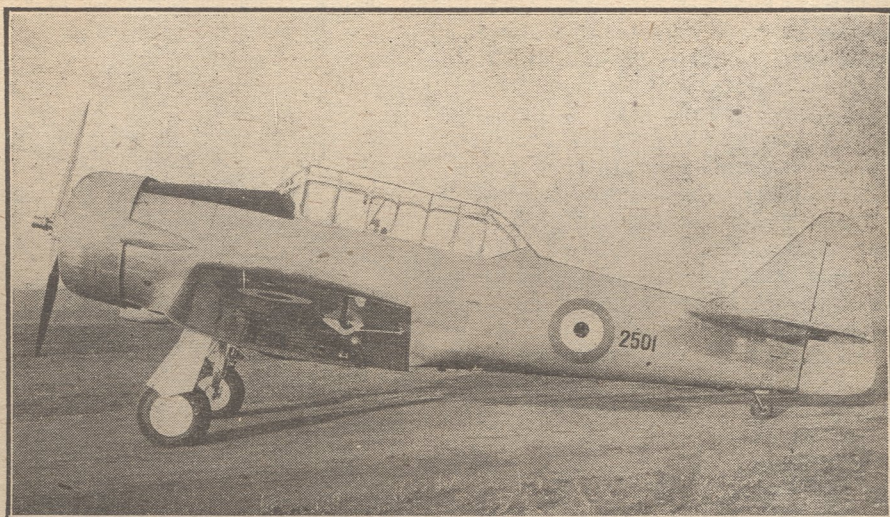
According to some sources, the Skyrocket has been released for export—presumably to Great Britain—and what hasn't? However, there seems to be no set tankage or gun arrangements and so far no guns have been fixed and very few instruments have been installed. Why, then, we ask, is so much ridiculous secrecy wrapped about the plane? It has also been said that the Skyrocket may take eight fixed machine guns in the wings or six machine guns and two fixed air cannon, all set outside the arcs of the propellers.

The Skyrocket no doubt is a very fast plane, but it will be very expensive to build. As a Navy fighter it will have to be designed for the demands of deck-carrier work, which means it will have to land slower than 77 m.p.h.

NOORDUYN HARVARD TRAINER
IN 1935, a young American engineer, who had had much experience with the U.S. Fokker company went to Canada and organized the Noorduyn Aviation Company at Longue Pointe, Quebec. This young man, R.B.C. Noorduyn, had designed the original Noorduyn Norseman, a single-engined monoplane transport using a Pratt & Whitney Wasp. The plane was highly successful and many were furnished to the Royal Canadian Air Force as flying classrooms.

In 1938, Noorduyn acquired the manufacturing rights to the North American BT-9 trainer and the company had to be reorganized to take over more work. Today, it is an accepted Canadian concern working on war orders for Great Britain and Canada. One of their most important products today is the Noorduyn Harvard trainer, which of course is the British version of the North American NA-66.

The Harvard, as produced by the Canadian Noorduyn company, is a very advanced model in the trainer category. As a matter of fact, it could be used for high speed Army-Cooperation work or distance reconnaissance. It is an all-metal, low-wing



NOORDUYN HARVARD TRAINER

monoplane, carrying wing flaps and a very complete two-place cockpit. Unlike the prototype, the Harvard has a fully-retractable landing gear. The BT-9 has a fixed undercarriage. There is a distinct change, too, in the rudder design and the radio mast set well forward has been dispensed with. The loop aerial is set low under the forward portion of the fuselage.

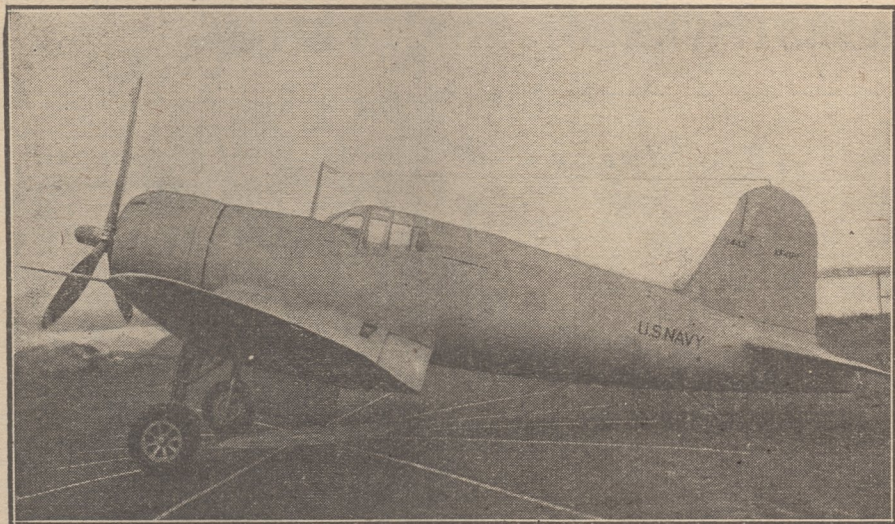
As a trainer, the Harvard carries

a 550 Pratt & Whitney engine but it is understood that a higher-powered plant may be installed. No details of armament have been given out.

While no figures on the performance of the Harvard craft are available, the top speed and dimensional figures are comparable to the U.S. Model BC-1A. The span is 47 ft., length 27 ft. Top speed at 5,000 ft. is 209 m.p.h.

TWO NEW FIGHTERS—AND TWO NEW TRAINERS

In this modern planes parade we review for you the strikingly-different Grumman Skyrocket and Vought-Sikorsky XF4U-1 fighters and the Noorduyn low-wing and Waco biplane trainers.



VOUGHT-SIKORSKY XF4U-1

VOUGHT-SIKORSKY XF4U-1
WITH vast additions being made to the Naval forces and promises of even more aircraft carriers being built and put into commission, the U.S. Naval Air Service is planning ahead for equipment that will be most modern when the new carriers are completed.

With many new lessons learned from the war activity abroad, it has been necessary to make many important changes in accepted designs, and

we must be prepared to see startling features in all new Navy air equipment. We get the first suggestion of this change in the new Vought-Sikorsky shipboard fighter, designated XF4U-1, which is now undergoing tests at Stratford, Conn., where the Vought-Sikorsky factory is located. Nothing quite like this has been seen in the American list for years, but one gets hints of certain overseas types in the cranked wing and fuselage design.

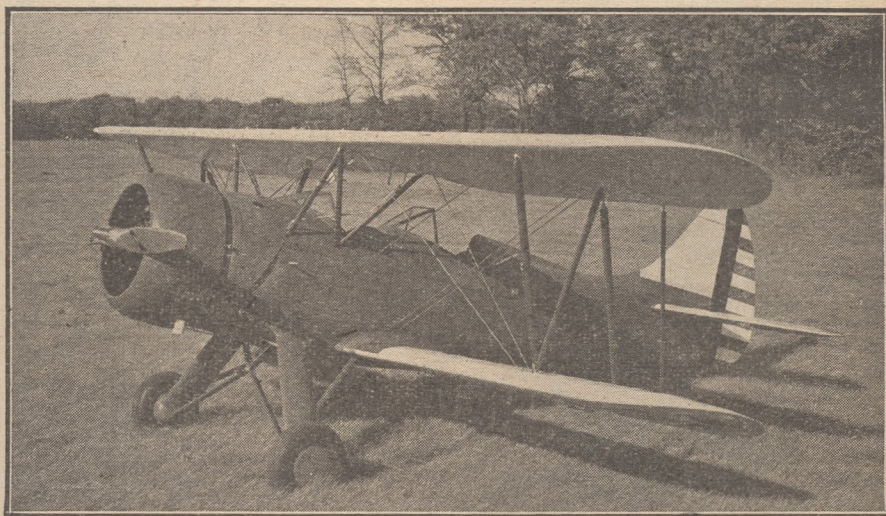
This plane is a one-place, single-engined deck fighter incorporating many new and interesting features. The wing, of course, will attract the most attention, and it should be explained that the down-crank feature is used mainly to keep the undercarriage legs short and yet keep the body high enough off the ground to offer clearance to the prop blades when it is landing and taking off.

The landing gear folds back into the wing. The fuselage is semi-monocoque and uses spot welding. The power plant is the 18-cylinder Pratt & Whitney R-2800 two-row radial, rated at 1,850-h.p. on take-off and capable of delivering 1,600-h.p. at about 20,000 feet. No details of performance have been given out, but it must be remembered that this plane is not developed for high speed. Being a Navy deck fighter, it must carry certain naval equipment, flotation gear, and have a slow landing speed to get down on flight decks. The details of armament have also been withheld, but it appears to carry four mixed machine guns—two inside the fuselage and one in each wing outside the prop arc. The large orifices in the wing are openings to the oil coolers and vents for the special engine cooling system behind the full cowl.

WACO YPT-14 TRAINER

AN AIR SERVICE is only as good as its pilots and a pilot is only as good as his training has made him. For this reason, then, the world of military aviation is turning more attention to the selection and design of the trainer. It is not enough that we select an easy-to-fly light-powered machine. We must provide a ship that offers a very wide selection of qualities. It must be simple to fly, and it must at the same time be a worthy mount for the man who is to eventually graduate to the 400 m.p.h. service craft.

We have seen the swing from stable biplane to low-wing monoplanes on the assumption that this type better prepares the young flyer for the strenuous days aboard high-speed fighter monoplanes. But the day of the biplane trainer is not over, for the two-winger still has a place in the scheme of things. The biplane, for one thing, offers a wider program of acrobatics and precision flying. As an illustration, the Gloster Gauntlets and Gladiators can still fly rings around the monoplane Messerschmitts, Heinkels, Spitfires, and



WACO YPT-14 TRAINER

Hurricane single-place fighters.

The Waco Army YPT-14 has been designed to accommodate a variety of power plants, including the 220 h.p. Continental and Lycoming and the Jacobs 225 h.p. radial. A 285 h.p. Jacobs has also been fitted. These motors naturally offer a wide range of performances, too, so that a student may start with a low-powered

engine and gradually graduate up to close to the 300 h.p. mark and still get the same sense of control reaction.

The fuselage offers a two-place tandem cockpit, carrying Army Air Corps adjustable seats built to accommodate seat-type parachutes. Complete dual controls and two sets of instruments are installed.

TNT On Wings

AMERICA'S LATEST WEAPON FOR DEFENSE

Lt. H. Latané Lewis II

Author of "Ceiling-Zero Takes It On The Chin," "Underground Eagles' Nest," etc.

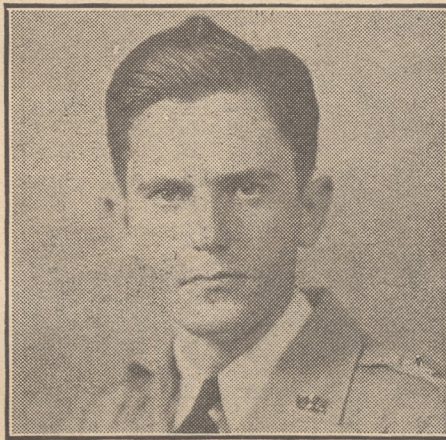
OFF the Virginia capes, a long file of the Navy's sleek floating greyhounds knife their way Northward through the sea. They are destroyers of the Atlantic Squadron speeding to answer an emergency call from the Naval base at Portsmouth, N. H.

The officer in command looks grimly at a terse message that came through a few hours earlier:

"Large flotilla of unidentified submarines attacking all shipping in these waters. Request immediate assistance."

Similar calls for help have been sent by U.S. Army First Corps Area Headquarters at Boston to Mitchel and Langley Fields. At these gigantic GHQ Air Force bases, all available planes have been ordered out. Like broods of hunting ospreys, they spring into the air and point their silver noses to the North.

As the Navy vessels reach a posi-



Meet Lieutenant Lewis, author of this and many other gripping articles featured in FLYING ACES.

tion far from the travelled sea lanes, a rusty freighter is sighted, her bow rising and falling in the rough water. She is flying the flag of a neutral European country and shows the marks of years of sailing on many far-flung oceans. She is a genuine tramp and there is nothing about her to arouse the suspicion of the Naval officers who have their binoculars trained on her.

As the destroyers fade out of sight in the distance, the tramp's captain, wearing the gold-braided uniform of a belligerent foreign navy, rubs his hands together and exclaims, "Good! They won't be on hand to spoil our little surprise party tonight."

He turns to his officers. "Go below and check up on the cargo that our American friends think is so harmless," he orders.

Carefully concealed in the specially-constructed

holds below deck, a dozen bombing planes are stowed. Mechanics are swarming over the machines, readying them for the flight to come. Forward, there is a veritable arsenal.

AS DARKNESS approaches, the freighter heaves to in a lonely stretch of ocean. Pilots and deck officers gather in the captain's quarters for instructions.

"This attack is going to be—how do the Americans say it?—a 'push-over,'" he tells them. "Who ever heard of an air force going to war in tramp freighters? That's one trick that hasn't been tried before."

"Well, we have fifteen vessels," he continues, "all of them rebuilt merchantmen as we are, carrying about 170 airplanes. As each of us has travelled alone and on a different course, we have not attracted attention. We will rendezvous here and launch our planes to attack these Army and Navy bases—"

He points to a pencilled circle enclosing the area around Norfolk, Va., on a large table map.

"This is the stronghold of the States' Atlantic defense," he explains. "See here: U.S. Naval Operating Base, home port of the Atlantic Squadron; Fort Monroe, coast artillery center; Langley Field, Air Corps base—all these shall be destroyed!"

One of the officers gasps at the audacious plan, which is being explained to them for the first time. "Do you mean, Sir, that we're to jump on that hornet's nest?"

"Exactly," the Captain snaps. "And we won't have much resistance, either. This morning, our submarines made a mass attack on ships along the New England coast. That was simply a feint to draw the armed forces away from this area and leave it comparatively unprotected."

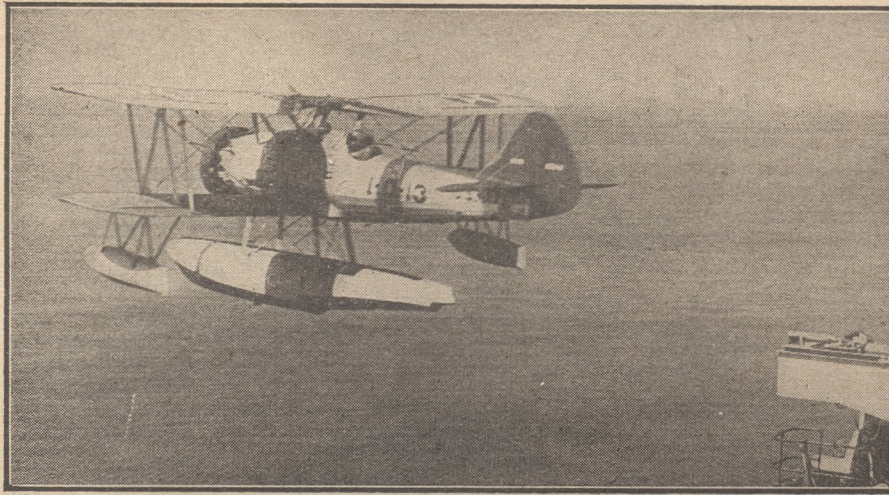
"Now, then, when we put these bases out of action we will have opened the gateway to Washington and we'll drop our little calling cards on the Capitol itself!"

As a sardonic smirk creases his face, the first officer enters. "The other ships are coming alongside, Sir," he reports.

Outside, several dimly-outlined hulks can be seen



Invading air squadrons like to keep their approach a secret—but the secret's out once this "tin ear" is switched on. The delicately-tuned horns catch the scarcely-audible engine sounds and recording dials quickly locate onrushing planes.



Just catapulted from the "U.S.S. Arkansas," this Vought O2U-2 is on the job to spot foreign craft which may be preparing to attack our shores. If anything is located, the observer will immediately radio back to the mother vessel.

wallowing a few hundred yards away. One by one, other vessels appear and slip noiselessly to a stop.

Accompanied by the creak of winches, the airplanes are hoisted through a large hatch amidships and deposited on the afterdeck of each freighter, where two catapults are ready to shoot them into the air. The craft are seaplanes and upon completing their mission will land on the water alongside the vessels to be picked up by derricks.

Pilots pull on helmets and goggles and sling parachutes over their shoulders as they hurry towards the bombers. There are terse orders from flight commanders. Flyers swing themselves into cockpits. The spank-spank of idling propellers becomes a deep-throated roar as throttles are shoved wide. Catapult carriages shoot down their tracks and the planes are hurled into the air like stones from a slingshot.

The squadrons have just swung into formation and headed due West when a lone U.S. Navy plane of the Neutrality Patrol is sighted. Down the screaming wind several bombers dive toward the star-cocarded craft, streams of steel venom pouring from forward guns. Bullets cut circles of living fire about the American crew. The crew slumps forward and the plane, completely out of control, plunges towards the sea. But before she strikes the water, the radio operator manages to send out a message warning officers ashore that an enemy is about to strike!

AT LANGLEY FIELD, a non-com in the communications section suddenly stiffens as he listens intently through his headphones. The stricken patrol plane's message is coming in!

In a few moments, lights flash on in Operations. Orders are barked. Bells ring and buzzers rattle as the post becomes a beehive of

activity, ready to go into action.

In a closely-guarded part of the reservation, a major takes his station amidst a maze of extraordinary equipment, the like of which has never been seen before on a military base. He checks the radio message "... enemy planes at latitude 37° 15" north, longitude 74° 30" west ... course 270° ... altitude 5,000 ... speed about 200 knots."

"Stand by to launch torpedoes," he orders. "Azimuth ninety degrees."

"Azimuth ninety degrees," a captain echoes after him as torpedo crews leap to their stations.

Then, a few seconds later, the captain blows a shrill blast on his whistle and calls to the commander: "Launching sections are in order, Sir!"

The major raises his arm. "Launch torpedoes!"

The throb of many motors fills the air as mysterious shadowy forms leave the ground and mount into the night sky. Only a few men on the post know what those wraith-like silhouettes passing overhead are, for their development has been shrouded in the utmost secrecy. Literally loads of TNT on wings, these "flying torpedoes" have no human crews aboard but are remotely controlled by radio. They roar out to sea like a swarm of angry hornets and soon disappear

over the water-capped horizon.

In the operations headquarters at Langley, a squad of control engineers are twisting dials on radio equipment. There appears before each expert on a television screen a panorama of what is being "seen" by the radio "eye" mounted on the nose of his torpedo. Although he is sitting in safety, miles from the scene of action, the moonlit sea passes before him just as if he were riding on the torpedo. His deft fingers turn other knobs and switches to control the movements of the flying bomb.

As the chief engineer watches his instruments, there suddenly appears on the screen a long formation of enemy planes, flying like a flock of wild geese. They are about ten miles off the coast, droning steadily landward.

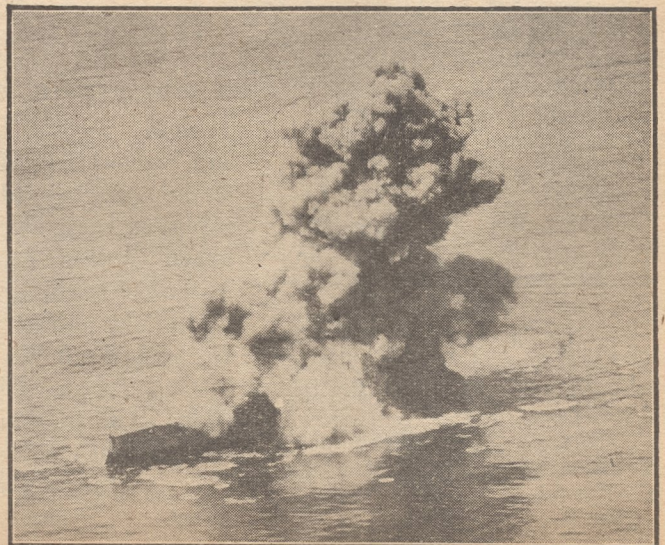
According to the battle plan, he picks out the leading bomber for his target and jockeys his dials until he sees it coming directly into the screen. Larger and larger it looms. With the speed of an approaching meteor, the ship fills the screen—then a kaleidoscope of flame and smoke and flying fragments dance crazily across it. A direct hit!

The engineer instinctively winces. It is hard to believe that that scene is really miles away!

On each control board in Headquarters the same drama is being enacted. As the major and his officers gaze to the East, far away over the horizon they can see a red glow in the sky as if the lid had been raised from a Gargantuan stove. Sharp flashes pierce the heavens as tons of

(Continued on page 80)

In 1923, off the coast of North Carolina, American military aviation strength was tested against the obsolete "U.S.S. Virginia." And here we see what happened when a 1,100-lb. bomb made a direct hit on the battleship. With the new television torpedoes, enemy ships could be attacked by "pilots" many miles away. (U.S. Army Air Corps photo)



Wings Over the Jungle

By Arch Whitehouse

Author of "Chute-Raid Ruse,"
"Balloons for a Breda," etc.

Illustrated by Alden McWilliams

CHAPTER I

WAR DRUMS BEAT



NOW look here, Hardwick," said the Air Vice-Marshall, "If you take my advice, you won't barge off up there just now. I don't like it."

"Thanks, Critchley," answered Tug. "We appreciate your forethought and anxiety, but we've imposed on your good nature long enough."

"Good nature? Oh, you mean the engine business? Glad to have been of help. Chaps here need something to do to occupy their mind. After all, Hardwick, you have done us one or two good turns, you know."

"Actually, we don't want to buzz off either," said Tug. "We like it here, but after all, we're working guys."

"Newspapers, bah!"

"Bah, my eye!" broke in Beansie Bishop, Hardwick's No. 1 boy. "We ain't filed a story in weeks. Amalgamated ain't running a Cook's tour, you know."

"Shut up, Bish," snapped Hardwick.

"Call me Beansie," wailed the pudgy one. "Beside, there's that other business to attend to. Let's get going."

Hardwick's eyes started to narrow into slits, but he relaxed and glanced at the British R.A.F. man.

"Is there a place called Benom anywhere around here, Sir?" he asked suddenly.

Critchley didn't answer at

first. He simply turned away and looked over his concrete and steel domain. "I wish you'd stay here at Singapore a few more days. I have an idea you would get a story—if we live through it."

"Don't stall," demanded Hardwick, directing his steel-blue eyes directly into those of the Englishman. "Where's this Benom place?"

"What do you want to go *there* for?"

"Listen, Critchley," said Hardwick coldly. "A man we call Major Norton was found dead the other day in Washington. Guys like Norton are too valuable to go out like that. He was murdered!"

"I know," answered the Englishman. "The whole British Foreign Service knows. Major Norton was one of our best friends. He was stabbed

from behind with a knife that came from the Straits Settlements. He was writing a message when he was cut down Right?"

"Nice pitching. Know what was in the message?"

"No. Do you?"

"That's why we're heading for this place Benom. Where is it, anyway?"

"It's about two hundred miles Northeast of here. We lost four machines up that way three days ago, and we can't find any of them. That's why I don't like allowing you a clearance."

"What were your ships doing up there?"

"Guarding the mines."

"Mines?" blew in Beansie. "What sort of mines—diamond?"

THE AIR MARSHAL put on a quizzical smile and glanced at his questioner. "What good are diamonds in days like these?"

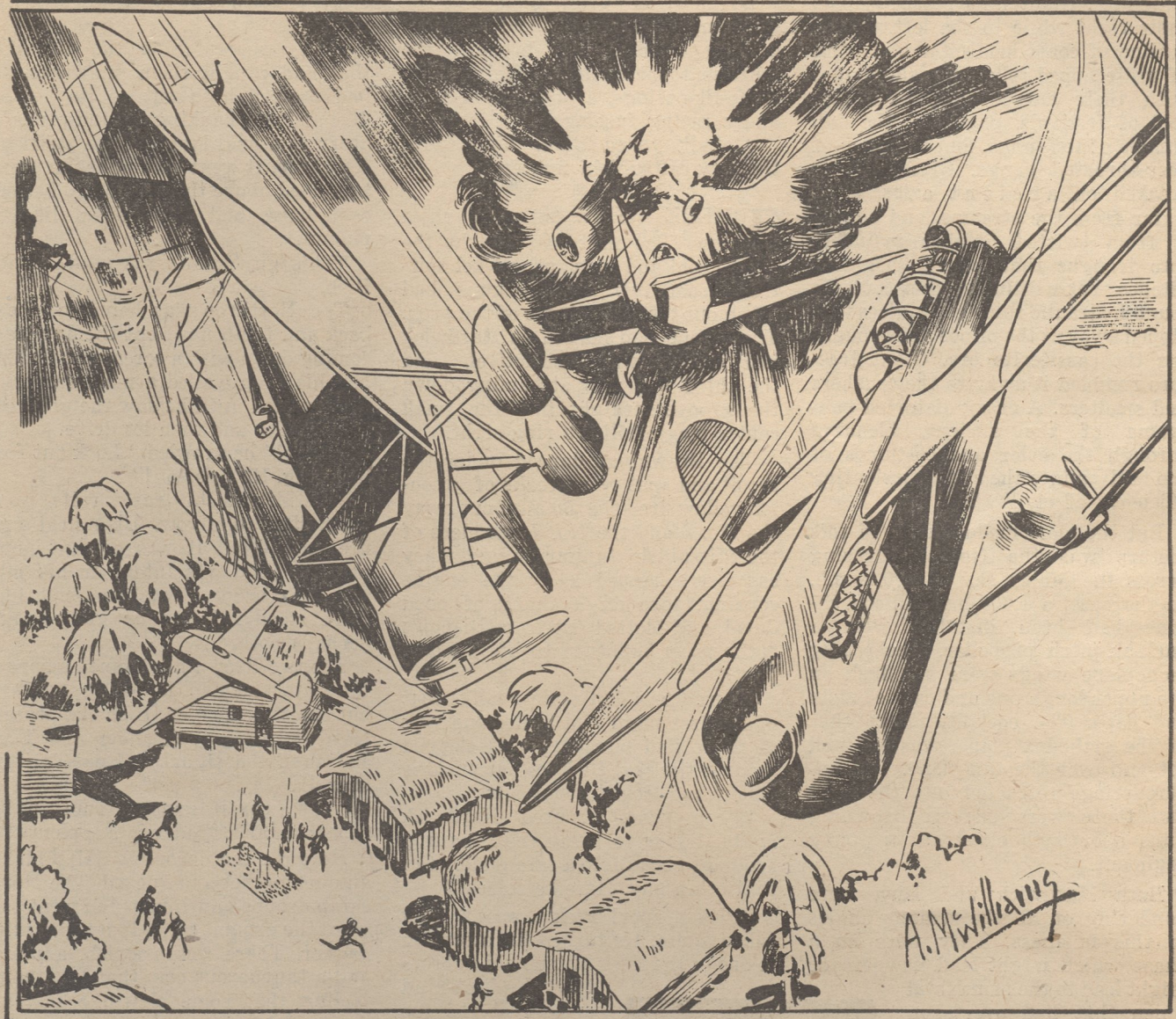
"I get it," broke in Hardwick. "You mean *tin* mines."

"Right. Up the Kinta valley. They're turning out about 75,000 tons a year in that section—and we have to make sure they keep doing it."

"And you lost four planes?"

"We don't say anything about it here, but we're jolly well worried and I don't like you buzzing off up that way," the Air Marshal said again.

Benom was just another way of spelling Hades! Tug Hardwick and Beansie Bishop discovered that as they blue-streaked their sleek Northrop over the green jungle inferno, cupro-spitting Mitsubishis riding them hard. But that wasn't the half of it! For on the ground, the pagan natives were being wrought into a fervor for their fire-walking ritual. And then another, stranger man stepped into this weird, hell-on-earth picture—a man known as
Son-of-the-Ben!



"What was your last report on them?"

"Just routine stuff. They were flying some old Demons. Good enough down here, in a way, but . . . Oh bother! Let's not talk about it."

"All right," agreed Hardwick. "We won't. But we'll have to be getting along. Norton was writing a message to me when he was stabbed. The message was not very clear, but we got the general idea about this Benom place and getting someone out."

"I hadn't heard that part of it," said Critchley. He waited for Hardwick to continue.

"Yes, getting someone out," Hardwick went on, "but we have no idea who he meant. He must be someone of importance, or they would not have nailed Norton at that time."

Critchley twanged at a front tooth with his broad thumbnail: "But I've been all over that country. There're only the chaps who operate the mines and the natives. None

of your blokes up there."

"Look," said Hardwick with determination. "Norton was preparing a message to me, telling me to go up to this place. It must have been important, I tell you."

"There ought to be news in it, too," Bish broke in. "If you lose planes up there, there must be a story."

Bish was first and foremost a newspaperman. There was printing ink in his blood and the clatter of telegraph keys was music in his large red ears. The aviation idea was Hardwick's, because a plane offered speed and a wide scope of activity. Also, since their special Northrop was well armed, it provided a certain degree of mobile defense. Only a short time before, they had managed to prevent a Japanese seaplane-carrying submarine from spreading damage and international havoc all across the China Sea—which accounted for

Hardwick clamped down on his rudder and shoved the stick as that Mitsubishi went up in a brilliant blaze of crimson. And Bish continued drilling away at the ship-board fighter, blasted off its upper left panel!

their being here in Singapore where the appreciative British repaired damage to their plane and gave them an opportunity to start off again in search of another story.

"Well, there's really nothing I can do about keeping you here, Hardwick," Critchley said. "I only hope you have some idea what you're going into."

"Thanks for all the assistance and the accommodation. If we spot anything of interest to you, we'll advise you. We have your call letters."

ROARING AWAY to the Northwest, the Northrop followed the railway which had been hacked out of the Malay jungle. Below were patches of foliage, outlines of rice plains, and wrinkled blotches of

FEATURING TUG HARDWICK, BEANSIE AND—

quagmire. Giant hills reached up to their right while to the left a cruel outline of coast held off the charges of whitecapped rollers. Small villages with their curved roofed temples told of festivals, pageants, the dull rumble of tom-toms, and the clash of deep-throated gongs. Great frames creaked on ancient axles, drew water from the streams, and poured it from twisted bamboo cylinders into troughs that led to irrigation ditches. Yet within eye-shot could be found hydraulic rams and sluices that ripped away at the mines and brought out the cassiterite ore. Giant tractors rumbled it away to the crushers and smelters. A crazy distorted panorama of the ancient, blending through the color and costumes of the natives into the stiff, unrelenting efficiency of civilization.

But the most modern item in this picture was the Northrop racing across the Malay sky at 300 m.p.h. In the nose, a 1,000-h.p. Allison engine had been installed with a variable-pitch propeller. The racing monoplane wings were set flush on the upper longerons and carried slots and flaps. The cockpit, unlike that of the orthodox plane, was set well aft and over the tail-plane. The undercarriage retracted into the body and there were enough Browning guns aboard to clean out a young regiment.

Both Hardwick and Bish were pondering on all the strange angles to this business. They were on a chase which might lead nowhere or might lead to the same fatal finish that had overtaken four R.A.F. men.

"I liked that guy Critchley," said the Bish while he studied the terrain below and compared it with a Royal Air Force map the Air Marshal had given them. "Wonder what happened to his Demons." He swung around in the saddle seat and looked over Hardwick's shoulder.

"It must have happened quick. That's the way—"

The Bish let out a bellow. He swung around and tried to get at his rear guns. There was a mad pandemonium of sound and clash all around them. There were streaks of white flame and a tremendous surge of uncontrolled vibration somewhere up front.

The Northrop whipped about like a stallion and tried to stand on her nose. Something black and sparkling slashed over them, leaving a trickle of thin smoke and a shadow of numb fear.

"What was that?"

"Prop gone—all the blades!"

By now, however, Bish had his guns in action. He yanked back the cocking handles and brought the muzzles to bear on something with knife-like wings, a pugnacious nose, and a racing fuselage.

"Japs!" yelled Bish. "Japs with the new Mitsubishi fighters!"

THERE WERE three of them now. The first had caught the Yanks cold and his cupro-nickel spitting from two Nambu guns had taken out the steel blades of the prop. The second had missed as Hardwick had jerked away instinctively, and the third was now streaming down the groove straight into the small center-ring of Bish's ring-sight.

The Brownings danced under the recoil and spat two streaks of greenish yellow fire. The .50 stuff cut away the No. 3 and the No. 7 cylinders of the Mitsubishi-Jupiter engine. They came out, ripped away the engine cowling, tore off a chunk of hood dural, and blotted out from Bishop's sight what happened to the anxious pilot.

There was a dull explosion like that of a burst main and a glorious yell of flame and wreckage was slapped against the sky. Bish let out another bellow and looked about him.

"Prop gone," barked Hardwick again, trying to bring the Northrop around to head into a safe glide. "Get that other guy. Here he comes!"

"Pick a spot! Pick a spot," Bish called again. He turned his attention to one of the sleek Mitsubishi fighters

that had curled around at the top of a kick-over turn and was coming back at them.

"He's your's. Head on!"

Hardwick nodded and somehow managed to get the nose up a trifle and bunt off a short burst from his four wing guns. The glint of muzzle

flash made the Jap pilot jerk over into a sloppy bank and he showed his wing insignia. Bish put his sights on the outline of the center-section panels and let fly with two short chugging bursts. He caught her cold as she slowed up in the turn, and one of the undercarriage legs gave up the ghost and dangled on the hydraulic brake cables.

"That makes him look silly," grinned the Bish. "Wait until he tries to make a landing."

"Wait until we try to make one," growled Hardwick, letting the nose down again. He had snapped the switches and was taking no chance

on her. "Keep that other Jap off, will you?"

Bish was watching the machine that had caught them unawares. It had zoomed high out of its initial dive and was banking around preparatory to a final lunge at the stricken Northrop. It went up and held a position dead above the Northrop, heeled over hard, and came down like a plummet.

"This guy knows his stuff," said Bish.

The Northrop was being swished back and forth now, but the Jap was coming down with a scream of thrust and his prop wailed a mad war cry. Bish waited until he saw the glint of the muzzles and then let drive.

"Golly!" he growled. "Look out for this mug. He's poison!"

The Mitsubishi was on its way down like an arrow. Bish held his fire on it—but it was evident now that the pilot was intent on his job and his Oriental fatalism kept his hand steady. Death or glory—and perhaps both.

The two Brownings fanned a spray full into the Jap low-wing fighter, but she still came on. Bish slapped at Hardwick's right shoulder and Tug answered the signal and eased over sharply.

"The guy's gonner ram us!" squealed Bish. "Sideslip . . . plenty!"

He gave the oncoming Mitsubishi another packet and ducked. The Northrop dropped a wingtip and went toward the ground below like a gigantic dagger. There was a swish, a roar, and a thunderous clap that left them feeling that some claw-like instrument had taken out their vitals. Something slapped at the curved top of the fuselage and the Northrop staggered and then somehow came out of that insane sideslip.

Bish came up and peered over the edge of the cockpit. He looked first to the right and held up one finger. Then he turned gingerly, looked to the left, and then put up a second finger.

"That's two," he said. "We still got both wings."

Below, a tumbling ball of dural and steel was trickling down, leaving a wide swirling plume of ominous black smoke. It hit in a clump of nipa palm and left a crusty blotch.

"Call the roll," said the Bish weakly. "I'm here. What about you?"

"Only just. Now cross your fingers. We've got to get down somewhere."

BELOW LAY a vast, vari-colored expanse of hopeless terrain. The jungles spread for miles. In the excitement and action, they had lost all count of time and position.

"What are we waiting for?" Bish
(Continued on page 65)



In the Slipstream

Here's a hangarful of info about aviation—flight programs, aero opportunities, timely news bits, and sky-high gossip.

When, Oh When?

This month—with America's aero push really underway—we hoped to tell you that our non-college men are finally getting a reasonable chance in the Government flying program. We meant to tell you in round figures. At this writing, however, Washington only says that a "substantial" number of non-c. men are being put through. Well, maybe we're pessimistic, but frankly that word "substantial" doesn't sound like it means a real "break" for our forgotten lads. It smacks of that same old 7 percent. Meanwhile, the Army's admittedly having trouble getting candidates for its current 7,000-flyer goal. Officers blame this on a lot of things. But they don't seem to be putting the blame where it actually belongs—on that higher-education restriction.

"Refreshers" and Lionel Lauded

The launching of those refresher courses for inactive ticket holders of past years (7,000 private and 5,000 solo flyers) is what gets our cheers this trip. For no airmen are more deserving than the fellows who put their own hard-earned jack on the line in attempts to win aero careers. If you have a lapsed license, look up your district aviation official. Cheers, also, to the Lionel Corporation—that electric model train outfit. Realizing that non-college men have been given the old go-by, this firm has started its own factory-employee pilot training program.

Not Enough

The May 1-to-June 1 period showed a gain of only 127 more planes and 791 more pilots in the private field. We'll certainly have to do a lot better than that! And active glider pilot tickets totalled only 157. Yet just think how important our glider training could be if more fellows would only follow in the "flight-steps" of the lads who just staged that grand soaring contest at Elmira!

Schools Boom

Brighter news from the school side of the story: Of 324 new aero trade grads at Gotham's Manhattan High, 291 found jobs before they got their diplomas . . . AA has opened an apprentice aero engineer's course for grads with mech training . . . AYA plans to organize aviation instruction clubs "in every secondary school in the country." . . . And if the McCarran-Larrabee bill passes in Washington, an Aviation Division will be

established in the U.S. Office of Education. Meantime, the Bureau of Labor Statistics tells us that out of every 12 persons now hired in aeronautics, 11 are new hands.

R-R "Comedy"

That goofy game of "Who'll Make the Rolls-Royce Engines?" is ended! Yes, the screwy barrage of "Yes's," "No's," and "Maybes" laid down by Ford and Packard has actually been lifted, with Packard coming through with the final "Yes." So now 6,000 R-R motors are really slated for Britain and 3,000 for the U.S. But we're not falling for any hoopla to the effect that those engines will be turned out in "Jack Robinson" style. They won't. For it takes a P & W or Wright company to do that—outfits which *know* aero motors and which don't bat "Maybe" balls.

Who's Right?

Now, then, will somebody please prove whether the Allison engine's any good or not? Al Williams says it's "failed to come through." And as proof he cites our placing of that Rolls-Royce motor order. Yet, John Crider declares in the *N.Y. Times* that "Air Corps engineers are convinced that the present Allison engine is probably the best of its type in the world." According to these Army engineers, only the *production* of the Allisons is faulty, not the engine. Well, who's right?

Plane Production Confusion

Next, take airplane production: Here, the country was given the story about "50,000 planes a year," whereupon a flock of towns wrote the War Department about the swell sites available for new aircraft plants. But the W.D. wrote back that present private aero factories were easily able to supply our Army and Navy with 25,000 planes by July 1, 1942. Quite a come-down from that "50,000" business!

Mystery

Out at Pasadena, Calif., the other day, the Institute of Aeronautical Sciences was all set to hear a talk on the use of rocket motors in airplanes. Then suddenly Army authorities had it cancelled. And no explanation was given. Try *that* one on your piccolo!

Americans vs. Hitler

Plenty more Yank flyers are fighting in this Nazi War than you think. Both Canada and England report

that a large number of U.S. pilots have joined up. Among those recently named for the Distinguished Flying Cross, was J. W. Davies, a native of New Jersey. But unfortunately he was killed before the presentation by the King. W. R. Williams, of Kansas, has meanwhile received the Distinguished Flying Medal.

CAA, CAB—and Beechcraft

You know, of course, that on July 1 the CAA (Civil Aero Authority) became the CAB (Civil Aero Board) under the Department of Commerce—and that the former independent Air Safety Board was abolished and its work absorbed by the said new CAB. But did you know about the fireworks between the Safety Board and the CAA just prior to the change? Anyhow, Safety Board members "strived in vain," as they put it, to get the CAA to ground certain Beechcraft biplanes pending a check of their "disastrous flutter." But the CAA only told owners of such jobs to fly slower. Then when another fatal accident occurred, the Board blamed the CAA—whereupon the CAA came right back and said "every aero engineer knows flutter happens only within small ranges of speed" and that grounding was "unnecessary" since the speed order steered pilots clear of those ranges. No, this regulatory business isn't skittles!

Airline Specials

PAA launched its new, far-flung trans-Pacific airway on July 13 when its *American Clipper* took off from 'Frisco for the long sky-drive to New Zealand. . . . Despite the War, two new Atlantic services are planned for early opening—one by Airways Atlantic, Ltd., of Britain, the other by American Export Airlines. . . . Four-engined "Stratoliners" now ply the TWA transcontinental route. These "Stratos"—the first major change in flying equipment since coming of the familiar DC-3's—are striking jobs.

New Aero Wrinkles

Bausch & Lomb has devised an aerial camera lens said to secure such fine detail from great heights that perfect pix may be shot from angles without flying directly over the enemy. . . . The British are reported to be dropping special bombs that don't go off 'til nine hours later. And they say Germany has developed an aero "drill bomb," for fort attacks, which bores 40 ft. into the ground before exploding. . . . A new English patent calls for a television air raid detector system. Via this apparatus, a whole area would be "covered" with ultra-short-waves, and
(Continued on page 65)

On the Light Plane Tarmac

WE ALL MUST FLY

THE GROWTH of light plane flying this Summer has been more than encouraging. We have seen more small jobs in the air this year than ever before. Also, we notice now that the public is getting to the point where they can tell a Taylorcraft from a Douglas airliner. We have seen more small formations of flivver flyers, and we must say that many of these flights are as smart as Air Corps pursuits on parade.

Yes, the public is beginning to buy flying at last—and none too soon, at that. They are wondering just how they can get a plane and then find time to learn to fly it. They are talking flying and using some of the correct words.

The gatherings at the smaller air fields all over the country are no longer made up of thrill seekers and the morbid mob which once hugged the parking lines waiting to see someone crash or a parachute jumper take a chance. Today, they are there for business. They are looking at the planes with a critical eye and they are appraising them for future reference. They are watching others take lessons and checking back with students concerning this instructor or that instructor. They are figuring it all out and in many cases conferring with the other half of the family, for most of our light plane enthusiasts are young married couples.

All this is, of course, good for flivver flying, but it's still not enough. Yes, we very much want the young

married people out on the field, but what's more important, we need the young single fellows. For while it is all well and good for married people to fly, the point usually comes where one of the two decides that they should give it up. Lost, two more pilots!

On the same basis, though, a single chap has nothing and no one to tell him what to do or how to do it. And

We All Must Fly

Sport Job Chatter

Francis Teaches to Learn

when he eventually takes that trek down the aisle, the story will still be different. His partner in life will have accepted him with the understanding that he is a pilot and that he will continue to fly. There are exceptions to both of these rules, of course, but they hold water for the most part.

We must get these young people out to the fields and induce them to take short hops and feel the controls.

And once they get that far, it's a good bet that no lever made will be strong enough to pry them away from the game.

We definitely must have a nation that is air-minded. We like to *believe* we are air-minded, of course, but so far we are not when we think of countries like Germany and Great Britain. Germany was not air-minded originally, but the Nazi government forced the Germans to think in terms of the air by the use of compulsory flying clubs where young men and young women were taught to fly light planes. This combined with the Youth Movement in general created the unbelievable and intense desire to fly, and once that was created the German Air Force was just a matter of building enough war planes.

The same went in Great Britain, only in a more conservative and easy-going manner. The British subsidized flying organizations years ago and those who were members up to ten years ago are now among the leading Squadron Leaders.

SPORT JOB CHATTER

MERCHANTS of Grand Rapids, Mich., have organized a non-profit "Flying League of America" which by the distribution of "flying stamps" with all retail purchases, will provide flying lessons without cost for any man or woman between the ages of—and get this—16 and 65! The arrangements for tuition were made with a local airport operator. Their goal is 10,000 pilots in that area within twelve months.

The Interstate Aircraft and Engineering Corporation, of El Segundo, Cal., has tooled-up its shop for the production of 600 Cadet planes designed for the new Civilian Pilot Training Program. This craft is a high-wing biplane powered with a 50 or 65 h.p.-Continental. It is a two-place job and carries a shock-dampening, steerable tail-wheel. The 50 h.p. machine does 105 and cruises at 95. It can be set down with absolute safety at 34 m.p.h.

Have you heard about the new double-range Aeronca Chief? It is listed as the 1941 Super-Chief and has a 50% greater cruising range than earlier models. It sells for less

Recently purchased by Purdue University, this Lycoming-powered Piper Cruiser will be used for aeronautical research and propeller development. Note stainless steel exhaust.



than \$2,000. From the pictures, it seems to be quite bulbous and does not have the fine lines of the Chief.

Aviation Industries, Inc., of Wichita, Kansas, has applied for an Airworthy Certificate on their new 758-pound experimental trainer called the "Pluver." This high-wing job uses the 75 h.p.-Continental and has a cruising range of 500 miles. Gas tanks are in the wings and the pilot has unusual visibility.

Flying must be getting tough in these days when we read that William Clark, a retired Tacoma, Wash., pharmacist, decided that motoring was becoming a little too much and that after tacking road traffic for twenty-six years, he figured he couldn't go far wrong if he took up flying. Clark is just 81-years of age and his instructor, George Hight, says he seems to get the idea as fast as the 18-year-olds.

Piper Cubs powered with Continental motors are now selling in batches of fifty instead of twelve, and as the result the price has been dropped to \$1,848—which is a cut of more than \$100. There must be something in this supply and demand gag.

Gordon L. Cahill, of Cahill's Flying Service in Bridgeport, N. J. is now putting out his own field paper, called the *Cub-Port News*, and it offers four pages of the newest stuff from the light plane flyer's point of view than all the glossy-sheet stuff put out. Cahill is doing a swell job and we think he ought to be in publicity, but he's really too good an operator to switch.

Joe McClelland and J. S. Smith, students of the University of Southern California, are hitch-hiking all over the country and picking up planes from factories to deliver. It's a new twist on the old drive-away car game of years ago. First off, Smith and McClelland hitched a ride in a transport plane that was being delivered to New York City from Seattle. In the Big City they saw the World's Fair and then hitch-hiked to Nashville where they picked up a new Stinson 3-place job and flew it to Los Angeles.

William B. Stout, president of the Stout Engineering Laboratories, Inc., stated that the present volume production of light planes marks the

This new 4-place Mercury light plane is powered with a 100 h.p.-Monsoon engine. Top speed is 125 and cruising velocity is 104 m.p.h. Slightly more than 5 gallons of fuel are used per hour. Landing gear is retractable.

Bill Watson, who won the Taylorcraft "scholarship-job" in the Lock Haven, Pa., air meet, is congratulated by Sales Manager Carl Elkins.

public's contact with the "second coming" of aviation," a new era by which volume production will bring about lower-priced craft so simple to fly that the average person will be able to own and operate them like automobiles.

The Luscombe Company, of West Trenton, N. J., is now turning out twenty-five all-metal ships a week. This is an all-metal job and comparable with any light plane in the world.

FRANCIS TEACHES TO LEARN

IN THE PAST, we have given you the experiences of our readers who have been caught doing foolish or hair-raising stunts in the skies. But this month Ed Francis, of New Castle, Pa., gives us his unusual story of how he obtained flight training in the face of considerable opposition and adversity. We like this letter because it is clear and straightforward, and we sincerely hope our two-dollar check helps Ed out in getting more time. Anyway, here we go.

Light Plane Editor:

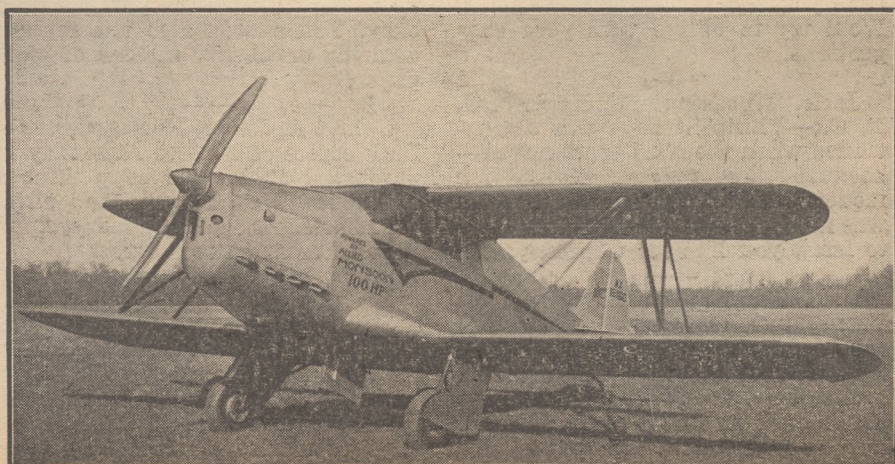
I am writing this in the hopes that it may be printed in your Light Plane Tarmac section. I am writing it to show that while you may not have a lot of money to spend for flying or haven't had the advantages of a college education, you don't have to give up and quit. There is still plenty of room in this aero game for you—if you want to get into it badly enough.

About a month ago I enrolled in the W. H. Ice Ground School in this city. I went to the first meeting, and when the evening wound up I was

teaching the theory of flight. I was given the job of handling the whole course, and so far have completed the theory of flight and construction. Next week we start a special section on aircraft motors. I am taking my pay in flying time, as it was offered to me as a choice between money and tuition. So far, I have logged more than two hours and since our ground school course will run for fourteen weeks, I have every reason to believe I shall make enough to enable me to solo.

We have some college fellows here who are taking instructions in the CAA program and they suggested that I go up to their university and teach the ground course there in the Fall. Their Dean invited me up and we talked it over, and as I see it now, there is a good chance for me since there is no member of the faculty who can teach it. There is also some talk of my getting a scholarship in Pre-Engineering as well.

While I am a long way from the top, I am having a swell time and
(Continued on page 64)



All Questions Answered

This section of FLYING ACES is at your service. So if you have an aero query, fire away and we'll answer it here. All questions will be considered in the order they are received. For a personal reply, send stamped, self-addressed envelope.

Eric Cameron, Three Rivers, Quebec, Can.:—David C. Cooke is our Model Editor. You can send your balsa queries to him when addressing this mag.

Phil Dixon, Burbank, Calif.:—Those compliments you handed us on F.A. have us all blushing. Thanks, fellow.

Anderson Chandler, Wichita, Kan.:—So you still have fond memories of Phil Strange? Well, the majority of readers wanted modern aero fiction (with the exception of the immortal Phineas) hence we dropped Captain Phil last year. But we're sure you'll find Dick Knight and Eric Trent just as much to your liking once you've buzzed along with 'em for a while. They're Don Keyhoe's current sky characters in F.A.

Paul Hartsel, Cleveland, Ohio:—We'll have an aero cross-word puzzle for you one of these days, Paul. In fact it may be published before you read this.

Ronald England, Alberton, Prince Edward Island, Can.:—Sure you can join the Flying Aces Club, Ron. Just follow instructions on our "Join the Flying Aces Club" page. We will send you the April 1940 number (containing the "Snowbird" model) and the May 1940 issue for 20c each in U. S. money.

Bertram Work, Milton, Mass.:—We are trying to please all readers on model plane plans. Future issues of FLYING ACES will have more three-view plans in their pages.

"Ace" Bradley, Hollywood, Fla.:—You can get the March and May 1940 issues from us for 20c each. Glad you like our features so much. We'll try to oblige with your suggestions.

Jack Worthington, Hazelwood, N. C.:—Philip Strange was discontinued when the Nazi War started—because the readers voted for modern plots. Strange, of course, was a World War man. We're happy to know you like the Griffon yarns.

R. H. Frasher, Jr., Elkview, West Va.:—Your drawings and article were interesting, but the tank-plane isn't new. In fact, we had a model article on a tank-carrying bombing plane back in our February, 1939, number of F.A. Suggest you

double-space your typewritten copy when writing to editors. Professional touch, you know.

William H. Moesel, Brooklyn, N. Y.:—We feel for you on that matter of trying to get that job, only to be told you must first get experience. Yeah, how is a fellow to get that first experience if all the employers say that? However, with the new preparedness program, things should break better for you, Bill. We wish you a lot of luck.

Rudolph Malkin, Baltimore, Md.:—Your cartoon was good, but we fear the idea was a little on the ancient side. Better query editors

And Now~ We'll Ask You a Few

- 1—What are the names of the aircraft carriers in the French and German navies?
- 2—What is the name of the aircraft carrier launched by Great Britain since the opening of the Nazi war?
- 3—How many aircraft carriers does the United States have?
- 4—Can you name the world's first aircraft carrier?
- 5—What is the most interesting feature of Japanese aircraft carriers?
- 6—Who is in control of all landings and take-offs aboard aircraft carriers?
- 7—In what direction does an aircraft carrier steam when it takes on planes?
- 8—What types of planes are carried aboard flying deck vessels?
- 9—Why is the aircraft carrier the most vulnerable of all naval craft?
- 10—Who made the first actual landing and take-off by airplane from a battleship?

(Answers on page 68)

first on your ideas—and then make up the cartoons *after* you get their okay. You should also use regular drawing cardboard instead of plain paper.

Robert A. Bader, Hemet, Calif.:—Back copies of FLYING ACES may be purchased at 20c per copy through this office. We have on hand all of the 1938 issues except January, April, September and December.

Bert Joss, Montreal, Quebec, Can.:—I do not have the exact performance figures on the Boulton & Paul "Defiant," but it most certainly is not capable of 504 m.p.h. Probably 350 is nearer the mark. The greatest value of the Defiant is not its speed

but its gun-power. They say it carries seven machine guns. Meanwhile, we question those recent items saying it carries fourteen machine guns in the wings and two cannon synchronized with the prop. As far as I know none of the Canadian Gregor fighters have been used yet on active service. I can't quite understand your objection to the mention of a "mysterious foreign power" in the story *Rip-Cord Ruse*.

D. W. Taylor, Kerrville, Tex.:—Sorry, but our Model Editor is not at present in the market for models such as you mention in your letter.

Robert Ishiguro, Los Angeles, Cal.:—Yes, some of the best gliding has been done near the ocean. The Cape Cod gliding school was set quite close to the sea. There are many types of safety belts. You might get details from some manufacturer.

Don Shea, Pontiac, Mich.:—If you intend to go into aviation, a good grounding in mathematics, geography, and the like, is advisable. When you get into high school, take the sciences and higher mathematics.

Jack Sortor, Detroit, Mich.:—Good pictures of Baron von Richthofen have been published time after time in FLYING ACES. I believe there is also one of him in the \$1.00 volume of *The Red Knight of Germany* by Floyd Gibbons, which can be purchased in almost any good book store. Back numbers you desire are available at 20c per copy. We do not have any April 1938 issues left, however.

Perry Gasaway, Mt. Pulaski, Ill.:—We have published many pictures of the modern military planes you desire, but we're at loss to say where you could get any photographs of those late German machines cheaply. We do not know the exact performance figures of the Bell XP-39 because they have not been given out. Top speed is over 300 m.p.h., though.

Jim Black, Woodside, N. Y.:—Our Model Editor tells me that you should try bamboo tissue if ordinary model tissue does not do the job. Silk, of course, would be ideal if you can manage it.

Paul Baker, York, Pa.:—I suggest that you go to your library and get the 1939 issue of *The Aircraft Year*
(Continued on page 62)



WISECRACK-UPS



Taxi in on this runway and pick up a plane load of laughs! In this department, we present a collection of jokes, cartoons, and humorous verse. For all original jokes which we can use here, FLYING ACES will pay \$1. Contributions cannot be returned. Address all letters to WISECRACK-UPS.

FINALLY COMES OUT

Dejected barnstormer: Anyhow, whenever I get down in the dumps, I get myself another plane.

Farmer: Well, son, I often a' been wonderin' where ye got them thar rickety contraptions.

"Someone must have dropped this," said the old lady as she walked into the lost and found department and handed the attendant a bomb.

PICKING ON THE GALS AGAIN

"What's the difference between a lady learning to fly and a lady learning to play golf?"

"A lady learning to fly usually hits something."

DEBTS HOW HE DID IT!

Pilot: That guy over there told me he's flown his plane five years without paying out a single cent for repairs! Do you believe that?

Mechanic: Believe it? Say, I know it! I made the repairs!

SURE REMEDY

Hark now to the tale of McHoot
Who never would fly with a chute,
When his motor fell out
He was cured of the gout,
—And the rest of his troubles to boot!

Ooof!

"'Lo, wing!" said the upper wing of the Beechcraft gaily addressing the lower wing.

"Hi, wing!" answered the lower wing graciously.

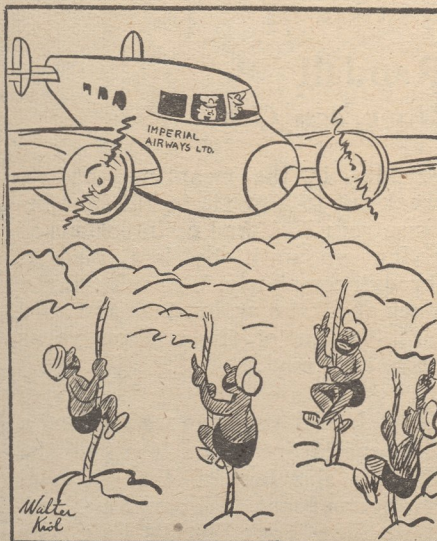
WITH APOLOGIES TO LONGFELLOW

Having drunk more than he oughta,
From the tavern, Hiawatha
Staggered to his Gypsy Motha.

Then beset by storm and sleet
Hia looped at fifty feet.
Now he's covered with a sheet.

GNAT SO GOOD

A young student pilot named Isadore
Up in his new Flying Flea did soar;
But a gnat touched his wing
And unbalanced the thing.
So now Pilot Isadore is no more.



"This MUST be Bombay. Those are the airport porters!"

TUNNEL CATASTROPHE

Pooselpick: You say you had an awful collision in your Flying Flea? How did it happen?

Picklepoos: Well, I was just flyin' through the wind-sock, you see—tendin' to my own business, mind you—when suddenly a sparrow came through from the other end!

NO MORE TARGETS

"So you think that bombing planes will become obsolete in the future?"

"Eventually, yes—because there won't be anybody left to drop bombs on when everybody flies."

SEPARATE MAINTENANCE

Surveying his green audience with a cold eye, the stunt flyer continued his wild yarn. "Anyhow," he said, "I looped the loop once, twice, a third time—and then suddenly I saw something above me . . ."

"Yes, yes," whispered a fascinated dodo. "And what was it?"

"My plane!" cracked the stunter.

SOCIABLE SECURITY

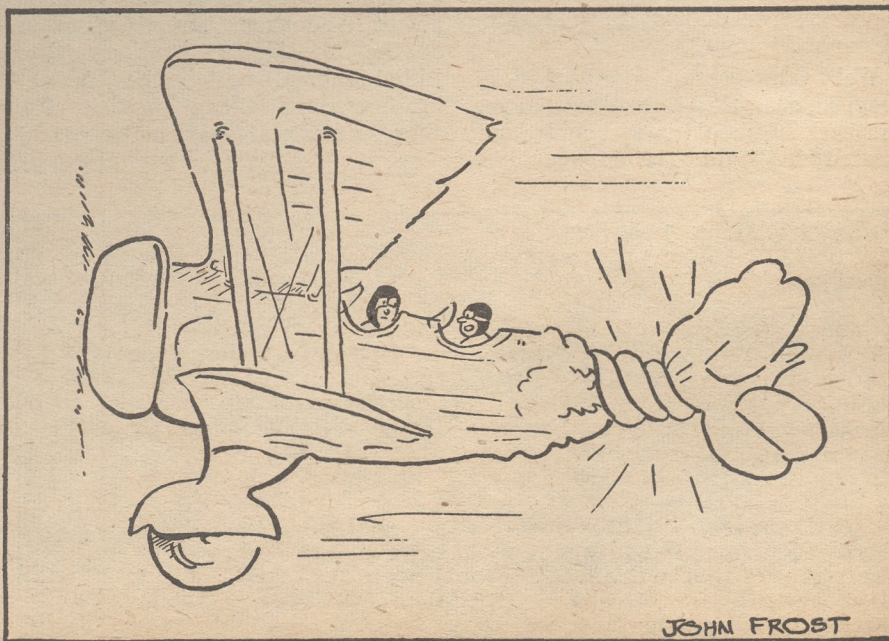
Stude: How come that snob, Pilot Smith, snubs everybody on the field—and yet can't do enough favors for that little runt Brown. I don't get it.

Hangarman: I do. Brown's the bozo who packs his parachute.

MODELER'S DIRGE

I launched my gas job into the air
Without the timer set.

I guess it came to earth somewhere—
But I ain't found it yet!



JOHN FROST

"Do you think we came out of that tail spin Okay?"

Flying Aces Club News

There's a bale of news to gab about this month, boys, over in this corner of the hangar. Here are a few of the choice items: "Change of staff" at F.A., Maj. Fred Lord's thrilling new book . . . our latest D.S.M. winner. All that, plus heaps more, is here for the reading!

By Clint Randall

National Adjutant, Flying Aces Club

WELL, CLUBSTERS, lots of things have happened around here in the last few weeks. We don't know quite what to begin with, however you boys are entitled to be in on everything that goes on around here, so here we go—

First off, yours truly, Clint Randall, has got a new office side-kick. Most all of you readers are quite familiar with this chap, for he's one of the oldest contributors to our model department. And right here Clint takes this opportunity on behalf of all F.A. Clubsters to extend their best wishes and congrats to Jesse Davidson as our new Model Editor. Dave Cooke, formerly the associate is now your editor, and succeeds Herb Powell.

The other day our old pal Maj. Fred Lord dropped in, and busy as we were we accepted Freddie's offer to let us thumb through the manuscript of his projected book, tentatively titled "Wings Over Russia." As we said, we were busy—but still it was rather difficult to just skim through the pages.

Well, Clint became so absorbed he dropped everything then and there, slid back in his old swivel chair, and started in right from page one.

Freddie, in the meantime, had to sneak out to a movie to kill time because your N.A. had no intentions of giving up until he had read it through completely. We can't tell you much about it now, but take our word that it's one of the swellest yarns we've ever read.

A SHORT time ago we received a special invitation to attend the preview showing of the pictorial aviation pageant, "Winged America," at the New York World's Fair. The show consisted of a series of 250 color slides projected on the spherical end-wall of the Aviation Building. A sound track was run separately, telling the story and history of the various photos as they appeared.

"Winged America" starts with aviation's real beginning—Leonardi Da Vinci and his visionary theories—and works all through the line to present-day flying. There are some swell shots of the First World War, too, showing all those crates you've read so much about. In addition, there are glimpses of the Montigolfier brothers, Otto Lillienthal, Chanute, the Wright brothers, and Glenn Curtiss. The showing is a real treat and we recommend it most highly. There are daily

showings, so be sure to hang around the A.B. long enough to take it in.

And now that that's off our chests, let's throttle back and hand out dope on this month's D.S.M. winner:

Charlie Ogg, of Briarcliff Manor, N. Y., is the lucky lad who takes top honors in our special contest this trip. Charlie's "Flying Flea" was built from plans in the December, 1937, issue of F.A. Congratulations, fellow! A D.S.M. is being put into the mail pronto for you. And as for the rest of you lads who haven't as yet entered our tourney, all you gotta do is—

Mail us a photo or photos of a model you've built from F.A. plans. And if your picture proves you to be the top-notch builder of the month, we'll send you a handsome Distinguished Service Medal as your award. Address letters to Clint Randall, D.S.M. Contest, FLYING ACES, 67 West 44 St., New York, N. Y.

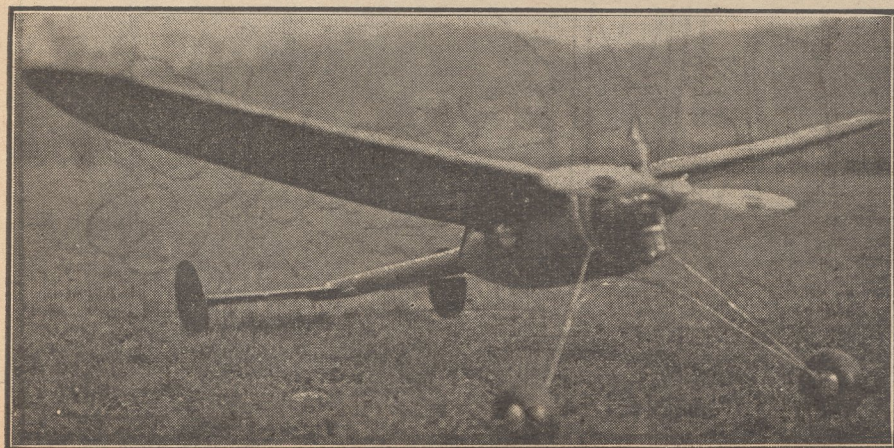
We can't undertake to return photos submitted, and the decision of the judges—Wing Commander Dave Cooke, Model Editor Jesse Davidson, and Adjutant Clint Randall—will be final. The picture of the winning craft will appear here in our Club pages. And, of course, only FLYING ACES CLUB members will be allowed to participate.

That's all there is to it, boys. Just build a model, making it the best you possibly can, ship a good detailed picture to Clint—and then wait and see if you're named our Master Model Builder of the Month and Distinguished Service Medal winner.

LAST MONTH we listed the By-Laws of Ray Wagner's Philadelphia Skull Squadron, and knowing how well it was grabbed up by you fellows, we're now giving you dope on the system used by the Philly boys in awarding rank commissions. The procedure is as follows:

- Major*—He is the commanding officer of the Squadron, leader of the first element of "A" Flight, and is elected by the captains at the regular January and July elections.
- Captain*—1. The Keeper of the Log (second in command) receives this rank and leads the second element of "A" Flight.
- 2. The leaders of all elements also receive this rank.
- 3. All captains must be F.A.C. Cadets.
- 4. Appointed by the 1st. lieutenant.

Charlie Ogg, of Briarcliff Manor, N. Y., wins the F.A. Distinguished Service Medal this trip as our Master Model Builder of the Month. This "Flying Flea" of Charlie's was built from plans appearing in the Dec. 1937, F.A.



ants of the Executive Committee, which is composed of captains and the Major.

First Lieut.—1. He must be a member of the F.A.C.

2. He is appointed by the Executive Committee of the cadets after accomplishing the following:

- (A) He must have attended three meetings as a cadet.
- (B) He must have submitted an acceptable set of original three-view drawings following the specifications of one of the flight competitions.

Cadet—1. A new member receives this rank when he is unanimously voted acceptable by regular members.

- (A) Any member may invite to the meeting any interested party.
- (B) The member issuing the invitation will inquire privately after the meeting whether or not the party is interested in joining.
- (C) If so, the member who extended the invitation will propose his name for membership and will stand as a reference to his good character.
- (D) A vote will then be taken, and if accepted he will be called to the next meeting and there given the rank of cadet.

Now that we've practically covered the Skull Squadron's organizational set-up, Clint hopes that other club leaders will use the foregoing formula to organize their own squadron officers.

"IT'S REALLY a shame that I haven't written to you for such a long time," says David Truse, of Menomonie, Wis., "but I've been terribly busy forming our club here in town. So far, we have five members whom we can always depend upon to turn out swell flying jobs. I expect to enroll at least three more before the season's over, and I need one more before we can have a flight patrol."

Dave, who is president of his F.A.C. unit, tells us of the neat insurance plan they offer when holding



This insignia, designed by Artist Henry Lunardi, Keeper of the Log for Philadelphia's F.A.C. Skull Squadron, was recently chosen as the unit's official emblem. Quite sinister looking eh?

an inter-club contest. He says: "Each member pays his dues, plus a certain amount extra for insurance—that is, if he desires it. In this way we encourage more entries, and at the same time prevent a lot of 'long faces' when and if models meet with disastrous results."

There's never a dull moment at G.H.Q., especially during the summer months when F.A.C.'s pay visits to N. Y. City. They're always bound to drop in and have a little chat with your N. A. who, of course is glad to welcome the boys he's been corresponding with all these years. Any-

how all the way from Belmont, Mass., came Jules Sussman, an F. A. pilot, to chat with old Clint. But, as you know, your N. A.'s in the office only once a week and Jules had to pick the day this department was out fishing! But from what Dave Cooke and Jess Davidson told Clint, Jules left quite an impression upon them, for in spite of his 11 years, he seemed possessed of unusual intelligence and a clear thinking mind. Jules, who hopes to be a transport pilot someday, builds almost all the rubber powered models in FLYING ACES. Mebbe sometime soon, Jules, we can get together and have a little gab session just between ourselves. Sorry to have missed you this trip—but there was sure a swell mess of fish that day on the table!

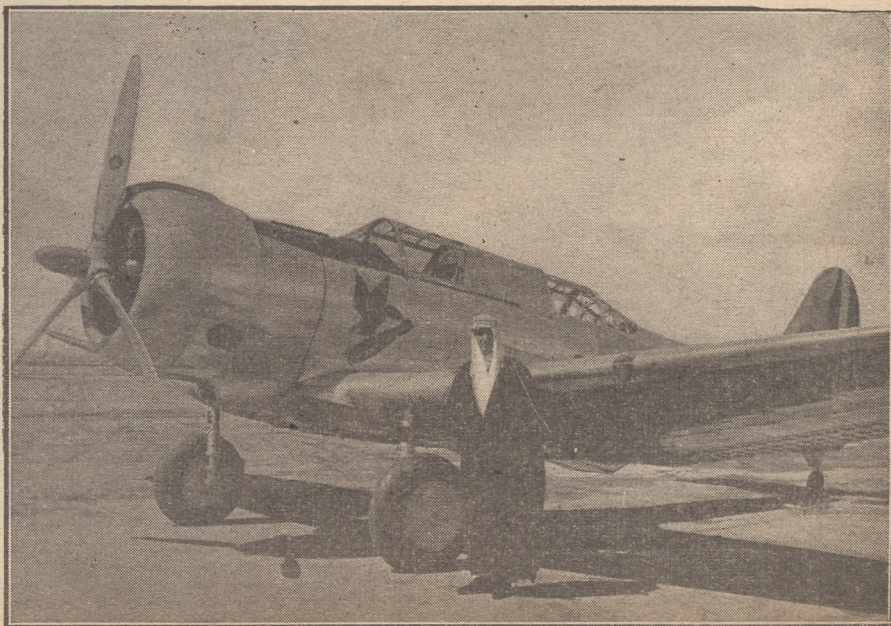
"At long last, I am an Ace, writes Jack MacDonald, of Shannonville, Ont., Can., "and I'm right after that D.S.M., too! I think I can make it, and here's how I plan to do it: I hope to register six members to form a flight. The boys will be given aeronautical training, using models for illustrations as each phase is taken up. And although these prospective F.A.C.'s are quite young now, I feel that by the time they are old enough to take actual flight training, they will have a thorough knowledge of aviation fundamentals.

"By that time," Jack goes on, "I hope to have my commercial ticket and Instructor's license and will teach all the members to fly. When they all obtain private pilots tickets, we will be (we hope) the first flight composed of all licensed airmen."

That's a pretty swell idea, Jack, and you can be sure that all the boys here in the office will keep their fingers crossed for you.

That's all for this session, fellows. Tight wings, strong tailwinds—and happy landings!

The short-bearded gent beside this Douglas 8A-4 attack-bomber is Major Mahmoud al Hindi of the Iraq Air Force. Al, shown here dressed in his Royal robes (he doesn't fly in 'em) is taking delivery of one of the fifteen Douglas jobs to be based at Baghdad. Powered with a 1,000-h.p. Cyclone, the craft has a top speed of over 250 m.p.h.



JOIN THE FLYING ACES CLUB

Honorary Members

President and Mrs. Franklin D. Roosevelt
Vice Pres. John Nance Garner
Casey Jones
Wallace Beery
Al Williams
Col. Scaroni
Major von Schleich
Lieut.-Col. Pinsard
G. M. Bellanca
Capt. B. Sergievsky
John K. Northrop
Colonel Roscoe Turner
Charles W. A. Scott
Richard C. DuPont
Maj. A. W. Stevens
Capt. O. A. Anderson
Major Fred Lord
Rear-Admiral Byrd
Col. Eddie Rickenbacker
Colonel W. A. Bishop
Major G. A. Vaughn, Jr.
Willy Coppens
Karl Ort
Walter H. Beech
Zack Mosley
Dwane L. Wallace
Josef Veltjens
Col. A. P. de Seversky
Donald W. Douglas
Major C. C. Moseley
Clarence D. Chamberlin
Mrs. Charles S. Baylus
Lieut.-Col. Theodore Roosevelt

Official Charters

F.A.C. Flights and Squadrons are recognized at GHQ only after they have received their official charters. These illustrated documents, printed on fine paper and portraying various features in the field of aviation, are excellent for framing and display. Their inspirational text is in keeping with the high ideals and aims of our Club. Each charter application must include a full list of proposed group members and their addresses. Each of these members must hold his regular F.A.C. card, obtained by clipping and sending in the membership coupon printed on this page. If applications are approved, Flight Charters are issued for 25c, and Squadron Charters for 50c. Send the correct fee with your application. It will be returned if the Charter is not granted.

WIN YOUR WINGS
Save This Whole Coupon for
CADET OR PILOT
insignia of the F.A.C.



All members with Official Membership Cards are eligible for Cadet Wings. This coupon, with two others and 10c, entitles members to Cadet Wings. Do not send this coupon alone. Save it until you have three. Then send them in all together with a self-addressed envelope and 10c to cover cost of wrapping and mailing.



All enrolled members who have won their Cadet Wings are eligible for Pilot's Wings. This coupon, with four others and 10c, entitles Cadets to Pilot's Wings. Do not send this coupon alone. Save it until you have five. Then send them all together with a self-addressed envelope and 10c to cover cost of mailing.

Send the Whole Coupon

regardless of which kind of wings you wish. Separate sets of coupons are needed for each insignia. Canadians send 15c, or three International Reply Coupons. Overseas readers send 1/-, or five Reply Coupons secured at the Post Office. Only one pair of either kind of wings to a member. If yours are lost, send 25c for new ones (2/- overseas). [100]

Do Your Full Share to Advance Aviation

To advance the cause of aviation, over 50,000 men and women, boys and girls, have banded together to form the FLYING ACES CLUB.

It is the easiest club in the world to join. Just clip the membership coupon, fill out, and mail it to GHQ with a stamped, self-addressed envelope. Your official card will then be forwarded to you. After joining, you can quickly win promotion and the right to wear the various insignia of the Club.

In the FLYING ACES CLUB there are two kinds of local organizations, known respectively as Squadrons and Flights. A Squadron must have eighteen members, including its leader. A Flight must have a total of six. You can start either of these groups in your own community by enrolling your friends in the Club, then applying for an official charter as detailed in the column at the left. *Each member must hold an F.A.C. card.*

Meetings and activities are conducted among the squadrons and flights according to the wishes of the members. GHQ has established no rulings in this respect, nor are there any dues or red tape whatsoever. The entire idea of the Club is a common meeting ground in an international organization for the lovers of aviation in its various phases. Many local Squadrons and Flights hold regular contests and public events. Many hold weekly meetings for model building, and instruction, and even regular flight training.

Awards and the Aces Escadrille

After the membership card, and Cadet and Pilot's wings, comes the Ace's Star. This is awarded for enrolling five new members, using, of course, a separate coupon for each. As an Ace, you are then eligible for membership in the FLYING ACES ESCADRILLE. Then you may win truly handsome awards. Among these are the Distinguished Service Medal and the Medal of Honor, two of the finest decorations that have ever been designed.

Any member who has reached the rank of Ace is eligible for membership in the FLYING ACES ESCADRILLE, an advanced organization which replaces the old G-2 unit and opens the way for participation in a definite program contributing to the forward movement of aviation.

To enroll, an Ace must apply direct to Escadrille Headquarters, giving his name, age, address, rank, and highest award already won in the Club, and enclosing a stamped, addressed return envelope. If he is approved for membership his instructions will be forwarded. Membership in the Escadrille is limited to American and Canadian members only, at present.

Special Service!

This Aviator's Positive Identification Bracelet



Registration and Bracelet Only 25c!

A valuable identification service for F.A.C. members is now offered with our World War type aviator's bracelet. Every one now issued will bear a serial number—which is the key to your confidential identification record on file at GHQ. In emergencies where prompt identification is needed, this number may be sent to GHQ, and identification facts will then be furnished. When ordering, send your name, address, occupation and full physical description—age, height, weight, color of eyes, hair and complexion, etc., together with name and address of nearest kin. Overseas readers may receive bracelets and be registered for 2/- in coins or Int. Money Order for same amount.

Keepers of the Log

In order to keep in touch with GHQ, every squadron should appoint a member with a facility for writing as Keeper of the Log. It shall be the duty of the Keeper of the Log to send in regular reports of interesting doings of his squadron. His is an important job, because it is only by means of interesting squadron reports that life can be given to the Flying Aces Club News.

Photographs, too, are an important consideration for the Keeper of the Log. Either the Keeper himself, or any other member with a camera, should keep a photographic record of the squadron's activities, for reference purposes, to show prospective new members, and to allow a selection of pictures to be sent to GHQ for reproduction in our monthly Club News pages.

The cost of film, prints, etc., would be a legitimate charge against the squadron's own treasury or could be covered by members' contributions. A number of flights and squadrons, incidentally, send us prints which have been taken, and completely developed and printed by foto-fan members of the outfit.

Correspondence

In all correspondence with GHQ where a reply is desired, enclose a stamped, self-addressed return envelope with your letter. GHQ receives thousands of letters weekly, and cannot undertake to answer those who do not heed this rule.

Official Supplies

Due to popular request, we have ordered a new supply of F.A.C. paper penants. These attractive stickers, which have glue on the back so that they may be stuck onto car windows, etc., sell at 6 for 10c, or 20 for 25c.

We also have a new supply of swell embroidered wing insignia that'll look top-notch on your sweater. They're made of the official Flying Aces Club colors, blue and gold, and are available at 25c each. Order now before the supply is exhausted.

(Overseas prices: Penants, 20 for 2/-; wing insignia, 1/6.)

October Membership Application

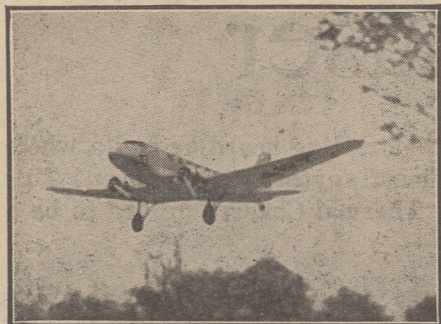
I, the undersigned, hereby make application for membership in the Flying Aces Club. I agree to live up to its rules and regulations; to foster the growth and development of aviation; and cooperate with all other members in the work of spreading aviation information, building up confidence in flying for national defence and transportation. I will aim to build up the Club and its membership, and do my best to win the honors that the Flying Aces Club offers.

My name is
Age [100]
Street
City State

Do you build airplane models?.....
Mail this application, enclosing a self-addressed, stamped envelope. Canadian and overseas readers send the application, self-addressed envelope, and an International Reply Coupon worth 5c, secured at the Post Office.

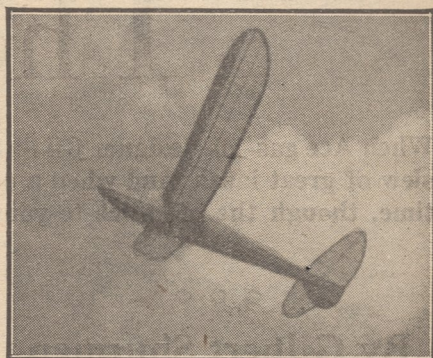
FLYING ACES CLUB, 67 W. 44th St., New York

"In flight!" Here's a Douglas DC-2 built-up model coming in for a landing. This job has a span of 43" and is made completely to scale, including its interior which carries movable controls. It was built by Will Miller, of Annapolis, Md.

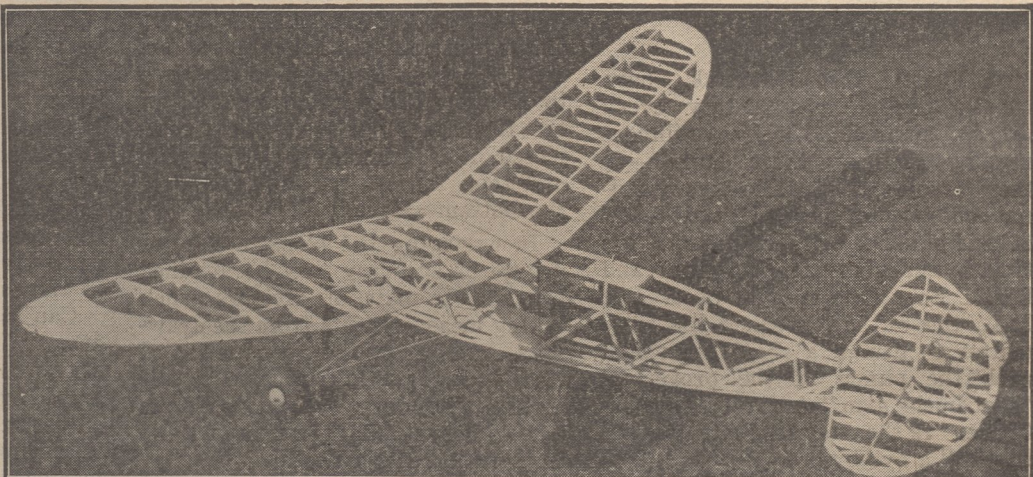


With the Model Builders

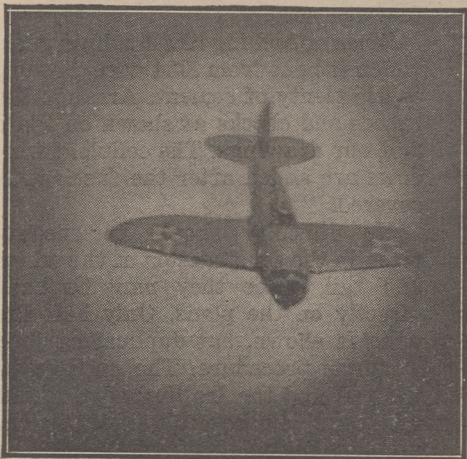
This graceful-looking sailplane was designed by Earl Stahl, popular F.A. model contributor. And if Earl hadn't told us it was a posed shot, we'd all be fooled. Excellent flights have been obtained by both hand and tow-launched methods.



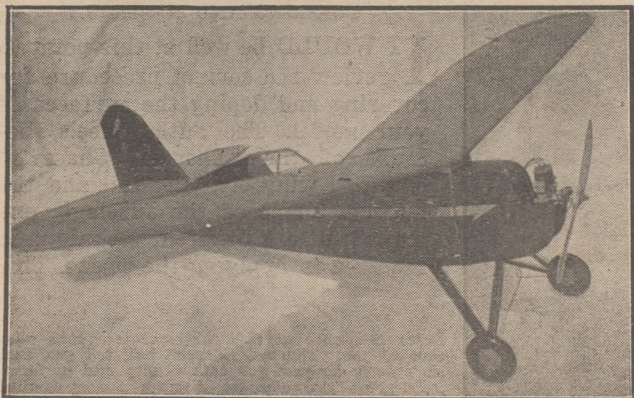
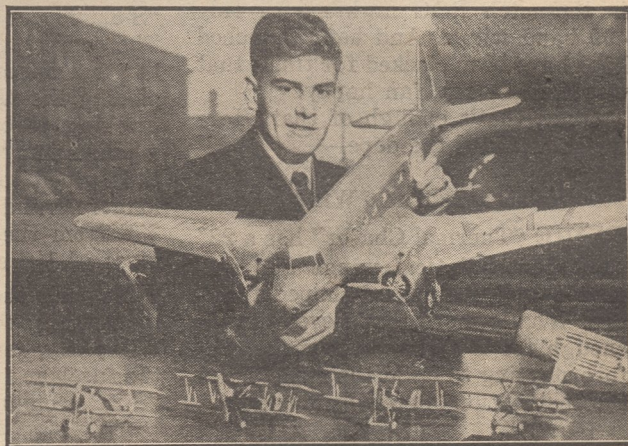
Right: This fine close-up shows details requiring painstaking effort. We cannot supply the name of that expert modeler who turned out such a swell piece of workmanship. If this is your craft, drop a card to Model Editor Jesse Davidson.



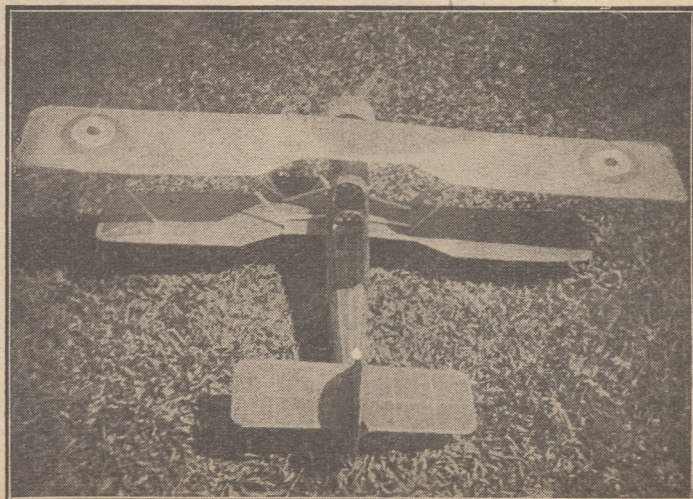
Below: You'd think this Seversky Army P-35 was caught in the snare of an A-A searchlight beam during a night attack. This realistic replica was built by Johnny Walter, of Washington, Ind. It has a retractable landing gear, movable controls, and a detailed, two-row 14-cylinder engine.



Right: Paul Peck, of Jackson, Mich., builds models by the peck! The ships lined up in the foreground are, from left to right: Nieuport 17 C1, Pfalz D-5, SE-5A, Fokker "Tripe," and an uncovered Turner-Laird Pesco. Paul's latest is the Douglas DC-2. It has a span of 42½", upholstered seats, baggage racks, lights, curtains, and a completely scaled cockpit—even to a radio set!



Above: Jimmy Brandreth, of Providence, R. I., built this sturdy-looking gas job which he says has an amazing climb and a long, flat glide. The ship is called a "Sportster" and is powered by a 1/5-h.p. G.H.Q. engine. Right: To the Model Editor's critical eye, this British Blackburn Shark looks like a top-notch performer. It's a swell flyer, too, according to its builder, Aub Thorpe, of Queensbury, South Australia.



Build This Swell

"Thermal Chaser"

When Ace gas-job designer Gil Shurman tacked his drawing paper onto the drafting board he had a whole slew of great ideas. And when a petrol builder turns to rubber craft—almost anything can happen! This time, though the old stick-to-your-own-game idea didn't hold, for this "Thermal Chaser" proved to be a top-notch sleek-sailer!

By Gilbert Shurman

Author of "Mike" Gas Job," "Rambler" Gasoliner," etc.

AFTER the Nationals have passed into history every summer, lucky winners usually loaf on their laurels—if they've won any—while less fortunate ones resign themselves to the lull of mid-summer activities—until it's time to again prepare for the Grand Brawl. So at the request of ol' Doc F.A., the author wracked his gray matter to design a ship that would pack the punch of the proverbial "shot in the arm." And the "Thermal Chaser" is the one inducement to bid that lull a bye-bye!

This little ship consistently turns in top-notch ROG flights with only 400 hand winds. And hand launched hops have been clocked for times that would make any fan happy.

Okay, that's enough of that. Here we go with all the dope—

FUSELAGE AND WING

THE "Thermal Chaser" has a 22" span, elliptical wings and stabilizer, and a diamond-shaped fuselage. What's more, she's even simple enough for a beginner to make. Before starting to build the model, read the instructions carefully to be sure

all construction details are thoroughly understood. The fuselage drawings are shown half size. This will necessitate their enlargement to full size. Only the outline of the top view is necessary, for in construction the $\frac{1}{8}$ " square longerons are pinned to the top and the bottom half of the fuselage built first. When completed, it is removed from the plan and then the top half is built onto the bottom segment.

In enlarging the plans, a greater degree of accuracy may be attained by using a pair of dividers when taking measurements from the drawings. And during the construction of the fuselage, it is advisable to use several temporary $\frac{1}{8}$ " square braces to hold the main longerons apart and in their correct shape.

The main bottom stringer, marked "S-3," is cut from $\frac{1}{8}$ " sheet balsa. The correct shape of this part may be transferred onto the balsa by placing the plans over the wood and pricking through the drawing with a pin. After "S-3" has been cut out, it is glued to the rear of the main longerons and propped up in the front $\frac{7}{8}$ " from the table by a temporary piece of $\frac{1}{8}$ " square balsa.

Now all the $\frac{1}{16}$ " braces are cemented in their correct positions. When dry, remove the lower half of the fuselage from the plan and attach "S-2," propping the front up 2" from

the main longeron. Add cross braces of $\frac{1}{16}$ " square balsa and then attach "S-1," using as many pins and temporary braces as necessary.

Before the nose of the fuselage can be finished, it is necessary to add the $\frac{1}{16}$ " square auxiliary stringers. These are glued directly to the braces and fair neatly into the rear of the fuselage.

At the nose, the auxiliary stringers are pulled together and cemented to the front body braces; then the braces from the front of the fuselage to the cabin can be glued in place.

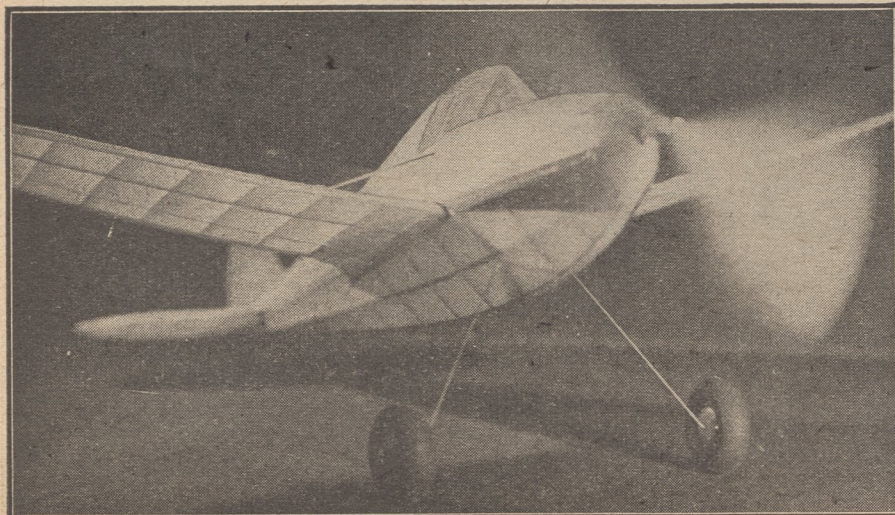
Cap strips of $\frac{1}{32}$ " by $\frac{1}{4}$ " are attached to the top and bottom stringers and $\frac{1}{32}$ " by $\frac{3}{16}$ " caps are likewise added along each main longeron. A piece of $\frac{1}{32}$ " sheet balsa is cemented to the nose. After it has hardened, trim to the shape of the fuselage nose.

When attaching the landing gear, which is bent from .034 wire, be sure to use plenty of cement. Arrange the braces and chocks as shown on Plate 2 of our drawings. The celluloid windows are added after the fuselage is covered.

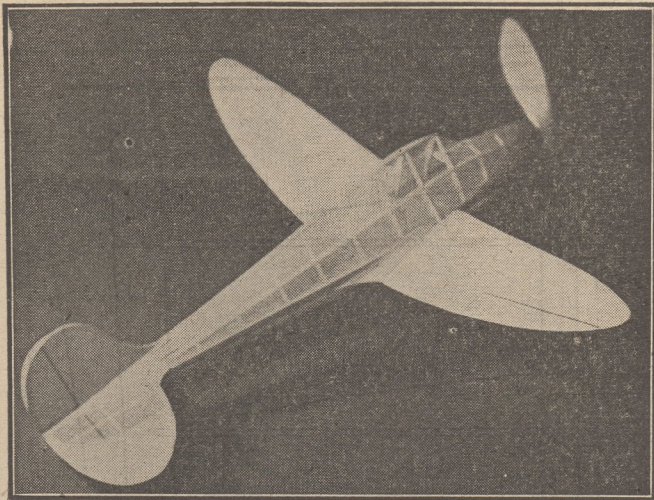
No difficulty should be encountered in the construction of the wings and tail, since they may be built directly on the plans. Only half the wing is shown, but duplicating it is a simple procedure. The outlines of the tail and the trailing edge of the wing may be best obtained by the pin-pricking method.

COVERING AND ASSEMBLY

IT WOULD be well at this point to review the correct procedure for covering and doping the surfaces of your model. The author feels, because of the "Thermal Chaser's" elliptical wing tips and tail and the unusual shape of the fuselage, one may assume a different technique is required in applying the tissue. This



Left: A glance at this three-quarter front view shot of the "Thermal Chaser" will tell you that she's been designed for both beauty and performance. This fine close-up displays the streamline zip that's been built into her lines. Its neat construction proves that Gil Shurman hasn't lost his skill in designing rubber-powered craft. Clear-cut plans and easy-to-follow instructions are yours—so just flip the page, haul out the old tool kit, and dig in!



Here's our sleek silver streak from another "slant." This picture gives you a good idea of its almost full-cantilever wing. Those two extra braces extending between the fuselage and wing are necessary for when this greased lightning mid-winger brushes past an obstacle, something is liable to come loose. Savvy?

does not hold true, however, for if the correct procedure is followed, even a beginner will be able to turn out a neat job.

First off, when the skeleton parts are ready for covering, a light sanding on all edges and surfaces should be made to prevent bumps or irregularities from showing through the tissue.

It is advisable to cover the stabilizer first, as that part should be attached to the fuselage as soon as it is completed. Apply a coat of adhesive dope to the wooden frame and lay upon it an oversized sheet of paper, its grain running lengthwise. Fasten the tissue to the center root rib. Now, by carefully pulling all around, the wrinkles will straighten out and then the paper may be doped to the leading edge. Thus the tissue is fastened to the wing outline which allows for shrinkage all around. The lower part is covered in the same manner.

After trimming off the excess material, the covered part should be given a light water spray with an atomizer. At least fifteen minutes should be allowed for complete shrinkage. And when all moisture has evaporated, apply one coat of dope to the surfaces. If necessary, brush on a second coat to eliminate remaining wrinkles. The rest of the model is covered in the same manner.

ASSEMBLY AND DECORATING

WHEN putting the various parts of the model together, follow the instructions carefully. First, glue the stabilizer to its proper place in the fuselage. The correct setting for the stab is flush with the top of the main longerons.

Each wing panel is now cemented to the main longeron. Take care to provide at least a $3/16$ " incidence angle. Since the longeron is curved, the root rib of the wing will only contact the longeron from the leading edge to the spar. To strengthen this joint, and fill in the space between

the wing and body, a $1/32$ " fillet is cemented between the trailing edge of the wing and to the fuselage. Next, $1/64$ " sheet balsa is ce-

mented to the wing and the fuselage tissue. This will have to be cut to the curve of the body by the trial and error method. Both the bottom and the top of the wing are covered

BILL OF MATERIALS

(All wood medium balsa unless specified)

Five strips $1/16$ " sq. by 36 " for fuselage braces, stringers, and tail spars;
Two strips $1/8$ " sq. by 36 " for fuselage stringers and wing spars;
One piece $1/8$ " by $3/16$ " soft balsa for leading edge of wing;
One piece $1/32$ " by 2 " by 36 " sheet for ribs and cap strips;
One piece $1/16$ " by 2 " by 36 " sheet for trailing edge, tail outline, wing tips, and fuselage fill-in formers;
One block 1 " by $1 1/4$ " by 9 " for propeller and nose plug;
One strip .030 wire for landing gear and hooks, one free wheel, two sheets tissue, one pair $1 1/2$ " dia. wheels, washers, celluloid, bamboo, ten strands of $1/8$ " flat rubber, $1/64$ " sheet scrap balsa, cement, dope, pins, etc.

by this $1/64$ " sheet fillet. After the wing is covered, a $1/32$ " by $1/16$ " bamboo strut is glued in its proper place as shown on the plans.

The dimensions for an 8 " propeller will be found on the drawings. It is best to first carve the undercambered sides and afterwards the front face of the blades. The outlines should be smooth and identical on both

Maybe we're cockeyed, but somehow this angle shot seems to make our "Thermal Chaser" look like Brewster's Navy fighter. But similarity or not, this buggy packs as much punch in the model field as the F2A-1 does in the military game. That's saying a lot—but we really believe it!

blades. Sand the prop with fairly coarse paper at first and complete with fine paper.

The prop freewheeler is of the spiral type. However, any light, smooth working freewheeler may be substituted.

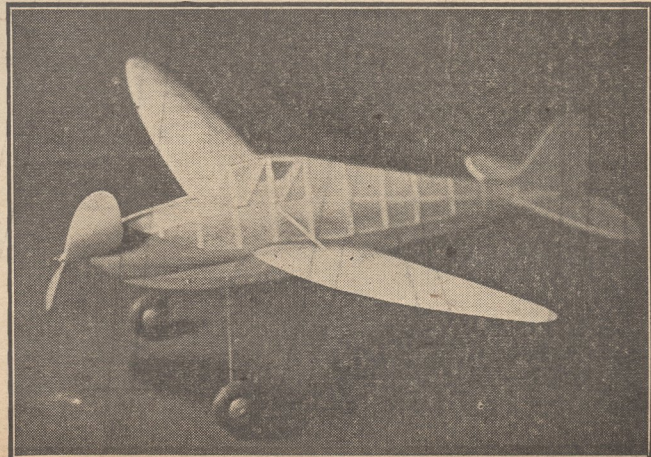
Carve the nose plug from a block of scrap balsa. A tight fit in the nose of the fuselage is desirable as this will prevent the plug from falling out when the rubber unwinds. To provide for less friction and greater accuracy in the thrust line, two eyelets are forced through the shaft hole—one in front, the other in the rear. A ball bearing washer is recommended, but two or three flat washers between the prop and nose plug are sufficient to prevent loss of power. Incidentally, these washers should be kept well oiled.

FLYING THE MODEL

THE "T. C." FLIES on eight strands of $1/8$ " flat rubber. However, should your job act loggy, use ten strands. To test fly the model, don't attempt to glide it. This may sound strange to you, but experience has taught me that nothing important can be gained from hand launching such a small, light model as this one.

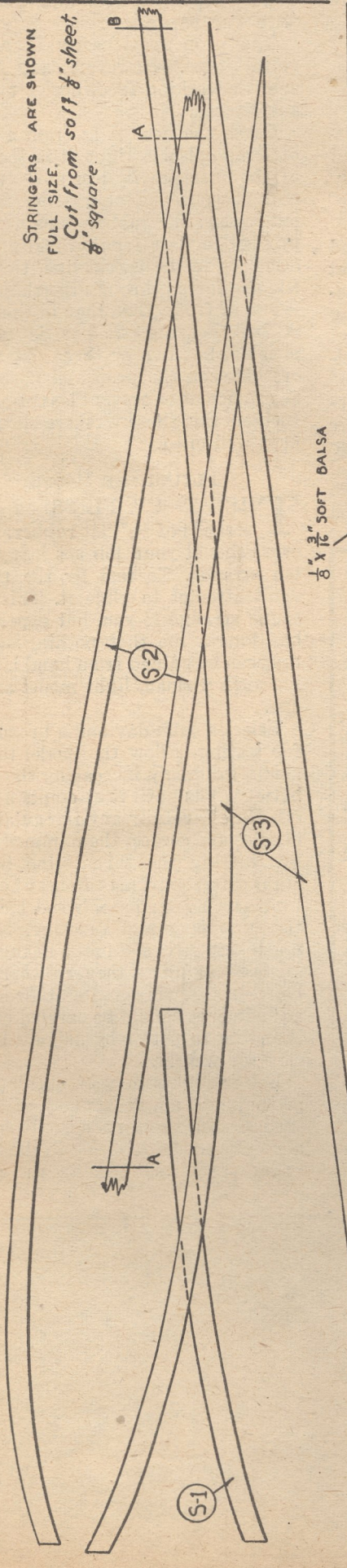
Select a calm day and a broad field for testing. Allow the model to taxi about, gradually increasing the number of winds until it attempts a take-off. Note carefully any irregular tendencies and correct them immediately by shifting the thrust line in the right direction. This can best be done by inserting strips of wood between the nose plug and fuselage. Never, under any circumstances, change the angles—assuming they are correct—between the wing and stabilizer. All adjustments should be carried out by changing thrust or by using a bit of clay for weight.

Better flights may be obtained by providing a slight amount of right thrust, and right rudder. This will allow the model to circle to the right under power and also in the glide.

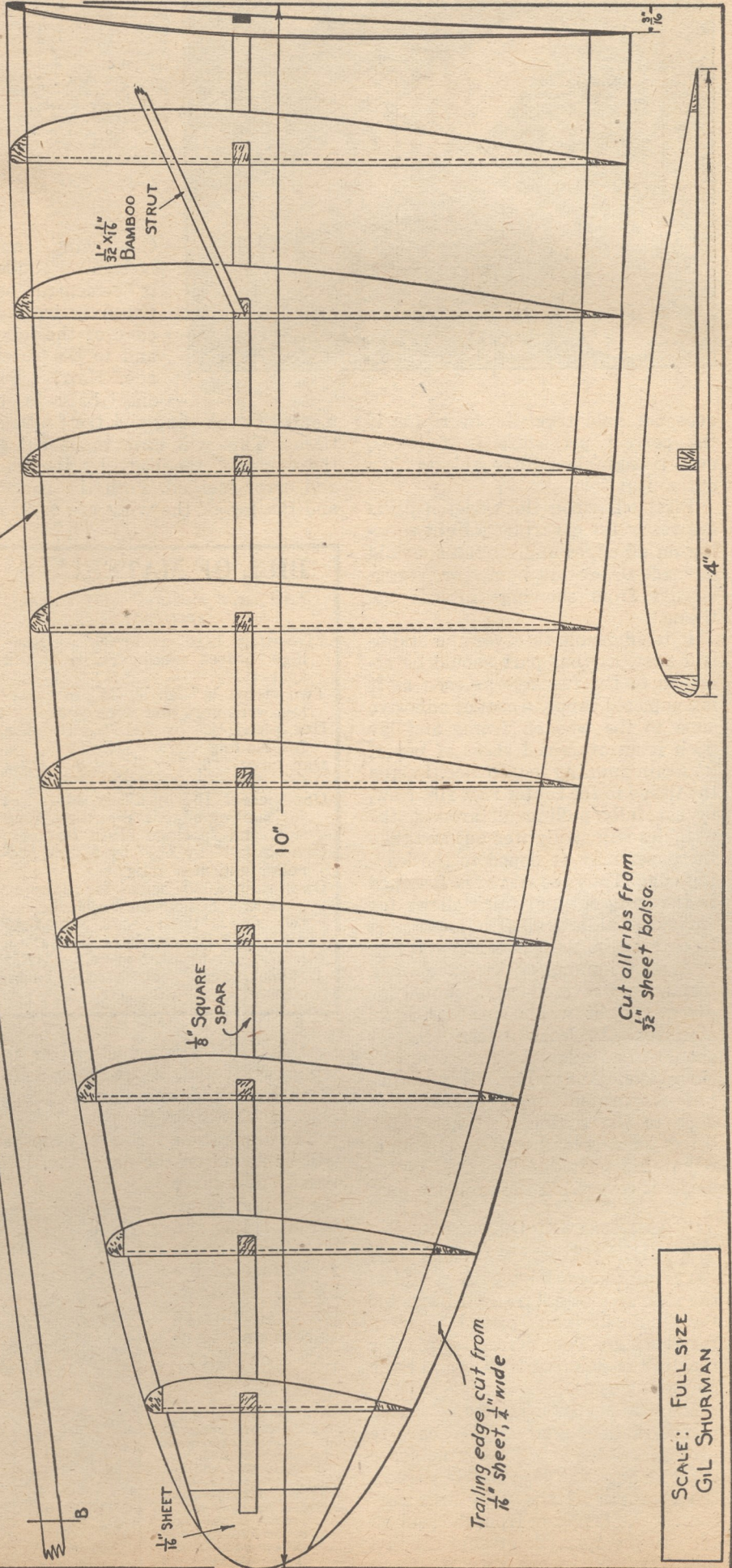


BUILD THIS SWELL "THERMAL CHASER" — Plate 1

STRINGERS ARE SHOWN
FULL SIZE.
Cut from soft $\frac{1}{8}$ " sheet
 $\frac{1}{8}$ " square.



$\frac{1}{8}$ " \times $\frac{3}{16}$ " SOFT BALSA

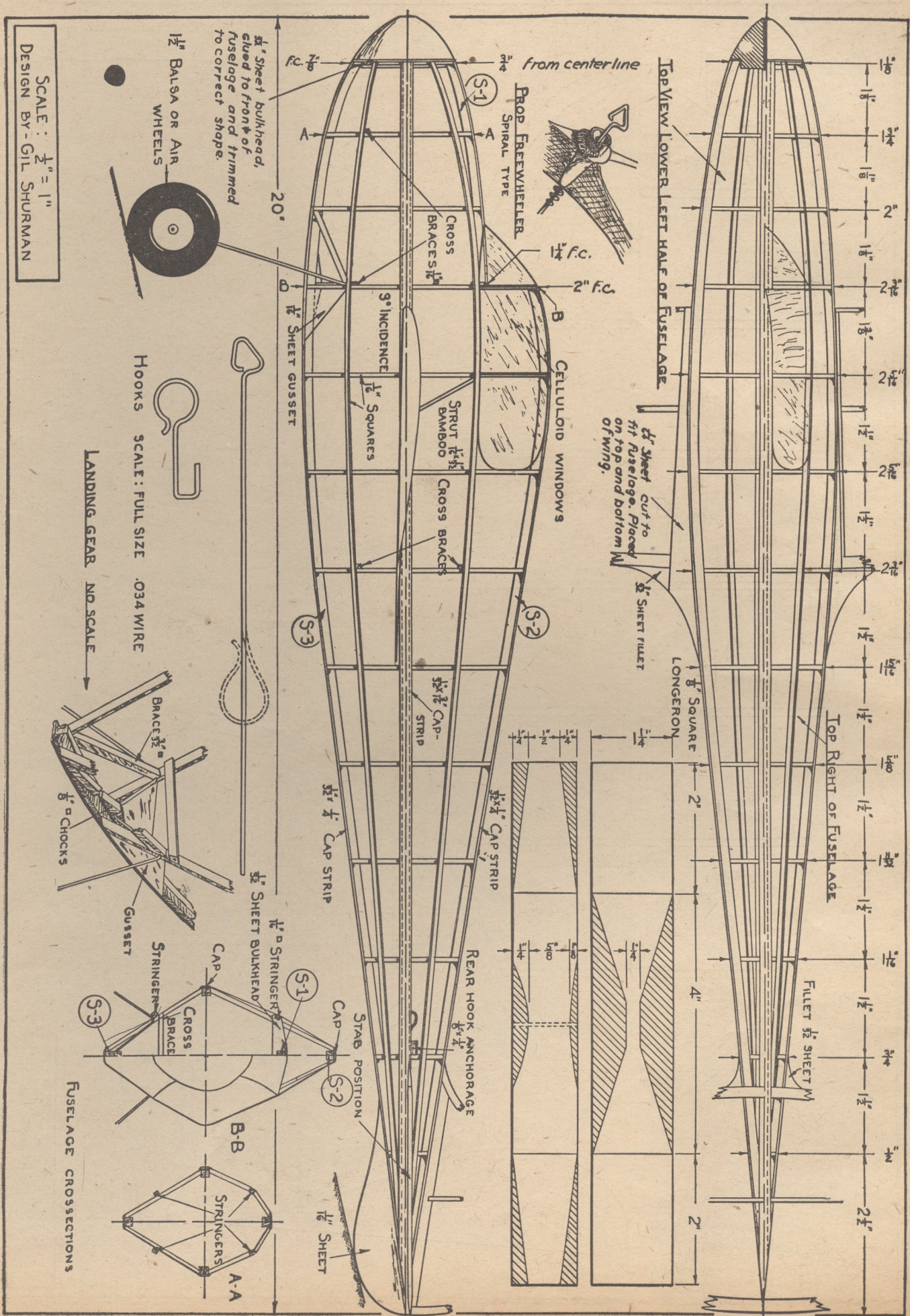


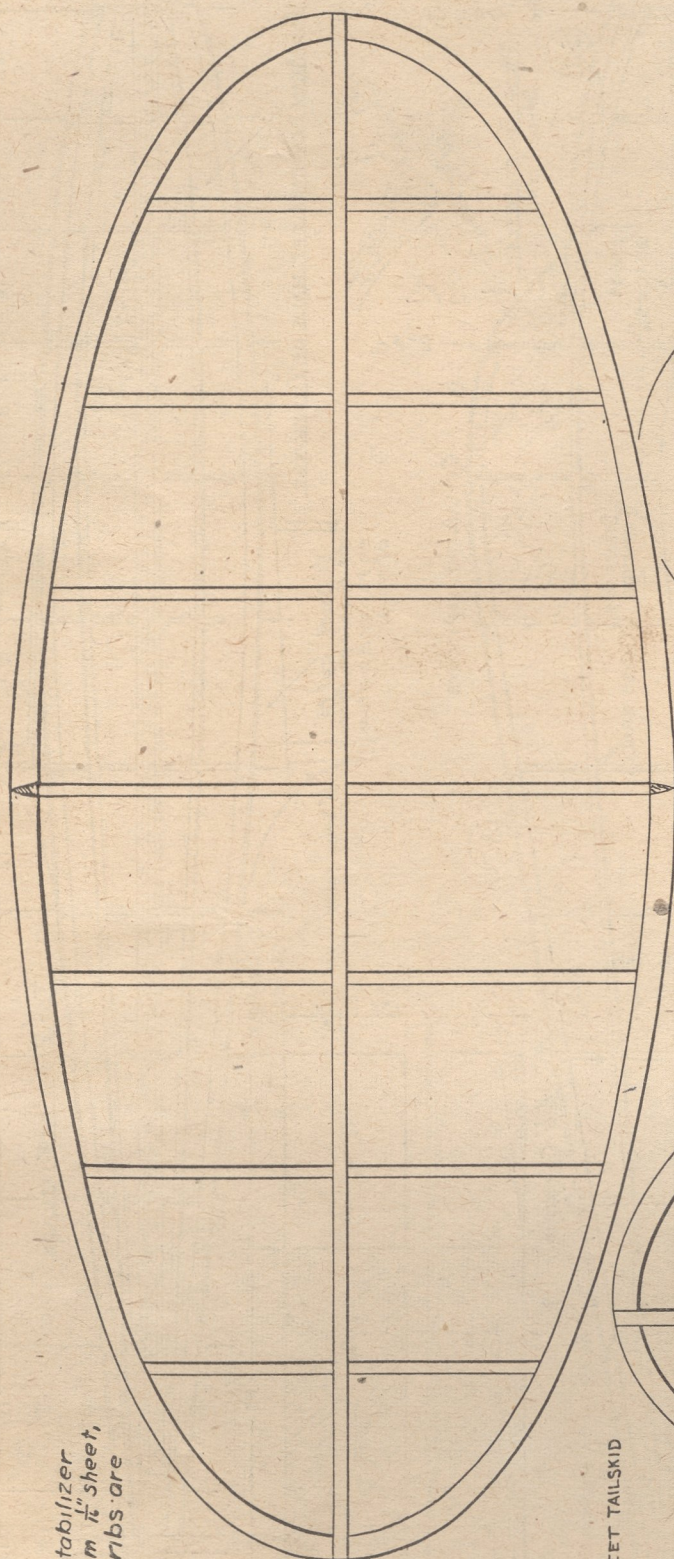
Cut all ribs from
 $\frac{1}{8}$ " sheet balsa.

Trailing edge cut from
 $\frac{1}{8}$ " sheet, $\frac{1}{4}$ " wide

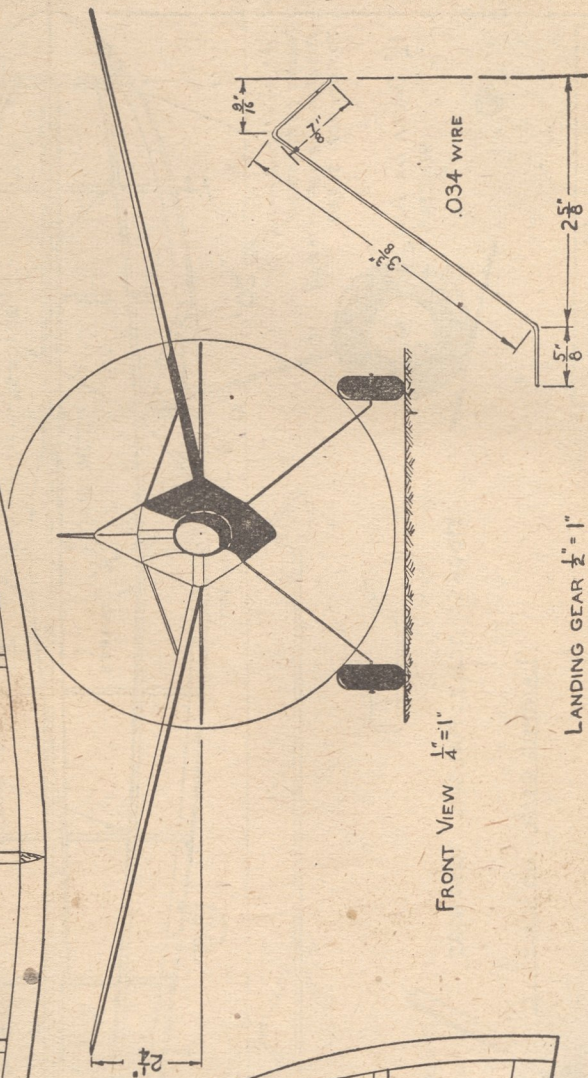
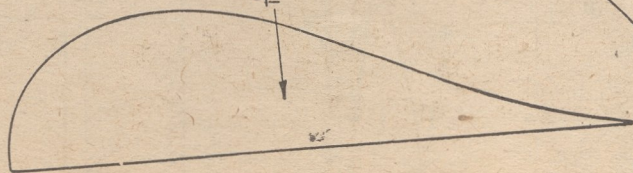
SCALE: FULL SIZE
GIL SHURMAN

BUILD THIS SWELL "THERMAL CHASER" — Plate 2





Note. Rudder and stabilizer outlines are cut from 1/16" sheet, 3/8" wide. Spars and ribs are 1/4" square

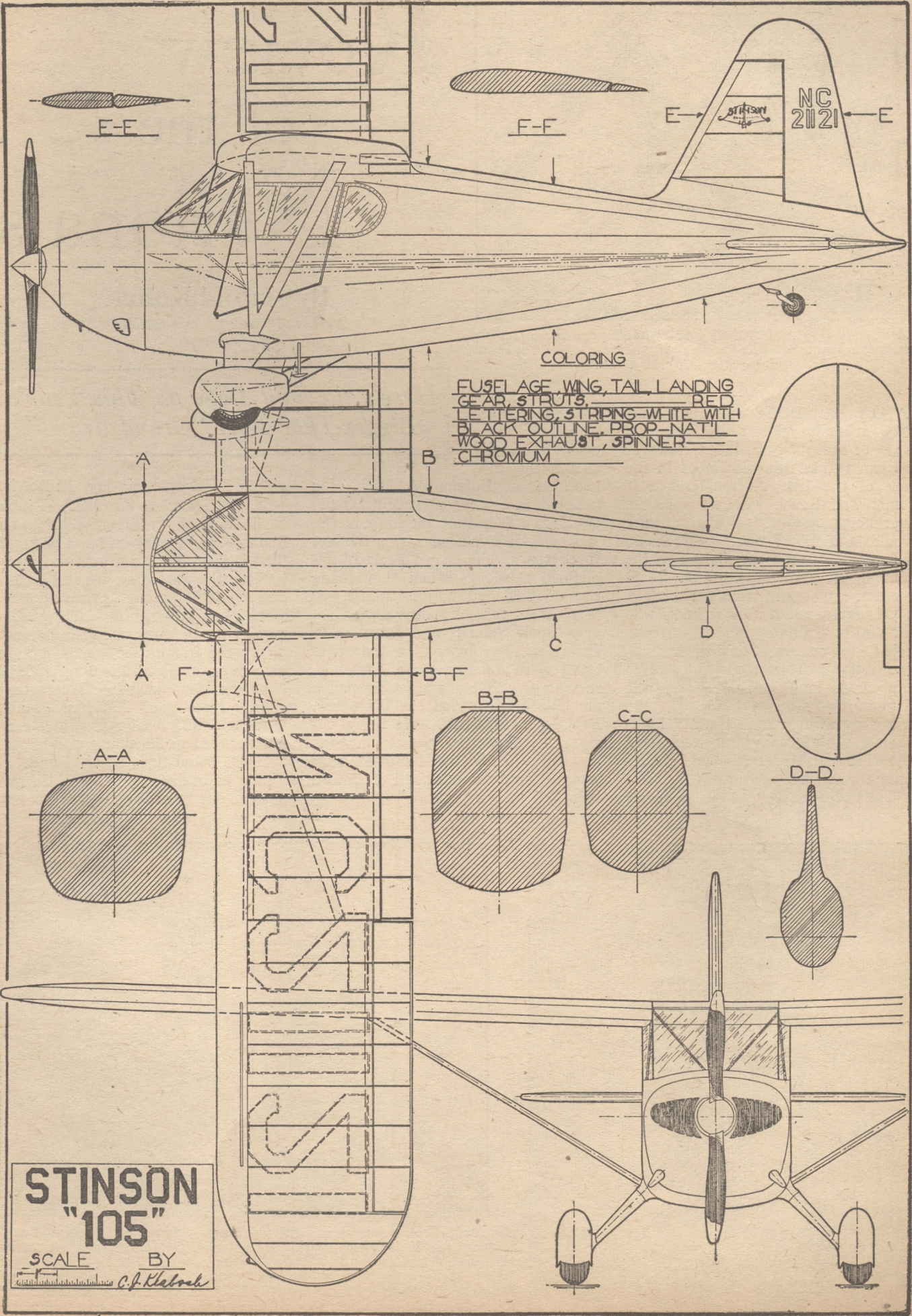


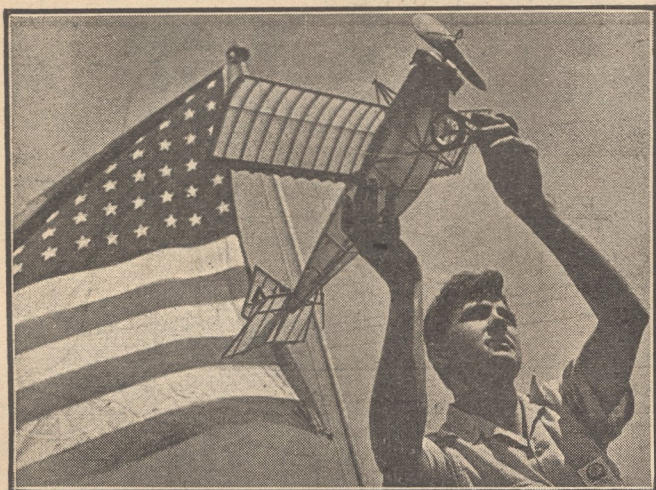
FRONT VIEW 1/4" = 1"

LANDING GEAR 1/2" = 1"

SCALE: FULL SIZE
GIL SHURMAN

CARVE OUT A SOLID OF THIS STINSON 105





Author-photog Hal Kulick just couldn't pass up this picturesque shot of Ed Petkins "launching" his Caudron flying-scale into the wind.

Review of the Nationals

By Harold Kulick

Author of "World's Fair-est Model"
Photos by the Author

SELDOM DOES any huge scale affair go off to the satisfaction of everybody included, however we can refute this sentiment in the case of the 1940 Nationals. For if comic Ted Lewis were to ask, "Is everybody happy?" — the answer would be a "Yeah man!" chorus. So before we give you any details of the contest, let's scan the highlights to see who's who and what's what.

Of course, you'll want to know who the National Champ is and you hope he's from your own home town. Well, you fellows from the "Auto City" can cheer loud and long, for the winnah was George Sass, Jr., who was duly awarded the beautiful Exchange Club Trophy and proclaimed the National Model Airplane Champion for 1940.

The radio-control gas event (it has

become more popular than ever) was easily taken by Good brothers, of Kalamazoo, Mich., for the *third successive year!* More amazing is the fact that the ship is the *same* one they've used during the last three years. The crowd heartily applauded the boys when they made the old bus land within twenty-five feet of its take-off point each time after some "plane" and fancy maneuvering. Also entered in the radio event were some of our old friends, such as Ben Shereshaw, Joe Respanti, and Charles Seigfried, to name a few. Ben, popular FLYING ACES model designer, unfortunately made a poor showing when the rudder of his ship jammed and the craft fell off into a spin.

Here's the Full Dope on This Year's Bigger-Than-Ever "Grand Brawl"

ON THE opening day, Al Lewis, Secretary of the AMA, Frank Nekimken, the meet director, and Bruno Marchi were on hand to greet the visitors and did everything they could in the way of advice and assistance. Entertainment was varied with movie houses within walking distances. On the program of events set up by the Committee was a motion picture compiled by the Comet Model Airplane Co., showing interesting scenes from past National events, Wakefield, and local meets, plus candid shots in which many well-known builders made their movie debut.

The amusement park was thrown open to the "visiting firemen," many



Above: "When good fellows get together—" Three past international winners air their views at the big shindig. Of course, you recognize them as Dick Korda, left, Frank Zaic, center, and James Cahill. Left: The glistening "cup" held proudly in the arms of Walter March, of Indianapolis, is the handsome FLYING ACES Trophy awarded for first place in the Indoor Open Class Stick event. Congrats, Walter, on coming through in such a grand style.

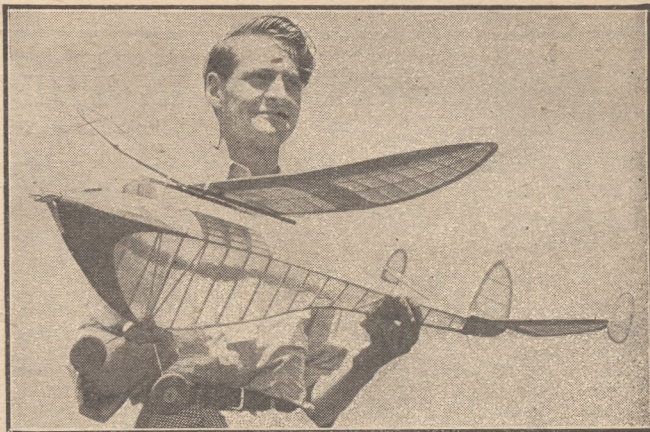
of which did not return until the wee hours of the next morning. And other modelers had to forego that day of pleasure in order to put their damaged ships into flying condition for the contest. All in all, the place took on a general atmosphere of a beehive, with old acquaintances greeting one another all through the day.

An industrial exhibit, similar to those held in aviation or auto shows, was held for the first time. Some two-dozen booths featured wares, accessories, newest engines, magazines, etc. Also the manufacturers held their first model industries meeting, during which C. W. Rogers, of Syncro Devices, was elected President. This group will standardize prices and cater to model builders. All complaints, wants, and suggestions will be taken up by the committee, which in turn will do its utmost to provide an agreeable situation to all concerned.

The day before the big shebang, of course, wasn't without its traditional humorous touch. Yours truly was the recipient of one of the better practical jokes. A number of boys—I'm not saying who—invited me to their room to look at something outside the window. Once there, they quite surreptitiously placed a firecracker in the rear pocket of my pants. For the remainder of those dizzy days I was obliged to eat off the mantelpiece. But fun is fun—though I can honestly say my definition of a model builder is, "An average American youth with his brains kicked out." (*Editor's Note:* Pay no attention to Harold, fellows. He builds models, too, you know!)

TUESDAY, July 2—the opening day of the meet—found 1,100 registered model flyers ready for action. A quick comparison of figures proved that the number doubled that of the previous year. The "Windy City's" own model airport, supervised by the Chicago Park Districts, was ideally suited for the occasion.

Right: No, that's not a string of frankfurters inside the body of Bob Hoffman's Moffett job. It's just the power strands necessary to give his ship the "oomph" to do a 9G—straight up!



And it was generally agreed by many of the "happy" contestants that it was the tall grass which saved their ships from destruction during hot landings.

The meet began with the Moffett eliminations. For those not familiar with the Moffett trophy event, it should be explained that this international event is very similar to the Wakefield contest. Through this elimination, the Wakefield team is picked to represent the United States. But because of the European war, there is to be no Wakefield this year. Naturally, however, it is the hope of all modelers that this great international event will soon be able to continue.

In the Moffett event, proxy flights were made, with seven planes from New Zealand, two from South Africa, six from Canada, and one from Great Britain. The proxy fliers were chosen with the greatest care so that all models would be flown with equal consideration. In the U.S. competition, Frank Kropak came through with the highest time in the Open event. Hilton Mollenhaur was declared winner of the Junior Class, and C. C. Johnson was awarded the Stout Trophy for the Senior event.

While the Moffett ships were being flown, the flying scalecraft were being checked. In this contest there were close to 100 entries. Every one of the models were really masterpieces, detailed and finished to the maximum extent flight conditions would permit. Because of the unprecedented number, it required a full



This smiling lad with his hand draped around the base of the Exchange Club Trophy is George Sass, Jr., of Detroit, National Model Airplane Champion for 1940.

day to check the plans and planes for accuracy and construction. Top honors and a Comet Trophy were awarded to Rancel Hill, of Akron, Ohio, in the Senior Class. Ed Naudzius copped the Open event.

The International Amphitheatre was the site for the indoor competition. A colossal building, it was perfectly suited for indoor flying. This



Left: "Quit shovin', fella!" You'd think this was a scene in the Times Square subway station during rush hour, but it's really some of the contestants crowding the registration booths. Right: No pushing and shoving for this chap. He simply hits the hay for a long snooze.



WINNERS IN THIRTEENTH NATIONALS

Times Given in Minutes and Seconds

Mulvihill Outdoor Stick—Jr.			Indoor Stick—Open			Power Model Event—Open Class "B"		
Name	City	Time	Name	City	Time	Name	City	Time
1. L. Vargo	Chicago	15:04	1. W. March	Chicago	17:32	1. W. H. Englehardt	Chicago	20:20
2. Geo. Sass	Detroit	11:16	2. J. Cahill	Indianapolis	16:47	2. Wm. B. Schwab	Cleveland	13:38
3. R. Kaufman	Barberton, Ohio	10:58	3. H. Struck	New York City	16:24	3. C. Keeling	Louisville, Ky.	12:04
4. J. Block	Hartford	10:37	4. J. Matulis	Chicago	16:14	4. J. S. Fedora	Granite City, Ill.	11:49
5. A. Blatter	Detroit	9:09	5. C. Werle	San Francisco	16:09	5. H. Benson	Rock Island, Ill.	11:44
Outdoor Stick—Sr.			Outdoor Flying Scale—Jr.			Power Model Event—Jr. Class "C"		
1. Homer Heller	Detroit	20:17	1. Al DeBuschere	Detroit	:55	1. J. Bashore	Wyandotte, Mich.	24:28
2. B. Wolfston	Birmingham, Mich.	18:27	Outdoor Flying Scale—Sr.			2. B. Hinshaw	Topeka	19:18
3. Bob Romeiser	Indianapolis	18:18	1. Rancel Hill	Akron	1:07	3. C. Boughter	Geneva, N. Y.	16:09
4. Bob Armas	Detroit	17:48	2. Walter Eggert	Philadelphia	1:05	4. J. Chapman	Minneapolis	10:55
5. Ralph Brown	Arlington, Mass.	17:17	3. Ray Beaumont	Philadelphia	:58	5. J. R. Conlin	Madison, Wis.	8:52
			4. Chester Stasik	Pittsburgh	:50	Power Model Event—Sr. Class "C"		
			5. Robert Abrahamson	Boston	:49	1. J. Leidecker	Ft. Wayne, Ind.	30:25
Mulvihill Stick—Open			Outdoor Flying Scale—Open			2. Jules Carrett	Chicago	22:31
1. Chester Lanzo	Cleveland	44:27	1. Edward Naudzius	Detroit	1:27	3. R. Abresch	Milwaukee	22:09
2. Wallace Simmers	Chicago	23:21	2. Henry Struck	New York City	1:14	4. J. Loufek	Davenport, Ill.	21:18
3. Henry Struck	New York City	19:39	3. Chester Lanzo	Cleveland	1:01	5. Bill Blair	Pittsburgh	19:21
4. L. Patraitis	Akron	18:30	4. John Ogilvie	New York City	1:01	Power Model Event—Open Class "C"		
5. J. Vermoch	Chicago	15:30	5. Edward Petkus	Cicero, Ill.	:37	1. J. Konefes	Chicago	57:55
Indoor Cabin Event—Jr.			Power Model Event—Jr. Class "A"			2. S. Hackenberg	Kansas City	35:06
1. H. Kaczynski	Detroit	12:42	1. R. Lieber	Philadelphia	4:43	3. J. Trefny	Villa Park, Ill.	28:41
2. R. Jagiello	Chicago	11:32	2. M. A. Bristol	Oak Park, Ill.	4:21	4. W. J. Addams	Riverside, Ill.	23:31
3. Geo. Sass	Detroit	11:16	3. W. J. Levedahl	Aurora, Ill.	8:36	5. W. Lackey	Maywood, Ill.	22:05
4. J. Kahremanis	Romulus, Mich.	8:36	4. J. Brofman	Brooklyn, N. Y.	3:08	Radio-Control Event		
5. B. Bakerjian	Watertown, Mass.	6:57	5. S. Callaway	Miami	3:06	1. Walter Good	Kalamazoo, Mich.	65
Indoor Cabin Event—Sr.			Power Model Event—Sr. Class "A"			2. C. H. Siegfried	Wichita, Kan.	49
1. G. Cain	Hyde Park, Mass.	15:53	1. Leon Shulman	Newark	19:56	3. Joe Respanti	Brooklyn	34
2. M. Huguelet	Chicago	13:51	2. P. Fruchtmann	Brooklyn	19:02	4. James Custin	Milwaukee	23
3. H. Lerman	Malden, Mass.	13:30	3. R. C. Hartman	Norwood, Ohio	12:58	5. Ben Shershaw	Nutley, N. J.	19
4. W. Bobier	Detroit	13:04	4. C. C. Johnson	Hampton, Va.	9:41	Megow Club Team Trophy		
5. S.W. Stanwick	East Cambridge, Mass.	12:39	5. J. Stloff	New York City	8:09	Detroit Jr. NAA Chapter		120
Indoor Cabin Event—Open			Power Model Event—Open Class "A"			Kresge Aero Club, Newark, N. J.		85
1. E. Leshner	Philadelphia	15:33	1. W. Gibson	Middletown, Ohio	47:32	Jordan-Traveler Junior Aviation League, Boston		64
2. J. B. Cahill	Indianapolis	14:13	2. F. Drobshoff	San Francisco	32:55	National Champions		
3. C. Werle	San Francisco	13:48	3. J. Conway	Evanston, Ill.	15:32	George Sass	Detroit	200
4. J. P. Matulis	Chicago	13:43	4. R. Gable	Reading, Pa.	13:40	Gordon Cain	Boston	175
5. C. D. Janke	Sheboygan, Wis.	12:42	5. R. Mitchell	Cleveland	12:41	Milton Huguelet	Chicago	175
Indoor Stick—Jr.			Power Model Event—Jr. Class "B"			Henry Struck	New York	175
1. R. Jagiello	Chicago	19:17	1. L. E. Maze	St. Louis	15:02	Roman Jagiello	Chicago	175
2. Geo. Sass	Detroit	14:40	2. Dick Lyons	Libertyville, Ill.	9:11	Chester Lanzo	Cleveland	160
3. H. Kaczynski	Detroit	11:54	3. J. Chapman	Minneapolis	6:50	James Cahill	Indianapolis	150
4. J. Kahremanis	Romulus, Mich.	11:46	4. B. A. Miller	Holt, Mich.	6:48	Henry Kaczynski	Detroit	150
5. C. Beggs	Chicago	11:23	5. J. Bock	Chicago	6:10	Moffett Finals		
Indoor Stick—Sr.			Power Model Event—Sr. Class "B"			1. R. Nelder	Canada	4:49
1. M. Huguelet	Chicago	18:22	1. Bill Redeker	Cincinnati	28:00	2. Alexander	New Zealand	3:51
2. C. Cain	Hyde Park, Mass.	18:18	2. D. Wright	Topeka	19:54	3. F. Prokop	U.S.A.	3:44
3. A. Adler	Philadelphia	17:39	3. Leon Shulman	Newark	19:10	4. R. Copeland	Great Britain	3:26
4. R. Bancroft	Detroit	17:16	4. Dushan Deshik	Chicago	18:08	5. T. Just	U.S.A.	3:09
5. A. Beckington	Rockford, Ill.	16:34	5. Jacob Drake	Franklin, Mich.	16:57	Berryloid Finish Contest		
						Henry Heyman	New Orleans	
						James Noonan	Milwaukee	

arena is situated in the heart of the stock yard district and if the wind blew the right way, out of town competitors had no trouble getting there—they just had to follow their nose!

A new indoor record for the Junior Cabin Class was established by Roman Jagiello, who took home the Early Bird Trophy. Walter March was the proverbial local boy who made good. He managed to just beat Jim Cahill out of that beautiful FLYING ACES Trophy with an indoor stick job in the Open Class. His delicately-constructed model remained aloft for 17 min., 32 sec.

The indoor contest was quite impressive with a bewildering number of new and extreme designs. A particularly clever stunt was the use of a "balloon barrage." Three toy balloons filled with gas and tied to a long string were sent up simultane-

ously to dislodge models which became entangled at the top of the building. We do not know who devised this neat idea, but everyone wondered why it hadn't been thought of before.

ON THURSDAY, July 4, one of the largest crowds ever to view a model plane meet were on hand to witness the Class "A" and "C" rubber events. For this competition, more than 700 modelers were registered. Many new designs were tried and tested, and several "big names" failed to come up to expectation. Dick Everett, one of the better knowns, ran into tough luck. He made a number of unofficial flights which, if declared official, would have placed him in the upper brackets.

In the power event, Leon Shulman of Newark, N. J., flying a ship of

his own design, captured first place in Class "A" Senior and was awarded a Comet trophy. Class "A" Open was taken by Bill Gibson of Middletown, Ohio, for establishing a record time of 47 min., 32 sec. Bill received the Model-craft Trophy for his excellent flight.

One of the most unusual model plane clubs to be represented at the Nationals was the Buzzard outfit of Chicago. All of the members had a hand in designing a gassy, flown by Joe Konefess, president of the club. This is one time that too many cooks didn't spoil the broth, for the ship went off to set a Class "C" Open record of 57 min., 55 sec.

At the end of the contest, the members of this unique club sent aloft a mass flight of identical design craft with Buzzard trailers streaming from their tails. It was a thrilling

sight to watch and, strangely enough, there were no mid-air collisions to spoil the effect.

FOR THE first time in model contest history, radio was used to "recover" ships which had flown out of sight. Some 68 lost planes were located with the help of the Chicago Radio Council. Patrol cars cruising around the country side, upon finding a model, would radio back to the "ham" station set up at the field. Receiving the call, a field car would be dispatched to retrieve the found plane. Extremely helpful, too, were the portable transmitters which were carried by a two-man crew. These trouble-shooters would wander about the field, from runway to runway, and if any part or parcel was desired, they would simply call back and have it sent up pronto. This saved a good deal of time and shoe leather.

Another new idea was the novel timing system for the gas powered ships. Each contestant's flight was guided by two official timers—one with a stop watch, and the other with a box timer equipped with a bell. The instant the model left the ground the timing device in the box went into action, and at precisely twenty seconds the bell sounded off. If the motor quit before the twenty seconds, the flight was declared official. If it continued running after the bell stopped, the flight was delayed.

On Friday, it was back to the Amphitheatre for the Indoor Cabin contest. To watch these models, their propellers barely turning over, rise and remain aloft for minutes at a time, was really something to write home about. They're about the most graceful performing models of all events. Gordon Cain, of Hyde Park, Mass., received the Bloomingdale award for top honors in the Senior event. E. Leshner, of Philadelphia,

Right: An anxious moment as Pinky Fruchtman's Ohlsson-powered job swerves on the runway during take-off. But it made a good get away—good enough to take a second place.

was the No. 1 man in the Open tourney and was closely followed by Jim Cahill in second place. Jim, many of our readers will recall, was the Wakefield winner in 1938. Henry Kaczynski, of Detroit, was the winner of the Junior event.

Saturday, the final day of the meet, was the biggest and busiest. Radio-Control, Class "B" gas, Mulvihill and the Berryloid contests were in full swing. James Noonan, of Milwaukee, Wis., was awarded the Berryloid Gold Trophy for the best finished flying scale; his model was a Stinson "105." For the most beautifully finished gas job, Henry Heyman, of New Orleans, was also presented with a Berryloid Gold Trophy. Competition was plenty tough in the finish event and those who won certainly deserved the honors. Bill Englehardt, of Chicago, took the scrumptious Gar Wood Trophy when his ship copped first place in the Class "B" Open. Lawrence Maze, of St. Louis, took the Junior place.

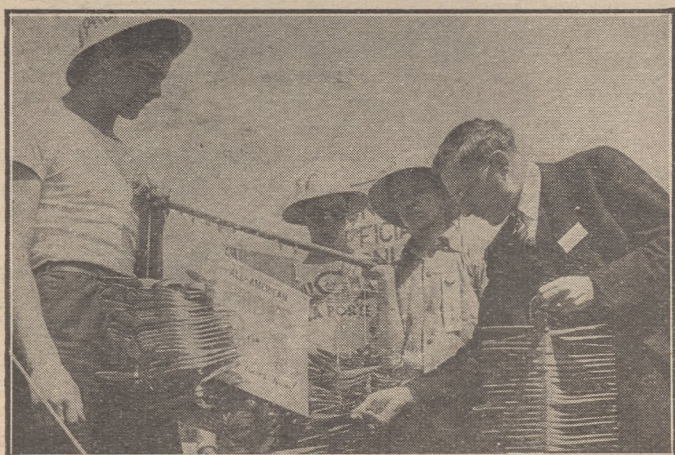
The Mulvihill stick event was run off without a hitch by 475 contestants. And there's usually plenty of life in the Outdoor Stick competition for the Mulvihill Trophy. An original casting, it is one of the oldest and most highly prized awards. Among some of the old and new models flown were twin stick pushers of original design. The twin pushers suddenly seemed to reincarnate themselves when they consistently broke



Something interesting must have caught the eye of Dick Everett, for here we see him watching the flight progress of a competitor's craft. Dick, incidentally, didn't fare so well this year.

records all through the day. Homer Heller, of Detroit, made the highest time of the Senior event, which was 20 min., 17 sec. First place in the Junior competition went to Louis Vargo, a local boy, with a high time of 15 min., 4 sec.

(Continued on page 64)



Bargain day at the Nationals. Joe Mastrovich, of Fords, N. J., carefully examines each propeller for flaws and grain. These youthful salesmen certainly figured out six new "twists" to make an easy dollar!



Invented by Raoul J. Hoffman, this unique weighing-in device was used for the first time at this year's Nationals. It did much to help run the contest more smoothly than previously.



Reflected glory! Here's that contest grabber in person, resting amid its laurels. Hand or catapult launched, "Cue Ball" is a sure winner. Simple enough for the absolute beginner, it can be built and flown the same day.

"Cue Ball"

Summer time is glider time, and that's when thermals are plentiful. And when you skim this swell sailplane along those uplifting currents, you'll admit that—you never "soar" anything like this before!

By Eric E. Ericson

IT IS difficult to find a model that will fly well both hand and catapult-launched. But the design of "Cue Ball" was checked and rechecked to make this possible. And this "QB" has proven that the work was justified—for she copped five awards in four Eastern contests between last July and November!

Before starting construction, a word about our Quiet Birdman's performance should stimulate you into action. It was a balmy Saturday when "Cue Ball" first hit the cumulus trail. She flew 7 min., 42 secs., on the first test flight! Inspired, the author started and completed the same night a second "Cue Ball." The following day it was flown as a hand launched job and averaged 38 sec. without any air current assistance. And in one of her hops, she made 6 min., 11 sec.!

To date, eight "Cue Balls" have been built—and lost. This type model has won two trophies, two medals, and a plaque at New Jersey and New York contests.

The beginner will appreciate the simplicity, ease, and rapidity with which the craft may be built, while the expert, realizing its potentialities,

will save time by building the "Cue Ball" instead of designing his own.

WING, BODY AND TAIL

THE WING outline was found by experiment to be just as efficient if not more so than the ellipse. It is called the "Seversky Taper" and this is probably the first glider to incorporate this feature.

Use semi-quarter grained wood. After the leading edge is shaped, it will be quarter grained "C" stock and the trailing edge pliable "B" stock. The wood, measuring $\frac{1}{8}$ " by 3" by 16", should be medium hard.

After the outline of the wing has been cut to shape, roughly work in the airfoil. Then smooth with No. 10/0 sandpaper until all scratches vanish. The wing is then rubbed with the back of the paper to fill in pores and smoothen out the "fuzz." Next, apply a coat of wood filler. Sand smooth and apply two coats of glider polish with intermediate sandings. A little Simonize and elbow grease will provide an extra high gloss.

The fuselage should be of extra hard "B" stock, measuring $\frac{1}{8}$ " by $1\frac{1}{4}$ " by 4". There is plenty fuselage

area to permit efficient hand launchings and extra fuselage area ahead of the C.G. to prevent spins and provide the model with inherent stability. The body is finished in the same way as the wing. Omit waxing, but give four coats of glider polish.

The tail surfaces should be of medium hard semi-"B" stock, measuring $\frac{1}{16}$ " by $8\frac{1}{2}$ " by $2\frac{1}{2}$ ". Follow the same procedure as with other parts, except in polishing. Exercise extreme care, as these surfaces may be easily bent out of alignment by careless polishing. Apply one coat of filler and one coat of polish. And don't forget the No. 10/0 sanding.

ADJUSTING AND LAUNCHING

AFTER the assembly has been checked and double checked, balance the glider by putting your index fingers under the wing tips. The center of gravity should be one third the way back on the wing chord. Add clay if needed. Test glide the model until it performs perfectly. Hand launch with a slight side arm action. If its recovery is satisfactory, don't hesitate to give it all you've got on the next throw. "Cue Ball" should gain 75 to 100 ft. altitude on a throw.

When the model has been sufficiently test flown, shape a catapult hook from No. .040 wire and insert as shown on the plan. Then obtain four strands of $\frac{3}{16}$ " flat rubber, 15 ft. long. Drive a stake into the ground and fasten one end of the rubber 6 ft. up. Have an assistant hold the other end about 2 ft. off the ground. Now pull the rubber half its maximum stretch, placing the model in the center tilted at 80 degrees to the right, and let her zip. This power is equal to a hand launch.

At full power, add a little positive incidence and left rudder. Altitude gained should be around 200 ft. Catapult flying requires some patience but its rewards are returned in thrilling performances.

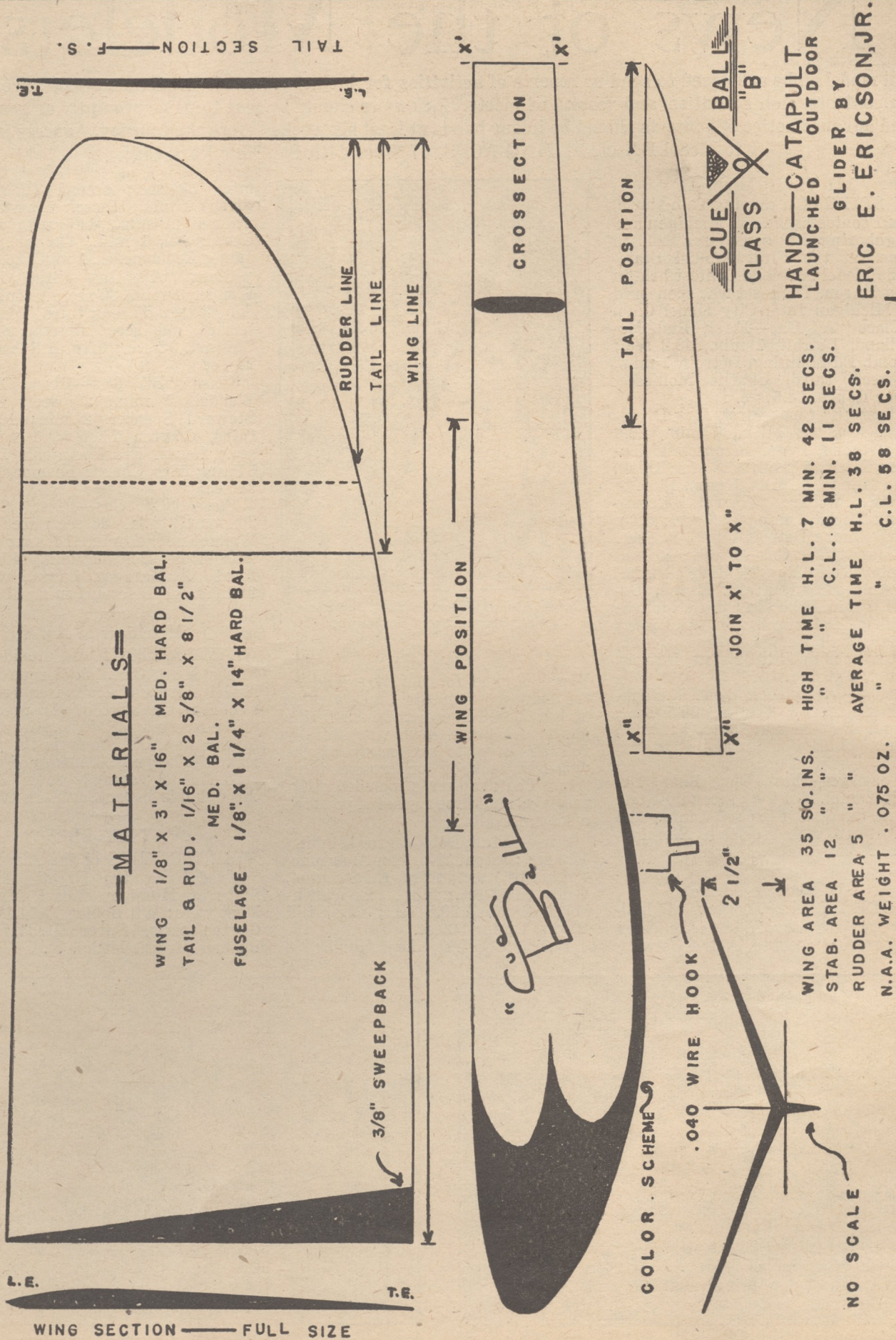
So there you are, buzzards. But before you're set completely for those soaring thrills, you'd better take a look at the following Bill of Materials:

One sheet $\frac{1}{8}$ " by 3" by 16" for wing; one sheet $\frac{1}{16}$ " by $2\frac{5}{8}$ " by $8\frac{1}{2}$ " for stabilizer and rudder; one strip hard balsa $\frac{1}{8}$ " by $1\frac{1}{4}$ " by 14" for fuselage; one length .040 music wire for tow-launch hook.

Miscellaneous materials: Cement, wood filler, polishing wax, razor blade, fifteen feet $\frac{3}{16}$ " flat rubber for catapult launching, dope, etc.

Before you buy the wood, though, be absolutely certain that it is knot-free and without pulpy areas. Also, be sure that the grain is straight and fine.

HERE'S THE PLAN FOR ERICSON'S "CUE BALL"



News of the Modelers

All model clubs are urged to send us reports of activities for inclusion in this department—advance dope on contests, club activities, and results of meets. Such news should be sent to us as promptly as possible, and advance notice of contests should be in our hands at least six weeks before the tourney. Address letters to Model Editor, FLYING ACES, 67 West 44th St., New York City.

121 Vie in Michigan

IN SPITE of a driving rain-storm, 121 contestants from Michigan and neighboring states vied for \$200 in prizes at the First Annual State-Wide Model Airplane Contest held in Port Huron. The meet was sponsored by Michigan Inter-City Model Club.

Class "A" Gas—First, Bud McClelland, Detroit, 1 min., 43.2 sec.; second, Ed Manning, Detroit, 1 min., 28 sec.; third, Charlie Mollissee, River Rouge, 54.5 sec.

Class "B" Gas—First, Jack Droulaid, Algonac, Mich., 1 min., 26.5 sec.; second, Roger Saums, Mt. Clemens, Mich., 1 min., 20.3 sec.; third, Fred Annas, Detroit, 1 min., 14 sec.; fourth, Willard Wernet, Grosse Point, Mich., 1 min., 12.6 sec.; fifth, Bob Williams, Detroit, 1 min., 12.1 sec.

Class "C" Gas—First, Russell Jacobs, River Rouge, Mich., 3 min., 28 sec.; second, Frank Marsh, Detroit, 2 min., 46.5 sec.; third, Monroe Redfield, Detroit, 3 min., 17.1 sec.; fourth, Walt Heater, Detroit, 2 min., 26.1 sec.; fifth, Bill Bristow, Detroit, 1 min., 50.6 sec.

Stick—First, Dick Wenzell, Birmingham, Mich., 3 min., 29.5 sec.; second, Bob Annas, Detroit, 2 min., 16 sec.; third, John Drake, Franklin, Mich., 1 min., 1 sec.

Fuselage—First, Gene Raka, Detroit, 2 min., 25.1 sec.; second, Reggie Clark, Sarnia, Ont., Can., 1 min., 42.5 sec.; third, Bob Wolfston, Birmingham, Mich., 1 min., 33.5 sec.

Big Meet in Corning

MORE THAN 200 contestants hailing from three states competed in a meet sponsored by the Corning



Above: A few winners in the "Sky Blazers" recent model aircraft exposition.

(N.Y.) Aero Club and the Corning Kiwanas. The tourney was held on the old American Air Lines airport at Big Flats. The area in which the gas models were flown was literally full of thermals and many of the "gassys" took off on cross-country trips. The five events included stick, fuselage, and three classes of powered models. Results:

Stick—First, Bob Cosgrove, 4 min., 47.3 sec.; second, Norman Alderman, 4 min., 14.3 sec.; third, Ed Swenton, 4 min., 13.3 sec.; fourth, E. Wallenhorst, 2 min., 28.5 sec.; fifth, Bill Hayes, 1 min., 30 sec.

Fuselage—First, Leo Kunick, 3

min., 39 sec.; second (name not given) 1 min., 59 sec.; third Charlie Thomas, 1 min., 44.6 sec.; fourth, Geo. Kesel, 1 min., 43.6 sec.; fifth, James Economedes, 1 min., 36.3 sec.

Class "A" Gas—First, Hervey Wendel, 1 min., 39 sec.; second, Gordon Baxter, 55 sec.; third, Tony Santersiro, 53 sec.; fourth, Spencer Stewart, 32 sec.; fifth, Bill Andrews, 24 sec.

Class "B" Gas—First, Hervey Wendel, 2 min., 20 sec.; second, Steward Spencer, 2 min., 19 sec.; third, Clayton Thomas, 1 min., 57 sec.; fourth Frank Antosh, 1 min., 37 sec.; fifth, Charlie Thomas, 1 min., 31 sec.

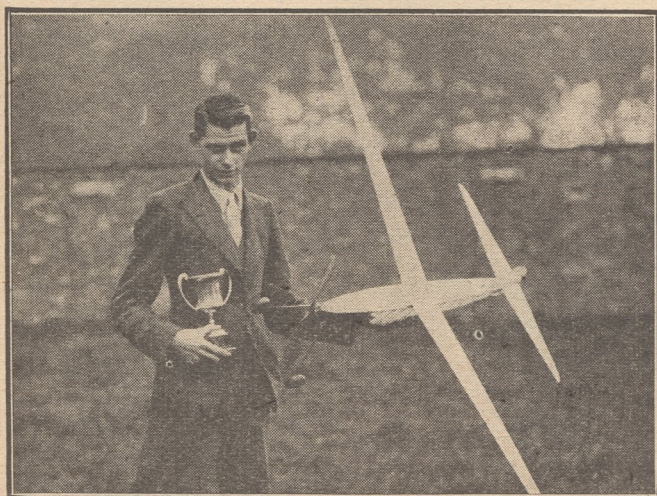
Class "C" Gas—First, Charlie Thomas, 3 min., 36 sec.; second, E. Wallenhorst, 2 min., 16 sec.; third, Harold de Bolt, 1 min., 40 sec.; fourth, A. Naragan, 1 min., 40 sec.; fifth, Ralph Bristol, 1 min., 39 sec.

Metchicas to AMA

JIMMY METCHICAS, president of the South Carolina Torque Fliers Model Airplane Club, was recently elected to the office of vice-president of the Academy of Model Aeronautics for his district. Jimmy is the young man who keeps F.A. informed of the aero model doings down South through his paper *Southern News*.

AYA Tid-Bits

THE WINNERS of the Air Youth Medals at the Eighth Annual State of Michigan Model Airplane Meet were: Wil Bobier, Gold Medal; George Sass, Silver Medal; Bob Boomer, Bronze Medal. . . . Word is



This young chap, Alex Ingram, of Liverpool, England, has his hands full. He's seen here with the silver cup he won in an indoor contest. That cabin job is his 1936 Wakefield Cup model. Note that he has equipped it with air wheels purchased in the U. S.



Hero for a day! Eugene Newcomb, of Arcadia Terrace, Santa Monica, Calif., poses for the photographers as he is declared a high time winner in the 8th semi-annual GMAASC contest held recently. His ship stayed aloft for 16 min., 20 sec.

being received almost daily at the Air Youth headquarters at 30 Rockefeller Plaza, N.Y.C., of new junior aviation groups being formed in all sections of the country. Many of these are being sponsored locally by Exchange Clubs, Kiwanis, Junior Chambers of Commerce and other Civic units. Several thousand of such groups are now active, and their membership, together with independent model plane fliers, is estimated to exceed 2,000,000. . . . A program of training for leaders and teachers of junior aviation groups is being worked out by AYA. By this Fall, Air Youth will seek to initiate a junior aero club in every secondary school throughout the United States.

Linden Constitutional Amendment

AN AMENDMENT to the constitution of the Linden (N.J.) Model Airplane Club was recently added for the purpose of establishing an auxiliary governing body. This group will be known as the Executive Committee. The functions are as follows:

The Committee shall be composed of ten members and shall consist of Mr. Frank Krysiak as club director and Advisor. The six elected officers of the club and three members at large will be appointed by the president and approved by the club.

It shall be the duty of the E.C. to meet upon call of the President to discuss all matters of importance, such as arranging for major contests, changes in the club's policies, etc. All findings and suggestions made by the E.C. shall be presented by the Chairman for approval or rejection by the club members at the next regular meeting of the club.

It shall further be the duty of the E.C. to pass on the expulsion of any member who in their opinion, and by a majority vote of that body, shall be deemed an undesirable member or a detriment of the club. The decision of the E.C. shall be final.

The E.C. shall also decide on the acceptance or rejection of any member who, having been dropped from the rolls for non-payment of dues, makes application for re-instatement. In the case of a vote for the candidate's applications, it shall evolve upon the E.C. to determine the amount of entry fee to be paid. At all meetings of the E.C., six members shall constitute a quorum.

NWA-EO Meet

ENTRIES from Northern West Virginia and Eastern Ohio participated for the \$103 in trophies, cash, and merchandise offered at the recent Wheeling, W. Va., meet. Results:

Gas—First, Howard Younginger, 1 min., 17.2 sec.; second, Joe Steele, 1 min., 11.3 sec.; third, Fred Taylor, 32.3 sec.; fourth, E. Suter, 15.3 sec.; fifth, Mervyn Wenzel, 5 sec.

Fuselage—First, Ralph Young, 1

(Continued on page 64)

CONTEST CALENDAR

Clubs and organizations sponsoring model airplane meets are urged to send us advance notification of contests for inclusion in this calendar. Such notices should be in our hands at least six weeks in advance of the tourney. Results of meets, and pictures when possible, are likewise desired for inclusion in our model news columns. Address Editor, Model Department, FLYING ACES, 67 West 44 Street, New York City.

NAA SANCTIONED MEETS

New Orleans, La.—Aug. 24-25; Third Annual Gulf States Model Airplane Meet. Full info from Whalen Norman, c/o Mod-Kraff, 4506 Freret St.

Cincinnati, Ohio—Aug. 25; Albatross Birdmen Gas Model Meet. Full info from V.P. Marquis, 3928 Glenway Ave.

Poughkeepsie, N. Y.—Aug. 25; Hudson Valley gas meet at city airport. Merchandise awards. Contact Howard Clark, 205 Grand Ave.

Rockford, Ill.—Aug. 25; Rockford Gas Bugs Annual Gas Model Meet at Gas Bugs' Field. Cash prizes. Blanks from R. K. Wilson, 411 State St.

Pittsburgh, Pa.—Aug. 25; Allegheny Mt. Area Club meet at Butler Airport. Tow line glider, HL stick, ROG fuselage, and gas endurance. Write Harry Vogler, Jr., 1633 Duffield St.

Baltimore, Md.—Aug. 25; Second Annual Loch Raven Gas Model Meet for all classes. Write Charles Wingo, 1138 E. No. Ave.

Randolph, Mo.—Aug. 25; August Contest at Wm. Volker Farm for Gas and Rubber. Info from Tom Moore, 2105 Swift Ave., N. Kansas City.

Kansas City, Mo.—Aug. 25; Contest for gas and rubber powered models at Wm. Volker Farm. Write Thomas Moore, 2105 Swift Avenue, No.

Philadelphia, Pa.—Aug. 25; Regular monthly meet of Phila. Gas Model Ass'n for Gas and Rubber. Contact Jesse Bieberman 3219 E. Brighton St.

Wichita, Kan.—Aug. 25; Air Capital Gas Model Ass'n Contest for Gas of all classes. Leo Rutledge, contest director, 2518 E. Second St.

Louisville, Ky.—Aug. 25; Louisville Model Meet for gas, rubber, and HL gliders. Write Fred H. Fromholz, contest director, 101 N. Western Pkwy.

Pittsburgh, Pa.—Aug. 25; Model Wings Tri-State Meet for combined gas, fuselage, stick and tow launched glider. Write M. J. Thomas, 246 Morrison Drive.

Pontiac, Mich.—Aug. 25; Pontiac Aerobats Third Annual Model Meet at Pontiac Airport. All classes of gas models. Contact Lloyd Skinner, 1879 Cass Lakerd, Keego Harbor.

Jersey City, N. J.—Aug. 25; Record Trials and Hudson County Championship Model Airplane Meet at Lincoln Park Field, Lincoln Park. All outdoor gliders, rubber, and gas "A" ROW. Write Richard McNally, 60 Cambridge Ave.

New York City, N. Y.—Aug. 31; Academy Record Trials for N.Y.C. and vicinity at Creedmore. Contact Frank Zaic, contest director, 100 East 10th St.

St. Louis, Mo.—Aug. 31; Record Outdoor Trials at Welsch Field. Write to R. H. Sommers, contest director, c/o Stix, Baer & Fuller Dept. Store.

Lebanon, Pa.—Aug. 31; Lebanon Model Airplane Championship Meet at Indiantown Gap Military reservation. All classes for rubber, glider, and gas. For info write Bob J. Light, contest director, 1404 Oak Street.

Salt Lake City, Utah—Sept. 1; 2nd Annual Douglas Trophy Gas Model Meet at Central Airport. Dope from Jack Douglas, 105 E. 2 St., South.

Greenfield, Iowa—Sept. 1; Mid-West Model Airplane Meet at Joe Hamilton Field. Open to all classes of gas and rubber. Contact D. R. Lewis, Director.

Syracuse, N. Y.—Sept. 8; Annual Syracuse Model Airplane Club Invitation Meet. Info and entry blanks from Bob Horton, 214 Hudson Street, Syracuse, N. Y.

Wyandotte, Mich.—Sept. 8; Indian City 2nd Annual Gas Meet at Fort and Penn. Ave. field. Contact Fred Bashore, 558 Bondie St.

Boston, Mass.—Sept. 14 and 21; Junior Aviation League meets. Write Gunnar Munnick, 101 Alstead St., Quincy.

Philadelphia, Pa.—Sept. 14; Fourth Annual Invitation Meet of Quaker City Gas Model Airplane Association to be held at Northeast Philadelphia Airport. NAA rules. Dope from William L. Lukens, 5507 Boyer St.

Pittsburgh, Pa.—Sept. 15; Allegheny Mt. Area Model Club meet at Butler Airport. Write Harry Vogler, 1633 Duffield St.

Berlin, N. J.—Sept. 22; South Jersey Fall Gas Meet at Pine Valley Flying Field for all classes. Contact E. N. Angus, 24 Ormond St., Oaklyn.

Creedmore, N. Y.—Sept. 22; Second Annual Sky-Scrapers Gas Model Meet for all classes. Prize for best single flight of day. Write Carroll Moon, 473 E. 9th St., Brooklyn.

New Haven, Conn.—Sept. 29; Fall Edition Conn. Gas Model Championships at Municipal Airport for all classes. Write Salvatore Russo, 666 Main St., E. Haven.

Boston, Mass.—Oct. 5; Junior Aviation League Indoor tourney. Write Gunnar Munnick, 101 Alstead St., Quincy.

Pittsburgh, Pa.—Oct. 6; Allegheny Mt. Area Model Club Championships at Butler Airport. Dope from Harry Vogler, 1633 Duffield St.

Boston, Mass.—Junior Aviation League meets on Oct. 9, Nov. 2, Nov. 16, Dec. 7, and Dec. 21. Info from Gunnar Munnick, 101 Alstead St., Quincy.

OTHER CONTESTS

Toronto, Can.—Aug. 26-27; Canadian National Model Aircraft Contest for indoor and outdoor events. For details write, Don B. Jacobs, Canadian National Model Aircraft, 7th floor, Lumsden Bldg., Toronto.

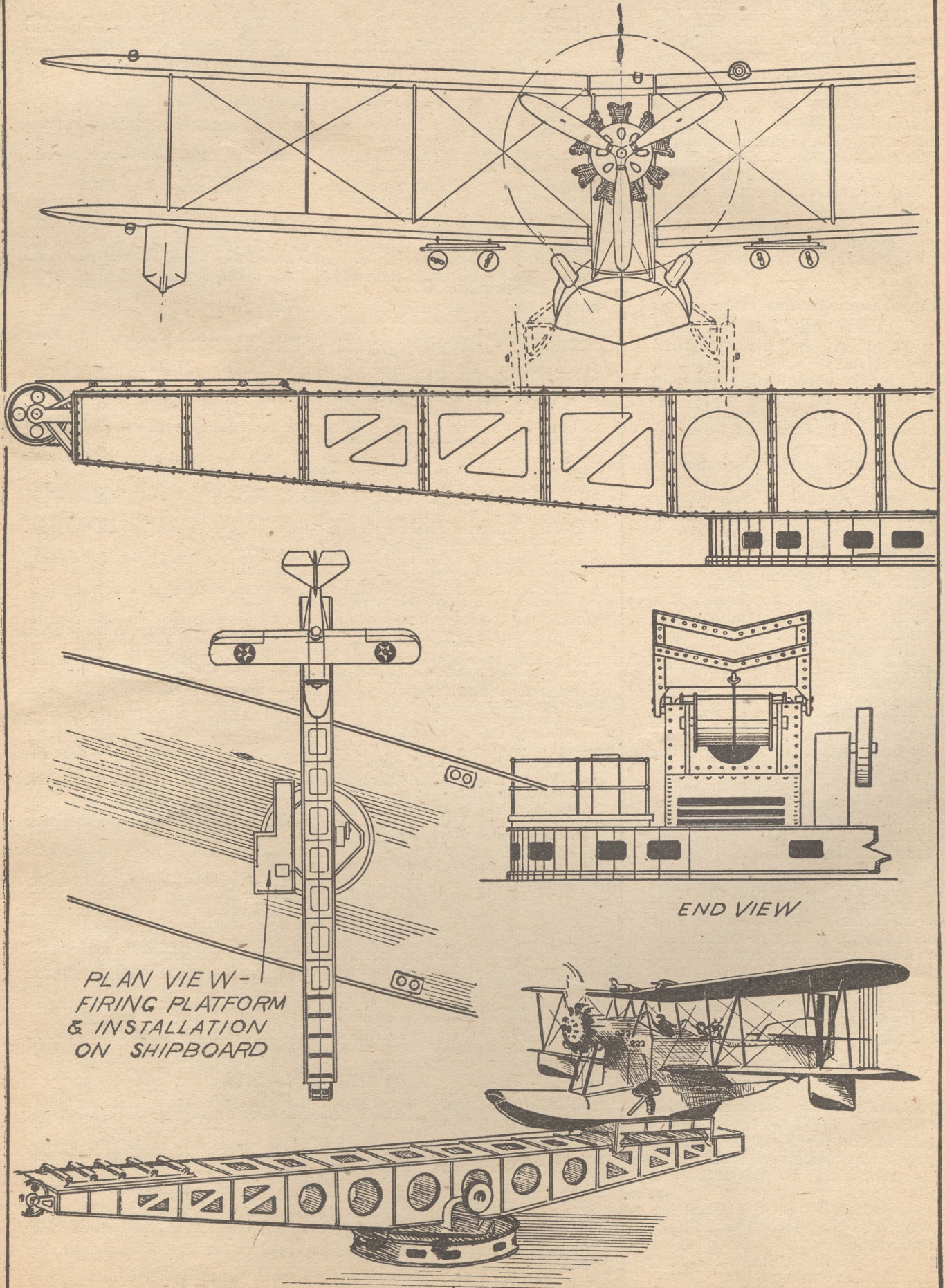
Toronto, Can.—Aug. 26-27; Canadian Nationals—gas, outdoor stick, indoor stick, fuselage, flying semi-scale, and Wakefield events. Write Elwood A. Hughes, Gen. Mgr., Canadian National Exhibition, 6 Adelaide Street E, Toronto.

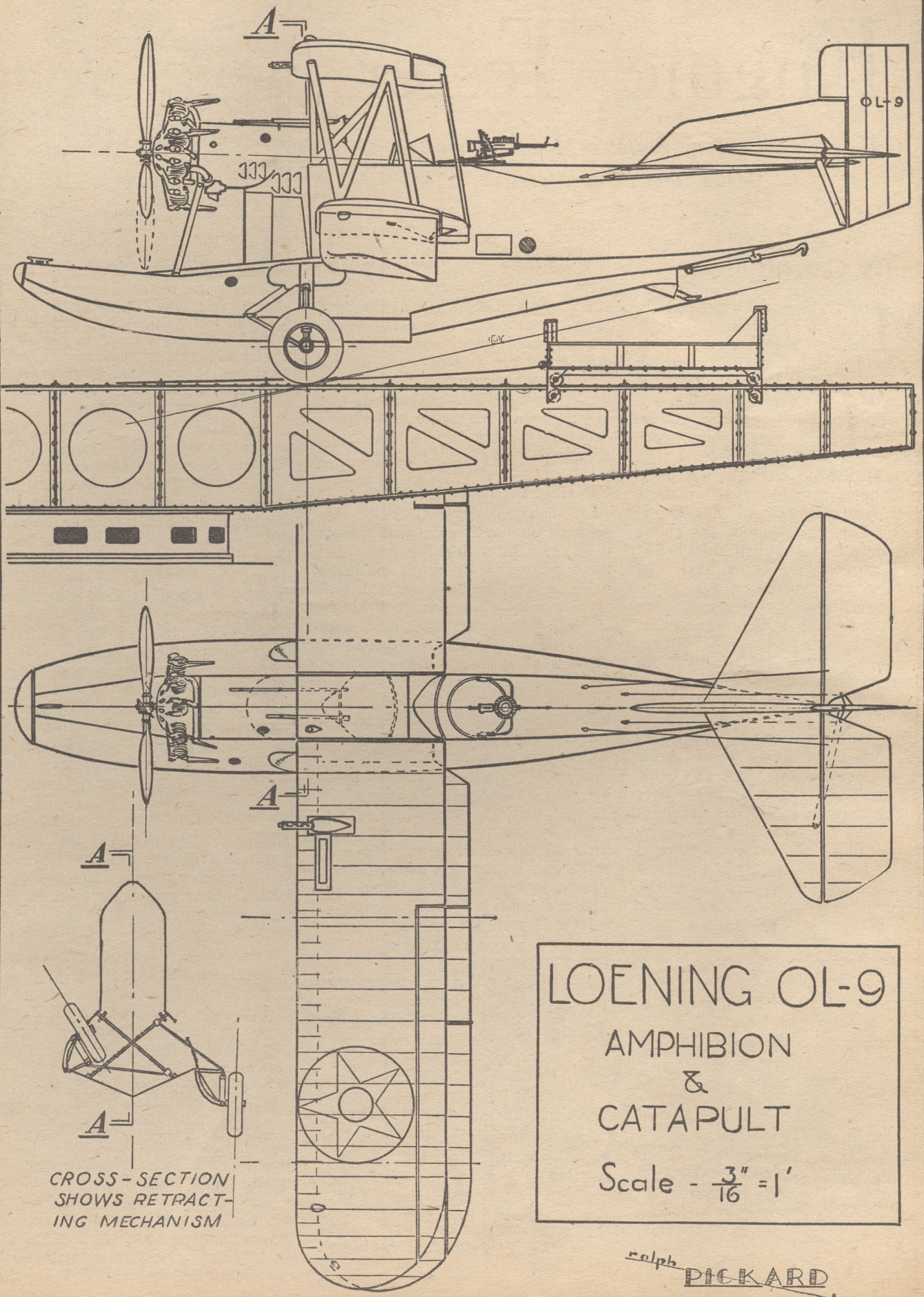
Akron, Ohio—Aug. 29-31; National Junior Air Races. Write Ed Clarke, Nat. Dir. Scripps-Howard Junior Aviator, The Press Bldg., Cleveland, Ohio.

Akron, Ohio—Oct. 6; Edith Van Orman Chapter Outdoor Contest for rubber, tow line glider, and gas. Merchandise prizes. Contact H. M. Jellison, Director of Vocational Education, Board of Education.

Philadelphia, Pa.—Regular monthly meets for gas and rubber. Contact Victor Fritz, 1427 Spruce St.

Laurel Springs, N. J.—Regular monthly meets for all classes. Dope from R. G. Boehme, 400 White Horse Pike.





LOENING OL-9
AMPHIBION
&
CATAPULT
Scale - $\frac{3"}{16} = 1'$

ralph PICKARD

Construct This Jiffy Engine Tester

*Here's a New-Type Portable Motor Mount That's
Made from Scrap Material*

By Carroll Moon

MOST gas model builders have had an occasion to remove their "pet" motor from a ship and run it in the workshop. With only one engine it is usually possible to make a simple mount which will allow the motor to be operated easily. But these temporary mounts are pretty "junky," to say the least. The coil is tied to the mount, the condenser dangles in mid-air and various wires lead aimlessly around to the booster batteries. And if the motor starts at all, you're plenty lucky. But when it *really* starts to "rev," the whole mount generally threatens to fall apart. These vise mounts are often improved to such an extent that the affair works pretty well, but few, however, are very satisfactory when more than one or two motors are to be test run.

Our "Jiffy Tester" was made of simple materials which cost but a few cents. A "two-by-four" was salvaged from the back yard. The bolts, washers, and butterfly nuts were bought from the local hardware store for a nickel each. The condenser was an old type, perfectly serviceable, but hard to mount in the average ship. The wire came from the junk box and the alligator clips were purchased. The first coil used

was an old type one, heavy and husky.

When you build our "Jiffy Tester"—even if it's for only one motor—you'll be much surprised at the work it will accomplish. It is easily transported, simply made, cheaply built—and if you are the only one in town to possess one you'll soon find your workshop filled with enthusiasts who "just wanta runna motor." We know—our own workshop is filled from morning to night.

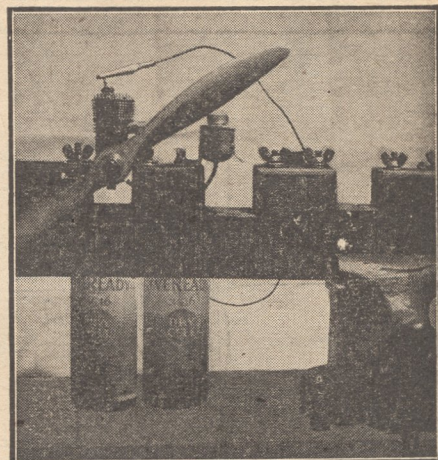
THE FIRST step is to plane down the rough edges of the two-by-four. It is possible to obtain such pieces of wood with planed edges, but the usual variety is rough and needs a bit of shaving before it will quit leaving wood slivers in your hands.

With an ordinary hand saw, make two cuts at the end of the piece, about 1½" apart for Class "C" motors. When the two slits have been made, knock out the inner pieces with a chisel and bore holes for the bolts. It will be necessary to counter-sink the holes a bit on the bottom, because the average four-inch bolts, ¼" in diameter, project only about ¼" through the piece of wood.

The wiring is very simple. Make the connections as in your favorite hook-up or follow the wiring diagram shown. Put an alligator clip on the wire-end that goes to the breaker-points. If a slotted connector is not

available, for attachment to the plug, use another alligator clip instead. The brass ground-rod which goes across the board may be any piece of old aerial wire; however, this must be sand-

Here's the "Jiffy Tester" fully equipped ready to "rev". The engines fastened to the test stand are, from left to right: Hi-Speed "Bullet," Brown "D" and O.K. "49."



This tri-motor tester can accommodate almost every type of model gas engine. You can install a motor, "wire it for sound" and have it ready to run all in ten seconds. This Hi-Speed engine hook-up shows the manner in which gravity-feed lines are run down to the intake rotary-type valve.

ed to provide good contact. The boosters connect as shown.

To operate the device, unscrew the butterfly nuts on each side of the particular slot you intend to use and slide the motor beneath the washers. Note that one washer on each mount is grounded, which means that a piece of wire is soldered to the washer and ground.

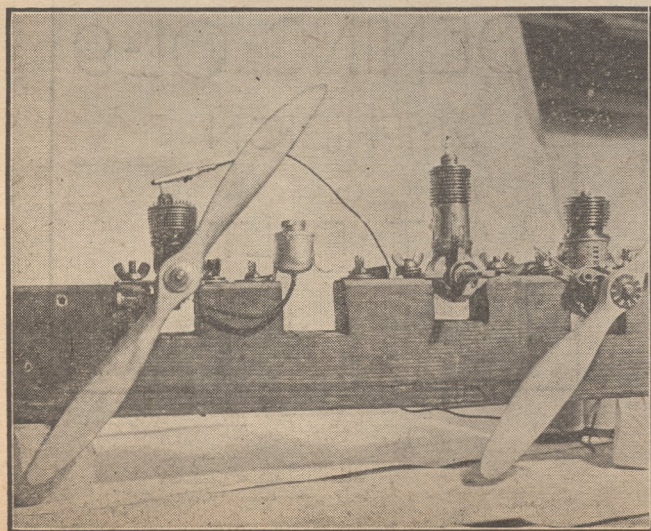
Slide the motor in the slot until the front of the crankcase is flush with the face of the mount. Then tighten up on the screws until the motor is held solid. Snap the alligator clip to the breaker-point terminal and connect the plug to the high-tension lead of the coil. Connect up the boosters batteries—and you're all set.

IN ALL probability, your first reaction may be that the device will not hold a motor. But that's where you're wrong! Should an engine pull loose from the mount, it would stop immediately, as the ground wire would be severed.

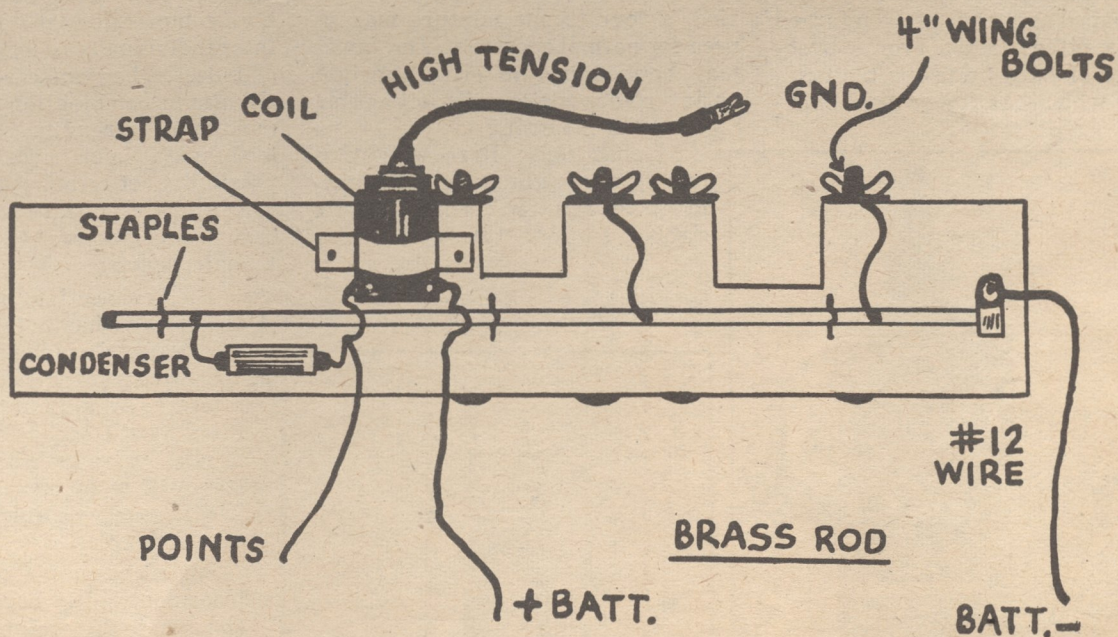
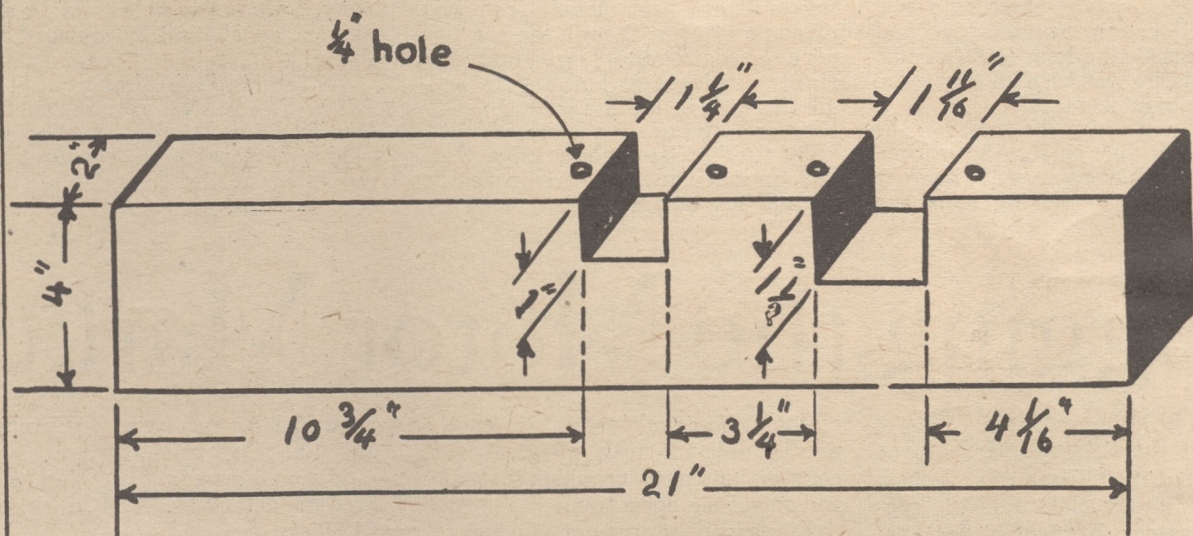
The original mount was made when the designer had but one motor, and as a result the tester was constructed to hold only one powerplant. However, the improved mount, as illustrated, will fit the majority of motors now on the market.

In the largest slot, such prominent motors as Brown, O.K., Dennyrite, Gwinn Aero, Mighty-Midget, Sky-Chief, Hurleman, Ohlsson 60, and Ohlsson Gold Seal, have been run.

The "Jiffy Tester" should be given a coat of paint; otherwise, after hours of use it will become oil soaked and quite messy to handle. Incidentally, if your motor has a particularly deep tank that projects far below the bottom of the crankcase, the slot may be cut deeper.



JIFFY TESTER FOR ALL MOTORS



SCALE $\frac{1}{4}" = 1"$

Drawn By - m. Schoentron

What Do You Say?

Here's your corner, buzzards, and it's open to all readers who have a model argument they want to get off their respective chests. Make your comments short and snappy, and we'll try to squeeze 'em in.

Model Editor, FLYING ACES:

I constructed the "Kaydet" (June, 1939, F.A.) and she has turned in the best flights around this district. The very first hop proved how tough she was. For as she came in for a landing, a tree stuck up too high and they embraced like long lost friends. Half the tissue was torn off and some cross members went A.W.O.L.

After climbing up the tree, I managed to free the ship. And rather than risk further damage, I threw it clear. Despite the missing members

and surface covering, she glided down to one of the neatest landings I have ever seen. So thank Nick Limber and Sorky for their fine work.

I still think F.A. is the best mag I have ever read. Well, I gotta get back to my workbench and finish up the helicopter that answers to "Jumping Jeppers" (June, 1939, F.A.).

KEN BRINDAL,
Upper Mitcham, Australia.

Built First Models From F.A. Model Editor, FLYING ACES:

My friend Harold Winer and I were practically weaned on F.A., having built our first models from your plans. And even though we can't report Korda success, we just keep right on plugging and try to learn all there is to know about construction and flying. I recently built a "Sky Gull" (September, 1938, F.A.) and am still waiting for clear weather to try her out. I've also made two

"Phone Booth Specials" (April, 1938, F.A.).

I really must compliment you on your gliders—for they're really swell. I got over five minutes on some of them and have built every one since 1937.

BUDDY BERGER,
Cleveland, Ohio.

"Winning Glider" Great!

Model Editor, FLYING ACES:

I built your "Winning Glider" (June, 1937, F.A.) and am more than pleased with the results. It was the flattest glide I have ever seen. Why, I was even able to walk alongside it as she settled toward terra firma!

As for the "Hi-Climber" (August, 1939, F.A.) I've got a complaint. One fine day I took that model to a field near the house. The first flight consisted of tight circles about fifteen feet off the ground. The next

Logging the Motor Market

ONE of the outstanding features of the 1940 Class "C" James, the manufacturer claims, is the special processed hardened feather-weight steel piston. The one-piece chrome molybdenum steel cylinder employs typical aircraft-type finning to provide adequate cooling. The manifold exhaust aids in scavenging of the exhaust fumes.

The connecting rod, which is "T"-beam shaped and made of drop forged dural, is fitted with a bronze bushing. Also of hard bronze is the main bearing which has forced feed lubri-

cation. The crankcase is die cast of new double-strength alloy. A fully counter-balanced crankshaft makes for smoother operation.

Electrical equipment includes a Champion spark plug, double AA heavy duty coil, and a condenser. The enclosed, adjustable timer functions dependably, it is stated, despite the effects of any foreign matter which may seep inside.

After the two-hour break-in period, a four to one mixture may be used for normal operation. The James may be installed in either upright or inverted position with either lug or radial mounting.

Specifications: Bare weight, 8 oz.; flying weight, 22 oz.; displacement, .647 cu. in.; bore, 15/16"; stroke, 15/16"; two cycle, four

port, 1/4 h.p.; recommended propeller, 13" dia., 7 1/2" pitch.

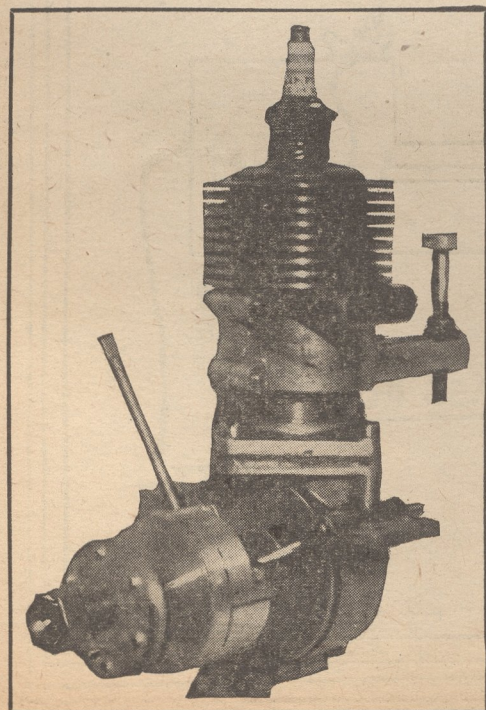
Minimum weight of James-powered model under A.M.A. ruling is 51.80 oz.

Drimmie Model 10

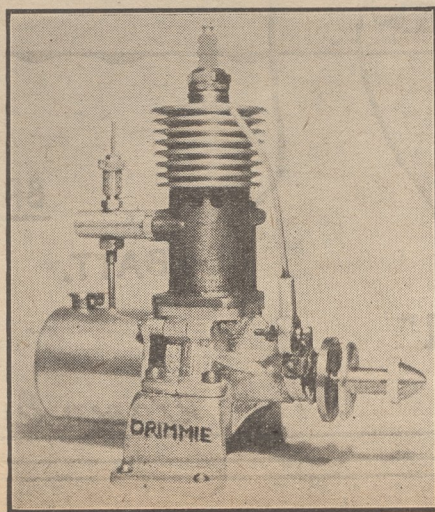
THE outstanding feature of the Class "C" Drimmie Model 10 motor, the manufacturer claims, is the fact that it can be completely disassembled without difficulty. A high-compression piston is lapped into individually selected cast iron cylinders. The crankcase is a copper-aluminum combination designed for maximum strength. Safety prop bushings, it is claimed, eliminate the possibility of crankshaft breakage. The shaft is heat-treated, nickel-chrome steel, tapered to fit the bronze main bearing.

The connecting rod is heat-treated and has both ends lapped. The crank-pin is hardened, lapped, and fitted with the connecting rod retainer. An aluminum gas tank is fitted with a micrometer-type needle valve which assures a steady flow of fuel at all speeds. The long-armed timer has a range of 180 degrees.

Specifications: Cubic inch displacement, .6; bare weight, 7 ounces; flying weight, 15 ounces; bore, 7/8"; stroke, 1"; rated h.p., 1/5; cycle, 2; ports, 4; maximum r.p.m., 10,000; minimum r.p.m., 500; fuel parts, 4 white gas, 1 "70" oil; prop. diameter, 14"; pitch, 8"; beam type mounting. Uses two standard flashlight batteries each weighing 1 1/2 ounces.



Left: Here's a three-quarter view front view of the James. Below: The Class "C" Drimmie on test stand.



time I wound her up and let go, she went straight into the wind, did a couple of barrel rolls, and then plowed into the ground.

MALCOLM RASMUSSEN,
Honolulu, T. H.

Editor's note: Suggest you try lowering the trailing edge of the "downward" wing to correct the tight circling. Either that or give a bit of opposite rudder. Also, it's possible that you're using too much power.

S.O.S. For "Moth" Plans

Model Editor, FLYING ACES:

I recently thumbed through a batch of F.A.'s and came across plans for the "Moth" (August, 1937, F.A.) and decided then and there to build her. I bought all the necessary materials and was about to start when my Dad asked me to do him a favor. That took over an hour. When I got back, I asked my Dad where the plans were. He didn't know. Well, to make a short story shorter, my Mom didn't know I needed the plans and she threw them out! Now, could anyone who is through with his "Moth" plans send them to me? I'd be very grateful.

ALFRED LIPPITZ,
3155 Rochambeau Ave.
Bronx, N. Y.

Two More On "Snoony"

Model Editor, FLYING ACES:

A boy in my neighborhood made "Snoony" and put a small sack of flour in the back. And when she flew fitted out like that, she sure looked like a real skywriter.

GEORGE BROWN,
Cincinnati, Ohio.

Model Editor, FLYING ACES:

I have been reading the pro and con discussions on the various models published in your mag and have

never put in my two cents. But when some fellows start slandering the "Snoony" (May, 1939, F.A.) my blood starts boiling. Now, I built old "Snoony" and by golly she flew like a bird. I then made six more that flew even better.

VIRGIL STAIR,
Devils Lake, N. D.

We're Okay By Him

Model Editor, FLYING ACES:

I built the "Twin Fin Transport" (Sept. 1939, F. A.) and got a 2 min., 57 sec., flight out of her. That's darn good, I think. Let's have some more small gliders.

I've read a lot about the "Snoony" (May, 1939, F.A.) and my curiosity is aroused. How about one of you readers coming through with the plans? Incidentally, I've been a steady reader of your mag for the last four years and I think it is the best model building book on the market.

KEITH WASHBURN,
Soper, Okla.

Stahl Proof!

Model Editor, FLYING ACES:

I have built several F.A. models and among the best performers is Earl Stahl's "High Climber" (August, 1939, F.A.). I'm still looking for another craft as swell as that one.

WESLEY HEALD,
Fort William, Ont., Can.

Solid Scale Surprise

Model Editor, FLYING ACES:

I built that solid Martin 167 (December, 1939, F.A.) and, believe me, she turned out to be a beauty! But that's not all. The other day I accidentally dropped her and imagine my surprise when instead of its doing a 9-G, she glided to a perfect landing! After that, I began to throw it

(Continued on page 62)

Workbench Tips

Coloring Sponge Wheels

SEVERAL months ago I made a pair of wheels for my gas model from sponge balls. Not liking the red color, though, I found a good way to make them black and more realistic. Here's how:

First off, give the two balls a slight sanding with fine paper, making them as smooth as possible. Then, after cleaning off the sandings with a cloth, apply from six to eight coats of liquid black shoe polish, allowing each coat to dry before applying the next. The final coat may be rubbed with a cloth to bring out a shine.

—TED BOZENCKI.

Now—Retractable Props!

MANY modelers are using folding, one-blade props on endurance craft. Yes, these work Okay, but they still offer plenty of resistance. I use a retracting prop on my jobs, though, thus cutting down considerable frontal area. Full dope follows:

When building the body, measure from the break point of your folding airscrew to the tip and mark this length on the fuselage where the prop would hit on folding back. Now moisten the outside of a 1/32" sheet of balsa and bend it across the rear of the prop for contour. Cut this "pattern" longer and wider than the prop, so that the airscrew will fit into it with plenty of spare room. Carve out the body where the prop will hit, and glue the boxed pattern into place.

With this system, your airscrew will be entirely out of the slipstream when in folded position, and will therefore present less drag—and that means longer glides.

—PINK WALKER.

IN THE NEXT

Streamlined FLYING ACES

FACT—"I Cover with Cubs." Donn Munson, Aero Editor of the Schenectady Gazette, gives you full dope on the flying side of reporting.

Also, there will be one more article than ever before, plus the same bang-up features and departments!

FICTION—Dick Knight in a smashing action-packed air mystery.

Your favorite trio—Keen, O'Dare, and Pebbles—in the latest "Griffon" corker.

Plus another swell Phineas funnybone-tickler.

MODEL BUILDING—Sid Struhl's great flying model of the Bellanca Junior.

The Gull Sportster by Rex Hall, who designed the famous "Snoony."

Plus many other features to keep you workbench buzzards busy.

In November FLYING ACES

On Sale Sept. 24th (Canada One Week Later)

SWASTIKA SCOURGE

(Continued from page 12)

of the affair, to include in my code to Washington."

"Then you don't think there's a chance they're telling the truth, Sir?" Jackson ventured. "Trent might have been falsely reported killed."

"If they're Americans, why would they fire on Navy planes?" Little said harshly.

"It might interest you," Trent said idly, "to know that those two 'Navy' ships were defending a Nazi seaplane."

"Now I'll tell one," snorted the commander. "There's a nice little cell at the O.N.I. building, and you can sit in there and think up another fairy story while—"

"Eric!" Mortimer Crabb suddenly exclaimed in an astonished tone. "Look over there—by that car."

They had reached the street which ran parallel with the docks. Trent halted, despite a jerk from the bluejacket who was holding him. Then he stared, unbelieving, as he glimpsed the beak-nosed profile of the man Crabb had pointed out.

"The Nazi pilot!" he exclaimed. "Hold everything, Mort—I'll nail him!"

CHAPTER II

HELD FOR MURDER

HIS QUICK LUNGE threw the bluejacket off balance. Before the sailor could recover, Trent sprang to the side of the waiting car. The beak-nosed man spun around with a frightened look, thrust one hand under his white linen coat. Then Commander Little and the bluejacket pounced on both of them.

"Trying a getaway, eh?" fumed Little.

"I'm breaking your case for you," Trent said coolly. "This man was the pilot of that German seaplane."

"You're crazy if you think I'll swallow—" Little broke off as he saw the half-drawn pistol in the hand of the beak-nosed man. "What's the idea of that gun? Who are you?"

"I'm N. D. Hunt, chief lock-operator at Gatun Lock," the man said shakily. His face was pale under a coat of tan. "You'd carry a gun, too, if somebody was trying to get you."

"Don't let him fool you, Commander," said Trent. "This man was in a Blohm and Voss Ha.140 seaplane forty-five minutes ago. I don't know how he got here so quickly, but I'd know that face anywhere."

The man who called himself Hunt gaped at Trent with a look of complete befuddlement.

"I've never been in a plane in my life. Commander, this man's insane."

Little reached over and took Hunt's pistol.

"A Luger? Where'd you get this?"

"I've had it for years. Bought it at a Colon shop."

"You'll have to come up to Naval Intelligence until I check up on you," Little said gruffly.

"Can't I use my own car?" said Hunt. "You can send one of your men along with me. Otherwise, I'll have to come back here—"

"We'll all go in it," Little interrupted. "It'll save time getting a Navy car down here. But first, we'll see that this fake 'Trent' doesn't get loose again."

At the commander's order, one of the bluejackets produced a pair of handcuffs. He snapped one link on Trent's wrist and the other on his own.

"What were you doing at the docks?" Little fired at Hunt as the man started the car.

"I was canceling reservations for a trip to Honolulu," Hunt replied sullenly. "I was supposed to leave tomorrow, but with this emergency order—"

"Never mind that," snapped Little. He shot a sideways look at Trent.

"Don't worry, Commander," said Trent. "Everybody probably knows all about it, anyway."

"I don't know what you're talking about," Little said angrily.

Trent chuckled. "Just because I'm not in Naval Intelligence doesn't mean I'm a moron. Also vice versa, if you get what I mean."

Mortimer Crabb groaned. "Here we are in bad already, and you go insulting people. How I ever was fool enough to team up with you, I can't understand."

Trent laughed. "Commander, don't pay any attention to my partner here. We're really the reincarnation of Damon and Pythias. By the way, will you have a cigarette—they're D'Artagnans, my personal blend."

Little's jaw dropped, as Trent offered him a lighted cigarette plucked out of thin air.

"Harker, I told you to handcuff this man!" he spluttered.

"But I did, Sir," protested the dazed bluejacket. "He slipped out of 'em like he was a Houdini."

THE COMMANDER stared from the empty handcuff to the gold cigarette case which Trent brought out so deftly that it seemed to materialize from nowhere.

"Nothing to be alarmed about," Trent said soothingly. "Just a couple of tricks I picked up when I was a magician's assistant."

"Keep him covered, Harker!" grated Little. "Shoot if he makes another move."

"Don't you think that's a bit melodramatic?" grinned Trent. "After all, I could have lifted Harker's gun and started some fireworks, if I'd been so inclined."

"You heard my order," Little grimly told the bluejacket. And then silence reigned until the car stopped before a trim white building not far from the line dividing Cristobal from the Panama town of Colon. Cheerful lights along the street and the softly waving palms made it a peaceful scene.

"A fine welcome home," Mortimer Crabb said lugubriously. "First time I set foot on American soil in months and then I get arrested."

"Cut out the chatter and get moving," grunted the sailor who guarded him. With Little and Jackson bringing up the rear, the group entered the Naval Intelligence building. Little ordered the three prisoners taken into a central room, opening off a short hall. There were no windows, and only the one door. Harker remained on guard in the hall, and the other sailor disappeared.

"Call the superintendent at Gatun," Little directed Jackson. "Find out if there's a chief lock-operator named N. D. Hunt. If so, get his description."

Jackson went out. The commander turned to Trent and Crabb.

"*Mein Herr*, the game is up!" he flung out suddenly in German. "You may as well tell the truth."

"For your benefit, Mort," Trent chuckled, "the commander is trying to trap us. He wants us to confess our sins."

"So! You do understand German!" roared Little.

"Ja," said Trent. "Also French, Spanish, and Dutch—and a smattering of others. Want to try me out?"

Little swore under his breath, sat down at a desk in one corner of the room, and scribbled out a message.

"Have this coded and sent to Washington by priority radio," he told Harker. When he turned back to the room, Trent was calmly holding the message pad up to the light, slanted so that the impression from Little's pencil was visible.

"Give that here!" thundered the commander. He snatched the pad from Trent's fingers.

"I could really save you the trouble of all that check-up," Trent offered agreeably. "You'll find our passports are in perfect order. We left the States before the European war broke out, in a DC-3 belonging to Mort—which unfortunately we had to leave behind after a little trouble in France. The passport photos you asked to have radioed aren't the best likenesses in the world—but you'll find that story of my death, like Mark Twain's, slightly exaggerated."

"Even if you are Trent, you've still a lot to explain," retorted Little. He jerked around as Lieutenant Jackson appeared.

"They gave Hunt a clean bill, sir," reported the junior officer. "Described him to a 'T,' and asked us to release him at once. Because of the emergency orders, he's needed at—"

Little stopped him with a quick gesture. "Hunt, I want to talk with you alone. You said something about

the reason for carrying a gun . . ."

The rest was lost to Trent as Little motioned the lock-operator into the hall. Jackson took up a position near the door, facing the prisoners. There was a sound of another door closing not far off. And a few seconds later Trent heard a footstep in the hall. It ended, and there was a brief silence. Suddenly Jackson turned to the door, listening to something outside.

"Stay here," he said curtly to Trent and Crabb. Then he swung the door open. There was a stifled oath, and beyond the half-opened door Trent saw something flash in the light. Jackson staggered back with a groan, sagged to his knees, clutching at the knob. Trent leaped to the door, pushed it open, and caught the lieutenant's arm. There was a sound of swift-running feet in the main hall, but the connecting door was shut.

"Good Lord, he's been stabbed!" Crabb said hoarsely.

Trent knelt hastily beside the wounded man. A stiletto was buried almost to the hilt in Jackson's side.

"Get Commander Little! Have him call a doctor!" Trent called swiftly. As Crabb hurried to the hall door, Jackson collapsed to the floor. He looked up at Trent, his face ghastly white.

"Hunt . . . listening at door . . . must be . . . spy." A spasm shook him, and blood came to his lips in a reddish froth.

"Don't try to talk," Trent told him. "We'll have help in—"

"Get him, Harker!" came Little's furious voice from out in the main hall. Then the door burst open and Mortimer Crabb backed into the shorter hall, hands elevated.

"But I was only trying to find you," he protested.

"Don't try to bluff—" the commander's words ended in a gasp. "Jackson! Those devils have knifed him!"

Jackson's eyes were glazed, but he made a last desperate attempt to speak.

"Not—not—" he stopped, a wild, incredulous stare fixed on some one in the doorway. Trent turned, saw that it was Hunt. For a second longer, Jackson lay there, then the stunned look faded, and his eyes closed for the last time.

"YOU BUTCHERS!" rasped the commander. He motioned grimly to Harker. "Keep them covered. I'm holding them both for murder."

"We didn't kill him," Crabb said forlornly. "It was somebody out in the hall, just after you left."

"It won't do you any good to lie," retorted Little. "We caught you trying to sneak out."

"Just a moment, Commander," said Trent. He glanced at Hunt, saw the lock-keeper's frightened eyes rest on the corpse. "It may interest you to

know that Jackson named the man who killed him."

Hunt stared at him, but he made no attempt to escape.

"You're only wasting your time," Little said harshly. But Trent interrupted: "When we came out, after Jackson heard a noise and stepped into the hall, we found him here, stabbed. I sent Mort for help. Just after that Jackson said: 'Hunt . . . listening at door . . . must be—spy.'"

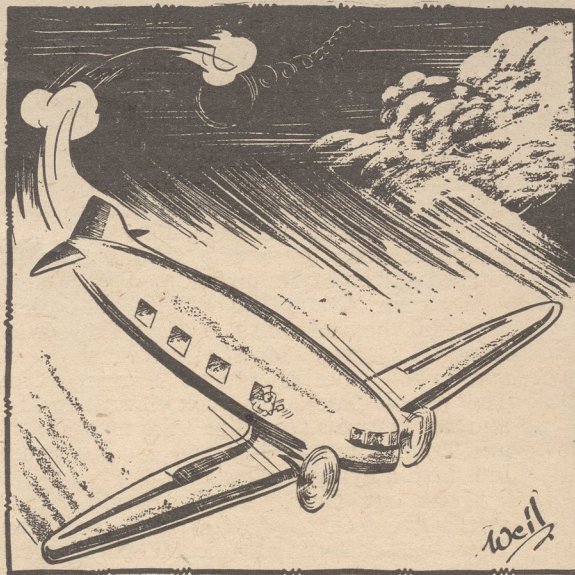
Hunt's face was a picture of amazement. Commander Little, after an equally astonished look, turned an angry red.

"Why, you poor fool, Hunt was with me every second! Harker can testify to that, too."

"Certainly, Sir," said the blue-jacket. "But—if the Commander will pardon me—I'm wondering about Seaman Morris. I told him to come back here and report to Lieutenant Jackson."

"Go look for him," ordered Little. "And phone the base hospital for a doctor and some men with a stretcher. Jackson's death will have to be certified as murder before he's moved."

Harker returned in a few moments, "No trace of Morris, Sir. I told your orderly to do sentry-guard at the door. They're sending an ambulance for the body."



"Okay, you can stop looping now . . . I finally located that blasted flap-jack turner I thought was lost!"

"Cover him up," muttered Little. "Then we'll lock these two in a cell and send out an alarm for Morris."

Hunt was still looking, white-faced, at the dead man. "May I go now, Commander?" he said huskily. "This terrible thing—I'd like to get away. And I've a lot to do before midnight, as I told you."

"No reason why you should stay," answered Little. "You'll have to give evidence, later, at the trial."

Hunt hurried toward the front of the building. A few seconds later a Navy surgeon appeared, followed by two corpsmen with a stretcher. Little cut short Trent's attempt to explain to the surgeon, and after a brief

examination of the body the medico ordered the corpse removed. Little and Seaman Harker marched the two prisoners back to a cell at the rear of the Intelligence building, and the steel door clanged shut on them.

"Stand guard out in the hall," the Commander directed Harker. "I've got to run over to Operations, and I want to get there before the blackout. I'll ask for a couple of men for special guard-duty. You'll be relieved in an hour or so."

The door to the brig closed, and for a moment the two prisoners looked at each other. Finally Trent shrugged.

"Well, Mort, you had it right—all but the Navy slum. Maybe that'll come later."

"This time we're sunk," Crabb said gloomily. "They'll hang us higher than a kite."

Trent sat down on the edge of an iron cot. "Don't let it worry you, Mort. We can prove we were searched and neither of us had that dagger on us."

"They'll say you hid it some way," Crabb replied morosely. "You and your magician's tricks—and why did you have to let them know about that, anyway?"

"I couldn't help deflating old Fuss-budget Little. If I'd dreamed it was this serious, I wouldn't have bothered."

"Oh, so you admit a murder-charge is serious?" Crabb said sarcastically.

"I don't mean the murder charge. I mean whatever's back of this business. Mort, there's some big scheme afoot, and lock-keeper Hunt is at the center of it."

"You still think he killed Jackson?" demanded Crabb.

"No, that would mean Little and Harker were both in on it, and they're obviously loyal. And that strange look Jackson had when he saw Hunt, there at the last. It was as though he couldn't believe what he saw. He was about to clear us when he saw Hunt—then he stopped as though he'd been paralyzed."

"Poor devil," mumbled the inventor. "He seemed like a clean young chap. Terrible, to be struck down like that."

"The question is, *why* was he killed? I've a hunch whoever did it was trying to get at us. Afraid we'd upset some plan, maybe. Mort, we must have the key to this thing without knowing it."

"How could we have any key?" Crabb growled. "All we saw was that Nazi plane with the fake insignia—and Hunt. Maybe he didn't kill Jackson, but he must be a spy, or he wouldn't have been in that ship."

Trent sat up, snapped his fingers. "Mort, you've hit it! He wasn't in that ship, after all."

"But I saw him! So did you."

"You thought you saw—" Trent's words were drowned by the moan of a siren out on the reservation. The

sound rose shrilly, with an eerie note that reminded Trent of the air-raid warnings he had heard with unhappy frequency in Europe. The siren was still wailing, its volume increasing, when from somewhere beyond the door of the cell-room, there was a muffled report. Although it was barely audible above the siren, Trent knew it instantly for a pistol shot.

CHAPTER III

JAILBREAK

SOMETHING like a strangled cry followed the shot, then the door of the cell-room was quickly flung open. Four men appeared, and beyond them on the floor Trent saw Harker doubled up with a red stain on the side of his uniform coat. The first of the four men was a big, massive figure in the uniform of a Navy two-striper. His head was set squattily on a thick neck and the glittering pupils of his pale blue eyes were like bits of black ice. In his hand was an automatic from which a wisp of smoke still curled. Behind him was the missing seaman, Morris, with a pinched-faced man in the garb of a chief petty officer beside him. And over the C.P.O.'s shoulder Trent saw the angular features and beak nose of lock-keeper Hunt.

"Krossen—come here!" said the big man. His voice was like the crack of a whip, and the beak-nosed man sprang forward.

"Ja, Herr Heimmmler," he said hastily.

"Are these the ones?" demanded the big man.

"They are the men who flew the Fokker," said the one called Krossen. Mortimer Crabb glowered at him through the bars.

"So you were in on it, you lying traitor!"

Krossen's lips drew back in a mirthless laugh, exposing receding gums and long, almost pointed teeth. Crabb started.

"Eric, look at his teeth! It's not Hunt at all!"

"I had just figured that out—a little too late," Trent said regretfully.

"Unlock the door," Heimmmler ordered Morris. Then he turned his pale eyes to Krossen. "For the last time, keep that shark grin off your face. One look at those teeth tonight, and they would know the deception. And it would be most unfortunate for you if you failed."

"I will remember, *Mein Herr*," Krossen said in a subdued voice. "No one will know."

Morris opened the cell door and Heimmmler grimly motioned with his gun.

"Come out, with your hands up. Morris, you and Schultz handcuff and gag them."

"The tall man, Trent, is a magician—" began Morris.

Heimmmler jumped at the mention of Trent's name. "*Was ist?* You mean this is the Trent who caused all the

trouble over the stolen bomb-sight last Fall?"

"He gave that name to Commander Little," Morris said nervously. "I would have told you sooner, but you kept me busy—"

"*Lieber Gott*, we have caught a real prize!" exclaimed Heimmmler. "If I had know who these two were, I would not have waited for the black-out before breaking in. At that, it seems incredible they did not tell the Navy officer what they saw."

"Trent told him, but the commander wouldn't believe him," said Morris. He gave Krossen an ugly look. "If you show no more brains tonight than you did using a plane with a swastika—"

"The swastika was painted out, with Colombian registry letters over it," Krossen said defensively. "But the paint peeled off—there must have been a spy at the Azores base where we had it done. The paint contained something to make it dry too fast, but we did not notice until we were half-way across, and we could do nothing about it. If the pilots of the stolen scout-bombers had met us sooner, they could have kept the Fokker from getting close enough for these *Schweine* to notice."

"We've no time for petty squabbles," snapped Heimmmler. "We have to get into Colon while the Zone is still blacked-out."

He gestured with his gun for Krossen to cover Crabb. In the split second that his pistol was turned away, Trent went into action. A lunge sent the steel cell-door thudding against Heimmmler's arm, and the Nazi's gun clattered to the floor. Before Krossen could fire, Trent snatched the man's wrist, dropped to one knee. Krossen went headlong over his shoulder, pitched on top of Heimmmler.

Mortimer Crabb leaped into the fray, his ham-like fists flying. The false C.P.O. went down with a howl and Crabb wheeled toward Morris. The psuedo-bluejacket took frantic aim, but before he could pull the trigger Trent dived in low and caught him with a flying tackle.

"Look out, Eric!" shouted Crabb as the two men toppled to the floor. There was a sound of a scuffle, then something hit Trent just above the ear. A roaring welled up inside his head, and then suddenly everything went dark . . .

WHEN TRENT'S senses returned, a steady vibration droned through his aching head. He groaned, opened his eyes, and found himself in the ill-smelling cabin of a fairly large motorboat. The hatch door was closed, but a faint light shone in through a nearby port.

"I think he's coming around," muttered a voice, which Trent recognized as Hunt's after a moment. He turned his head, painfully, saw the lock-keeper and Crabb bending over him. There was a bandage around Crabb's forehead, Hunt's face was bruised.

"Eric, are you all right?" whispered Crabb.

"I feel as though an elephant stepped on my head," Trent said thickly. "Aside from that, I guess I'm Okay."

"The big fellow slugged you with a pistol butt," said Crabb. "I tried to block him, but Morris and that devil who looks like Hunt jumped me."

"Where are we?" Trent asked. "Feels like open water."

"We must be somewhere the other side of Point Manzanillo," Hunt put in. "They're hugging the coast and running without lights."

"How'd they get out?" queried Trent as he struggled to a sitting position.

"Two of them were in my car, waiting," Hunt answered glumly. "They grabbed me the second I climbed in, made me drive around in back. Then when the black-out came, they left me tied and gagged and went into the Intelligence office. When they brought you two out, they tumbled you into my car and drove from Cristobal into Colon. Heimmmler's uniform got them past the sentry-post—they had the three of us on the floor so we couldn't be seen."

"Fine mess," Trent commented. "Little will think I worked the lock on that cell-door and killed Harker. But no use worrying about that angle now. Do you have any idea where we're heading?"

"I heard Heimmmler say something about a river," answered Hunt. "No telling which one he meant—there are several along this coast which drain into the Atlantic."

"Probably they've fixed a hide-out back in the jungle," ventured Trent. "Just how much do you know about this thing, anyway?"

"Nothing," Hunt said helplessly. "That is, only what I've guessed. It's something about the Fleet—but I don't know what they're up to, or why they want me."

"The Fleet's coming through the Canal tonight, isn't it?" queried Trent.

"That's right. The first ship will reach Gatun Lock about midnight."

"And they've a man who can double for you," mused Trent. He leaned back, winced, rubbed the side of his head. "If I could only think straight. What was this story you told Little about having to carry a gun?"

"Several queer things happened to me," Hunt told him. "I begin to see now what was up—though it isn't all clear yet. I discovered I was being followed everywhere, but I couldn't find who was doing it. My house was ransacked one night. Another time some one slipped me a Mickey Finn at a bar, and when I came to, I was out on the edge of Colon with oil all over my face—"

"They were making a plaster mask of your face," hazarded Trent. "I'd say all that business was to get as much information as possible for somebody to impersonate you. They evidently searched until they found some one who could double for you."

"But why would things happen to

my assistants, too?" said Hunt. "One of them had a smash-up in his car, and another got sick after eating at a restaurant in Colon. He's been in the hospital, poisoned—"

"That's not hard to guess," interrupted Trent. "They wanted to make sure you'd be on the job. You were set for a vacation, so they got two of your assistants out of the way to force you to stay here until the Fleet passed through. They're planning to have Krossen—your double—impersonate you tonight. Now what could he do out there at the locks?"

"Well, he could cause trouble, all right," Hunt said thoughtfully, "but I don't see how he could hurt the Fleet, though he might delay it temporarily by wrecking some of the lock mechanism."

"It must be something more than—" Trent stopped as the boat slackened speed. "We must be in the river—I don't feel the swells."

"Running in the dark, they'd have to slow down," said Hunt. "These rivers twist a lot."

There was silence in the cabin for a few minutes.

"Did Krossen come on the boat, too?" Trent asked suddenly.

"They left him back in Cristobal," Crabb replied. "I heard that big brute talking to him, but it was in German and I couldn't tell—"

"I understand German," said Hunt. "But I couldn't tell what they were up to. Heimmler told him to follow the directions on a sketch of some kind, and that he'd be taken to Gatun by Schultz—whoever he is."

"Schultz is the name of the spy in C.P.O. uniform," supplied Trent. "Mort, did he stay back there?"

"Yes, I forgot to mention that," said Crabb. He sighed gloomily. "What difference does it make? You can't laugh your way out of this jam."

"It's not a question of getting out of a jam," Trent said grimly. "Unless I'm mistaken, most of the Fleet is in serious danger."

The boat's engines fell to idling speed, and a moment later the craft bumped against something. Then a key scraped in the lock of the cabin door.

"Pretend I'm still unconscious," Trent whispered swiftly. He let himself back on the deck. "No matter what they do, don't let on."

THE DOOR was flung open, and through half-slitted eyes Trent saw the glint of a gun in the starlight.

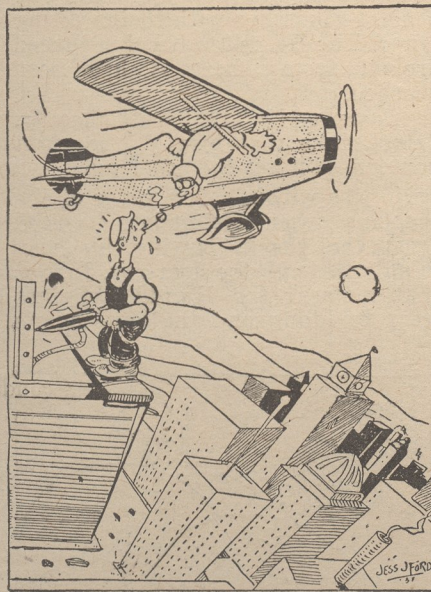
"Come out, you *Amerikaner* pigs," came Heimmler's curt voice.

"Speak English, you big ape," muttered Crabb.

Heimmler swore under his breath and a flashlight probed into the cabin. Trent closed his eyes as the beam twitched toward him. The big Nazi gave an order and Trent heard men hustling Crabb and Hunt out of the cabin. A boot tip thudded against his side, and he held back a groan with difficulty as another kick followed.

"Take him ashore," Heimmler directed. Trent was dragged across the deck, roughly hoisted up the hatchway. He kept his eyes closed until he felt the men reach solid ground, then he risked a glance through narrowed lids. The boat lay in a small inlet at the side of the river. Trees growing close along the banks merged their foliage to create a natural screen, and in this shaded lagoon he glimpsed the vague outlines of several planes. Beyond the crude landing where the boat lay, he saw the massive bulk of a large Navy patrol plane. It looked like a Consolidated flying-boat, but he could not be sure in the gloom.

The men carried him along a path toward a small group of native shacks at the end of the lagoon. There was a light showing from the opened door



"Thanks, my good man!"

of one shack, and he saw a dozen men in the uniform of American blue-jackets. Several others in the garb of Navy officers came forward as they saw the supposedly-unconscious prisoner.

"What's wrong?" one of them demanded in a tense voice.

"There's nothing wrong," Heimmler's clipped voice sounded from not far behind Trent. "This is one of the men who saw Krossen in the sea-plane."

"Why bring them here?" said the other man gruffly. "Why couldn't you get rid of them back there—or dump them into the sea?"

"Because they may be useful to us later," snapped Heimmler. "The two who were in that Fokker happen to be the Americans Trent and Crabb. It means a decoration for capturing them. The other man is lock-keeper Hunt. His knowledge of the Canal will prove helpful later—when we are ready to put their Fleet back into operation."

"Then everything is ready?" said the other man in a relieved tone.

"Exactly as scheduled. Get the men aboard the patrol plane. Have the en-

gines started, and also the other planes—"

Trent lost the rest of Heimmler's instructions as he was carried into the nearest shack and dumped down on the floor. "I'll watch him," growled one of the men, and Trent recognized Morris' voice. "Go get your parachute on."

Trent cautiously opened one eye, saw the other man leave. Morris stood near the doorway, hand on the butt of his .45, his face turned so he could look outside. The distance was too far to risk a leap for the spy's gun, and Trent lay motionless, making a quick survey of the shack. A cot stood in one corner, near a field desk on which was a map of the Canal Zone. Illumination came from a small electric lantern. At the foot of the cot was a box of grenades, and Trent's slitted eyes were puzzled as he translated the German label on the box. Tear-gas bombs. What purpose called for these relatively-harmless grenades?

He had no time to consider, for Heimmler appeared in the doorway, followed by the gruff-voiced man who had met him outside. Trent closed his eyes again.

CHAPTER IV

PANAMA PLOT

"**I** TELL YOU there is nothing to worry about now," Heimmler said tartly. "Krossen works better under tension. Once he starts to play the role, he will carry through. As for the other act, they will never suspect a thing until it is too late."

"I hope not," mumbled the other man. "It is such a tremendous thing—it almost seems it is too great to succeed. Last night I had a dream that we had been tricked—that this Martensen had taken our money and lied to us about the controls."

"He wouldn't dare," rasped Heimmler. "The Gestapo would hunt him to the ends of the earth. Beside, there are the blueprints—the photographs—his detailed sketches."

"Photographs have been faked before," the other Nazi said sourly. "Remember the discrepancy between Martensen's sketch of the room itself and the blueprint? He could have taken the money, knowing we'd fail and be trapped, so the truth wouldn't come out until too late."

"I will soon make certain," growled Heimmler. "Morris, go get Herr Hunt—and have the other prisoner brought here, too. We'll put them under one guard."

"But you said to keep Trent separate from the others," objected Morris.

"I intended to question him alone—an adventurer of his type can always be bought, if the price is high enough. But there isn't time now."

Trent heard Morris go out. Then the gruff-voiced man spoke again.

"You still intend to fly one of the Vought-Sikorskys?"

"Ja. I mean to make that combat

look real," Heimmler replied with a peculiar note.

"You don't mean—*Ach du Lieber*, you told the two men they would have a chance to escape if they volunteered to fly the Blohm and Voss."

"The lives of two men are not important with all we have at stake. Go ahead and order all engines started. Take off in the patrol plane as soon as your men are aboard. It is a tricky operation in this river, and you had better be clear before the other ships taxi out. Circle until I signal, then proceed according to plan."

Trent waited until the other man's footsteps had died, then he opened his eyes a fraction of an inch. Heimmler was at the field desk, taking a roll of blueprints and photographs from the drawer. Trent could see the bulge of an automatic under his left arm. The Nazi's back was partly turned, but it was almost fifteen feet to where he stood behind the desk. To jump up and reach him without giving the alarm would be almost an impossibility.

Trent's eyes shifted to the box at the foot of the cot. Swiftly, silently, he reached out to it, grasped one of the tear-gas grenades. Heimmler shoved the drawer of the desk closed. Trent had a freezing moment when he thought the big Nazi was going to turn around before he could snatch the grenade. Then Heimmler unrolled the blueprints and bent over one. The next moment Trent had the grenade hidden in his left hand, out of Heimmler's range of vision. He had the safety-pin almost withdrawn when voices sounded outside, and Morris and another Nazi spy appeared with Crabb and Hunt.

Heimmler wheeled, motioned for Hunt's guard to bring the man to the desk. Out in the lagoon, a motor thundered, and then another. As the first roar settled into the steady drone of the warming-up process, Trent heard Hunt give an exclamation of horror. Through slitted eyes, he saw the lock-keeper staring in consternation at the blueprints and sketches.

"Martensen! So that's why he kept asking me—"

The roar of another motor, close to the shack, drowned the rest of his words. There was a look of triumph on Heimmler's face.

"You understand quickly!" he jeered. "I see you can guess what will happen when the first vessel of your Fleet reaches the locks."

"You devils!" Hunt shouted. "You'll never get away with it. They'll stop him—" with a sudden fury, he hurled himself at the big Nazi.

HEIMMLER jumped back, hand thrust inside his coat, and Hunt's guard sprang forward with his gun lifted. Trent's hand flashed up from the floor, and the grenade struck the side of the shack, behind Heimmler. There was a spurt of whitish gas and the big spy staggered back, clawing at his eyes. Morris

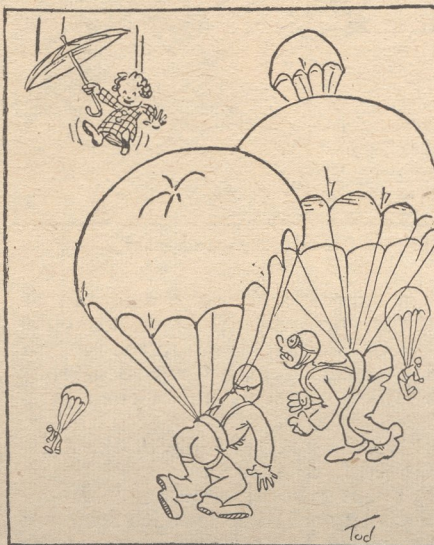
had whirled as Trent threw the grenade, but before he could fire, Crabb was upon him.

A huge fist sank deep in the traitor's solar plexis and he doubled up in agony. Crabb snatched his gun and Trent leaped after Hunt's now terrified guard. The German was halfway to the door, one hand before his eyes. Trent brought him down with a terrific left to the jaw. Scooping up the man's pistol, he grasped Hunt's arm and they stumbled out of the gas-filled shack with Crabb at their heels.

"*Hilfe!* The Americans are escaping!" Heimmler bellowed from inside, but the roar of the engines drowned his cry. Trent cast a swift glance around. Out on the river, the big Consolidated was taxiing into position for taking off, its landing-lights illuminating the surface. Silhouetted by the glow were the two Vought-Sikorskys with their waiting crews. The Ha. 140 was being turned around from where it had been beached.

"Come on!" Trent said hastily. "Mort, take that bird at the right pontoon—I'll get the other man."

He was within a few yards of the seaplane when Heimmler emerged from the shack, pawing his way blindly through the doorway. Just at that moment the Ha.140's engines went to idling and the spy-leader's



"There goes that darned kid again. This is the second time he's spoiled the mass jump!"

frantic yell cut through their rumble. A helmeted pilot in U.S. Navy uniform spun around, one hand at his hip.

"*Gott im Himmel!* The Americans!" he bawled.

He jerked his pistol from its holster. Trent fired a split-second before flame jetted from the Nazi's gun. The pilot stumbled, pitched across the pontoon, and fell into the water. Two more shots cut through the thrumming of the engines. Crabb grasped at his right arm, dropped his pistol. The Nazi gunner jumped back, aimed a hasty shot at Trent.

Trent's gun barked twice and the

spy fell, shot through the heart. By now, the Vought-Sikorsky crews were running desperately toward the German plane.

"Get in!" Trent flung at Hunt. "Here—help Mort, quick!"

"I'm all right—just nicked my arm," Crabb said shakily. He tumbled into the Ha.140 and Trent climbed up, threw himself down at the controls. Bullets drilled the starboard window panel as he shoved the throttles open. He bent low, sent the big seaplane thundering out of the lagoon. A machine-gun blazed from the rear cockpit of the second Vought-Sikorsky as he sent the German plane speeding past. The Consolidated was racing down the river and Trent saw it lift as he swung into the wind. Mortimer Crabb had crawled into the bow and Hunt was bent over him, bandaging his arm. The lock-keeper scrambled back as Trent took off, climbed into the radio-man's seat, at Trent's left and slightly below his level.

"We've got to stop them!" he cried hoarsely. "They're going to open all three of the Gatun Locks and leave the Fleet stranded in the Canal!"

"So that's it!" Trent said tautly. "I knew it must be something tremendous—but how in Heaven's name can they work that? There must be safety devices—"

"There are—the three locks can't be opened at once by accident—but there's one way, and they've found it out!" Hunt's face was white in the reflected glow of the lights. "Those sketches were made by an engineer named Martensen—he was one of the anti-sabotage group that surveyed the canal three months ago. He kept asking if there was any way all three locks could be opened simultaneously, and I finally told him they could, by having some one hold or tie the circuit-breakers and remove a safety-block—"

"Never mind how they can do it," Trent cut in swiftly. "We've got to warn the men on duty at Gatun. Switch on that radio and try to raise the station at Cristobal."

Hunt bent over the set, despairingly shook his head.

"It's no good—it's been shot up."

"That's Fate for you," Trent said with a twisted grin. "We shot up this plane ourselves—Mort and I. Well, the only thing left is to beat them to Gatun."

"We're only about twenty-five miles from the locks, if you cut straight across the San Blas Mountains," Hunt said jerkily.

Trent switched off the lights as a stream of tracer flamed past the starboard wing.

"SO YOU want to play, Herr Heimmler? Well, I'll attend to you later."

The seaplane bored up into the darkness, straightened on a South-west course.

"What about Mort's arm?" Trent said abruptly. "Was it badly hurt?"

"No. Luckily, the bullet went

through the fleshy part of his forearm without cutting a vein."

"Thank Providence for that." Trent peered out into the gloom. "We ought to see the light of Colon as soon as we're over these hills—unless they're still blacked-out."

"The black-out was only a test," said Hunt. "The Canal lights have to be on for the Fleet to come through safely."

Trent shook his head. "Seems incredible, stranding a Fleet like that. Of course, they couldn't get all the ships—"

"They'll get almost half if this scheme works," Hunt said through tight lips. "They're making the transit in closer order than ever before, to see how fast it can be done. And every ship between Gatun and the Pedro Miguel locks—practically the entire length of the Canal—will be grounded when the three Gatun locks are opened. Gatun Lake is eighty-five feet above sea level. That water will start rushing out into the Atlantic, and any ship near the inner lock is sure to be smashed against it. The ones behind it will be whirled around, probably floated out of the channel. Even if these devils haven't found some way to keep Gatun Dam spillways shut, it won't do any good to try to fill up the lake again. The locks could never be closed against that floor, once it's going full force. And it will take six months for the lake and Canal to fill up with normal rainfall."

"Six months with half the Fleet grounded, at the mercy of Nazi bombers—the Atlantic coast unprotected," Trent said in a grim voice. "Hunt, no matter what happens to us—"

"There are the lights!" Hunt broke in. "Bear left a little—that's it. You're headed straight for the locks."

With engines full out, the Nazi plane roared across the thin range of mountains, tilted down at the great locks now only eight miles distant. Suddenly, a searchlight flicked across the intervening space, caught the seaplane's wing. Trent hurriedly ruddered out, dived, zigzagging to keep the light-crew from spotting them again.

"Get on a chute!" he flung at Hunt. "You'll have to bail out and warn them."

"No parachute here!" Hunt exclaimed, after a hasty search. "You'll have to land on Gatun Lake and—"

Br-r-r-r-t-t-t! The muffled pound of machine-guns cut through the engines' thunder, and a Vought-Sikorsky plunged through the searchlight beam at the Ha.140. At the same moment two more searchlights stabbed up at the twisting ships, and still more blazed from vessels out on Gatun Lake. As Trent kicked out of the scout-bomber's fire, he saw the great hulk of a battleship slowly approaching the Western end of the Gatun Locks. Barely underway, some

distance beyond, was an aircraft carrier, and at intervals across the Lake toward Culebra Cut he could see the lights of still other Navy ships. The gates of the first lock were starting to open, and a shiver ran through him as he thought of Krossen somewhere inside the control tower, ready to open those other locks.

"Hang on—fasten your belt!" he clipped at Hunt. "Mort—brace yourself up there—we're making a crack-up landing!"

"Never mind me!" Crabb howled back. "Watch out for that Consolidated!"

The big patrol plane suddenly swam into the glow of the lights, and at the same instant another Vought-Sikorsky joined the first in a furious charge at the Nazi ship. Trent's last doubts were swiftly erased as he saw Heimmler at the controls of the first scout-bomber.

"Get back on the rear guns!" Trent ordered Hunt. As the lock-keeper crawled aft, Crabb swung the nose-turret guns and sent a blasting fire into the cockpit of the patrol plane. The Consolidated dipped sharply, swung back over the locks. The next moment a figure went headlong into space, followed by a second, and a third. A parachute opened, tilted steeply as the spy beneath slipped it toward the locks. Trent pulled up in a tight chandelle, and two simultaneous bursts blazed from the nose and aft-turret guns. Smoke puffed from one of the patrol plane's engines, became a mantle of flame.

Anti-aircraft shells burst wildly around the Nazi seaplane. Trent kicked over onto one wing, slid out of one bracket, dived away from another. A spinning ship whirled past, and he saw it was one of the Vought-Sikorskys. Less than a hundred feet away, Heimmler appeared, swaying in a chute, his face set with a fierce purpose. Trent swore under his breath. The spy-leader, seeing his main group of parachutists lost, had bailed out to aid Krossen against any resistance that might develop.

Two of the descending chutists missed the locks, landed in the Canal, but the third came down on the center wall not far from the gate at the Atlantic-approach channel end. Trent saw him release himself from the chute, snatch up a sub-machine gun which he had cradled in his arms, and run toward the control tower.

SIX NAVY Grummans suddenly whirled out of the sky, helling down at the Ha. 140. Trent snapped off the switch, dived at the center wall of the lock. As he backsticked, fishtailing madly to kill his speed, Crabb hauled himself up in the nose, pitched a fiery blast at the running parachutist. The Nazi sprawled on his face, made a last attempt to lift the machine-gun, then lay still. Heimmler was down to within two

hundred feet of the locks as Trent leveled off above the center wall. There was a crash as the pontoons settled upon the track used by the electric "mules" in hauling ships through the locks. The seaplane lurched violently to one side, skidded on its wrecked pontoons, then came to a jolting stop.

The flash of a pistol shot caught Trent's eye as he clawed out of the cockpit. Then he saw that two men were struggling furiously at the rail of the control tower. One was Krossen, the other obviously an assistant lock-keeper who had discovered the masquerade.

Trent was half-way to the tower when a bullet clanged against the base of the structure. As he dropped to the concrete, there was another shot and a slug scraped his shoulder, searing hot. He twisted around, saw Heimmler dashing along the wall, his collapsed chute back near the farther lock-gates.

"Krossen, you fool!" Heimmler screamed. "Open the other locks!"

Trent jumped up, raced to the body of the Nazi parachutist who had been felled by Crabb's burst. A wild cry sounded from up in the tower and he saw Krossen's opponent topple limply over the rail. With a desperate effort, Trent snatched up the sub-machine gun, whirled it in an arc as his finger closed on the trigger. He had a flashing glimpse of Heimmler's terrified face as the hail of bullets cut across his chest, then the muzzle lifted to the tower. Krossen sprang back frantically, but too late.

"You got him!" gasped Hunt. "I'll run on up there, phone ashore, and tell them the truth—"

He vanished around the base of the tower and Trent turned to look for Mortimer Crabb. The inventor was only a few feet away, his bandaged arm dangling, a look of grim satisfaction on his face as he gazed back at Heimmler's motionless figure.

"Well, that's one less Nazi spy in the world. It's worth taking a bullet in the arm to see those devils finished off."

Trent laughed in spite of the ache in his stiffening shoulder. "Mort, you old war-horse, I'm going to miss you."

"What do you mean miss me?" demanded Crabb. "When those rats start working on the good old U.S.A., you can count me in any time!"

"Maybe I was right about that reincarnation stuff," chuckled Trent. "Come on, I want to go up in the tower and make a phone call—after Hunt gets us cleared with Commander Little and the rest of the Navy."

"What are you up to now?" said Crabb, suspiciously.

"Don't get alarmed," said Trent, with a grin. "I'm just going to order a couple of steaks for Damon and Pythias."

Another Absorbing Keyhole Thriller Next Month

LETTERS

(Continued from page 55)

around and she made many swell flights. All went well until she sailed out an open window and landed on the highway below. That's right—curtains!

MARK BENENSON,
New York, N. Y.

Wants Same Scale On Plans
Model Editor, FLYING ACES:

Every time I look at the scales on your solid model plans I get disgusted. I wish you would settle down, as all the fellows I know build their jobs one quarter inch to the foot.

ROBERT CALLADINE,
Egbertsville, N. Y.

ALL QUESTIONS ANSWERED

(Continued from page 30)

book for the addresses of leading aircraft manufacturers. Failing that, you might try the aero technical magazines which carry a great deal of aviation advertising.

Raymond Fitzgerald, South Norwalk, Conn.:—The ten leading World War Aces are as follows: Baron von Richthofen, (G) 80; Rene Fonck, (F) 75; Edward Mannock, (E) 73; William Bishop, (C) 72; Raymond Collishaw, (C) 68; Ernst Udet, (G) 62; James McCudden, (E) 58; Erich Lowenhardt, (G) 56; Donald McLaren, (C) 54; William Barker, (C) 53. Phillip Fullard (E) and Georges Guynemer (F) also had 53 each. Goering was credited with 26.

Walter Smith, Kansas City, Mo.:—At the present time there are no dirigibles in the United States capable of carrying two heavier-than-air craft. The *Macon* and the *Akron* both crashed and the *Los Angeles* is being dismantled. No others have been built of late, although there is talk of a small Naval dirigible being made with which to start all over again. The *Los Angeles*, as far as I know, never carried aircraft, although I believe several launchings and hook-ons were made experimentally. It did not have an airplane accommodations aboard.

D. Helb, Chicago, Ill.:—The two volumes you mention are prizes today. No, I do not know of anyone having copies of Jane's *All the World's Aircraft* and Jane's *Fighting Ships* for sale cheap. The 1918 *All the World's Aircraft* is worth about \$100 today and the 1939 edition sells for about \$20.

Dick Wake, Indianapolis, Ind.:—You can get the NAA Contest Rules from the Academy of Model Aeronautics, Willard Hotel, Washington,

Editor's note: Sorry, Bob, but no can do. Planes are built different sizes, you know, and therefore different scales must be used to make plans fit our page size.

"SB" Like Brick"

Model Editor, FLYING ACES:

I recently built the "Snowbird Stick" (April, 1940, F.A.) and it flew like a brick! But when I took off the landing gear and prop she turned out to be a nifty glider.

I have plans for sixteen models and I will gladly trade any of these for plans of the "Moth!"

MASON ASHLA,
777 Tyler St.,
Gary, Ind.

Model Editor, FLYING ACES:

I have been reading F.A. since 1939 and have never seen any article

on doping or covering, so how about some? I have quite a few F.A. plans and would like to trade for the "Moth." How about it fellows?

E. J. HATTOON, JR.
Springfield, Ill.

Editor's note: Most of our articles on flying models devote space to covering and doping. See Gil Shurman's "Thermal Chaser" in this issue.

Likes Two—Builds Another
Model Editor, FLYING ACES:

I like particularly your commercial flying jobs, such as the "High Climber" (August, 1939, F.A.) and the "Moth" (August, 1937, F.A.). I am now working on the "Kaydet" (June, 1939, F.A.) and I am sure it will be a swell flyer.

TOM COONEY,
Elmhurst, N. Y.

modern war planes in our magazine today. Unfortunately, German plane photographs are very hard to get.

Harry M. Ellery, Pittsburgh, Pa.:

—I suggest that since you seem to have such a lot of things to sell, you would be better off inserting an advertisement in this magazine. After all, this is a question and answer feature—not a swap column. And while we appreciate your wanting to sell your magazines, this is hardly the place to advertise them. I hope you understand our position.

J. Gordon Scott, Davidson, Sask., Can.:—The S.E.5 did 128 m.p.h. The Spad 13-C1 is credited by some with doing 135 m.p.h. The Fokker D-7 had a top speed of 125.

Jim Scott, Mankato, Kan.:—I am sorry, but I do not agree with Col. Lindbergh's views and never have in the quality of the German Air Force. I am of the opinion that the German Air Force is still over-rated.

Jack DeLaney, Ironton, Ohio:—We cannot undertake to publish month after month the full requirements for enlistment in the United States Army or Navy. All these details are available at your local Post Office or from the office of the Adjutant General in Washington, D. C. There should be a recruiting station in your section where you can get all the information you desire. We hope that other readers will remember this point, too. We want to help all we can in this business of national defense, but we cannot devote valuable space to information, month after month, that is available much quicker at so many other points. Sorry, but we hope you see our point.

James Leahy, Kansas City, Mo.:—The aerial torpedoes used in Donald Keyhoe's story, "Junkers Jugger-naut," were imaginary. The Junkers Ju-89 is a military version of the Junkers Ju-90 which is a four-engined commercial transport. The mo-

D. C. No U. S. airlines are using "Fokker Tin Gooses" anymore. First off, though, you've got that name wrong. The Fokker you mean was the F-10. The so-called "Tin Goose" was the old Ford Tri-motor. Glad Keen and Phineas get over so big with you.

Maurice Cartwright, Spokane, Wash.:—In the May 1939 issue of FLYING ACES we offered a three-view drawing of the Boeing 314 flying boat. Sorry, but we have no swap column. We offer available plans on as many types as we can.

Nevin B. Matthews, Jeannette, Pa.:—You haven't told us enough about that publication scheme of yours. Better write us full details, enclosing a stamped, self-addressed envelope for reply.

John Dyr, Passaic, N. J.:—We get so many contributions to our "Wise-crack-Ups" page that we can't send them back or take time for notifications on them. You just keep plugging, John—and when you get a check you'll know you've "clicked."

Sylvester Pondo, Winamac, Ind.:—Our editors certainly appreciate your kind sentiments about the contents of F.A. The world can use more liberals like you, says we. Your "Workbench Tips" ideas are being relayed to the Model Department.

Murray Romer, Bronx, N. Y.:—There is no such thing as a "standard color" Hawker Hurricane. When they are built, they are dural or dull silver in color. They are then camouflaged for active service work. And since the Hurricane is both a day and night fighter, day squadrons have one style of camouflage and night-flying fighters have another—one that uses much gray and black. We feel we are presenting many fine

tors are 640-h.p. Junkers Jumo 210 twelve-cylindrical inverted "V" types. The F W-198 is an experimental fighter. We gave all the information we had on this machine in the July, 1940, issue.

Adrian Wallen, Chicago, Ill.:—The Beech Aircraft Company is located at Wichita, Kansas. I am quite sure they will be pleased to send you a catalogue.

Richard Atkins, Beaumont, Texas:—Your idea for a safe retractable landing gear has much merit, although your drawing is quite sketchy. No, I do not have any World War relics—except myself—which I might offer for sale. I wasn't very bright in those days or I would have brought back a shipload of the stuff.

Billy J. McKelvey, Clearfield, Ia.:—The Curtis A-18 is a midwing, two-engined Attack plane. It has high performance combined with long range and is particularly designed for low-altitude work. It uses two 1,000-h.p. Wright Cyclone engines. I do not know the actual armament of the Bell Airacuda. American war planes are far under-gunned as compared to British and German planes. Thanks for the kind words on my stories. Glad you like them.

Raymond Poulen, Holyoke, Mass.:—We suggest that you have the plans of the "Pegasus Pete" model photostated up to full size. We do not have full-size plans of that job.

Bob Newman, St. Louis, Mo.:—The manufacturers of the Piper Cub seem to put their plane through all the manoeuvres you mention—with the exception of the outside loop—before they leave the factory.

William Rippon, Paterson, N. J.:—Your parachute idea has some worth-while features, but I wonder if you have considered the fact that a pilot may have to leave a damaged plane while it is not in a flying position? If your gear will release okay then, it has real possibility. As to your carburetor heat control, I have no idea whether it has real possibility.

Jesus Gomez, Mecca, Calif.:—Sorry, but our Model Editor says he's not in the market for plans at this time. And from all indications, there won't be openings for many months to come.

Eugene Kramer, Brooklyn, N. Y.:—At the time the item was written, no publicity had been given that Curtiss job. Also, we didn't state definitely how many guns were carried. Sorry, but Phil Strange was voted out when the Nazi War started.

Richard Gleason, Hasty, Minn.:—Fairchild is located in Hagerstown,

Md., and the Ranger plant is in Farmingdale, N. Y. The N.A.C.A. is about the only place we can suggest for those plans.

Jack Thompson, Rt. 1, Box 103, Ashland, Va.:—You want plans of the Von Hindenburg zeppelin? Well, perhaps one of our readers will be able to supply you.

Gilbert Hausman, Brooklyn, N. Y.:—No, gas engines do not have chokes—but they are choked. That gadget above the gas tank is the needle valve. You can get the April issue from us for 20c, postpaid.

George Demuth, Scranton, Pa.:—We have many photographs of that flyer on hand and therefore are not in the market for others.

Frank Pozdol, Downers Grove, Ill.:—Here are the specifications on the Curtiss A-18, Span, 59 ft. 6 in.; length, 41 ft.; height, 11 ft. 6 in.; empty weight, 9,388 lb.; useful load, 3,405 lb.; gross weight, 12,793 lb.; fuel, 639 gal. maximum; oil, 54 gal. maximum. Top speed is 252 m.p.h. at 4,500 ft. and cruising velocity is 212.

Joey Battersby, Chicago, Ill.:—Back issues may be obtained for 20c per copy. We cannot supply anything earlier than 1938, however.

T. Koprowig, New York, N. Y.:—By now, you've probably seen the "Tow-Line Terror" plans we published in the Sept. issue. Guess that fills your bill, huh?

Cliff Howe, Hamburg, N. Y.:—A direct injection engine is one in which gasoline is injected into the cylinders by means of direct pressure through a timed feed nozzle. The Germans are said to have several very successful types of engines using this method of fuel feed. The system is very simple and eliminates the carburetor. Each cylinder

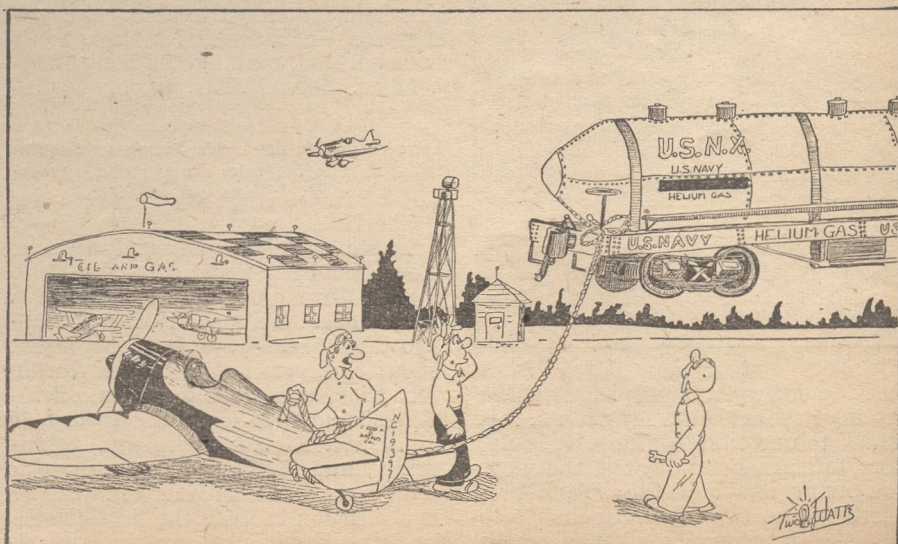
is connected to the fuel tank by a direct pipe line through which the fuel is forced.

John Festone, Syracuse, N. Y.:—The Delanne cannon plane was once an experimental French military machine. The actual performance figures on it were never given out, but it was designed to do about 380. Past issues of FLYING ACES are available at twenty cents per copy. We still have a few copies of 1939 books.

Laymond Warn, Fairfax, Okla.:—As we have stated so many times before, we cannot offer information concerning particular physical problems. If you are blind in one eye, only an examining physician can tell whether you still have sufficient sight in the other eye to justify your taking flight training for a private license.

Jim Parker, Thistledown, Ont., Can.:—To attempt to explain details of an old war-time aerodrome is very difficult. There are few dromes anything alike, but in general we flew from cleared hay fields or pastures. There were three Besseneau hangars set along one side of the field while along the other in an L-shaped arrangement they usually placed the long wooden huts housing the officers and men. Petrol and bomb dumps were any kind of small buildings away from the hangars. There was always a power lorry and a small Armament shed near the hangars, and for defense there was a Lewis gun or two mounted on a wagon-wheel swinging on an old axle. There were no runways in those days.

Jerry Nixon, De Soto, Mo.:—There were many four-bladed propellers used by the Allies in the last war. I flew Bristol Fighters that used four-bladed props. Many S.E.5's also used them. The R.E.8 and the B.E.2C also used four-bladed props, and we have shown them in FLYING ACES on many occasions.



"Found it floatin' over Lakehurst and thought I'd bring it in!"

MODEL NEWS

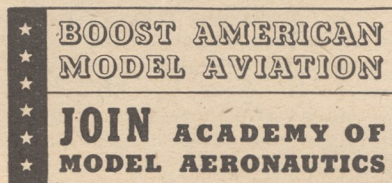
(Continued from page 49)

min., 35.5 sec.; second, Jack Schneider, 1 min., 26 sec.; third, Thomas Young, 1 min., 16.2 sec.; fourth, George Friebertshauser, 1 min., 14.6 sec.

Stick—First, Jack Schneider, 1 min., 37.8 sec.; second, Bob Hess, 1 min., 12 sec.; third, Howard A. Younginger, 1 min., 1 sec.; fourth, Raymond Potter, 58 sec.

Novice—First, Aldine Darwish, 19.8 sec.; second, Louis Poplowski, 14.5 sec.

Sky-Scrapers Elect
NEW OFFICERS were elected at a recent meeting of the Sky-Scrapers club of Brooklyn, N. Y. The offi-



cials are: George Gilchrest, Pres.; Sal Taibi, Vice Pres.; Zeely Gerber, Sec'y.; Art Mansfield, Treas. Carroll Moon, author of the "Jiffy Tester" in this issue, is director of the club.

Air Youth Handbooks

NEGOTIATIONS have been completed for the publishing house of D. Appleton-Century to handle the printing and distribution of the Air Youth handbooks and guides. Within a short time the first of the series, *Model Airplane Contests* and *An Air Youth Guide*, will be available.

REVIEW OF THE NATIONALS

(Continued from page 45)

THE RADIO-CONTROL event was by far the most interesting of the Outdoor Competitions. Though in its infancy, rapid progress has been made in the short time by the boys who took to the new field. In view of this, Edward Roberts, of Philadelphia, this year established a perpetual trophy. Along with this, \$250 cash was awarded to the winner of the radio event.

Among those entered in the radio event were old friends of previous years with new types of ships. However, because of the lack of preparation and adjustment they did not fare so well. It was a popular conception that those who entered radio-controlled craft must be thoroughly familiar with their respective ships. This is not always true, inasmuch as models are sometimes completed only a day or two before the meet

and hence there is little time for the builder to familiarize himself with the qualities of his craft. An example was typified when Charlie Siegfried, of Kansas City, placed second with one of the two ships he entered in the contest. Though the craft flew beautifully, I was of the opinion that with a little less excitement and more practical knowledge of the craft, he would have taken top honors. For it had all the qualities of a consistent first place winner. Joe Respanti, of Brooklyn, brought his radio-control job before it was test flown. He placed third. But because of his lack of familiarization, the ship fell off into a tight left spin at a low altitude.

Between flights, Jim Williams entertained the crowd with a specially-constructed gas job controlled by two 50-foot lines. One of the lines controlled the elevator, and by careful manipulation he could make the model do anything except sit up and say enough's enough.

The general opinion concerning radio-control craft is that the future will bring forth an array of smaller-size ships. It was definitely shown that the large, unwieldy jobs need not be the only size in which the radio mechanism may be installed.

The Academy of Model Aeronautics held its annual meeting July 2. A new set of rules and by-laws were incorporated, making the body independent of the N.A.A. Much was dis-

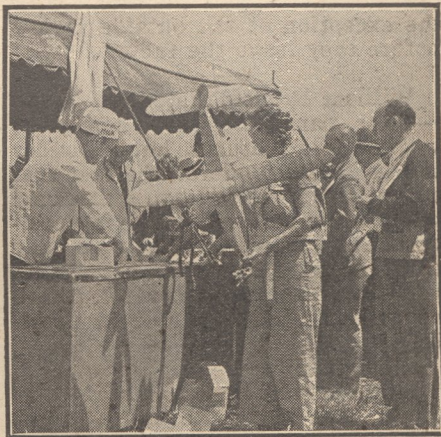
cussed concerning relations between manufacturers and model builders, and everything was amicably settled. As to where the 1941 Nationals would be held was not decided. Probably an announcement will soon be forthcoming.

Saturday night the big blowout was held in the grand ballroom of the Hotel Sherman. The place was packed to the rafters until the S.R.O. sign had to be hung out. And after a delicious dinner, some very fine entertainment was provided, including a magician whose sleight-of-hand tricks left the boys gaping. There was a musician who could play almost anything asked for, and among the celebrities of the stage and screen was Warren Hymers who with his charming wife said "Hello" and signed their autographs for many of the boys.

When the entertainment and presentation of the awards was over, it was quite well after midnight. And so the final hour passed on the 1940 Nationals. It was a great show and we're sorry it's now history.



Left: "Laughing Boy"! Ben Sheresaw can still smile, despite the total washout of his radio job. Right: Time out for lunch.



PLANE TARMAC

(Continued from page 29)

meeting some grand people, as well as getting in some hours myself. All this is due to one thing—study. It is not hard to learn aviation, and the more you know about it the better prepared you are to take any chance to get ahead when the chance comes along.

There's plenty of material to study. You should attempt to first build up a good library of books and aviation magazines. As a matter of fact, FLYING ACES really got me interested about five years ago. My advice is that those who want to get into aviation should first learn the theory of flight, avigation, meteorology, instruments, and engines. The flying will come easy later on and you will be in a position to grab the first chance as I did. It can't be done in a hurry because it takes time and a lot of

work to get it all down pat.

But it is all worth it. I found that out the first time I tooled a Cub down toward the runway for one of my slam-bang landing specials.

ED FRANCIS,
New Castle, Pa.

Well, there it is. A good sound letter and one worth reading over again. This chap had an idea and he worked hard to put it over. We hope there are many more who can do the same thing.

In the Slipstream

(Continued from page 27)

any plane touching them would automatically send in a visual warning signal. . . . Over here, an "omni-directional radio-range beacon" is announced which, it is claimed, will tell a pilot his exact direction from his field at any time—simply by a quick look at a dial.

On the Lighter Side

Apparently, we were all born 30 years too soon—for now Igor Sikorsky tells us that helicopters of the future will be so simple that people will learn to fly 'em through correspondence schools! . . . It was *SQUASH!* instead of *BOOM!* the other day at Cochran, Ga. Some flyers there conducted aero bombing prac-

tice—with watermelons. . . . Jessie Walizer, a harpist, has taken up aviation mechanics at Syracuse. She should have got the idea in 1918—when planes had more wires to twang. . . . A U.P. dispatch says the Germans have built a "pusher type fighter similar to the Bell Airacobra." Since the Airacobra is *not* a pusher, the similarity probably lies in the fact that both jobs are monoplanes.

More of the Same

Claude Dornier, son of Germany's plane designer, is in New York. He plans to enter an American university. . . . Blind landing systems will be built at the New York, Chicago, Los Angeles, Kansas City, Cleveland, and Fort Worth airports. . . . A bureau for finding out the fate of lost war flyers of all nations has been established in Roumania. . . . Britain figured the Nazis had lost 2,500

planes up to July 8. . . . An airport is being considered atop Bald Mountain in Georgia. Planes running into low ceilings down below, they say, could alight without trouble on such a "field above the clouds." . . . More than 1,900 different firms supply materials employed by Douglas in building planes. . . . Stearman just got the largest peacetime order for training craft ever placed by the U.S.—a Navy contract amounting to \$3,780,000. . . . Most aircraft firms are worried about sabotage, and rightly so. And we're worried because so many of these factories are on the seaboard. They should be in the safer central portion of the country. . . . Dropping of notes to the enemy didn't die in the War of '18. For a letter from R.A.F. Air Marshal Longmore recently plummeted to an Italian African drome. It expressed sympathy over Marshal Balbo.

Wings Over the Jungle

(Continued from page 26)

finally asked. "I'm stepping out right now!"

"You jump and I'll slap you in the seat of the pants with a wingtip," warned Hardwick. "We're sticking with this boiler. I'll get her down somehow."

"Pick a nice nest, then. I feel I'm going to—"

"Shut up and sit still. There's a spot right up there this side of the bend in the river."

"Whoosh!" whooshed the Bish. "Plenty of room there. Big enough for a croquet court, anyway!" He wrapped his arms about his head, huddled up in a ball, and awaited the crash.

But Hardwick was certain he could make it now. He wanted, above everything, to get the Northrop down intact. He glanced about, his eyes taking in every twist of the jungle below. He drew in his breath, allowed his eyes to tighten a trifle, and then set out his shop.

The Northrop was swinging in the strange currents that came up from the river and brushed off the uneven fringe of the trees. Hardwick held her in a glide, struck out for a point where the river was reasonably wide, let her sideslip down into the narrow space between the trees, and then dropped his flaps.

The job seemed to revolt at the braking effect and tried to stall. He eased up a twist or two on the flap wheel and nosed her down again.

"Here's where we go native," groaned Bish. "Why didn't we pick Bali to crack up?"

Hardwick ignored him and held his course down the river. It was a surging torrent now and the space he had picked was a mere open flat which had been silted out by the water during a flood period. The flaps held her well now and they were ballooning in

gradually. It was splendid flying and Hardwick was confident all the way. She dropped and dabbed her wheels at the water, but Tug eased up gently with the last surge of inertia and she bellied over some tough reeds, floundered, and then nosed down.

There was a rumble of olios and the grinding of brakes as Hardwick's heels went down. The Northrop staggered, fishtailed a trifle, and then wallowed across the spongy surface and came to a halt with her broken prop boss nosing gently into some palm fronds.

"Thank you for the rabbit," wheezed Bish, peering up with his opened fingers across his eyes. "Or is this Death? I can't hear the angels sing."

"Shut up and get out. Let's see what the damage amounts to."

"What does it matter? You couldn't get out of here with a set of size three sky hooks!"

Hardwick opened the hatch and clambered out. Bish just sat there, watching a brilliant-plumaged bird pinion across the opening and disappear into the jungle. Beyond, through the fringe of trees, Bish could see a razor-back hog nuzzling its way into a valley covered with heavy brush.

Tug was around the ship and inspecting the damage. It was pretty obvious at once. A burst from one of the Mitsubishis had taken off a prop blade, and before it could be thrown clear the other two had snapped around and smashed themselves to smithereens against the club that had been sliced away. There was nothing left but the main hub carrying the variable pitch mechanism. The Japs might just as well have shot the engine out, for all the good it was now.

Bish finally crawled down and looked at the mess. "I read a story

once where a guy named Stanley went looking for a guy named Livingstone," he said. "I wonder where that guy Stanley is now?"

"It isn't that funny, Bish," retorted Hardwick.

"Call me Beansie," said the Bish.

"I never can think of it. But, you know, that guy Critchley had something. We sure got all he figured."

"But why Japs this time?"

"I don't know. Remember, Critchley was talking about the tin mines up here. If the Japs are going to try to take over the Dutch East Indies, they may start by driving the British out of the Straits Settlements. They might try to destroy the mines—because that is one important item Britain holds on here for—that is, tin and rubber. They can't destroy all the rubber plantations, but they can put the tin workings out of commission."

"But why pick on us? We didn't have British markings!"

"I guess they were tipped off about us and were taking no chances."

"It's all mixed up," mooned Bish. "We come out here looking for someone we don't know, get shot down by the Japs for no sane reason, and here we are miles from nowhere—without a prop!"

They kicked out of their parachutes and threw them into the cockpit. "Did you notice anything in the way of a village while we were landing?" asked Tug.

"I saw a tree," said Bish. "Maybe two trees."

Hardwick gave him a look that might have curled his hair and then suddenly drew up stiff. He turned his head slightly and listened intently.

"What's up?" the Bish inquired. "Hear a tiger or something?"

"Shut up and listen—listen closely."

It was hard to tell how they heard the sound. As they stood there stiff and tense, it seemed that the rumble came up from the ground, passed through the heels of their shoes and trickled ominously up the muscles of

their calves and thighs and then beat a tattoo at the base of their skulls.

"Get it?" asked Tug, turning slightly.

"Sure. Sounds like the West Hang-nail Fire-and-Drum corps getting ready for Labor Day."

"Dope! They're war drums."

"Yeah? Well, let's beat it. I don't want to stew in a pot!"

CHAPTER II

NATIVE HOT-FOOT

"**N**OTHING DOING!" snapped Hardwick. "We're going to find out what that is all about. Get a gat and git!"

Puzzled, Bishop stared at Hardwick. He was certain now his boss was completely off his onion. "Of all the screwy ideas, that takes the biscuit," he growled. "We'll walk right into a barbeque—and we'll be 'it'!"

"Don't be silly. Come on." Hardwick led the way into the jungle. He cut and slashed with a Cuban machette, and the doubtful Bish followed, swishing at the flies. They stopped frequently and listened, then they went on, cutting and slashing to make the going more simple. As they plunged on, the sound of the drums became louder and louder, and to add to the Bish's misery there was a distinct smell of burning wood.

"They're playing 'Keep the Pot Boiling'," he wailed. "Do they roast you first?"

"We're almost there now. I can hear them singing."

"You would sing, too, if you knew your dinner was walking right onto the table. Let's beat it."

Hardwick ignored that and then stopped after a few more steps. The drums were louder now and the chanting continued in more mournful tones. He held out one hand and warned the Bish to halt. He waited, drew aside a curtain of foliage, and peered out on the strangest scene he had ever witnessed.

There was a Malay temple before which paraded a wild throng of Hindus, Malays, and Pandus, all carrying arched frames on which had been entwined flowers of various descriptions. Before all this was a long deep trench from which smoke was rising. Young priests and their assistants were throwing logs into this fire and stepping over crawling devotees who chanted strangely.

"I get it," said Hardwick. "It's a *treemiri*."

"Come again, and speak English," Bish said in a low whisper.

"Fire-walking. You know, that tribal custom of walking on hot coals of fire with bare feet."

"We have to do that?" gasped Bish.

"No, you dope. They wouldn't let us. We're heathen to them."

"I'll tell 'em I never went to church in my life."

"See, those chaps with the long splinters of wood stuck in their backs are the candidates," explained Tug. "Listen."

The chanting went on, louder and louder. The crowd moved in swaying groups and set a new picture every few seconds. Hardwick watched closely and then turned again. "Something queer here," he said. "There's several birds in European kit. There're Japs and Eurasians in the group, too. Look at this!"

From where they stood, they could see more of the weird ceremony. Two men in gay costumes brought in a young goat. One held its head, the other its hind legs. There was the flash of a great knife and the goat's head was severed—and then the bleeding body was carried around the long trench of live coals so that the blood poured into the hot embers. The fire-walking candidates were being whipped across their bare backs by a High Priest and were in a grim stage of excitement.

Tug and Bish stood there watching the preliminary warm-up of the ceremony. Great jars of whitish, milk-like liquid were being poured into a large hole near one end of the fire trench. Several groups of men in European garments moved about, talking quietly and watching the antics of the candidates. He studied them closely, and sensed that some of them were there for other purposes than witnessing a tribal ceremony.

TWO WERE JAPS who looked much like the typical tourist. There was a tall Eurasian dressed in white and a large Dutchman. Then a new figure caught Tug's eye—a man in native dress who stalked about apparently taking little part in the business. He stared into the sky now and then and moved up near the Europeans who stood off away from the smoke.

This man had a short spade beard and he wore a gay silken cape, a string of tiger teeth about his neck, and a short, kilted skirt-like something about his waist. This reached to his knees, showing his bare legs. It was the way he kept looking up into the sky that first caught Tug's attention. Since he and Bish had just come from the air, it was natural that Hardwick would wonder just what this man expected to see or find.

"Hello. What's going on now?" asked Tug. "Someone hurt?"

They could see a litter being carried out of the temple. It was a gayly decorated affair, but the bearers were moaning and shaking their heads with sincere grief. Behind the litter marched a radiant Chief who was holding his long, bony hands to the sky in evident supplication.

"Some guy sick, and he's being brought to the fire for a cure, I suppose," said the Bish. "They'll probably toss him on and if he don't burn up they'll figure he's cured and sing some more hymns."

The litter was placed on the ground near the fire trench. The medicine men chanted, waved their wands, and rattled their amulets. They trotted up and down, placed hideous masks on

their faces, and raised their voices in loud lamentations.

"Let's go and take a look at this," said Tug. "We might learn something."

"Yeah, they might toss us on the fire as a sacrifice. But if you say so, I'll take a chance."

"Now don't do anything crazy. Take it easy and let me do the talking if they get gay," warned Tug.

"I couldn't talk if I tried," the Bish wailed. "I'm stiff with fear now."

Tug took the long chance and stepped out into the clearing. He dragged Bish after him, started across the ditch-slashed turf, and was well inside the outer circle of native spectators before anyone noticed them. They sauntered casually, staring about with curiosity, and made their way to the side of the long fire pit. They stared down and saw that it was full of red-hot embers and more fuel was being added while the fire was raked level.

A few of the natives moved up and stared full into their faces, but they bowed and smiled and raised open palms to indicate friendliness. One young chief came up and said: "Welcome, *Tuan*. You are friends?"

"We are Americans from across the ocean. We are lost and heard your drums. We are not within sacred bounds or trespassing on your temple ceremony?"

"We are very glad to greet you. You will find wine and fruits on the temple steps, *Tuan*."

"Thanks. Is anything wrong? We notice the litter and the man who appears to be ill."

"It is the son of the High Chief. He has been ill with a strange wracking malady and the medicine men do not seem to be able to drive out the evil spirit which makes the young boy jerk with pain and anguish."

"He has been ill very long?"

"Since the passing of the full moon, *Tuan*."

Tug figured that the youth had been ill about two weeks. "I will go and look at him, if I may," he said.

The young chief nodded and moved off while Tug and Bish worked their way around the trench and came up near the decorated litter. The medicine men were in a frenzy now and calling on all their gods, but the young native lad lay there gulping and jerking with convulsive gestures.

"What's wrong with him?" asked Bish, staring down at the pain-wracked youth. He was about sixteen but looked older with the pain and torture of his malady.

"Just sounds like hiccoughs to me," said Tug. "Why don't they do something for him?"

"Keep quiet," a voice behind them said. "I'm going to do something when the medicine men quit."

Tug and Bish turned quickly and stared into the bearded face of the man who had been walking about staring up into the sky.

"Who the heck?" began Bish.

"Take it easy. Where's your ship?" the man asked very softly.

"Down along the river about a mile from here. No prop left. Who are you, anyway?"

"Didn't you come to get me?" the strange one asked.

They both turned and stared at him again while the medicine men ranted louder.

"Norton?" asked Tug.

"Sure. In Washington."

"You heard about him?"

"What?"

"He's dead. Murdered in his office. He was just writing a message, telling me to go to Benom and pick up . . . That's all there was to the message. He was murdered before he finished."

The strange one who spoke English with an American accent, did not answer. He simply held his breath and looked at the boy.

"They shot you down?" he finally inquired.

"Three Mitsubishi fighters. But we got them before we landed."

"Good! Near here?"

"No. Miles deep in the jungle."

"I was hoping we could swipe one of their props."

"No chance. We put them down in flames."

THE STRANGE ONE whistled low. Then he picked up an iron bar that lay near his feet. He stuck it into the fire and felt around in his pockets.

"Got any sugar?" he whispered to Tug.

"Couple of lumps in my emergency kit."

"Give me one and keep quiet."

Tug brought out a square lump of sugar. The chief chap took it and put it in a pocket somewhere in his strange garments. Then, waiting his time, he suddenly approached the High Chief.

"Chief Nitoo, I present my sympathies in your grief and offer aid of my people. Your medicine men cannot drive out the devils which inhabit the frame of your first-born. Might I, whom you call Son-of-the-Ben-Which-Buzzes, apply the medicine of my people?"

The High Chief raised his eyes from the folds of his garment, looked at the strange one, and then stared across the fire trench where the others in European costume were standing.

"Subramanya, the Eurasian, speaks not well of you, Son-of-the-Ben."

"He cannot cure your son, Father."

"Subramanya offer much gold to Chief Nitoo."

"Yes, gold to betray the King Emperor from across the sea. Much gold which will be of no use if you destroy the tin mines and cut the railroad which steams from Singapore to George Town. One cannot eat gold."

"You know much, Son-of-the-Ben. But Subramanya speak of you as a white man, not a Pandus chieftain warrior. He speak of you as one who is not to be trusted."

"I can heal your son, Chief Nitoo."

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I do not kill, as do the followers of Subramanya. Can *they* cure your son?"

"None can heal my Son. He is bewitched with vile devils that shake and toss him. He is lost!"

The old chief was sincere in his sorrow now. He had no fight left, and a few minutes of reflection gave Tug and Bish a chance to figure out the conversation.

This man who was posing as a Pandus chief was an American in disguise. He had learned somehow of a plot to ravage the tin mines and workings. There was something in it, too, about the railroad that ran from Singapore to George Town at the upper end of the Strait of Malacca which was their chief link be-

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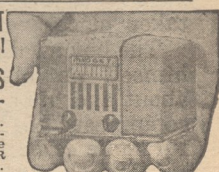
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tween India proper and the Straits Settlements.

"I will offer to cure your son, Chief Nitoo," persisted the man known as Son-of-the-Ben, "if you will send away the plotters and traitors who would involve you and your people in a scheme to destroy the mines. You and your people here in the Kinta valley are no longer men of the land. You no longer plant vast crops and live from your fields. You have been for so many years employed in the tin mines and you have lived on the wages and supplies the King Emperor has sent to your compounds. If you destroy the mines, you destroy yourselves."

The old chief looked up and then stared about at the mad ceremony that was going on about him. The candidates were being whipped again. The flowers from the arched bearers were being thrown into the fire. The gongs were being banged louder, the drums with more vigor, and the wailing flutes of the squatting music men added to the mournful din.

"You may attempt to cure my son," the old man agreed, putting his face down into the crook of his elbow again, as if he no longer had hope.

"But you must send off the men of Subramanya. You must agree not to allow the destruction of the mines. The explosive they have given you must be withheld from the men who work in the mines."

"You must first cure my son before I can believe what you say," Chief Nitoo said with angry emphasis.

"That I will do—and then you shall send them away and go on with your ceremony."

Son-of-the-Ben took the lump of sugar from his pocket. He made several suggestive passes with it and said: "I hope I don't cop Snake-Eyes," to Hardwick and Bish. He walked over to the litter, spoke quietly to the lad, and then looked around at the fire trench.

The boy managed to nod between convulsions and take the sugar. He placed it in his mouth and allowed it to dissolve slowly as he was ordered. Then, suddenly, Son-of-the-Ben turned with a loud scream and reached down for the iron rod he had placed in the fire. It came out of the hot coals spitting and gleaming. With a quicker movement he turned and stabbed it at the face of the lad. It stopped half an inch from the curve at the top of his nose. He let out a low cry, twisted painfully on the litter, and Son-of-the-Ben withdrew the gleaming bar. It all happened so swiftly that few realized what had taken place.

The boy swallowed hard and raised himself on his elbows. He stared about and his eyes opened wider. He compressed his lips and a faint, hopeful smile came into his weary eyes.

"The old scare-em trick to cure hiccoughs," whispered Tug. "And, by golly, it worked! Look at the guy!"

The effect was amazing. It was not the rapidity of the cure that was astonishing, but the facial expression

of the lad who gradually realized that something amazing had happened to him. He struggled to a sitting position and looked about, trembling with excitement for fear the hateful malady would strike again. He waited, holding his breath unbelieving, and then sensed that more than a minute had passed without the painful stricture of the throat which had been slowly but surely pinching out his young life.

The young chieftain sat up, threw his legs over the edge of the litter, and called to his father. The High Chief raised his head a trifle and listened, unbelieving. The lad called again, and Son-of-the-Ben tapped the old chief on the shoulder: "See, old Father," he said. "Your son is cured."

Answers

TO QUESTIONS ON PAGE 30

- 1—Germany has one aircraft carrier—the *Hindenberg*—and the French had one—the *Berne*.
- 2—The new British carrier is the *Illustrious*.
- 3—The United States has seven aircraft carriers.
- 4—The world's first carrier was the British *Hermes*, built originally as a cruiser and converted in 1913. She was sunk in October, 1914.
- 5—Most Japanese aircraft carriers have full flush decks. The funnels are trunked over the side and superstructure is eliminated.
- 6—The Flight-Deck Officer is in charge of all landing and take-off operations aboard an aircraft carrier.
- 7—When taking on or discharging aircraft, carriers always steam into the wind.
- 8—Aircraft carriers can handle fighter, long-range patrol, and naval reconnaissance ships of various sizes. The planes, however, must be suitably constructed and designed for carrier work.
- 9—Because aircraft carriers are lightly armored, lightly gunned, and must steam into the wind during deck operations they often leave station and are thus the most vulnerable of all naval craft.
- 10—The first actual landing on a battleship was completed by Eugene Ely, a Curtiss test pilot, on January 11, 1911, when he flew from San Francisco and landed on a special platform rigged on the aft deck of the U. S. Navy cruiser *Pennsylvania*. He later took off again and flew back to land.

He speaks to you to tell of his joy. My medicine worked when even you were not assured."

The chief clambered from his throne and went to his son's side. He held his wan but smiling face in his hands and peered deep into the eyes. He nodded with satisfaction, turned and clapped his hand for silence, and began to exhort the dancers, the firewalkers, and the medicine men.

FROM THAT moment on, the ceremony gradually reached its zenith. The firewalkers trod the trench of burning embers from one end to the other and then finished up by walking through the pool of milk. The gongs banged and the reeds chanted. The dancers began to wail their dirge-like tunes.

"How'd he do that?" demanded Bish.

"It's an old remedy. He created a lot of saliva with the sugar and then tried to time the scare with the next hiccough. If the involuntary swallow which comes with the scare is timed to the throat convulsion, it usually stops the hiccough. This time it worked—and we were lucky."

"But these guys walking through the fire," added Bish. "They're *actually* doing it. I thought it was a gag."

"It is, but I don't know how it's done," said Hardwick quietly.

"I'd like to find out. It would make a good story."

"Well, take your boots off and try it," suggested Hardwick.

Bish just looked at him with that air of, "You weren't-as-crazy-as-this-last-year" look in his eyes.

They went over to Son-of-the-Ben, who was talking with the old chief. "But old Father," he argued, "I have cured your son. You gave me your word that you would control your followers and turn away Subramanya who would have you revolt against the King Emperor."

"For your service, I will pay good gold, Son-of-the-Ben," the High Chief agreed, wagging his head. "You shall stay here with my people and become one of us. You shall be chief medicine man and have a part of the temple in your own right."

"I shall speak later," said Son-of-the-Ben. He left hurriedly and came back to Hardwick and Bishop. "Where's this plane of yours?" he asked.

"Along the river. About a mile from here."

"Can you get away quick . . . ?"

"I told you—we have no prop," explained Hardwick.

"But we've got to get you out of here *somehow* and get back to Singapore. They're going to blow up the tin mines."

"Wish the old guy himself would get the hiccoughs," the Bish added.

"He's sold out to these mugs over here. They're part of a Jap Fifth Column outfit that's working to grab all this area. I've been out here for months working on the gag, and now it's folding up."

"Here they come now," said Bish. "Let's take a chance to bump off the lot!"

"No! Take it easy. You can't pull stuff like that at a fire-walking ceremony. You'd be dead yourself by now, if they could," explained the disguised American.

The tall, slender Eurasian came up smiling. Behind him was the big Dutchman who had sold out his country. Bringing up the rear was the Jap and his retinue of army and navy officers. Hardwick hooked his thumb in the slack of his holster belt and stood in a position where he could shoot fast from the hip—if necessary.

"A very clever move," the Eurasian said. "A typical American spell-binding trick."

He spoke at Son-of-the-Ben, and his words came like jets of acid from

a squirt gun. He was oily and sleek. His eyes had strange adder folds and his face was something that might have been carved from an old chunk of wax.

"Why don't you go and fry your face?" asked the Bish.

"I wasn't speaking to you—scum!" the Eurasian added.

"Shut up, Bish," warned Hardwick. "You're only wasting words."

"Very true, my friend," Subramanya agreed with a hint of a bow. "Your advice is well, under the circumstances."

The disguised American took up at that point: "I have been trying to persuade High Chief Nitoo to have no part of your plan, Subramanya. You know that what you ask him to do only threatens the future of his people. If they destroy the tin mines, they have no other means of existence."

"I have no desire to discuss my business with an American adventurer who has, as you say, gone native. In another week, you will be back on some beach, scraping up the rubbish the waves wash up. A cheap imitation of a medicine man attempting to impress a Malay chieftain."

"And you, Subramanya?" asked Son-of-the-Ben.

"I represent the country that will take over this country. My government believes it has the rightful control over Malay and will make every move to carry out suitable absorption with as little trouble as possible. The natives will be paid for what they do."

"Can they eat the gold you give them?"

The Eurasian waved the question aside.

"But why destroy the tin mines here? They are of great value."

"Only to Europe and America. The government I represent has enough workings in the Dutch East Indies, in China, and Siam."

"In other words, then, you plan simply to ruin the Malay Straits workings, just for the sake of destruction. You know that you cannot hold this country."

"I do not care to discuss our plans with a beachcomber," the Eurasian said. "I advise you and your American friends to leave this area before real trouble starts. That is very good advice and I give it willingly."

"And we ain't taking it," the Bish broke out. "You and your tribe of Jap acrobats can clear out yourself. We're staying here and watch the fire-eaters!"

"Fire-walkers," corrected the strange American. "An interesting exhibition by a people this man Subramanya would destroy to gain his own ends."

"Fire-walkers, bah!" Subramanya spat. "That is a simple Malay trick. There is no danger to it."

At that, Son-of-the-Ben leaped closer. "Just one minute, Subramanya! Can you walk along the fire trench in your bare feet?"

The Eurasian went as near white

as his dirty-yellow complexion would allow. He fumbled with his hands for the first time and showed he was out of his depth.

"Come, Subramanya. You have scoffed at the Malay ceremony. You must prove that it is a trick and simple to do!"

"Can you do it?" raged the Eurasian.

"Yes, I can do it, Subramanya. I can walk all the way along the fire trench. I will walk along it with you. We shall see who is the cheap spell-binder—the beachcomber. Will you accept the test?"

"Holy smothering catfish!" gagged Bish.

"Don't be a fool," husked Hardwick. "That fire's real!"

"I know it. But I'll walk as far in it as this Eurasian!"

CHAPTER III

MAGIC PAINT

"KEEP them there," the strange American said. "If you have to use a gun, keep them there!"

"Boy, you sure talked yourself into a Follow-the-Leader racket," grinned the Bish. "I'm gonner get a shot of this, if it's the last film I ever shoot. We'll call it the dance of the half-breed. Barbecue up, boys!"

Hardwick was not so sure. He wondered what trick Son-of-the-Ben had up his sleeve. He was certain no white man knew the trick of fire-walking, and that anyone who tried it would wind up a cripple for life. It was too much to expect, and yet . . .

The High Chief came along with his followers. There was the roll of drums and the jangle of temple gongs. There was a strange silence from the participants and the dancing girls stopped in their tracks. Rows of perspiring faces turned to the procession of the High Chief along the fire trench to the end where the Eurasian stood, boastfully sneering at Hardwick and Bishop. The High Chief had drawn himself up to a regal stature. He was again in full charge, imperial and master.

He addressed the Eurasian:

"You, Subramanya, have been invited to my feast and to witness my people at their religious celebration. You were invited in due respect for your position and the position of those who came with you. You have asked great favors of us and have accepted our meat and drink. That is true?"

"That is correct, Chief Nitoo," the Eurasian agreed, bowing.

"Is it true that you have expressed contempt for my people and their religious rites? That you stated they are false rites and mere tricks of base ideas? You have said that the fire-walkers do not really walk the hot embers. That is also true, Subramanya?"

"Only that man, Son-of-the-Ben, has said so," replied the Eurasian.

"I heard you say it," said Bish.

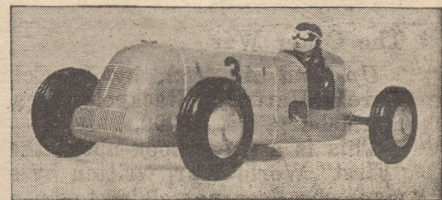
"That's right, Chief Nitoo," added

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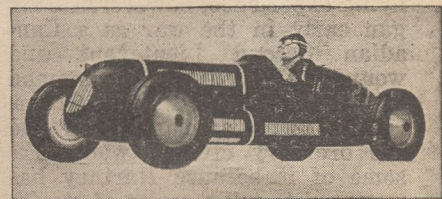
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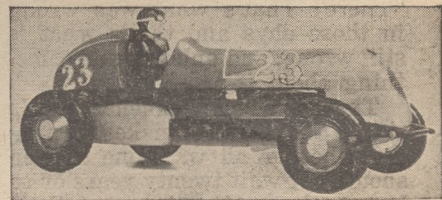
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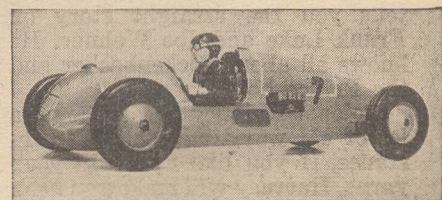
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Hardwick with a slow smile.

"This is a cheap trick, Chief Nitoo," argued the Eurasian. "The false visitor claims he can walk the fire trench. He says he can do the same as your tribesmen. Make him prove it and I will also walk the fire."

The High Chief turned slowly and let his eyes fall on Son-of-the-Ben. He glanced along the trench which still glowed hot and set up dancing films of heat. Then he turned back to the strange American.

"You are ready, Son-of-the-Ben?" he asked quietly.

Aero Book Reviews

Any volume described in this department may be obtained, at the price quoted, direct from the publisher named. When writing for a book, kindly mention that you saw it reviewed in FLYING ACES.

The Other War

Up And At 'Em, by Lt.-Col. Harold Hartney, Stackpole Sons, Harrisburg, Pa., \$2.00.

This is a great book about the "First" World War, written by a man who does not claim to be a great Ace. He has had a lot of war flying experience, however. He began early in the war as a Canadian Second Lieutenant and wound up a Lt.-Col. in command of America's First Pursuit Group.

This is an airman's book and the ordinary civilian won't like some of it because Hartney has managed to tell a series of stories and then hold them up and say: "There! That's what was wrong in those days and that's what is still wrong, and unless we do something about it . . ."

There is a sound saneness in *Up And At 'Em*, and it makes us wonder whether all war-time airmen should not wait twenty years or so before they attempt to put their stories down on paper. The author tells you the straight story on Frank Luke and Joe Wehner. He knows all about Rickenbacker and the Prince boys.

Colonel Hartney breaks down a lot of old war time idols. For instance, if you like Spads in your yarns, Hartney will make you bash your head against the wall when he tells you what he and his outfit thought of them in comparison to Nieuports or Camels.

Hartney started low and went all the way up, and in doing so he collected some of the best material that has been written about the other war. For one thing, he confirmed the motion picture story that Vernon Castle had once been out in France with the RFC. It seems that Castle was at Bailleul with Hartney when Hartney was with No. 20 Squadron. We had never been able to confirm Castle's active service record.

"I am ready, old Father," answered the American. "I can walk your fire because I am faithful. We shall now see who has the best interests of your people at heart."

"Go, my son," said High Chief Nitoo.

"And when I have done so, Subramanya must emulate my deed. And then when he has also walked the fire trench, you shall decide which of us has brought you the truth."

Both Hardwick and Bish stood there icy cold within but perspiring like men at an open hearth furnace.

Up And At 'Em is full of real names—General Billy Mitchell, Jerry Vasconcelles, von Richthofen, McCudden, Roy Brown, and all the rest of them. We hope a lot of people will read it and learn all over again that the boys of those days were just as game, just as brave and just as certain they were right, and died just as hard as any man on the front in Europe today.

Just to Pick Up

Sky Roads by Ernest K. Gann, Thomas Y. Crowell Company, New York City, \$2.00.

Ernest K. Gann is a pilot for American Airlines and one gets the impression that he became tired of giving free lectures on the various aspects of aviation every time someone stepped in for an evening of bridge. So he lined up all he had, put it into chapters, got some very swell pictures, and made a book.

That's just the sort of a volume this is. You can pick it up whenever you desire, barge through a chapter on anything from air weather to an airline pilot's flight plan. As a matter of fact, that's the way to read this book, which has only 123 pages, for in skimming through it one is apt to miss a lot of hot stuff. This book is well done, make no mistake about that. It is handled well from start to finish and it is well illustrated. The pictures and art work are particularly good, and if you take it chapter by chapter and digest it carefully, you will have learned something about flying and modern commercial aviation.

This is good stuff for those interested in how the modern airline pilot lives and works. It tells the inside story, and it tells it well. The maps are there, the charts are there, and the flight plans are shown in full detail. There is a good chapter about weather and another about instruments.

Sky Roads will not teach you how to fly or guarantee you a job, but if you read it you will know a lot more about the technical side of commercial aviation than most of the people who fly as passengers daily over the big routes.

They were unable to believe their eyes when they saw Son-of-the-Ben walk to the end of the trench, calmly kick off his straw sandals, and close his eyes. They watched him draw in a deep breath and gather up the loose ends of his lower garment. His legs and feet were bare, but before he stepped into the shallow trench he turned and gave the Eurasian a glance that told Hardwick the thing was as good as over.

Amazed, Subramanya walked up to the strange American and stared down at his feet. They were sunburned and dirty where the open portions of the sandals had allowed the sun and dust to seep through.

Then, as the gathering watched puzzled and strangely silent, the man known as Son-of-the-Ben began his amazing exhibition. He closed his eyes against the heat and calmly walked in measured strides. One, two, three—and the tom-toms and gongs began their steady beat. Four, five, six—and he had passed the half-way mark across the heated pathway. Seven, eight, nine strides . . .

"He's doing it!" gasped Tug.

"I don't believe what I'm seeing," Bish said, wiping his hand across his mouth. "How the devil . . . ?"

"It must be a trick. Where's your camera?"

"Forgot all about it. Heck, he's finished!"

It was too late to get the picture. Son-of-the-Ben was walking out the other side. He staggered a trifle and then stepped into the pool of goat milk. He stood there while the natives screamed and gesticulated. He closed his eyes again, sucked in his breath, and worked his feet up and down in the murky milk. For fully a minute he stood there as though he were cooling his feet in the mud below. Then, opening his eyes, he stepped out, tottered a stride or two, and sat down on a carved log.

"Come on. I want to see his feet," called Tug. "The poor devil!"

Subramanya was there before him. "But it's a fake, I say," he was yelling. "He tricked us. Let me see his feet!"

Son-of-the-Ben smiled, drew up his garment again, and stuck his feet out.

"Look, Subramanya. You see, I am not burned. The hair on my legs is scorched, yes. I am not harmed because I am a friend of Chief Nitoo and his people. Now *you* do it."

The High Chief had returned to his throne satisfied. He sat down and waited for the Eurasian to walk through the fire. Hardwick and Bishop pressed through the crowd and stared at the man's feet. They were bare, slightly red above the instep, but clean and white along the soles!

They glanced at him in wonder, but Son-of-the-Ben only smiled—and winked.

NITOO sat and waited, looking across the fire trench. His son stood nearby, lightly supported by two loyal retainers who stared down

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at where Son-of-the-Ben still sat on the carved log. Music squealed from the reeds and the medicine men went through their gyrations.

"We are waiting, Subramanya," the High Chief spoke.

The Eurasian came away from his group, flushed, angry, and ill at ease. He stood opposite the High Chief across the fire trench. The men behind him tried to encourage him, but they sensed they were beaten.

"But it is a trick, High Chief Nitoo," he tried to argue. "He was not burned in any way."

"They why are you afraid?"

"Because I do not know the trick. The man is a cheap trickster!"

"Then you do state that my ritual is that of the fraud and the charlatan? You accuse my people of trickery? You do not believe the fire will burn? You can only assure me of your good intentions by repeating what you have seen here."

The Eurasian backed away from the fire. Bishop and Hardwick were right behind him. "What's the matter, Subramanya?" said Hardwick. "You can't take it, eh?"

The High Chief stood up in rage and held up his tiger-toothed mace. His eyes flashed and he showed his betel-stained teeth. He spat at the Eurasian and began his tirade: "You are worthless, Subramanya. You accuse us of trickery when it is you who practices deceit. I have considered the words and deeds of Son-of-the-Ben and believe him to be a true friend. We shall no longer have dealings with you and those you represent. We shall be loyal to our King Emperor. We shall not destroy the mines that provide us with bread. You may go your way, and we shall live on in peace and contentment. Leave!"

The drums rolled again and the fire-walkers pranced up and down.

The tom-toms chanted and the medicine men made the most of their chances. The tribesmen danced and the girls formed groups of swaying figures on the steps of the temple.

But Subramanya was not through. He dashed back into the center of the crowd and threw up his clenched fists.

"You, old Nitoo, shall suffer for this. We shall go now, but we shall lay waste the temple, your villages, and your aqueducts. The war birds of the Rising Sun shall sweep in and hurl death and fire. You cannot fight that kind of fire. There are no tricks your Son-of-the-Ben can devise that will douse the flames spread by the war birds of Nippon."

"Go," the High Chief demanded, pointing a bony finger. "My guards will escort you to your praus."

The Eurasian stood silent a minute. Then he looked down at the fire, still unbelieving. He walked up close, kneeled beside the trench, poked his finger in—and withdrew it quickly. He stuck it in his mouth, a mask of absolute amazement telling what he himself had not believed.

It was real fire, and Son-of-the-Ben had walked across it in his bare feet!

The people of High Chief Nitoo laughed and Son-of-the-Ben's triumph was complete.

"Why don't these natives knock that mug off before he gets away and causes trouble?" asked the Bish.

"They can't. There can be no bloodshed during the ceremony. Don't worry, Subramanya knows that, too. He would have bopped you off before now, only he knew he never could have got away with it. They'd have thrown him in the fire . . . all of them," explained the strange American, coming into the picture again and pulling on his sandals.

Subramanya and his party consulted together for a few minutes. They were frustrated but they had not given



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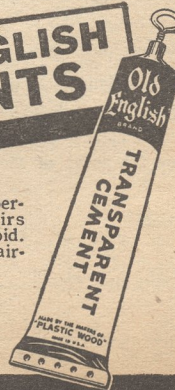


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en up. They called for their escort party and bowed one by one to High Chief Nitoo and flinched under the gaze they drew in response. Then they backed away and disappeared into the jungle.

"They won't pass our ship, will they?" asked Hardwick.

"Not likely. You are farther South, I guess. But what I'm worrying about is what they'll do when they get back."

"You mean they'll bomb this place?" asked Tug.

"Of course! They'll scare the day-lights out of these poor devils and they'll go on a rampage and blow up the tin mines and the railroad. We've got to get you a propeller—and quick!"

"How? There isn't one any nearer than Singapore," said Tug.

"I have an idea. I think we can make a prop. There's plenty of iron-wood and teak around here."

"Why, that would take days—even a wooden prop!"

"Not these guys. Here, you go back Bishop, take off that whole prop boss, and bring it here. We'll get a prop, fit the main boss into it and bolt it. Maybe we can get away with it."

"Maybe," agreed Hardwick dubiously. "You know the way, Bish?"

"I can find it, the way you hacked your way through. You get the Chief interested. By the way, what's your name, anyhow, Son-of-the-Ben?"

The man in the native costume smiled, half-turned away: "Just that," he said. "Son-of-the-Ben. In other words Ben's son. Or if you must be told—it's Benson!"

"Benson? . . . Benson?" they both gagged. "You Benson . . . Billy 'Buzz' Benson?"

"That's right. Buzz Benson," the man in the weird garments said. "I'm Buzz Benson, the mug you came to find. I'm the man Major Norton was writing about when he was murdered. Queer world, eh?"

THEY STOOD there staring at the man who had disappeared back in 1937 after his amazing adventure of the "Clipper Ship Curse." The man they had heard so much about for years. The man they had never seen. The man they had never expected to see.

"Look," said Bish weakly. "I can stand just so much of this sort of thing. I'm going to get that prop boss

and get my breath in the bargain. You straighten it out, Tug!"

And with that, the Bish left, hurried through the swirling crowd and found the jungle path again.

"Come on," said Benson. "We've got to work fast."

"Fast! They can't make 'em that fast in a prop factory," argued Hardwick.

"No? These guys can—by hand, if you work them up."

They made their way to the High Chief and in a few words Buzz Benson explained the situation. Nitoo listened quietly while Buzz went on to tell how the other white men were down along the river and wanted assistance to get their plane into the air again.

"What would you have us do, Son-of-the-Ben?" the old Chief asked calmly.

"You have many teak logs here, old Father," Buzz went on to explain. "We must have workers who will work until their flesh bleeds. We must have a finished propeller within an hour—two, at the most. It is most important."

"It shall be done, my Son," the old Chief answered, clapping his hands.

The warriors answered and formed half a circle. The old Chief made a short speech in his native tongue and they looked blank. He pointed to Buzz and Hardwick and then into the sky and added some more phrases. Their faces gradually changed and Hardwick knew that Benson's plea had been answered.

A long teak log was brought by a group of workers. It was set up in the prongs of four stakes driven into the ground like saw-buck legs. Buzz and Tug consulted on length and possible weight and then drew out the first crude outline of the proposed propeller. The wood was hard and tough and the prospect seemed hopeless, but the men went to work with a will. First, they placed long irons in the fires and in relays they started in to burn away the outline of the boss and the blades.

There were fully a hundred men ready now and iron after iron was withdrawn from the long fire trench and carefully worked across the heavy teak log. Another group with an ancient saw finished off the ends. Men stood by with battle knives which they sharpened in anticipation. Two master workmen straddled the teak log and chipped at the blackened portions as fast as the irons ate it away.

In a quarter of an hour, the outline of the propeller was becoming very distinct. Buzz and Tug checked and re-checked at intervals and allowed the men to go on. Benson drew a rough plan of what they wanted as the finished product and showed it to the master workmen. They nodded, fondled the teak with their hands, and called off orders again. They measured and checked as the chips and burned sections flew.

The prop boss was left rough until Bish could return with the hub. They

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bored a center line and went to work again. Relays bent over the log and cut away with swift strokes, and inch by inch the blades began to take on the true line of an airscrew. It was bitter work, however, and the crude blades of the native knives soon had the hands of the workers bleeding and raw. Still, they glanced up into the sky again and wrapped dirty rags about their fingers and carried on, encouraged by the High Chief and Benson.

BY THE TIME the blades had begun to take on some semblance of form, Bish returned with the master hub from the Allison engine. He also brought along a few tools so that the butts of the broken blades could be removed. It was simple to take off the collars from the hub boss and then unscrew the face plate. This left a tubular journal with the back plate clear. All that was necessary now was to bore a hole through the propeller, insert the shaft, put the face plate over it, and bore a few holes through the boss and tighten the two plates together.

The carvers and the men with the hot irons were given a few minutes respite while Tug, Bish, and Benson completed the fitting. It joined snug and smooth, and all that was necessary now was to complete the general outline of the blades and cut away to maintain balance. Relays of new workers came up and the chips flew in spite of the toughness of the wood. The fight went on relentlessly, mingled with the exhortations of the medicine men, the cries of the dancing girls, and the clash of temple gongs. Never had a piece of modern equipment been produced under more amazing circumstances.

"Keep them at it," said Benson. "I'm going back to my shack to get rid of something."

"I'll come along with you. Bish can keep them to the line. I want to talk to you, anyway," grinned Hardwick.

Benson led the way through the village, passed along through a row of huts which stood off the ground on bamboo logs, and continued on through the fronds of vegetation until they came to a small shed. It was a little more modern than the others with a heavy thatched roof, a small veranda, and a door that swung back and forth on leather hinges.

"My little gay home in the West," beamed Benson. "How you like?"

"No like. Can't understand how you stuck out anything like this so long. You must like this sort of thing."

"You get little choice when Major Norton pulls the strings. Poor guy, so they got him, eh?"

"Right. Got him clean, too. You had told him of this business?" asked Hardwick.

"Gave him the general layout and asked for assistance to get out. I was being held here a prisoner, more or less. This fake medicine man game. I cured the old man of ringworm with some stuff I got from the mine

superintendent. The Chief and the other temple guys don't work, you know, and they won't have anything to do with the conveniences and medical care the British offer them. I had to fake that I got the salve from a *nipa* palm and it was okay."

Hardwick laughed. "It's a crazy business, Buzz. But what the deuce have you been doing down here all these months?"

"I haven't been here all the time. I've been in Japan and China and gradually worked down here when it looked like someone was going to grab the Dutch East Indies. And don't think they haven't tried. I had to get in touch with Norton quick when I saw how this guy Subramanya was working. That message went through in code with the aid of a young Englishman who was going to Calcutta on business. Funny how they traced it all the way to Norton and then bopped him off just as he was wiring you to get me out."

"They've got a system, all right. They have been knocking off the British Demon fighters which have been making routine patrols in this area. Critchley, down at Singapore, is going nuts about it. He lost four in one day."

"They're lucky," said Benson. "It could have been more. They have a hidden field outside Kuala Lipis which they keep supplied from the deck of an aircraft carrier. They have quite a few Jap fighters there and they're not to be laughed at any more. They're plenty good."

"I know it. We had a devil of a time downing three," grinned Hardwick.

"Well, you'll soon get a chance to try your hand against more. They'll be back with a fleet in no time. I hope we can get you off."

"If they get that prop finished, we'll get off, don't worry."

"I hope so. Now about that paint," said Buzz, looking out of the doorway.

"Paint? We're not going to bother with paint, are we?"

"No, I mean *my* paint. The stuff I used in the fire."

He reached under a crude cot and brought out a can of aluminum metallic paint such as is used in the tropics for protecting machinery and tools. He held it up and laughed. "This is the stuff, my boy!"

"That? What do you mean?" gasped Hardwick.

"Simple. I simply painted the lower part of my feet with a thin layer of light rubber cement that I got from the mines. Then I spent all last night putting coat after coat of metallic paint on that until I had a thin sandal of metal on my feet."

"But I can't see how you did it. Didn't it burn off right away?"

"No. I had tried it out before—just in case. When I first stepped into the fire I felt absolutely nothing except the heat about my legs. It was hard to breathe, but my feet didn't begin to hurt until I was near the end of the trench."

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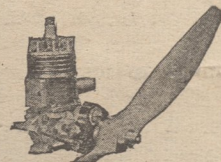
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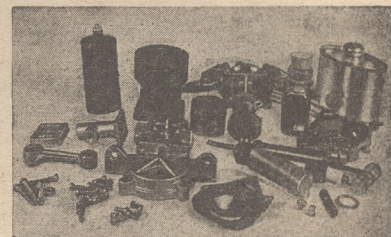
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Benson went on: "When I stepped out of the fire I was almost overcome with the heat. Then I somehow made that puddle of milk and tramped around in it until I could remove what was left of the metal and rubber cement base and press it down into the mud. That was why my feet seemed so clean when I came out."

"I still don't believe it," said Hardwick, staring at Benson.

"You saw those Pandus do it in their bare feet, didn't you? Why can't I do it with a light form of protection?"

"I saw them do it, yes. But as long as I live, I shall believe you walked that fire bare-footed. Somehow you've discovered the trick, and I don't blame you for keeping the secret."

"We'll let it go at that, then," grinned Buzz. "But, just the same, I'm dumping this stuff in the jungle before any of those madmen out there suspect anything."

CHAPTER IV

WAR IN THE AIR

THEY RETURNED to the temple clearing where Bish was in the thick of it, helping scrape down the blades of the prop. The natives were rubbing furiously in relays with rough stones, and now the blades were clean and distinct as to shape and pitch. Another ten minutes of furious effort and they lifted the propeller and tested it for balance. The men chipped away and they tried it for balance again. It wavered gently and Benson drove a heavy nail deep into the butt of the lighter blade.

"That will do," said Hardwick. "Let's get going. Get some rope, too."

A cheer went up from the natives and the workers squatted about while others came along and hoisted the heavy wooden airscrew to their shoulders. A weird procession started through the jungle for the Northrop

with Bish, Buzz, and Hardwick in the van.

The Northrop stood where they had left it, and in a few minutes the new wooden prop had been placed on the shaft and bolted securely in place. The key was fastened and the cover screwed to the front plate.

"You'd better call Singapore the minute you get into the air," warned Benson. "Get aboard and start her."

Hardwick lost no time getting into the cockpit and operating the cart-ridge starter. The big Allison went over with a roar and the great prop swung evenly. They all grinned and the natives ran around wildly while Tug and Bish climbed into their parachutes. Tug then let her idle to check the vibration—if any. The Allison responded beautifully, indicating that the prop at least was evenly balanced. Whether it would pull was a matter they would have to find out later.

"You'll have a devil of a time getting out of here with that prop," said

The Airmail Pals

READING about that recent TWA Stratoliner's record-breaking flight between Los Angeles and La Guardia Field, N.Y., sure made your ol' R.H.P.D. lean back and think for a moment. Yes, it's remarkable how rapidly aviation had progressed—especially when you realize that the strato ship was only "loafing" when she turned in that 240-m.p.h. average. Why, it seems like only yesterday—or maybe the day before—when we spoke of the "astoundingly-high top speed" of the Boeing P-26A Army fighters. And they did just a little over 200, you remember.

But you lads know all about those two ships, so let's buckle our gut-girdles and bail out to chute down with this month's batch of A.P. news. Here goes—

"I'm in on that Plattsburg training program," says Martin Billings, of New York City, "and, boy, is it swell! Sure, I realize that a lot of fellows wouldn't like this sort of thing—but I've had a hankering for military service ever since I was knee-high to a rocker arm. Now I've got that chance without actually joining the Service.

"All of the boys up here are getting a kick out of the program, and about the only thing that isn't liked is being on K.P. But that's Okay, though, for they told us that they're picking on all of us so's we can see just what a tough job it is feeding an Army.

"We drill, have rifle practice, drill some more—and then have a little more drill just to top it off! I'm get-

ting to be just like a Regular now; you should see me strut!"

That's swell, Martin. Maybe one of these days you'll be wearing officer's markings. And now, for that top-notch note, we're putting a set of two corking 3-views into the mail for you—Crash Carringer's Hale Hellion and the Westland Pterodactyl V. The Hale Hellion is autographed by Arch Whitehouse, too!

Now, how would the rest of you missive makers like to win yourselves that swell pair of 3-views? Well, all you gotta do is—

Sit down and tell the R.H.P.D. what you've done by mail that you'd like to let us all in on. You might not think of anything interesting at first, but keep trying. And when you finish your "communique," address it to R.H.P.D. Letter Contest, c/o FLYING ACES, 67 West 44 St., New York, N. Y.

A strong booster of our Air Corps is H. McMullen, of Imlay City, Mich. Mac's home town is just a few miles from Selfridge Field, where some of the country's crack pursuit squadrons are stationed. And we've got a swell letter waiting for the chap who can fit the qualifications set in Mac's epistle—but that pal's gotta be about 26 and nuts about aviation. Mac signs off by telling us that "FLYING ACES is the best aero mag I've ever read." Thanks, fellow. Them's kind words.

And while we're on the subject, how's about some of you older chaps writing in and telling us what kind of postal phriends you're looking for? There's some top-notch info in several letters we've got here from fans between 20 and 35. Let's hear from you, huh?

Well, as they say in Washington—I have Spokane! (Isn't that corny?)

—THE R.H.P.D.

HOW TO GET AN AIRMAIL PAL

FIRST, write the best possible letter you know how. Use your best pen-and-ink handwriting or a typewriter. In your letter, introduce yourself fully—for this is the letter we'll forward to the pal we'll pick out for you. Tell your age, your interests in aviation, your other hobbies, and any additional items that might interest a new friend.

Then on a separate sheet tell the Right Honorable Pal Distributor what kind of an Airmail Pal you want. Send your letters to Airmail Pals, FLYING ACES, 67 West 44th St., New York, N. Y. Be sure to enclose a stamped, self-addressed return envelope, plus five cents in stamps or coin for each pal requested (our fee for the R.H.P.D.'s "Kitty"). We'll try to supply you with a pal in line with your specifications, although we cannot guarantee to fill the bill exactly every time.

Your new pal's letter will be sent to you, and yours to him—after which you will correspond direct.

Do not ask for "lists" of pals. We cannot supply them.

Regarding foreign pen pals please note that because of the present European war we cannot supply foreign pen pals in all cases. However, we will fill as many requests as possible, then when the supply runs short we will substitute domestic pen pals.

If you are an American resident and want an overseas pen pal, do not write a pen pal letter. Instead, send us a short note telling in a general way what kind of a chap you are and what kind of a pal you seek. Enclose a stamped, self-addressed return envelope and five cents for each pal called for. A foreign writer's letter will be sent to you, then you may correspond with him direct.

If you live outside of the United States and want an American pen pal, write a complete letter as described in the first paragraph of this box, and send it *without* the return envelope but *with* an International Reply Coupon worth five cents. Get the coupon from your local postoffice. Your letter will be forwarded to an American correspondent, after which you need only wait for his reply.

Buzz after looking over the ground.

"That's why I wanted the rope. Hook a line from our tail-wheel bracing-strut to the base of that heavy palm tree. We'll start her and you stand by with a sharp machete. When I give you the signal, slash her clean."

"I get it," Benson said.

"Wait a minute. What about you? We're supposed to get you out of here."

"Never mind me now. You get into the air. You can come and get me later. Get going—here they come!"

There was no time for argument now. They could hear the roar of raider planes. Tug and the Bish slipped down into their seats and tightened their bolts. The natives were already scurrying for the trees. The big Allison was opened up gradually and Benson stood by with a machete.

The engine increased its roar, and gradually the Northrop struggled against the rope. Tug eased the throttle up still farther, and gradually the straining plane raised itself a few inches off the ground. A few more notches and Hardwick's hand went up and then slashed down. The big machete in Benson's hand flashed and the rope was cut a few inches behind the sternpost of the fuselage.

The released Northrop raged, leaped forward, touched its wheels once, and bounced into the air. There was a breathless second or two as it roared at the curve of the river and shot like a projectile at the trees on the other side.

But Hardwick was in full command now and he held her dead on until the last possible second. Then he hoiked hard, rammed a wing-tip down, zoomed in a wild climbing turn, and came out in the clear, his wheels slashing through the tops of the trees. Once they were aloft, Bish set the radio wavelength-lever on the notch that hooked up with the R.A.F. base at Singapore. In a few words he told the story and asked for help—help that was 160 miles away, but 160 miles meant but half an hour for modern British fighters.

Then before they knew what was going on, they had run smack into a formation of heavy Japanese bombers which carried no markings.

The Mitsubishi-96 bomber biplanes were selecting their targets and preparing to loose incendiary bombs when from out of nowhere came a monoplane scourge that cut them down before they could get set over the village and the temple.

There were four when Bish and Hardwick started. In twenty-eight seconds there were two. Two were in the river, burning and pouring streams of flaming fuel from their fractured tanks across the waters. One hit with a crash and exploded, blowing itself to bits.

"Tap those others before they get away," yelled Tug.

"You get one. I'm busy with this baby."

They cut off the two remaining Mitsubishi bombers on brute speed alone and then went to work on them. The gunners tried to halt them with their Nambu guns, but Bish was calmly shooting away N-struts to see what happened. In a few minutes he had turned the two biplanes into monoplanes by shooting away their struts so that the top wing floated off with an ominous crack. The ship-board bombers staggered across the sky while their crews attempted to take to the silk. Bish then turned his attention to the props and pecked away with his Brownings until the battered crates were floundering about with nothing but burning oil tanks in their noses.

The rest was quick and orderly. Tug moved up, climbed into position, and before the Mitsubishi wrecks could strike the trees, he gave them both a neat package of wing-gun pepper that made them sneeze themselves into tangled masses of dural and junk. They both hit with loud explosions and left gaunt patches in the jungle.

"Keep calling Singapore," Tug ordered. "Keep after them and make them understand that they can get some air-raid experience if they get here in time. Keep calling!"

It was just as well. In half an hour a new Jap formation came in from the North. Fighters and bombers, too, this time. Subramanya had called on all his forces to clear out the Benom village and to carry out the destruction of the tin mines. But this time he met more opposition. The sleek, if battered, Northrop sailed into the middle of the lot with Hardwick spraying the sky with his wing guns. Bish pecked away at the fighters and drove them out of position just in time to open them up for a mad hornet swarm of Hawker Hurricanes which slammed down out of nowhere from above.

Air Marshal Critchley was leading his pack and they leaped into action with vigor. This was something they could understand. Here was something to get their teeth into. Here was war as they understood it—and they made the most of it!

Below, the natives hugged the trees and watched modern civilization vent its wrath. They saw Hurricane fighters tangle with unmarked Mitsubishi bombers and fighters. They saw a knife-winged Northrop lead the way into the fray that saved their village and their future. The bombers were battered to burning

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	18" dia. 335c	18" dia. 335c
	18 1/4" dia. 340c	18

wrecks before they could put a bomb-sight on a *kampong*. Unmarked fighters piled up, vomited their wings, and slipped away to their fathers. Demons came in later and added their packet to the battle. And before ten minutes had passed, Tug Hardwick led the formation back over the village and was dropping messages of triumph and promise, while Critchley fell back and allowed the American machine to lead the gang back to Singapore.

* * *

The landing was what might be expected. Very lights and horseplay. The odd spot in Mess and a promise of a binge dinner—but not before an

armored car section had been sent North to pick up the man who had walked the fire; the man known as Billy "Buzz" Benson.

"Quite a spot, Hardwick," agreed Air Marshal Critchley. "Glad I gave you a clearance now. Turned out all right, eh?"

"All right? Ripley should have been in on this one," beamed the Bish. "We saw a guy walk the fire up there."

"Now Bish," taunted Hardwick. "Can you prove that?"

"Well, we saw it with our own eyes."

"Not I. I wasn't looking," said Hardwick.

"Do you mean to stand there and tell me you didn't see Benson walk that fire trench?" blatted the infuriated Bish.

"You know darned well he only dared the other guy to do it," kidded Hardwick. "The other guy was afraid, so the old Chief sold out."

"But, you big tramp, you stood there and saw it, too!"

"Now, Beansie," warned Hardwick.

"Okay, Boss," Bishop sighed. "Where do we go from here."

"To the bar," suggested Air Marshal Critchley. "I think you need a bracer—er, Beansie."

THE FOIL GUY

(Continued from page 18)

Phineas reminded his hut-mate. "Oh, I will not hurt them none."

Phineas hied to the Nisson, shut his door, and barred it. He lifted a stack of old French magazines out of Bump's trunk and immediately began poring through them. For an hour he hunted for something and finally found it. He ripped a page out of the copy of *La Vie Parisienne* and folded it up carefully. Then he put the other magazines back and began whistling. He delved into his own trunk, came up with a sachet he had purchased in Paree. It was going eventually to an address in Waterloo, Iowa. Phineas put that in his pocket and then explored further into his belongings. He was looking for that box of stationery his aunt Agatha had sent him.

"Only she would send me blue writin' paper," Phineas sniffed. "She must of thought I joined up with the Red Cross nurses. Well, it looks like I have got a good start."

Phineas had once played a joke on a pal in Boonetown, Iowa, who had had a heartbeat in Paris, Illinois. Folks back home who had heard about it claimed that Phineas would find himself in a state penitentiary if he did not look out. They said he had used the mails to defraud.

"I am safe over here as I won't even bother with the Frog mail carriers," Phineas said. "After I see what the brass hats are going to do to us, I will start to work. I will show that Boche thief a thing or three!"

MAJOR RUFUS GARRITY let the outfit know what was threatening them. The brass hats from Chaumont had heard his story and had withheld judgement for the time.

"They are going to start an investigation," the Old Man said. "We will all be on the carpet—me and Howell and that halfwit Pinkham. Meanwhile, we have a black mark on the Squadron and it will take us eighteen

years to start to live it down, according to them brass hats. We are a detriment to the A.E.F. an' are helping the Germans to destroy allied morale. That's all we are accused of so far. I will think of some other things in a moment."

"That is gratitude!" Phineas hooted. "We shouldn't even try no more. We was only tryin' to get what was lifted from us. It is that DeBri's fault. Boys, I never thought I could hate anythin' worst than a Kraut. If it's the last thing I do—!"

"You leave that Frenchman alone!" the C.O. howled. "If you get us into any more messes, I will kick your pants all the way from here to Dijon! I'll—"

"It is awright by me. As long as my empennage ain't in 'em. Haw-w-w-w! Well, you will have to excuse me everybody as I have my knittin' to do. Everybody across the pond knits for us and I am the first soldier who thinks to knit somethin' for the unfortunate civilians."

* * *

Let us now peek into the private lives of other characters in this amazing drama. We take you over to Valmy where *Capitaine* Alphonse DeBri sits in his cubicle on the French drome and stares hungrily at the picture of a very gorgeous *made-moiselle*.

"Ah-h-h-h, *mon petit*! I am zo desolate weethout you, *oui*. Light of *mon* life, why ees eet you do not love ze great soldat like ze han'some *Capitaine* DeBri? *Sacre*! Life she ees not worth ze living, *cheri*. *Nevair* weel you see me again. Bettair ees eet to die than live weethout you. *Voila*! Ah-h-h-h-h-h-h-h-h! For one-two-t'ree months I ask for ze Boche to heet me where she weel keel me. I keep on unteel—ah you are so beautiful—my heart she ees broke!"

Across the palpitating lines in a Boche drome close to Aachen, Hauptmann Adolph von Lieberstraum sat in his quarters. For a man who had downed forty enemy planes he presented a sorry picture. The Hauptmann was thinking of a toy factory in Dresden. It had been in the family for two generations and now a Heinie banker was going to swallow it up. He had written the Jerry Ace that unless a certain amount of legal

"YOUNG AMERICA FLIES"

WARNER BROTHERS Motion Picture Company extended your Editor an invitation to the preview showing of their new two-reel aviation film entitled "Young America Flies." This picture is the first we've seen concerning the CAA's pilot-training program, and was completely interesting throughout. What's more—and this is astounding for Hollywood—there's not one technical error in the entire movie!

The featurette, which is played by a big-time cast including Jean Parker, William Orr, Donald Woods, Henry O'Neill, and William Lundigan, was produced in cooperation with the CAA. B. Reeves Eason, an action-drama veteran, was director-in-charge of the film.

In his screen play, Author Delmer Daves has taken a typical

group of young student flyers at Stanford University through their training program, from classroom and ground instruction, to solo. And in tracing these steps, he has woven the problems, thrills, hazards, and triumphs which fall to the lot of American aviation fledglings.

The students, after selection, are ground-trained in the theories of flight. Then the group is enrolled in a civilian flying school and given dual instruction. And after hours under the watchful eye of an instructor, they qualify for their first solo, followed by a cross-country hop, and the final license test by a CAA Inspector.

The film is recommended most highly for all those interested in the CAA plan and actual flying. Be sure that your local exhibitor has it on his list.

tender was forthcoming within ninety days, the toys would be manufactured by the hands of receivers. There was a mortgage on von Lieberstraum's chateau big enough to sink a coal barge so he could not hock it the second time.

"Ach! The bummers ask *idt* for security from von Lieberstraum. *Idt* is *der* joke. Security yedt *undt* me up efery day mit Spads and Camels with S.E.5's shoodting at me. Ha, ha! Ain't it funny? Ba-a-ah! *Himmel!* For a hundredt years *undt* more the toy factory is ours *undt* now—why was der var. *Donnervetter!*"

A little Heinie flyer walked in and asked the von if he was troubled.

"*Nein!* I am laughing mit stitches, *dumkopf!* I am close to bankruptcy *ist* all. For a hundredt thousandt marks I would join der French army efen. Do you believe *idt?* Anything, *mein freund*, to safe der Lieberstraum toy business. *Mein fader* vill turn in his grafe no less."

The young Fokker pilot commiserated briefly with the Hauptmann and then took it on the lam. Little did he know that it was his last night as a war pilot. He was not psychic so he could not know that he was going to be forced down on Allied linoleum the very next day, that he was to be a part in the skullduggery surrounding Lieutenant Phineas Pinkham.

BACK at the Ninth Pursuit Squadron, Phineas put a blank sheet of blue paper in an envelope, sealed it, and then addressed the letter to himself before hitting the mattress. He wrote with pen and ink and the label on the ink bottle said:

FOOL YOUR FRIENDS!

with
MERLIN'S INK.

First You See It—
Then You Don't!!

A despatch rider bound for Nancy stopped off at the Ninth Pursuit Squadron the next morning just before "A" Flight was about to take to the scraposphere. Phineas sidled up to the mechanical bug jockey and handed him the blue letter.

"Do me a favor an' mail that in Nancy, huh?" Phineas said. "Oh, don't put your hands on your hips an' be funny! I used that stationery so that these bums will think I have got a swell dame writing to me."

"It is screwy," the dough said.

"You forget you are talkin' to an officer," Phineas said in a huff. "Ah-er-haw-w-w-w! Here is ten francs."

"For that dough, Lootenant, I would write a letter to my mother-in-law."

The flight led by Captain Howell added two more scalps to the belts of the Ninth Squadron. Over Mont Sec, von Lieberstraum and four Fokkers argued the right of way. And before tracer smoke had cleared away, a pair of Prussians had been crossed off the tax list across the Rhine. Hauptmann von Lieberstraum had made a terrific battle of it and had

thrown his sky buggy around the ether in maneuvers that had never been taught in an air school. The Heinie had tried to ram Howell's bus head-on and he had missed doing the same thing to Phineas by the width of a communion wafer.

"I wonder if a frawline has got him down, too," Phineas asked himself as he headed for home. "No wonder dames make history." He pawed cold beads of worry dew from his face. The von's undercarriage had just missed fracturing his skull.

The sweet victory of the Ninth was soured by news from Valmy. *Capitaine* DeBri had knocked down his twenty-second Boche the very same morning.

"He will need a bookkeeper yet," Bump Gillis sighed.

"Just wait," said Phineas.

Forty-eight hours later, Phineas received a letter and the whole squadron kidded him about it.

"I would say it come from Glasgow," Bump said. "That frill used the palest ink I ever saw. It is nothin' but water I bet—with a dash of blueberry juice. Ha!"

Phineas ignored the anvil chorus and laughed up both sleeves. He knew what he knew. In a few more hours the ink would be entirely evaporated.

That night, Phineas borrowed a motorcycle without permission from the E.O. and drove to Bar-Le-Duc. He went to Babette's domicile and knocked on the gates. The fiery daughter of France would not admit Phineas at first. She was about fed up.

"Listen, *mon pettee*. I am here on bended knees," the miracle man from the U.S. called out. "Ever since that night I not get ze wink of sleep, *non!* I am trays devastated, so helpz mwa. Aw-w-w-w-w! Babette *mon cherry*."

Phineas was forgiven. Babette asked her big brave aviator to forgive her for making him jealous and she walked right back into his heart via his stomach. Babette was the champion pastry cook of France. After a while, Phineas dropped certain plans he had for himself right

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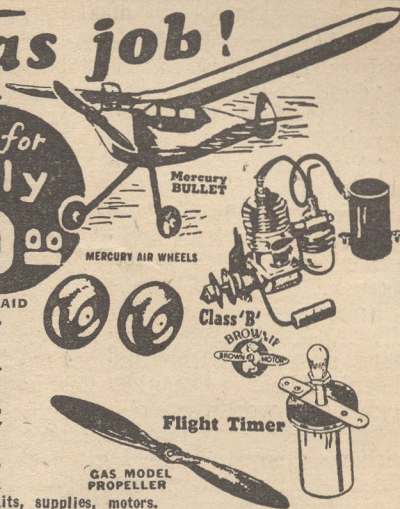
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into her lap. Babette had a sense of humor herself or she never would have bothered with the American wag in the first place.

"Oui, Pheenyas. Eet ees funny, non? Ha-ha-ha! You breeng ze papair?"

"Yep. Haw-w-w-w-w! It is all smelled up with sachet too. Here is a page out of a *La Vie Parisienne* with writin' on it. You just copy the writin' an' write what I say in French."

Babette proved an able amanuensis. "Ah-h-h it is writeeng almos' like mine, *mon cheri*. Babette does nevair theenk Pheenyas could theenk up such sweet words, non."

"It is because you are *ici*, Babette," Phineas gushed. When I git back to the drome I will steam open the letter I got from Nancy an' put this one in place of the blank sheet. Haw-w-w! I had to have a post mark an' cancelled stamp from the French Republic, nest paw?"

"No wonder I am in love weeth you," Babette giggled. "You are so varee cleveair."

Phineas went back to the drome as pleased with himself as is a cat that has tumbled into a bin of catnip.

FATHER TIME ripped three more days off the calendar. At the end of the third day, a Frog ackemma walked upstairs to *Capitaine* DeBri's boudoir on the Spad drome near Valmy. He saluted the Ace smartly and held out a letter. Perfume seeped into DeBri's proboscis and made the ends of his waxed lip spinach quiver.

"A soldat in Bar-Le-Duc finds ze lettair on ze street, *Capitaine*," the corporal said. "Ze mail she ees so careless, *oui*? He picks eet up an' eet ees for you."

"*Oui? Merci*. She smell so szweet, non?" DeBri grinned. He pushed the ackemma out of the room and slammed the door. Brows knitted, the Ace ripped open the scented letter. He opened up a sheet of paper and began reading. Every nerve in his fuselage started to palpitate. His ticker pounded like Vickers guns.

"Ah-h-h-h-h!" sighed DeBri. "Eet ees from *mon angel*, *oui! Voila! Vive La Fraw-w-wnce! Ah-h-h mon Dieu, merci beaucoup!* Maybe eet ees she fin's out she loves me!"

DeBri devoured the dainty feminine handwriting. Each and every word was manna from Heaven to soothe his hungry pump. He read:

"Dear Alphonse:

Can you forgive me, my life, my all? Not until you had gone did I realize that you were my only love. I cannot sleep. I cannot eat. I think of you up in the sky with the bullets of the terrible Boche flying all around you. Alphonse, you are all the world to little Lily. Don't let them kill you, my everything. If they do I will shut myself up from the world in some far away convent and just pray for you.

Fly to me, Alphonse, and tell me you still love your poor petit Lily of France. I count the seconds, the minutes, the hours. Ah-h-h-h-h, life she is so sweet

now I know how much I love you, Alphonse. I am waiting for you. I will wait forever.

Yours until Death,

Lily"

Capitaine DeBri read the love missive twelve times. Then he went outside and crossed the field to the mess shack. He summoned the pilots and announced that he was going to break open six bottles of choice champagne he had been nursing in his quarters.

"Life she is good, *mon amies!*" yipped DeBri. "Tonight we celebrate for—"

"*Oui*," a pilot cut in. "For *demain* eet ees maybe we die, non?"

"Ah-er-gulp—*oui*," *Capitaine* DeBri agreed and he felt as if he had swallowed a croquet ball. His undercarriage buckled a trifle and his brow oozed brine. "*Allons en-enfants! Ze champagne, oui!*"

After the binge, *Capitaine* DeBri sought the quiet of his cubicle and sat down to take an inventory of himself. There was a chance a Heinie would tag him yet. It would be tough to have his noggin resting in Lily's arms and not being alive to appreciate it. The *guerre's* aspect had suddenly changed for *Capitaine* DeBri. For the first time, Mars assumed the proportions of a great monster drenched in gore. DeBri did not shut an eye that night.

The show went on. The pilots of the Ninth Pursuit Squadron added six Jerries to their total of *descendus*. Phineas got two and trailed the French Ace by one point. DeBri seemed to be in a terrific slump. He asked for leave and was refused. The Boche were getting ready for a drive and every airman in the sector was sorely needed. DeBri's companions accused him of having his wind up. And he challenged two of the pilots to a duel and nearly carved up half a Spad flight on one duelling ground.

"It is a mystery to me," Captain Howell said at mess one night on the Yank drome. "I saw that Frenchy duck a fight with a couple of D-7's yesterday afternoon. No buzzard with his record would get cold undercarriage at this stage of the scrap."

"It is maybe his nerves," Phineas offered, his tongue in his cheek. "If we was pals we would go over and talk to him. You can take a pitcher to a well once too often as sooner or later you will drop the pitcher and break it—or maybe the well will dry up."

Capitaine DeBri was in a spot and he knew it. He could not come right out and tell his mates that his yen for Lily was stronger than his gripe against the Jerries, that he had a future now where he had not had one before. Something had to be done, however, or the great Alphonse DeBri would be labeled Fromage DeBri. That meant a big smelly cheese in France.

"*Sacre bleu*," DeBri groaned. "If I could shoot down von Lieberstraum, I would nevair have to fight no more of the Germans, *oui!* I would be ze hero an' get ze leave. *Voila!* I have

eet! Ze German I shoott down from Lieberstraum's Staffel. He was ze *homme* who talk so much weeth me. Ze theengs he tell me, *voila!* Ze toy factory in Dresden eet ees—so!"

The French Ace started writing on a pad of paper in front of him. He kept wetting the end of the pencil with his tongue, the lead was so hard. DeBri was excited and he bore down with vim and vigor. When his message was finished he sealed it in an envelope and marked it:

HAUPTMANN VON LIEBERSTRAUM
Personal

Capitaine DeBri walked out of his quarters in flying togs, went out to a hangar, and asked for his Spad. The Flight Sergeant lifted his brows.

"I go to challenge this von Lieberstraum to a fight to ze death!" said DeBri grandiloquently. "I go to drop ze challenge!"

The news spread across the drome and pilots gathered to cheer lustily. So their great Ace had flopped, had he? Feathers from ze cheval, bah!

THE SPAD raced across the field and kissed the ground goodbye. DeBri was skimming over the lines when Phineas Pinkham arrived on the French drome. He asked to see the French Ace. The C.O. of the Allied outfit coldly gave Phineas DeBri's regrets.

"Huh?" Phineas gulped. "He went over to drop a challenge to that Kraut? Somethin' must be wrong. I—er—mean—haw-w-w-w-w! I come over to say I didn't believe what they said about him and—er—to apologize for everythin' as—do you mind if I go to his quarters an' wait for him to come back, huh? Is he still sore at me?"

"Ze *Capitaine* ees varee happy man an' ees not mad weeth even nobody in your squadron, Lieutenant," the Frog C.O. said. "*Oui*, eef you want to see ze *capitaine*, you wait for heem."

Right then the Frenchmen proved that Barnum was right. Phineas was shown to DeBri's quarters and there he made himself comfortable until he was sure the orderly was beyond hearing. Phineas studied the papers on DeBri's little table.

"H-huh, he has written to Lily, awright. The Bon-Ton Theatre in Nancy will forward her mail, haw-w-w-w-w! B-but why did he go over and look for a fight with the von? He will drop a challenge an'—now he must of wrote it in some-thin'. Ah-h-h-h, there is a pad of paper."

* * * *

DeBri flew high over a Boche drome and dropped his message weighted down with a big spanner to which had been attached a chute. Hauptmann von Lieberstraum was reading the communique even as the French Ace winged back to his lines.

"Ach! Such ein business," the German said. "But *idt* means the toy factory is saved. I vill meet der

Frenchy tomorrow, *ja!* Anyway I am sick of der var an' what nobody knows it von't be no skin off their noses, *nein. Donnervetter!*"

The air duel was scheduled for four P.M. the next afternoon, over Savant. At two in the afternoon, DeBri received a letter from Paree. It was from a Mme. Rene St. Hilaire. She told DeBri that his letter had been forwarded to her from the Bon Ton Theatre in Nancy. She could not understand how a Frenchman could be such a fool. She had been Lily Donselle but she was no more and she was happily married. And if DeBri sent her any more mash notes, she would show them to her husband. Rene might not be a champion sword wielder, but he was right there with thirty-eight calibre cannons. She had not written DeBri a letter. She advised the French Ace to get his noggin examined.

Capitaine DeBri ran amok. He pulled out tufts of hair and wrecked his boudoir. Somewhere—and not far away—there was a rodent. It smelled of sachet. DeBri had been tricked and everyone had always told him that Lieutenant Phineas Pinkham was the greatest trickster in all the world. DeBri finally calmed himself down. A picture conjured up by his own mental assembly had been the balm. He had Phineas in a secluded spot with the end of a duelling sword tickling the Pinkham throat.

"I weel get zees von Lieberstraum an' zen I weel keel Lieutenant Pinkham, ze peeg, ze chien, ze vache! Ah-h-h-h-h-h, *sacre bleu!* Lily she ees—Mon Dieu! So zis Pinkham he comes to apologize while I am gone, *oui?* He come to laugh at ze great DeBri, *oui!* He shall die!"

The representatives of three armies watched the great Alphonse knock von Lieberstraum off in an air duel over Savant. They watched the Kraut flutter down with DeBri pounding close to his tail. They heard later that DeBri worried the Jerry right down into a sheep pasture and landed not more than fifty yards from him. There was rejoicing on the French drome when DeBri brought the Jerry Ace in himself and introduced him all around.

"You entertain the Hauptmann," DeBri said to his mates. "I have business over at the Yankee air-drome, *oui*; I know now why eet ees Lieutenant Peenkham has two more planes than *Capitaine* DeBri. Ze snake in ze grass he treek me. I mak' heem ze laughing stocks of all France. I cut heem up like he ees minced meat!"

DeBri arrived on the drome of the Ninth Pursuit while the pilots were at mess. The French Ace walked right in and pulled Phineas away from the festive board. He slapped Phineas across the freckled pan with a leather glove.

"You have ze seconds at dawn, *M'sieu,*" DeBri growled. "You have sullied my honor an' made ze beautiful *mad'm'selle* laugh at *Capitaine* DeBri. Ha-a-ah! This afternoon I

breeng down von Lieberstraum. At dawn I breeng down Lieutenant Peenkham! I cut off ze ears an' ze nose an' zen ze ears! In ze peeg's hut you weel fin' some blue writeeng papair, *oui!* He gets ze femme to write like ze *petit* Lily Donselle an' he mak' DeBri not want to fight, *non?* At dawn, *m'sieu!*"

"I ain't deaf. I heard you the first time," Phineas sniffed. "Oh, I will be there!"

"Wha-a-a-a-a-a?" Major Garrity yelled. "I will not allow it. Phineas, you don't know a duelin' sword from a banana. I forbid this thing to go on. I'll call Paris and Chaumont. I'll—"

"It is my honor at stake," Phineas proclaimed. "I will settle this with DeBri—as anyway he has robbed me of two Boche! I am a Pinkham and if I crawl, I will have to hang my head in shame. I will never have the heart to go into the graveyard where my forefathers are buried. At dawn, *m'sewer!*"

"Awright," Garrity groaned. "Go get your ears sliced off. I'll be one of your seconds and pick them up for you. Ha-a! Still want to play?"

"I have spoke!" Phineas said.

"O-o-o-o-oh cripes," Bump Gillis moaned. "He gets nuttier every day. He has not got a chance. Oh-h-h-h!"

DAWN. In a mist-wreathed spot close to a bosky dell between the Ninth Pursuit layout and Bar-Le-Duc, seven men gathered. Phineas Pinkham walked up to DeBri and asked him to step aside to exchange a few words. "It is my family I am thinkin' of, *Capitaine*. You write an' tell them I died brave, huh?"

"*Oui,*" DeBri said as he moved away from his seconds. "I am almos' ashamed to fight you eet ees so easy. Eet weel be *murdair!*"

"Oh, yeah," Phineas whispered. "I am goin' to win—or else—*Capitaine*. If I don't I will show your C.O. and everybody else how you wrote a letter to the Kraut askin' him to take a dive for a hundred thousand francs. I have the paper I pulled off the top of that pad in your boudoir. Haw-w-w-w-w-w! That was a hard pencil you used—and you bore down like you was carving your initials in an oak tree. You said you would arrange for the payment through a banker you knew in Holland an'—"

DeBri's physiognomy became whiter than a trout's bosom. He pawed at his face and swore in his native tongue.

"When I prove that von Lieberstraum went into the tank like a fourth rate pug," Phineas kept tossing, "you will be sent to a bastille an'—"

"*Mon Dieu!* You are ze diable, *oui!* Eet ees ze bargain, *m'sieu*. For ze papair you have, I let you win ze duel. Ah-h-h-h, *sacre*, I am what you call ze wash up, Lieutenant. I theenk she loves me so I do not want to die. But now—ba-a-a-ah!"

The duel got under way. Major Rufus Garrity held his hands up to

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his face and Bump Gillis said a little prayer. DeBri's blade sang and hissed as he struck a significant posture.

"En garde!"

"I am ready even if I can't strike a pose like voose!" Phineas sniffed. "Start carving!"

Blades clashed. Bump Gillis kept praying. He saw DeBri lunge at Phineas and miss one of his big ears by less than nothing. Phineas countered and got his blade hooked in DeBri's belt. The Boonetown wonder, a big grin on his face, heaved upward and the leather belt parted. DeBri's pants began to go to half-mast and his undercarriage was stymied.

"Touche!" Phineas yipped, and took off part of the lobe of the frowning Frenchman's right ear.

"Ow-w-w-w-w!" DeBri howled and fell down. He tried to pull up his pants and himself at the same time and Phineas ripped his shirt up the back with his sword. He snipped off a lock of DeBri's curly black hair and then put the point of his duelling sword right against the Frenchy's Adam's apple.

"Mercy, m'sieu!" DeBri yelled. "I have had enough of ze satisfaction, oui! Mercy!"

DeBri's seconds folded up and sat down on the wet grass, their lower jaws hanging loose like oriole nests in a high wind. Major Garrity dropped his hands away from his eyes and stared at the winner. "Did you see what I saw, Gillis?" he croaked at Bump.

"Y-yeah. An' we are both dreamin'. It will be dawn in a minute and we will wake up. That bum couldn't—!"

"Shake, DeBri," Phineas said. "I

never met a tougher opponent, haw-w-w-w! Once when I was in Heidelberg maybe but—"

"Ze papair, m'sieu," DeBri bit out.

"Sure. I will bring it over tomorrow sometime," the Boonetown jokester grinned. "Did I say I was a mind reader, too? I pulled two sheets off that pad. I will keep one as I know what you are thinkin'. Once you are in the clear, you would ask for a return bout, huh?"

"Ah-er—if it takes maybe feefty years, m'sieu, I weel get what you call eet hunk, non?" DeBri ground out. He sat down on the grass and fingered his sore ear. Phineas had never seen anything more dejected.

"Well, adoo," Phineas said. "There is still a guerre goin' on. You bums are four Krauts behind us and you better go and try to catch up. Haw-w-w-w-w-w!"

On the way back to the drome, Major Garrity demanded that Phineas come clean. "You never saw a fencin' sword before, you homely mutt! You've pulled somethin'! An' I'll break your neck if you don't spill it!"

"Nobody will do nothin'," Phineas countered. "The Frenchies will withdraw charges against us for that tiff we had with them. I just made a deal. After all, this guerre is a business like everythin' else."

"Look," Bump said. "Nobody ever beat DeBri with them swords. You just tell us how—"

"Wasn't you watchin'?" Phineas grinned. "I just happened to catch him with his pants—er—haw-w-w-w! That is all I will tell you bums. That is—until the guerre is over."

TNT ON WINGS

(Continued from page 23)

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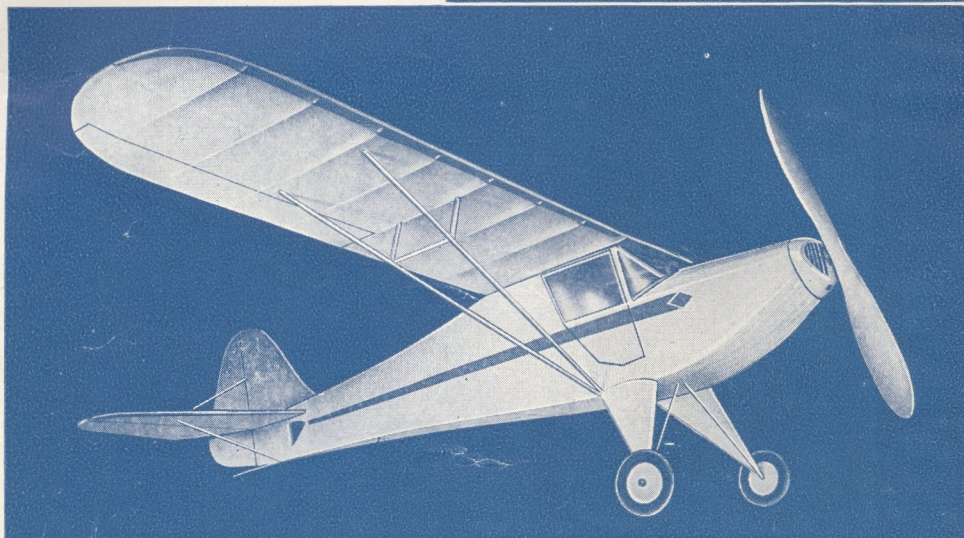
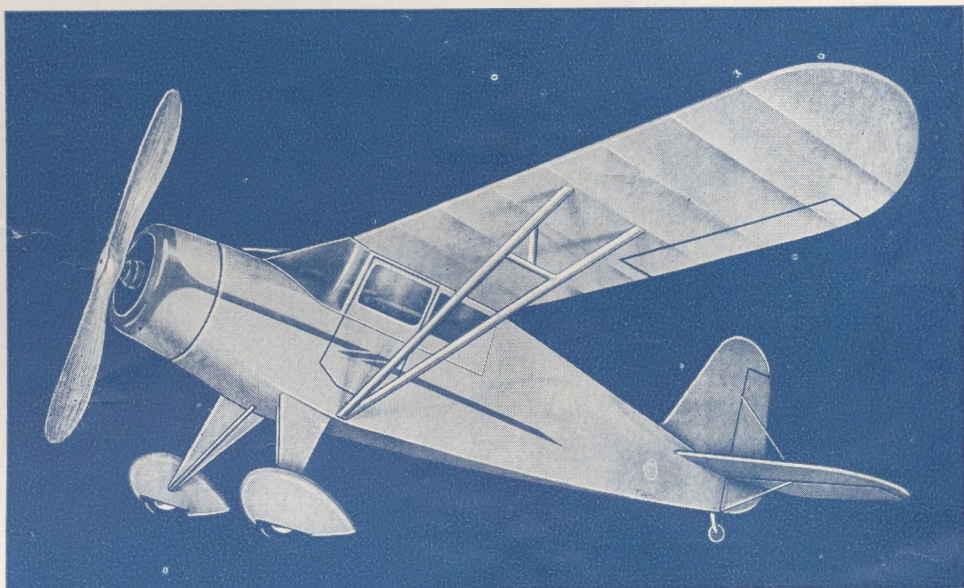
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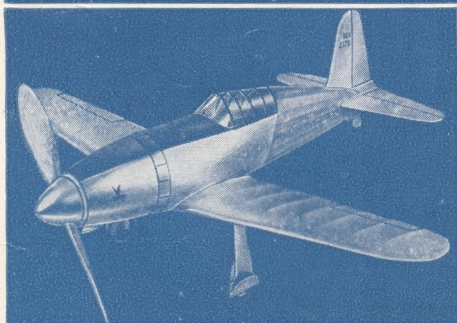
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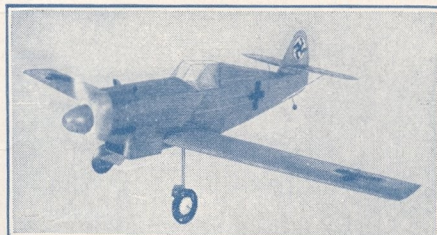
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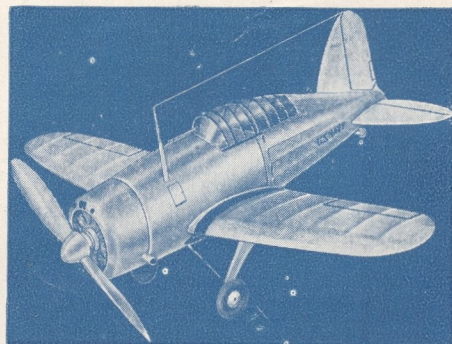
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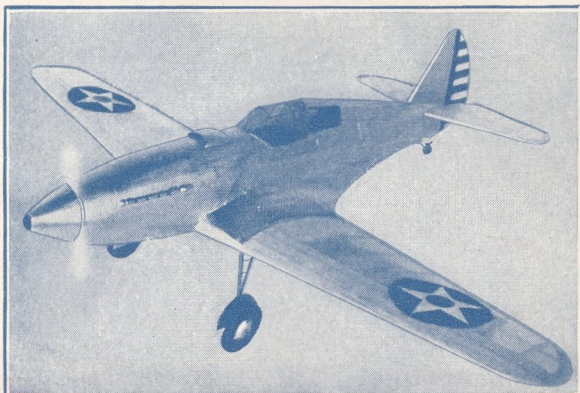
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