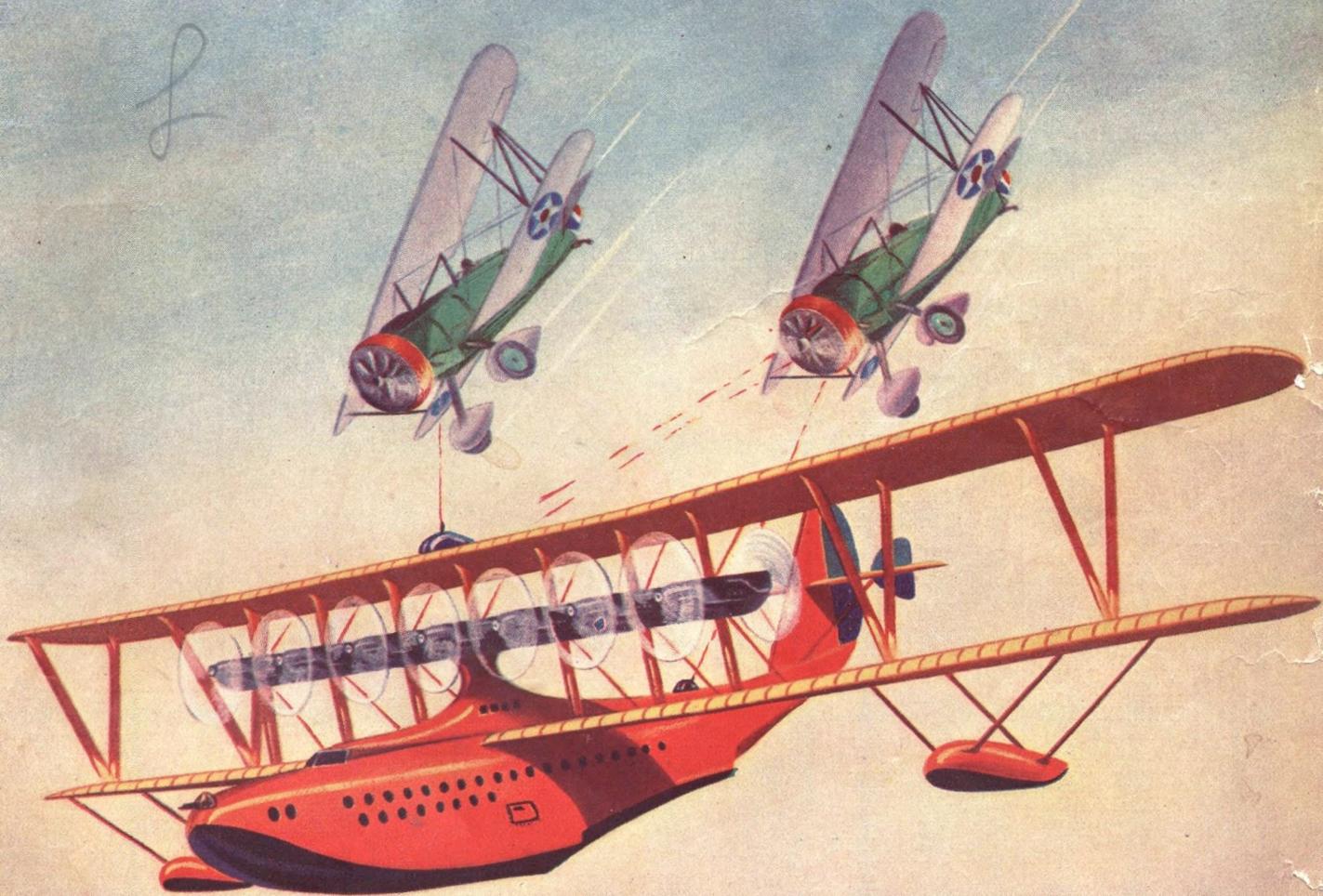




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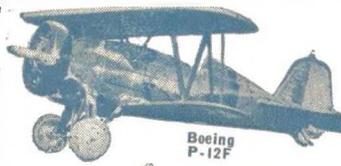
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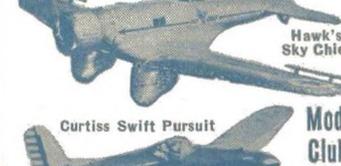
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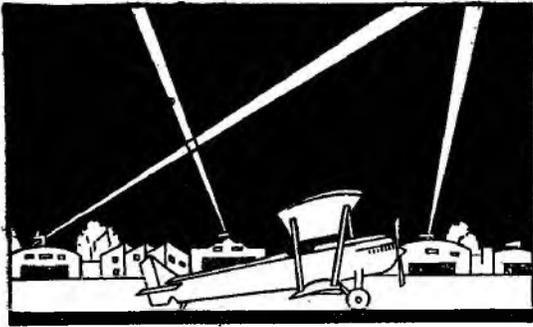
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FLYING ACES

A.A. WYN, *Editor*

VOLUME XIX

FEBRUARY, 1935

NUMBER 3

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Cover Painting by C. B. Mayshark

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Baron Death

Always he flew alone—that king killer of the clouds whose face was marked by a gleaming white helmet, whose plane was known by its gruesome skull insignia. Sometimes he sent down five Allied planes in one day. Sometimes he calmly ran out on a fight when he had an Allied pilot cold. No one knew the identity, guessed the secret of this sky tiger who unsheathed his claws only when he pleased—this ace whom great aces refused to fight. But when he went out to kill, he always killed—and for that, men on both sides of the lines called him Baron Death.

CHAPTER I

ROOKIE REVENGE

THEY saw him suddenly that first time, the four of them. Wiley, and little Allen who'd sworn to be an ace, and "Berlin" Joe Smith and Jim Mort himself. It was dawn, with the night ebbing reluctantly along the road back of Toul. Frontward, the flash of the heavies was like a giant's candle flickering behind the horizon. The new day was like something that had died in birth.

Then it was terribly alive. He came, stabbing down out of the dimness, a shimmering globule of white helmet riding the hurricane wings of a black-tailed Fokker D-7. Baron Death himself—*Baron Tod*, as the Boche themselves called him.

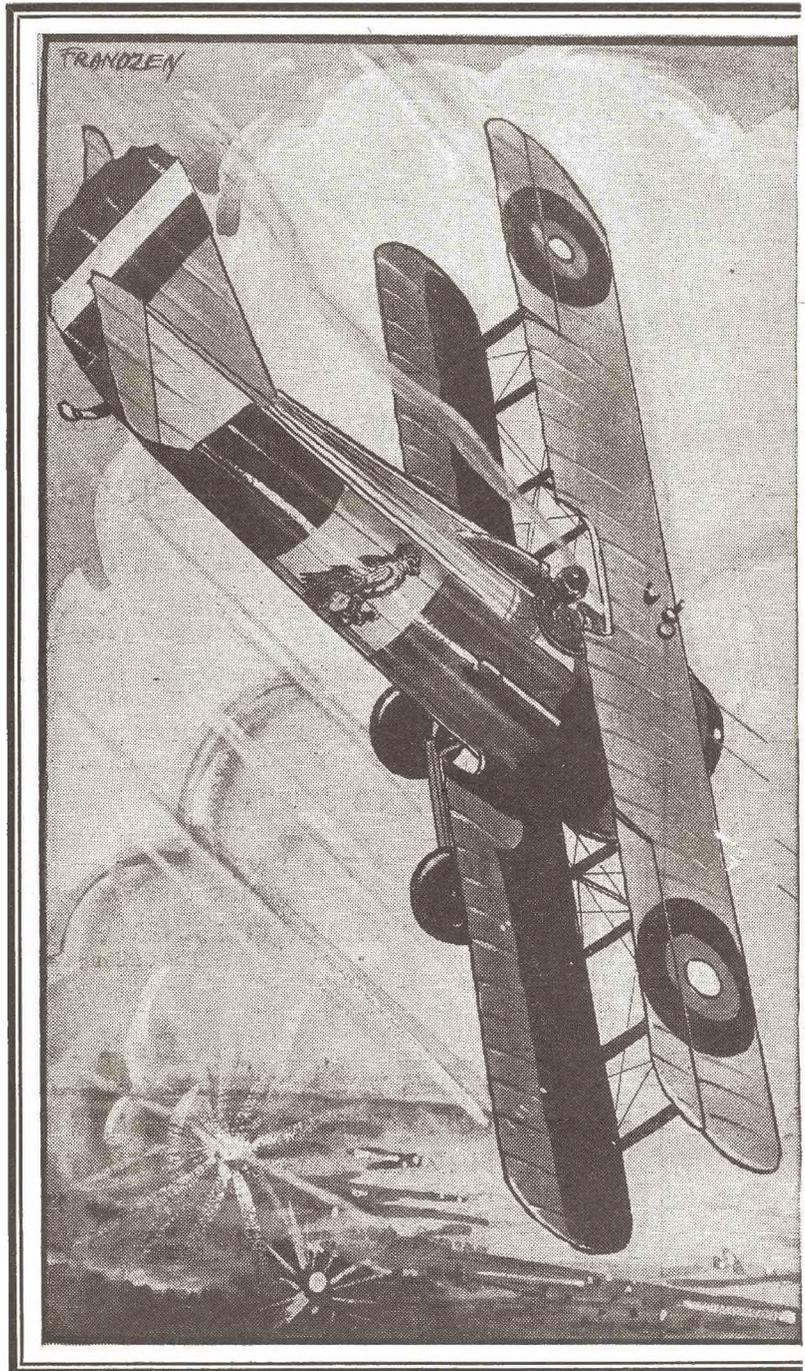
He had come suddenly, as they always said he did. Mort stood with his rangy figure taut and fixed, following him with his eyes. On a wing tip, he lanced low. The stagnant little canal to the east mirrored his bus a brief moment. Then he struck like some hell-loosed thing, Mercedes racketing a diabolic howl, and his Spandaus chattered into a Satanic song.

One of them tried to pull Mort back, but he stood there, hypnotized, then frozen by the rising tide of his own hate. He knew he was in danger, knew the others were huddled back there against that sagging wall—but he couldn't move.

They were at the edge of a deserted, oft-shelled town. They'd been on their way up to join the 79th Pursuit—four half-cocky, half-fearful little second lieutenants fresh from Issoudun and the gunnery butts of Cazau. They'd been shivering in the dawn, waiting for a lorry going their way.

Smith had been repeating his boast of how he'd strafe Berlin before he was finished. He was always talking about that. That was why they called him "Berlin Joe." And that got little Allen swearing again that he'd be an ace. In his excitement, he'd waved those girlish white hands of his, that could do such mad things to a piano, and he'd vowed that he would get even the famed Baron Death himself!

He'd barely said it when that little Fokker with the skull on its fuselage side burst out of the envelope of receding darkness. They knew it at once. The skull on the empennage was Baron Death's sign.



Illustrated by Eugene M. Frandzen

Now Jim Mort stood and watched. The Fokker darted at the line of lorries winding down the shell-gutted road. The guns on its checkered nose frothed like red-flaming nostrils. It roared over them, strafing, and catapulted in a steep bank.

Then Baron Death came blasting back. He seemed to be roaring right at Mort himself, but he didn't seem to be hitting much.

Allen yanked at Mort's arm, then jumped back against the wall again. Mort wheeled. A careening lorry was rushing through the town behind him. He leaped for the opposite side of the street.

The checkered wings of the ship with the skull sign seemed to shadow the town. Its Mercedes roar deafened him. The crackle of its guns seemed to ricochet off his very head.

Lead must have rattled off that advancing lorry, for

GRIPPING NOVEL OF WAR SKIES

By T. W. Ford

Author of "Saint Satan," "Falcon's Fate," etc.



"No-Orders" Mort sent that black-tailed Fokker down in a fatal spin. Yet above him, circling idly, waited another! German ship. Baron Death!

the driver leaped from it. The snub-nosed truck bumped into a gap in the cobbles, then lurched to the other side of the street and rammed halfway through a building front in a cloud of steam.

The wall swayed. Mort looked across the street and saw his mates. Wiley and the half-bald Berlin Joe Smith had leaped away from the wall. Little Allen hadn't. He stood staring after the departing plane, eyes shining at the daring of its lone pilot.

Over him, the wall leaned. A seam ran up the already cracked mortar. A chunk of it bellied outward, then crushed down in a rumbling dust cloud. And Allen was under it.

Mort ran over and started digging feverishly at the debris with the others. The lorry driver came up and

helped them. They got little Allen's body extracted from the debris. Wiley shook Allen's head.

"Come on, Pete! Come on!"

Allen opened his eyes. For a moment he seemed all right. He looked off to where the plane droned away.

"Why'd he have to pick on me, eh?"

And he folded up. Mort dropped on his knees beside him and tried to bring him out of it. There was a half-smile on the boy's face. His arms moved out before him; his fingers rippled along the keyboard of an imaginary piano. Perhaps he was hearing music. Then they stopped for the last time, and his head sank.

"Tain't no use," said the lorry driver gruffly. "Look at the back of his head. Clean stove in."

Mort looked, sickened. He let little Allen down gently

and straightened. Tears welled unashamed into his eyes, ran down his thin, tanned, taut face. He thought of how Allen had played "There's a Long, Long Trail A-Winding" on the tinkly piano in that *estaminet* they'd stopped in the night before.

Berlin Joe was cursing steadily, monotonously. Wiley's eyes ran around; he wanted a drink. Mort's gaze followed the dark, dwindling tail of the Fokker of *Baron Tod*, and his voice came dry and hard.

"He killed him just as if he'd put a gun to his head—just as if one of those m.g.'s of his had brought him down."

"And Pete was going to be an ace. He was going to get *Baron Death* himself," Berlin Joe spat out.

A heavy boomed up on the Front like a throbbing funeral chant. The lorry driver said something about how they all had to get it some time and went down to extract his truck from the gap in the wall.

"G-God," Wiley put in shakily, "Pete never had a chance, did he?"

Mort continued to stare where the baron's Fokker had vanished eastward. "Maybe we won't, either. But one of us is going to get him. That wasn't right—what happened to Pete Allen. . . ."

His words fell harsh and bitter. His right hand was fisted, poked awkwardly out from his body. The motors coming down from the Front began to rumble into the town. Then Berlin Joe's stubby paw folded over Mort's hand and gripped. After a while, Wiley's hand wavered, then jerked out and made it three in the grip.

They were just three, young kids maimed by the mangle of war for the first time.

"He was the first," Berlin Joe muttered. "We'll all get it sooner or later. And they say it doesn't take long."

Mort stared at where the baron's plane had gone. He lit a cigarette, stood holding the match. Then his fist closed over it and put it out.

THEY took Pete Allen on up to the 79th, anyway. It seemed the right thing to do. Little Allen had wanted to get to the front so badly. The lorry snorted along the crater-pitted road, and the three who had been four sat silent and thinking.

Berlin Joe Smith was some older than the others. He was a sawed-off little cuss with his sandy hair thinning in front so that he was half bald already. On a bottle of cognac, he'd talk about strafing Berlin—if he lived long enough to get there. That was the way he talked about everything—if he lived long enough. He didn't expect to. He didn't expect anything. Doleful, habitually glum, he was an eternal pessimist.

He sat looking down at little Allen in the jouncing lorry. And he began to hum, "There's a Long, Long Trail A-Winding."

Wiley, Second Lieutenant Wayne Durligh Wiley, sat as if he wanted to jump. He'd glance sideways at the dead man, then out at the bleak horizon where leafless trees poked up bare limbs like the skeleton masts of ships in a doomed sea. He was lonesome—lonesome for peace.

The thin, handsome Wiley with dark, curly hair was never built for war. Somewhere behind him there was blue blood. Perhaps he was too much of a thoroughbred. He'd get strung up tight, then blow sky-high. That's what the instructors back at Issoudun had found. He had the touch of an angel on the stick. Then something would happen, and he'd crack up a landing gear or go into a perilous tailspin or something.

When he left for the Front, they said they'd either be patting down that slim form with a spade or pinning a *Croix de Guerre* on it right soon.

The lorry fought a mud hole, grunted out of it to round a curve. A low, camouflaged hangar roof showed over a tiny hill—the dome of the 79th. Jim Mort's mouth whitened. They were there, and he was a little afraid—but not for himself.

Jim Mort was different from the others, just as he

had been at Issoudun. The English cadet instructors had hinted he might be a little mad. Perhaps that's why they forgave him so much. For Jim Mort had earned the nickname of "No-Orders." When he wanted to do a thing, he did it.

He seemed like a sloppy rookie, at first glance. His tunic was unbuttoned; he needed a shave, and his ragged hair fell carelessly over his forehead. Then a man looked into Jim Mort's eyes, and he felt like being careful—for those eyes said Mort didn't know how to be.

Those eyes were the only difference between Jim and his twin brother, Clinton Mort. Together they'd been at Heidelberg when hostilities broke out. Clint had even been engaged to an Austrian girl. He had sometimes seemed more German than his Prussian classmates.

They'd returned to America, enlisted when the U.S. drew chips. Clint, with his flare for mechanics, had breezed through ground-school, qualified at Kelly, and been sent over in an incredibly short time. And in the last letter from England, Clint had hinted vaguely about being sent to some factory as an aeronautical expert. That had been the last Jim Mort had heard from him.

THE lorry clattered down a track between a small block of woods, screwed around a corner of a big messhall and out onto the edge of the tarmac. Ground guards came running. Jim Mort looked around calmly at the crouched hulks of the hangars, at the handful of planes drawn up on the line. Then he swung down.

A stubby, French ground-guard corporal began shrilling at them. Mort knew German, but not much French. He pointed to the body of their dead comrade. The corporal gesticulated. This wasn't a cemetery.

A pilot sauntered up. He was a tall man, walking lazily, like a big cat, but his eyes were empty little holes in the middle of sunken, blackened gaps at the top of his face. He looked at the dead Allen.

"Did he try to fly before he got his wings?"

Mort told him.

"It was rotten!" Wiley blurted out, a little hysterical at the memory of it.

The tall pilot shrugged. "He could have got it worse if he'd gotten here. A friend of mine came down in flames last week. Not pretty, you know."

The holes that were his eyes bored deep into Jim Mort's face. Mort's mouth tightened. He knew he was being measured.

"That's too bad," he said after a moment, "but I didn't expect to enter a beauty contest when I came up."

The pilot stuck out an oil-blackened hand. "Good enough, kiwi. Name's Fellows. Better get down and see the Old Man. I'll see that the body's taken care of."

The trio walked slowly down to the Nissen hut that was the operations office.

They didn't say anything, but Mort's lean nostrils flared when he got a whiff of the castor oil odor from the hangars. They stood before the sawhorse table of the C.O., Major Poffer, for a full minute before he lifted his gleaming, bald head.

Poffer looked up, a big, gray-faced man, bloodless, impersonal. He took one look at their youth, snapped down the lids of his big eyes, and wrapped a bony hand around a pair of binoculars on the table.

"Lieutenants Smith, Wiley, Mort—and—and Allen reporting for duty from Issoudun, sir," Mort told him.

They handed over their papers. The C.O. swept them with a weary glance, then rose and shook hands with them. "And—Allen? Wasn't there another one of you?"

Mort nodded. "Was . . . Second Lieutenant Peter Allen, sir. He was killed by the Boche known as *Baron Death*. We were on our way up. He came down, ground-strafing—"

Poffer's mouth jerked. "Don't you boys know enough to get in out of the rain?"

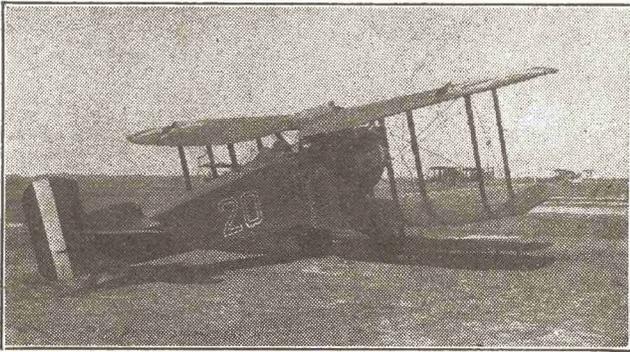
Mort told him how it was.

Poffer's lids came down over the windows of his eyes

(Continued on page 48)

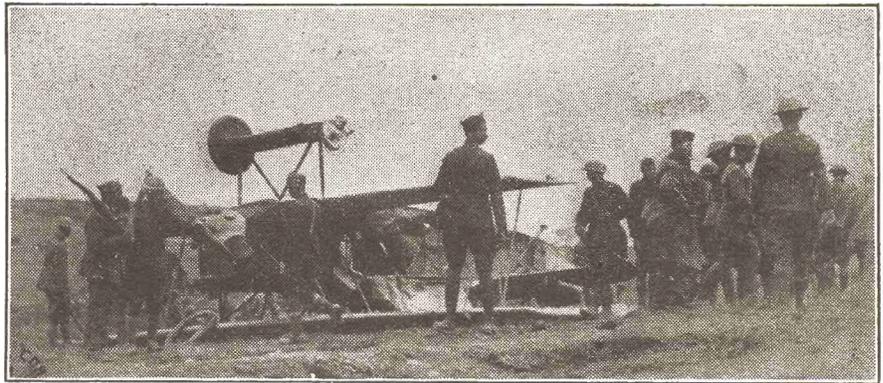


Snapshots of the War



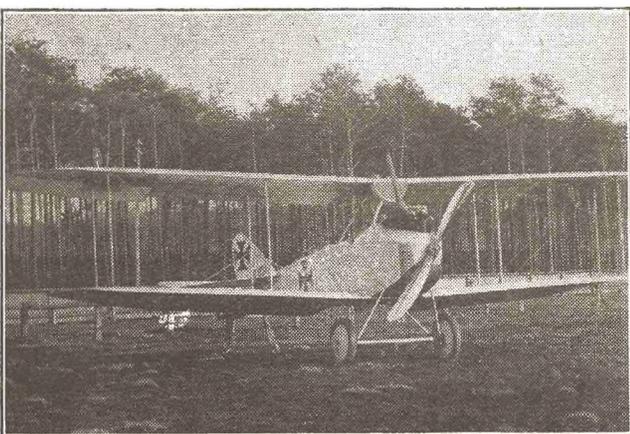
Above: An American fighter that should have seen action. The noted Thomas Morse scout M.E. 3, powered with a 300-h.p. Hissco. It was so good it was used by the U.S. Air Service up until 1927. Top speed, even in 1918, was 165 m.p.h.

Right: the wreck of a British Handley-Page night bomber, brought down inside the German lines by anti-aircraft fire. The hand of the dead pilot may be seen protruding out from under the wing in the foreground.

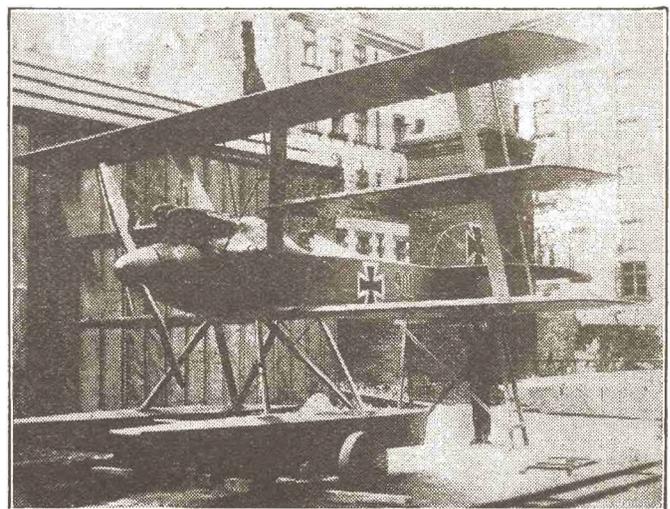


Above: A German machine a few minutes after it had been brought down by American machine guns along the road between Cuisy and Montfaucon on Oct. 3rd, 1918, shortly after it had destroyed a balloon of No. 6 Company.

Left: This is the famous Lieutenant Kurt Wintgens, a member of Immelmann's noted outfit. He is credited with more than twenty victories over Allied airmen. A cool fighter who won high honors in the air.



An unusual view of the little-known German Rumpler Ru C-1 two-seater fighter, brought out in 1915. It was powered with a 160-h.p. Mercedes and was unusually easy on the stick. Until the famous Hannover came out two years later, this was one of the finest two-seater German machines on the Front.



Here's another unusual study for your collection. It is the Sablatnik Dr. 1 triplane seaplane, which was used on North Sea patrols as a fighter. It did not compare with the Brandenburg, in seaworthiness, however. It was powered with a 160 h.p. Benz engine. Note the Sopwith-like interplane struts.



Admiral Kwanji Kato, prominent member of the Japanese commission for national defense. Always an advocate of the Big Navy policy for Japan. Admiral Kato is the man who wrote the preface to the novel which we are presenting here in abridged form.

WAR of the

EXTRACTS FROM AN AMAZING JAPANESE NOVEL

By Lieutenant Commander Kyo-suke Fukunaga, I.J.N., Retired

Translated and Presented in Abridged Form

By Dana R. Marsh

CHAPTER I

WAR BLOSSOMS SWIFTLY

THE sun was sinking behind the Manchurian hills when Tzuyoshi Kawano returned to his home on the outskirts of Darien. Kawano liked Darien. To him it was a perpetually visible monument to the growing power of his native land. It was one of the fruits of victory awarded to his emperor at the conclusion of the Japanese-Russian war. Its modern wharfs and vast railroad terminals made it a fitting gateway to the wealth of Manchuria, now thoroughly under the domination of the Chrysanthemum throne.

But Kawano's thoughts were not focussed upon the glories of his country's history as he neared his home. As a radio repair man and jack-of-all-trades, he had been busy since early morning, and he was tired and hungry. He wanted to stretch out and listen to the radio while his wife prepared the fish, rice and tea. He was glad when he reached his own threshold, paused and took off his shoes before entering the house.

"Anything on the air worth hearing?" he asked his wife, as he squatted on the floor.

"The radio's out of order. I've been trying to get the *geisha* program from Kama-kura, but it won't work."

Kawano smiled indulgently. His wife was of Old Japan, and did not understand modern inventions. He was a professional repair man. He examined the set and discovered that the contact with the electric light plug had been broken. He hurriedly spliced the wire and snapped the switch. The drumming notes of many *samisens* and the high shrill of *geisha* singers filled the room.

"There!" Tzuyoshi told his wife, with the air of importance a man always assumes under the circumstances. "Didn't I—" He paused as the music ended suddenly. Mrs. Kawano smiled as she peered into the rice pot. "See," she said. "It's broken again."

"Just a minute. They're—" Kawano stopped as a voice sounded over the air, a voice vibrant with excitement. The *geisha* program had been cut off intentionally.

"Stand by for a flash," the

KOBE STORES SHOW 'THE WAR OF 1936'

Entire Floors Feature Displays to Prepare Japanese for 'Coming Crisis.'

ENEMY IS NOT INDICATED

But Lecturers Explain to Crowds How 'Nippon Will Defeat the United States.'

Special Correspondent, THE NEW YORK TIMES.
KOBE, Japan, July 28.—"The Japanese-American War of 1936" is now being heavily featured by the three large department stores of Kobe. Day after day many hundreds—probably thousands—view realistic and often horrible representations of the perils and sufferings which "the big conflict" will visit upon the people of Japan, and listen intently while jingoist lecturers explain the strategies of naval warfare by which "Nippon will defeat the United States."
Kobe boasts only three foreign-style department stores, and today each of them has had its upper floor transformed into a war museum. The stores serve only to increase the American feelings among unaccustomed Japanese. From morning until night hundreds and hundreds of observers and listeners see these exhibits and listen to the lecturers—and then shuffle away on their sandals, visibly impressed.

Incident Not Unusual.

People who travel in Japan become accustomed to being spoken to unceremoniously by natives of the country. It happens on the streets, on trains and steamers, and in hotels and shops. Sometimes the person who accosts you will ask the meaning of a difficult word he

This amazing story sent to the New York Times by its special correspondent in Kobe, Japan, reveals one of Japan's methods for spreading propaganda among its own people.

has found in a book or an English language newspaper. Sometimes he says frankly that he wants "to converse and improve" his English. Sometimes he is inspired by idle curiosity, sometimes he is a plain-clothes police spy or an agent of the immigration bureau trying to get the traveler to say something that contradicts a suspicious passport declaration. In most cases, however, he will be inspired by a friendly hospitality, a desire to help the visitor see Japan in its best light, or a real wish to be of assistance as a guide, as an interpreter, sightseer or hopper.

But a friendly offer to show an American the Japanese-American War of 1936 "next" was something of a novelty. The correspondent expressed lively interest, and away he went up the street.

The department store in question is a five-storied building of modern foreign style. Over the spacious main entrance was suspended a paper and cardboard replica of an aerial bomber with a wing-spread of about ten feet, and the sign above this, the guide explained, advertised the war exhibition on one of the floors above, and what an exhibition!

A large portion of the floor was devoted to an elliptical papier-mache relief map of the Japanese coast around Tokyo. The area devoted to the capital city itself was a rough circle about 15 feet in diameter. The bay and outside ocean were shown, and there was an attacking and a defending fleet of warships, each ship about three

inches long. Squadrons of contenting airplanes hung from the ceiling by invisible wires. From somewhere a phonograph was giving out sounds like the crash of big naval guns, the drone of airplane motors and the thud of hursting bombs.

"Enemy" Was Anonymous.

Another portion of the floor showed imaginary battlefields, trenches, and large Big Berthas and other heavy Japanese flags and airplanes in plenty, but there were no American flags to be seen, the "enemy" being supposedly anonymous.

On the walls were ghastly and realistic paintings depicting the effects of explosive and incendiary bombs upon great cities, and these pictures were interspersed with long scrolls inscribed in Japanese characters with what the guide said were patriotic slogans.

Most shocking of all were rows and groups of figures about four feet tall showing the effects upon human beings of poison gas, shrapnel, bomb-fragment wounds and machine-gun and rifle bullets. The voice of the lecturer droned on and on, although all explanations seemed superfluous.

Your correspondent did not ask his guide how it happens that, in a country like Japan where police and censors are all-powerful, dangerously exciting exhibitions of this kind are permitted. But he did ask if his guide did not think that such displays might not needlessly alarm the general public.

PACIFIC

In December, 1933, a diplomatic sensation was caused by the seizure of five thousand copies of *Hinode*, a Japanese magazine, which were being smuggled into Hawaii and California. Innocent in itself, the magazine had as a supplement a novel by Lieutenant Commander Kyosuke Fukunaga, Imperial Japanese Navy, retired. The discovery of this novel and its sensational contents was the work of the United States Army's trained staff of Intelligence officers.

Word of the magazine's coming was flashed by cable across the Pacific. America's G-2 men had already read and digested the propaganda destined for general distribution among residents of Hawaii and California who were of Japanese descent. As soon as the baled packages of the publication reached the United States Customs offices, they were confiscated, and their distribution forbidden. Diplomatic exchanges followed. The American government pointed out that the novel's entire purpose was to sow anti-American feeling among populations of Oriental extraction. Tokyo, however, denied any interest in the publication, and declared its author was no longer connected with the imperial government.

But in its reply to the American protest, the Japanese Foreign Office ignored several facts that caused no little stir in Washington. Not only is the author of the novel on the Japanese Navy retired list and subject to recall to active duty, but the preface to the work was written by Admiral Kwanji Kato, a member of the Japanese commission for national defense. More than that, Vice Admiral Suyetsugu, an ardent Big Navy man, wrote the foreword in the edition that was shipped to America. Both are high-ranking officials, and their endorsement of the novel gave it an almost official status.

FLYING ACES Magazine presents this sensational novel in abridged form as an interesting document that reveals the Japanese psychology and use of propaganda.



Another Japanese Navy official who sponsored Lieutenant Commander Fukunaga's novel by writing the foreword to this amazing document on a future war between the U.S. and Japan. The above picture shows Admiral Suyetsugu in ordinary uniform, on board his flagship, the Kongo.

voice boomed. "Stand by. It's big news, the biggest since the World War. This is Tokyo speaking. An official announcement by the government has just been released informing this station that—"

"Why doesn't he say what it is?" Mrs. Kawano had left the glowing *hibachi* over which she was cooking the fish.

"Sh-h-h!" her husband hissed.

"Flash!" The voice flooded the tiny house, "The Japanese destroyer, *Nara*, commanded by Lieutenant Maki, has sunk the U.S.S. *Houston*, flagship of the American Asiatic fleet, after a clash off the Woosung forts at the mouth of the Yangtze. An insult to the Japanese flag left Lieutenant Maki no alternative."

There was a pause. Tzuoyoshi's sloe eyes flicked to meet his wife's dull gaze. The little radio repair man was tingling with excitement, but his wife was puzzled. The sinking of an American cruiser meant little to her. Of course, if the Americans insulted the Banner of the Rising Sun, they should be destroyed. There was nothing in that to cause excitement.

"I need not point out the importance of this announcement," the radio voice went on. "As
(Continued on page 59)

At the time of the confiscation and suppression of copies of Lieutenant Commander Fukunaga's supplement to the Japanese fiction magazine, *Hinode*, the story at the right appeared in the Honolulu Star Bulletin. Five thousand copies were seized by customs officials in Honolulu.

Story Of War Between U. S. And Japan Seized By Customs Men Here

Recent orders for the transfer of the American fleet from the Pacific to the Atlantic ocean do not rule out possibilities of a future war between the United States and Japan.

Thus says Lt. Cmdr. Kyosuke Fukunaga, of the Japanese navy reserves in the introduction of his story entitled "Future War Between the United States and Japan," contained in one of the supplements of the New Year edition of the *Hinode*, Japanese fiction magazine published in Tokyo.

Two thousand copies of this supplement were seized by local customs officials upon landing here on the *Chichibu Maru* yesterday. Another shipment had been previously seized. The article on the President's declaration on December 8 on the belief that it is propaganda detrimental to Japanese-American relations.

There is no reason to believe that just because the fleet has been withdrawn from the Pacific it

Propaganda Alone
The Japanese officer asserts that most of the stories of fictitious wars between nations have been failures because they were only for propaganda purposes.

"I realize that this is a difficult task, that of attempting to carry my readers into an actual world," the officer says.

"Beforehand I wish to make it clear that while my story starts the actual difficulties between the two

(Continued on Page 8, Col 2)

The New York Herald Tribune's account of the seizure of the copies of *Hinode*, the Japanese magazine which printed the sensational novel by Lieutenant Commander Fukunaga.

Hawaii Seizes Japanese Story Of '36 U.S. War

2 Admirals Indorse Fiction Writer's 'Hints' on How to Win Battle in Pacific

The Associated Press

HONOLULU, Dec. 16.—A supplement entitled "Dream of War Between the United States and Japan" which was inserted in a Japanese fiction magazine, caused the seizure within the week of 5,000 copies of the publication imported from Japan. It was announced today by J. Walter Doyle, collector of Customs. A customs officer found the pamphlet within the pages of the Japanese fiction magazine "Hinode."

The magazine was confiscated under a customs regulation which forbids importation of material "advocating or urging treason against the United States."

The first seizure was made aboard the *Dollar* liner, incident Taft a week ago. Another seizure took place when the Japanese liner *Chichibu Maru* was in port yesterday. The Army Intelligence Department was notified.

A brightly colored picture of a battle between warships on the reverse cover of the pamphlet caught the eye of the customs officer. He had the contents of the supplement translated. The story tells of a war between Japan and the United States in 1936 which was victoriously for Japan, which takes the Hawaiian Islands.

Among the illustrations is one of a Japanese "traitor" facing a firing squad. Another depicts a battleship passing through the Panama Canal. A purported battle at sea between Japanese and American warships is illustrated, the difference between types of the two nations' warships being made clear.

Mr. Doyle said he planned no action
(Continued on next page)

Supreme in the Skies!



Here's the one you have all been waiting for! It's the famous British Hawker Super-Fury, which does 250 top, and that is official from the R.A.F. It has the Rolls-Royce "Kestral" engine and is equipped for special interceptor work. An even later model does 273, but has not as yet been accepted.



The U.S. Marine Corps goes in for smart-looking ships. This is their version of the Corsair, known as the SU-2. Note the high-caliber machine gun mounted in the upper wing, and the anti-drag ring around the motor. A two-seater beauty!

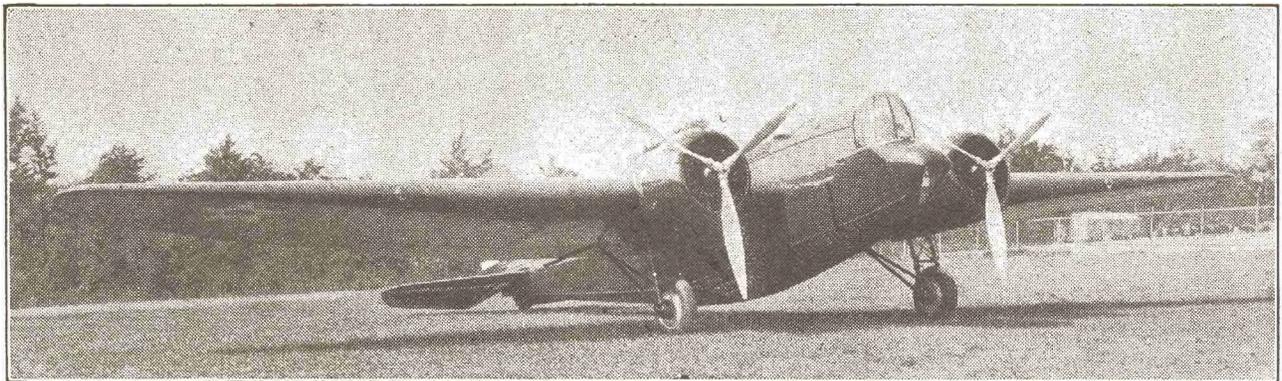


Photo from Glenn L. Martin Company
The mysterious Martin Bomber which has been accepted in large numbers by the Army Air Corps. It has a top speed of more than 200 m.p.h. and can out-run most single-seaters. This is the latest model, with the revolving dome turret and the observation-window for the bomber. The wheels retract into the motor nacelles and make the ship one of the cleanest-lined military planes in the world. Experts declare it to be the finest machine of its type today.



This trim craft is the Navy Vought "Corsair" O2U-4 which is used by the Navy Scouting Squadrons and thrown from cruiser catapults. A single-seater of fine performance, it carries much Navy equipment, such as deck-landing gear and flotation bags.



A strange craft, but a fine performer. The French Breguet two-seater reconnaissance ship, which is powered with a 650-h.p. Hisso. It has a top speed of 146, fully loaded, and the unusual tail gives the gunner a wide arc of fire.



Illustrated
by the Author

They thought Phineas could make anybody laugh—until they sent him to the Pallbearers' drome, where even the birds sang death marches. Yes, it looked for once as if Phineas had met his match in that bunch of

"Bum sour!" Phineas greeted them. "I am here with samples of morale!"

Crêpe Hangars

PHINEAS—THE GLOOM BUSTER

By Joe Archibald

Author of "An Itch in Time," "Good Haunting!" etc.



IN the early spring of 1918, Lieutenant Phineas Pinkham took a bicycle up to six thousand feet above the fighting lines without touching the handlebars. Yes, it sounds like an item for the "Believe It Or Don't" addicts, but Phineas did it. He tied a bicycle to the side of his Spad, and in reply to Captain Howell's command to take the blankety-blank thing off, he said glibly, "I will not. I'm sick of walkin' home from forced landin's. The Frog shoemakers are gettin' rich from half-soling my boots. I know what I'm doin' bums. You're just jealous because you are not visionary like me."

"Whatever you are," Bump Gillis cut in, "I want to be somethin' else always. But I am surprised you did not make it a motorcycle an' sidecar, while you was at it. That'd be faster an'—"

"Come on, you plane dopes," Howell yelled. "Let's go before he tries it. And if I catch any other fathead putting ideas into his dome, I'll—aw, come on."

And so Phineas took his bicycle up to six thousand feet. The Ninth got into a brawl with a group of flying Heidelberg Alumni over St. Benoit, and Captain Howell's brood proceeded to convince the junkers that he who gets famous by the sword doesn't necessarily have to

die by one. Phineas had a narrow squeak, and a Von blew a tire on his bicycle with a Spandau slug. The two-wheeled vehicle had jiggled a little loose during a loop, and one handlebar had whacked the Pinkham cranium as if in earnest about it. Bump Gillis succeeded in keeping the Junkers off Phineas' neck until the hero from Boone-town, Iowa, got his eyes uncrossed. Then everybody headed back to Garrity's *Kraal*—with the exception of Phineas Pinkham. And so the fun began.

Having some personal experimenting to do, Phineas had decided to pause *en route*. A great open space presented itself, and he landed. He looked at his watch, then jumped out of the battle bus and began to work feverishly at the moorings of his bicycle. When he had managed to unloose it from the Spad, Phineas hopped aboard and pedaled away for about a quarter of a mile. At that point he stopped, hopped from the two-wheeler and looked at his watch again.

"Oh, boys," he enthused audibly, "that was speed! Two minutes, forty seconds—an' with a flat tire. Well, with more practice I could make a get-away in—"

Boom! Phineas spun around and looked up at the brow of a hill from where the sound of the big gun

seemed to have come. Something described a parabola through the early morning ether. Cr-r-r-ash! Again the Yankee truant swiveled. Gobs of turf and rock geysered skyward. Right up from the spot where he had left the Spad! He saw a wing skirl through space. A piece of prop fell right at his feet. Weak in the undercarriage, Phineas stumbled toward the ruins of his Spad.

"Why, the dirty—" he began; but voices from the hilltop brought him up short. Again his head revolved on his gangly neck, and he saw a group of men running toward him. They did not seem very pleased to have him around. "Did you bums do that?" Phineas yowled, pointing to his defunct Spad. "Wait'll I report you!"

"Landed here, did you?" a big officer bellowed. "You mush-brained looney. Don't you know this is a restricted area? We are trying out new trench mortars, and—"

"Well, I was tryin' out somethin' too," retorted Phineas. "I guess you bums don't own this country. I was engaged in legal business an'—"

"Take his name, sergeant," the officer snapped. "I've been waiting to grab a fresh flyer for a long time. I don't like flyers."

"You don't give me a ravenous appetite," Phineas countered promptly. "I saw a better lookin' face once on a can of crabmeat."

"Insult a superior officer, too, huh?" yelled the major. "That is another count against you, see?"

"Well, I better not do any more, huh?" The culprit grinned savagely. "As I bet you can't count up to three!"

"Start moving!" howled the officer. "I'll show you."

The major did. Major Rufus Garrity, harried C.O. of the Ninth Pursuit Squadron, was sitting on the doorstep of the Squadron headquarters when Phineas Pinkham pedaled onto the drome.

"I'm sorry to be late." He grinned broadly. "I had to stop an' git me some tire tape an' a pump. It is lucky I saved the bicycle, ain't it?"

The Old Man got up and took a jackknife from his pocket. He ambled deliberately to Phineas' bike and cut the tires clean to the rims.

"An' I've got a good mind to let the air out of you the same way, you fathead," he hollered. "Get inside, and get in quick!"

"That was willful destruction," protested Phineas. "I will put in a bill—"

Sir Rufus chased him into the Orderly room and slammed the door.

"Now, Mr. Pinkham," he began, "just sit quiet, as I am going to bust you faster than anybody has ever been busted before. Only you could set a Spad down just where a shell would hit it. With all the real estate they have in France, you would—shut up! Pinkham, you're nuttier than a squirrel's pantry. You get a new Spad blown to hell and come in and yelp, 'Yoohoo, I saved the bicycle!' I—shut up, I said. Oh, well, you'll get used to the trenches in time. I hope you get sent to a sector where the cooties have tapeworms."

"I will take it to court," threatened the perpetual trouble-promoter. "You can't—"

There came an interruption. The door opened, as a Brass Hat from Wing Headquarters oozed in and stood glaring at Phineas.

"This flyer ever meet a superior officer before, Garrity?" he barked. "Did he?"

"Yeah," cut in Phineas. "That's the hell of it."

"Salute, you crackpot!" roared the Old Man. "Then get out, and don't forget you're under arrest. I'll send for you later."

"WHAT did he do now?" the colonel from Wing wanted to know as the Pinkham scion made his exit without bothering to salute.

"I'd rather talk about something cheerful," groaned Garrity, "like what you've come for. How many Spads do you want sent out to bomb Potsdam?"

"I'm thinking of Paris, Garrity, and the Channel ports," the colonel snapped. "I suppose you did not know that Dover, England, was bombed last night? By a Gotha, a super-Gotha that the Krauts believe will wash up the Allies. No place is safe, major. Suppose it bombs Chaumont—then what? Why, the whole Allied plan will be disrupted. Four motors, Garrity. Armored tanks and gun pits. The ship is a flying fort. A whole squadron of Spads would never knock it off. I tell you, Garrity, it—"

"Gott seems to be mit 'em, what?" Garrity cut in sarcastically. "Maybe we could tie three Handley Pages together with wire and even it up."

"It is no joke," the colonel snorted, chewing furiously at a frayed cigar butt. "It's killing that Spad outfit over by Commercy. Remember Major Tiptlett, the sour-faced guy at Issoudon? Gone sourer, Garrity. And the other buzzards with him. They give you the jitters just to look at 'em. Morale all shot to pieces. We call it the Pallbearer Squadron. Why, even the birds in the trees around there sing nothing but the Death March from Saul. If somebody could just go over there and pep them up—somebody with a sense of humor—"

"You said a 'sense of humor?'" Garrity cracked suddenly. "Somebody with pep and—colonel, just let me sit alone with my thoughts for perhaps two minutes." The Old Man sat back and twiddled his thumbs, his mouth twisted into a feline grin. Without warning, the front legs of his chair hit the floor, and his finger stabbed the colonel in the chest. The Brass Hat swallowed his cigar.

"Garrity," he choked, "you—"

"I've got the man," the honorable Rufus Garrity declared solemnly. "Phineas Pinkham! He's in a sling as usual. I can't get him out of this one, colonel, and I don't want to see the bum busted—crazy as it sounds. Do you think we could arrange for his transfer to the Pallbearers as a disciplinary measure? I imagine that would satisfy the fatheaded infantry major he insulted. We will call Phineas a—er—an ambassador of morale for the good of the Allied cause, eh? Can you think of any better names for him?"

"Plenty," the colonel declared, "but I'm a good Baptist, Garrity, and must control myself."

Major Rufus Garrity yelled at an orderly. "Bring Lieutenant Pinkham here!"

"I am right here," came from none other than the Pinkham throat, as its owner peered over the orderly's shoulder. "Haw-w-w! I tried not to eavesdrop but—well, when do I leave, huh? I always thought there was ambassador blood in this branch of the Pinkhams."

"I've a good mind to bust you instead," howled the Old Man. "Colonel, it's up to you."



And right where he had left his Spad!

"Garrity," the man from the Wing clipped, "the Pallbearers will either catch some morale from him or they will kill him. We win both ways, don't we?"

"Right," grinned the major. "Pinkham, I'll have you transferred so quick—go pack your trunk. You might even start tonight."

"Boys!" chuckled the irrepressible Phineas. "I hate to leave the old homestead, but would a cat refuse an invite to a family reunion of mice? I got some new ones that are too good to waste on these bums here. All they need over there is somebody with a sense of humor, haw-w-w-w! Excuse me, as I must pack. Don't forget to write me some references. Adoo."

"Fresh mutt!" growled the colonel. "We should've busted him, Garrity." The colonel had never said a truer word.

Phineas lost no time in spreading the news. "Well, I'm leaving you," he announced to the pilots as he went out into the big room.

"I am very sorry," Bump Gillis apologized solemnly, "but I just can't seem to bust out cryin'."

"I hope it is far enough away so you will have to take a pullman," offered Captain Howell. "Go away! Can't you see I am up to my neck in my tatting?"

"Awright," Phineas shoved back at them, walking out, "to hell with you fair-weather friends."

TWENTY-FOUR hours later, Lieutenant Phineas Pinkham got out of the sidecar of a motorcycle on the drome of the Thirteenth Squadron. It was a gloomy, rain-fouled night and the wind moaned like a Banshee with an ulcerated tooth. As the mechanical bug roared away, two men emerged from an elephant iron hut labeled Operations Office. The taller of the two peered at Phineas closely.

"You ain't an officer," began the new arrival. "Who are ya?"

"I'm Sergeant Tombs," replied the non-com. He lowered his voice. "Terrible war, don't you think?"

"Yeah, ha, ha," Phineas pushed out, "but if you'd just tell me where I can find an officer, like the C.O. f'r instance—"

"Oh, this ain't the squadron headquarters," the non-com explained. "You see, we just put the sign up here as we think there are spies all around us, an' then if they try to cut somebody's throat while a body's sleepin', they'll git fooled an' kill only non-coms."

"Ah — er — yeah. Ha, ha," Phineas said weakly. "Well—"

"Here, you," the sergeant flung at his little companion, "take the officer's luggage. This is Corp'ral Graves," he said to Phineas.

"Hm, Tombs an' Graves, huh?" the Pinkham representative snorted. "Have ya got any Hearses or Coffins? Ha, ha!" The laugh did not come from very far down in Phineas' diaphragm.

"Lieutenant Coffin was shot down three days ago," said Corporal Graves in appropriately funereal tones.

On the way to the officers' quarters, he led Phineas by another hut. The mournful strains of a phonograph issued from behind a curtained window. Our hero stopped as voices blended into song.

"For-r-r-r-r well we-e-e-e know that on the mor-r-r-row-w,

So-o-om-m-me will sle-e-e-ep be-e-eneath the so-o-o-od!"

"Haw-w-w-w-w!" Phineas tossed out with difficulty.

"Do they raise hell like this ev'ry night, huh?"

"Well," replied Corporal Graves, "I must say them fellers is unusually gay tonight, sir. I guess it's because only three was shot down today an'—"

"Just skip it, please," gulped the new addition to the squadron.

As Phineas walked into the mess shack of the outfit, a short time later, a black cat spat at him. Eleven men hardly looked up as he entered, his face split by an expectant grin. It did not seem possible, Phineas mused, that out of the stockroom of humanity which fate had in reserve, she could pick almost a dozen men with faces



"It is me," said Phineas. "Talk United States."

twenty inches long and throw them all into the same place.

"Bum swar," he ventured. "I am Lieutenant Pinkham late of the Ninth Pursuit come to cheer ya up. I have samples of morale I would like to show you an'—"

"Sit down!" snapped a doleful-looking pilot. "Ya're in my light."

"Huh? Ya never heard of me? I'm Pinkham," persisted Phineas.

"Napoleon was awright, too," drawled another pilot listlessly, "but he ain't so hot now. We all got to git killed sooner or later. Maybe tomorrow you'll git it, an'—"

"Boys!" groaned the would-be comedian. He sat down, looked over the shoulder of a pilot to see what he was reading. The title on the top of the magazine page said, "The Cemeteries of Paris."

"Murders in the Rue Morgue' is good, too," suggested the determined spirits-inflater. There was no reply. Suddenly a tall man put in his appearance, and all the woe one could scrape up in the wake of a pogrom seemed reflected on his countenance. The pilots stood up.

"Major Tiptlett, huh?" Phineas said, and actually saluted, as in the presence of the dead. "It sure is a lively place here, ha ha. Well, I'm reportin'—"

"Okay," intoned the major. "We can see that, can't we? You'll bunk with Jitters, the pilot next to you." He sat down and rolled a smoke.

"All ya need is some peppin' up," began Phineas as the gloom seemed to get as thick as sulphur and molasses. "Let's have some music, huh?"

"I hate music," said Tiptlett.

Undaunted, Phineas picked up three eggs he saw in a bowl on the mess table and started to juggle them. "Not bad, huh?" he addressed his new C.O.

"I can do it with four eggs," Tiptlett growled, "but why bother?" He turned his head. "I bet we get bombed tonight, an' by that new Gotha."

"Cr-r-r-ripes!" groaned Major Garrity's chief pain-in-the-neck. "What a ghoulish paradise. Er—ah—I got a good riddle. There were two Indians in the woods. The little Indian was the son of the big Indian but the big Indian was not the little Indian's father. Now what was the big Indian to the little Indian, huh?"

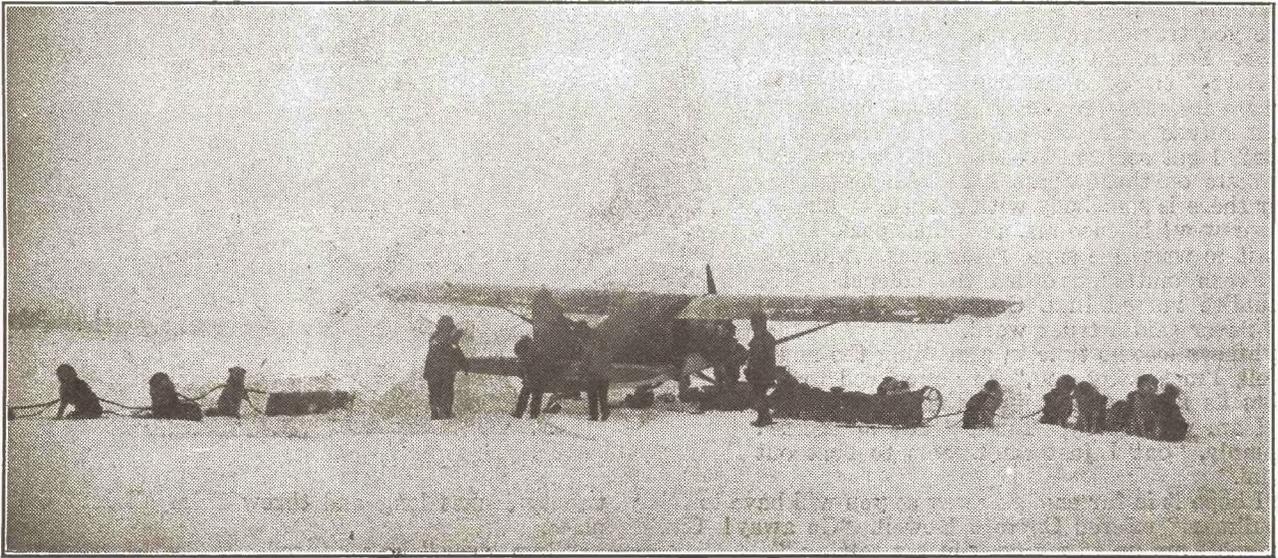
"His mother, you sap," spoke up a pilot with eyes as sad looking as a St. Bernard dog's. "Huh, we had another feller who thought he was funny, too, but he got knocked off quick. I know how it is. You're scairt an' try to be funny so we won't notice it. Well, here today an' gone tomorrow!"

Phineas gulped, pulled himself together and produced a deck of cards from his pocket. "Here's one. Each of yuh draw, an' I'll tell—"

"Why should we?" queried Pilot Jitters. "We've got cards. I think I'll try an' get some rest, although I may not need it as maybe tomorrow I'll be restin' for good."

(Continued on page 74)

From the dog team to the airplane, in one easy stage! The picture below shows you the ancient and the modern method of transporting mail in the Far North. Time, Christmas Day. Temperature, 54 degrees below zero, with 86 degrees of frost. B-r-r-r!



The Airplane

INTERESTING ARTICLE OF THE FAR NORTH

By Charles S. Strong

Author of "Sweden's Sky Ambulance," "Right Side Up in the Arctic," etc.

✱ ✱ ✱

DID you ever get a chance to swap an airplane for a whaleboat? Well, that will always be my most lasting impression of my first air visit to Eskimo Land, up on the northern end of Hudson Bay in Canada. The Fokker had wound its way up the coast from Fort Churchill at the end of the Hudson Bay Railroad to Chesterfield Inlet, and when it came in to rest there, one of the first visitors to it was neither the Royal Mounted Officer looking for mail, nor the Hudson Bay Factor to arrange for shipping out some furs—but an old Eskimo.

An interesting product of the Mission schools, he spoke fairly good English, and asked quite seriously, "Will you trade the flying ship for my whaleboat?" The question was such an unusual one that we were tempted to laugh it off, but the Eskimo meant it. Inquiry developed the fact that his father, a rather important member of the Iglooutmiut Eskimos, had died, and this man, his son, did not feel that he had prepared his journey to Heaven quite satisfactorily.

On the next afternoon, he took us out to his father's grave and showed us how he had placed the Eskimo's rifle, his seal harpoon, a tool chest, wearing apparel, a *kayak*, caribou skins for the purpose of building a tent, and some other items from his store of worldly possessions, to ease his journey into the next world. Now he felt that the old man deserved an airplane, and if he could get one in exchange for his whaleboat, he was willing to make the trade.

We compromised by pointing out that if his father's body was buried in the grave, his soul would not need a very big conveyance. And we left him happy with a model airplane, carved out of balsa wood, which he de-

posited very reverently among the other possessions of his departed ancestor.

Much of the fur traffic that is now brought out by airplane from the accessible points in Canada is carried on in August, and the Eskimos who trek down from the Arctic with their whaleboats, or overland with their cargoes, have a week or so of living there during the trading period. This is equally true at Chesterfield Inlet.

The shore about the Inlet is dotted with Eskimo *tupeks*, or tents of caribou skin, while some of them have canvas tents. The Eskimos arrive as early as they

Here's the typical winter garb for the Airways pilot in the Far North. The Parka, or hooded coat, is made of caribou or reindeer fur, and the Nukliks, or boots, are of skin or fur, and reach to the knees. And none too warm for that climate, we'd say.



Churchill Harbor, where the railroad ends—and the airplane takes off! This port is at the end of the Hudson Bay Railroad, and from there, planes fly due north up the coast to contact Eskimo fur traders.

Official Photograph, Royal Canadian Air Force



in Eskimo Land

Not so long ago the dog team was the only means of transportation in the Far North, up near the Arctic Circle. But times have changed, and today furs, mail and other goods are carried in speedy airplanes. Three or four days of easy flying now do the job that once took a solid year. There's progress for you!



can, and an afternoon behind the counter with the Factor is an education in itself. The first arrivals, with their previous winter's catch of fox skins, can get first pick at the trade goods that have been brought in with the trading ships.

The Eskimo has become so up-to-date, however, that it is almost impossible to keep up with his requirements. They may include sewing machines, whaleboats, radios, or snowmobiles. In a few years they may be looking for airplanes, too. So far, they have demanded about

everything except golf balls, and that is probably because they have never seen a golf game. In case the articles are not on hand—and often they are not—the order is sent out with the furs either in the plane or in the trading ship, and is brought up the following year. How Sears Roebuck would gnash their teeth! Mail order service one year in advance!

With the departure of the Eskimos early in September, the furs are baled up and loaded into the ship, and are ready for the jump southward. Where it previously took all year to get the furs shipped through the ice and back to civilization, it is now possible to get them down to Churchill and the railroad for Winnipeg in three or four days of easy flying; and they may even be taken all the way to the Hudson Bay Store in Winnipeg in another two days of air cruising.

Before leaving Chesterfield Inlet, however, one of the Eskimos offered to swap us a ride in his *kayak* for a trip in the airplane. I accepted the invitation and was taken for a jaunt in one of the two-place *kayaks* which are used for seal-hunting. One of the Eskimos maneuvers the tricky craft, while the other does the spearing business. And when I say they are tricky pieces of machinery, I mean it.

The *kayaks* are tailor-made, and if you happen to be too big for a particular boat, you are just out of luck. If you are too small for it, that may be partly remedied by an apron that fastens to your belt in the front or back. This is necessary, because even the slightest kind of a wind will ship water over the craft, and unless you like sitting with wet feet in a puddle of water, you don't want any of it to seep down between

(Continued on page 79)



The wireless reaches far up into the North, too. Here you see a Dominion explorer's machine bearing wireless messages. The mechanic is balancing himself carefully on the pontoon of the ship.

The Wonder-Ship of the Year

THE DE HAVILLAND "COMET"

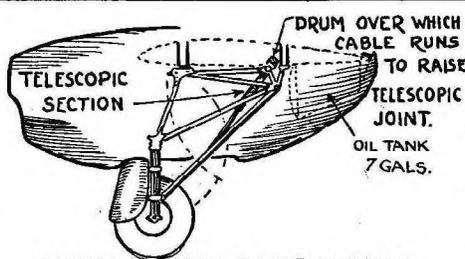
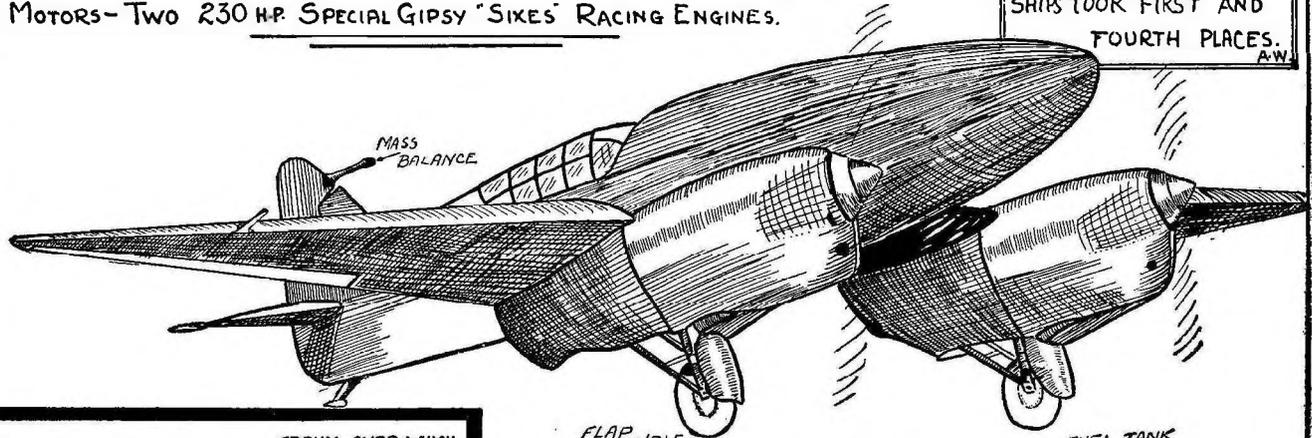
THE WONDER-SHIP OF 1934
WINNER OF THE ENGLAND-AUSTRALIA AIR RACE.

C.W.A. SCOTT AND T. CAMPBELL BLACK AVERAGED 176.5 M.P.H. FOR 70 HRS. 59 MIN. 50 SEC. IN COVERING 11,323 MILES. THEY FLEW ABOUT A FOURTH OF THE DISTANCE ON ONE MOTOR.

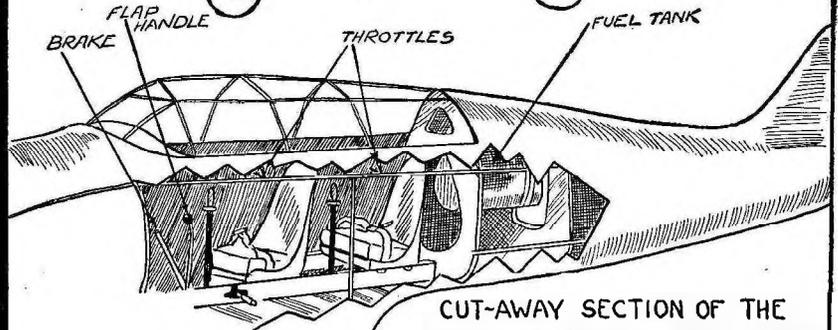
SPAN, 44 FT.; LENGTH, 29 FT.; HEIGHT, 9 FT.; WING AREA, 212.5 SQ. FT.
MOTORS—TWO 230 H.P. SPECIAL GIPSY "SIXES" RACING ENGINES.

FACT, NOT FANCY.

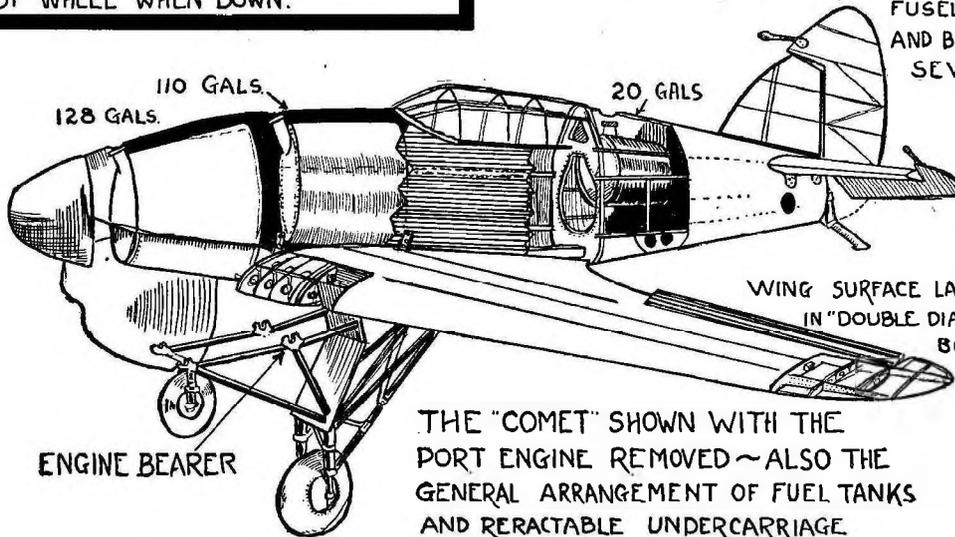
THREE MONTHS BEFORE THE RACE, CAPT. GEOFFREY DE HAVILLAND DECIDED THAT HE COULD BUILD A SHIP TO WIN THE SPEED RACE. NO ONE TOOK HIM SERIOUSLY, BUT HIS SHIP TOOK FIRST AND FOURTH PLACES. A.W.



DETAILS OF RETRACTING UNDERCARRIAGE, SHOWING POSITION OF WHEEL WHEN DOWN.



CUT-AWAY SECTION OF THE FUSELAGE SHOWING WHERE SCOTT AND BLACK SAT FOR MORE THAN SEVENTY HOURS.



WING SURFACE LAID ON WITH SPRUCE STRIPS IN "DOUBLE DIAGONAL" METHOD AS USED BY BOAT BUILDERS.

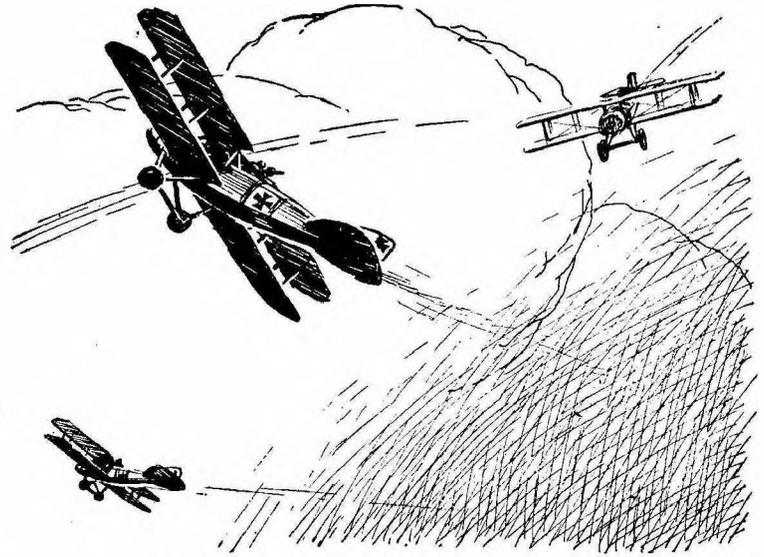
THE "COMET" SHOWN WITH THE PORT ENGINE REMOVED—ALSO THE GENERAL ARRANGEMENT OF FUEL TANKS AND RETRACTABLE UNDERCARRIAGE.

34
Fact
Whitehouse

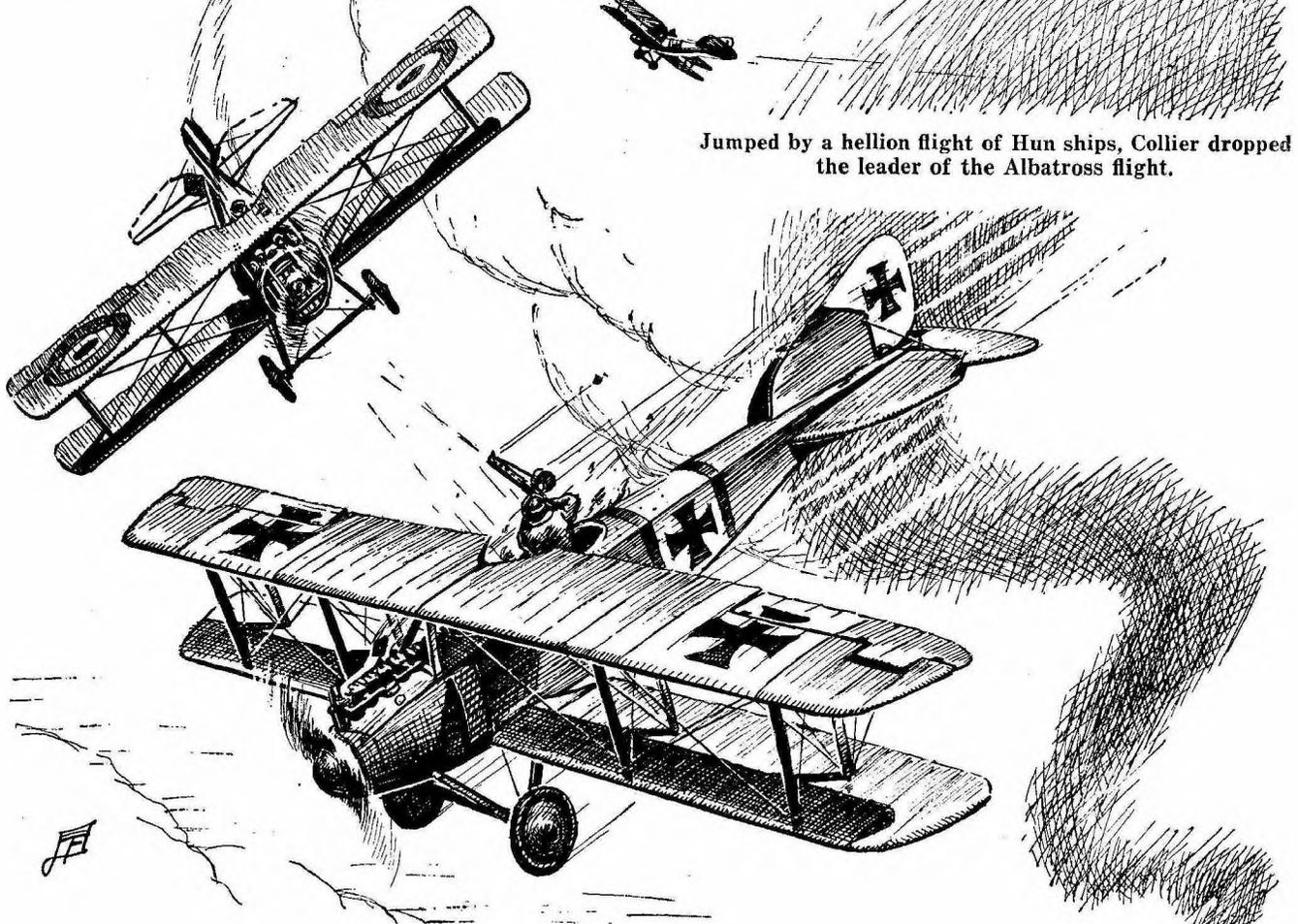
SCOTT AND BLACK PUT UP THE BEST SPEED SHOW BUT COL. ROSCOE TURNER AND CLYDE PANGBORN GAVE THE GREATEST DISPLAY OF NAVIGATION DESPITE THE FACT THAT THEY HAD NEVER BEEN OVER THE COURSE BEFORE.

His own squadron called him "Mud" because he spent his leave up front with the infantry and his air hours patrolling their death-infested forward zone to protect them. But to those doughboys who every day defied the fury of the enemy barrage—his name was not mud.

Illustrated
by
Frank Tinsley



Jumped by a hellion flight of Hun ships, Collier dropped the leader of the Albatross flight.



The Solo Skipper

By HAROLD F. CRUICKSHANK

Author of "Ace for a Day," "The Bulldog Brood," etc.

✱ ✱ ✱

CAPTAIN JIM "MUD" COLLIER hurled his Spad through the sky lanes like a demon possessed. His gas tank was about empty. He'd be lucky to make his tarmac, or even the American lines. Weary, and battle-battered, he sagged in the pit as long-range tracer hissed fiendishly past his head. He was a lone wolf, a lone tracker of Boche.

There was a time, before sky guns had distorted his handsome features into the almost ugly face he now possessed, when he had been the dapper commander of

a flight of hellion Spads. That was before he had been rushed to a hospital. On his return, he had just taken up the reins where he left off, but had made the request that he be permitted to fly solo. He had a score to settle with the Huns, and he wanted to settle it in his own way. And who was there to deny him this request? He had a record that was the envy of many. He had a skill and fighting spirit that was never bettered. Head-

quarters allowed him his own way, since that way brought real results.

Today he had gone deep into enemy territory to smash a line of enemy kite balloons which were a thorn in the side of American infantry. He had sent three of these "eyes of the German Army" down in roaring flames. But he had been jumped by a flight of Hun ships which forced him to the utmost of his skill and nerve. He had dropped the leader of that Albatross flight—a kill which, of course, he'd never be able to claim, for the ship had smashed to atoms deep in German terrain.

There had been a deep-rooted reason why Collier had singled out those sausage balloons for attack. It was because of his regard for the Allied infantry. Many months before his country had come into the war, he had been a lieutenant with the Canadian infantry. When America entered, there came, with the doughs, a younger brother of Collier's—a kid who, by rights, should have been back home at college. Whenever possible, whenever granted a few hours' leave of absence, Jim Collier trekked up the communication trenches—on up to the front lines; there to spend his leave in company with his kid brother and the boys of the old life. He returned to his drome plastered with mud. Hence his *nom-de-guerre*—"Mud" Collier.

But Collier took it with a grin. He was glad he liked the infantry so much. To him, they were the cream of all branches of the service—those doughs hugging the parapets amidst the fury of red hell. Mud's associates at 48 Squadron thought he was crazy to invite further chances of sudden death by crawling up into that death-infested forward area so often; but to him, it was an opportunity of a lifetime.

And now he was hurling his Spad's nose down over the muck of No-Man's-Land—tight-lipped, his slitted-eyes peering through the flame-shattered gloom for some spot that was not all tangled wire and gaping craters. At his back, gaining fast, were two flame-spitting Fokkers, seeking vengeance—sky vengeance. Collier ducked as a sheet of lead screamed between his wings. He touched his stick still farther down. His badly scarred face screwed up in a grimace as he caught the uninviting terrain on which he must slam his ship.

Down! He was putting her at a patch of darkness which looked like a maze of willow scrub. At least, those willows would break the fall. His gas was done. He must make a dead-stick landing.

Now he shoved the ship over on her right wing tips and screamed down, to flatten, and then dive dead into the scrub. And when she hit, Mud Collier was ready for a headlong dive into space. His safety belt was unbuckled. But he was only dimly conscious of that solo flight through space, following the crash. A piece of snapped brace wire had twanged across his right brow. A million lights danced before his vision. He was out, a badly scratched, badly bruised piece of limp wreckage, when a patrol of bombers picked him gently up and toted him to the cover of a forward dugout.

COLLIER awakened to the mad thunder of a fearful bombardment which split sky and earth in a blazing inferno of sound and lurid brilliance. Mud looked up into the drawn face of a medical officer. Men were dragging down the dugout steps—wounded men, whose muddy clothing was blood-stained.

The sky skipper raised himself to an elbow. He was back in the forward zone, back with the infantrymen. He started. He was back in the zone in which his kid brother was in action!

"Thanks, doc," he jerked. "I'm okay now. Nothing seriously wrong, is there?"

"No. You're mighty lucky," jerked the M.O. "You're Collier, aren't you—a brother of Dan's?"

"Yep. Is he—"

"He's okay, or at least he was, the last heard from him. He's out forward with a party of scouts, on patrol

and outpost duty. Well, you'd better rest up a bit. I wouldn't attempt the trip back just yet, in this strafe. We're getting hell, Collier. The enemy seems to have our every move taped. German sky men seem to have free range on us. First it was the balloons. We're holding the most important part of this whole line, and every move we make is blocked. What the devil's wrong with our Air Service? I—sorry, Collier, but it's been getting our goats. If something isn't done to block the work of that German baron in command of enemy sky service on this front, well—look at it. Look at these boys dragging in—a steady stream of casualties."

Collier got shakily to his feet. The doctor had opened his eyes to something. There was some deep, sinister movement at the back of the enemy work on this front. It was plain that the Germans wanted this sector at the moment, more than any other; and Mud Collier was determined to find out why. It tore into his heart to see these pain-racked doughs stumbling down the steps, or being packed down the steps for first-aid treatment. Something had slipped up, had escaped the notice of the Allied Intelligence departments.

Mud Collier began to strip off his teddy bear suit. He was going out into the blinding night, to hunt up his brother. Young Dan was a clever scout. He would know something. . . .

"Halt! Who goes there?" Mud Collier froze in his tracks. The command, in its strange tone, had seemed to come right up through the ground at his feet. "Shoot the password, quick!"

Collier winced. That was something he didn't have—a password, the word of the night.

"Pipe down, you," he snapped. "I'm Dan Collier's brother—Lieutenant Collier's brother. I—"

"Yeah? Well, I'm his ol' man's uncle. Stick up your paws, mister. I got a dead line on your guts with this firestick."

Mud smiled a little grimly and lifted his hands, as well as he was able, above his head. It was a difficult operation, for he was flat to the battered clay of No-Man's Land, where the gods of war danced a dance of death in the rippling chains of flame. He slithered forward and dropped into an outpost.

"So you're Dan Collier's brother, eh?" snapped a stout built corporal. "Just like I thought. Figured to get back to your lines, huh, in that rigout? You think we're crazy. You've even got Jerry boots on."

"Now listen, corporal," jerked Collier. "I admire your vigilance, and will see that it's recognized. But I am Dan's brother, and these are airmen's boots, not German. Now where's the kid?"

"You mean you're Cap'n Collier of Number 48 Spad outfit?" gasped the corporal. "You got any identification? You know how it is in a spot like this—lemme have a look at some papers."

Mud fished out a card of identification, which the corporal slipped behind a ground sheet cover and read by the light of a flash lamp. Mud smiled. Had he been a spy, this was a moment when he could have done plenty of damage.

"Seems okay, cap'n," grunted the non-com. "Sorry I played you for a—"

"That's all right, son. You did the proper thing. Now, where's Dan? I've got to see him at once."

For a long moment there was no chance of hearing the corporal's reply, for a hundred new guns seemed to lash to life from beyond the enemy lines. Their H.E. and shrapnel were scouring No-Man's-Land just ahead of this lonely outpost. The non-com moved in close, so close that his lips almost touched Mud's ear.

"That's where your brother is, sir—up front there some place, with two of the scouts. He's the only Intelligence officer who seems to be on his toes. We been getting no support from any place in the last week. Jerry has had it all his own way. Look at the way those new batteries opened up. Why, I'll bet a month's pay our Air Force never locates those guns. Jerry's

(Continued on page 64)



Raid of the Unseen

SMASHING YARN
OF THE
NIGHT BOMBERS

by
Kenneth Brown Collings

* * *

The C. O. of the 7th Marines Squadron was not new at the fighting game. He'd taken lessons from blood-crazed Moros in the Philippines, from slant-eyed Boxers in China. And he'd learned one thing—you've got to hit what you shoot at, whether you're on the ground or in the air. And because he'd learned that lesson so well—he was faced with a court-martial!

* * *

Illustrated by E. M. Frandzen

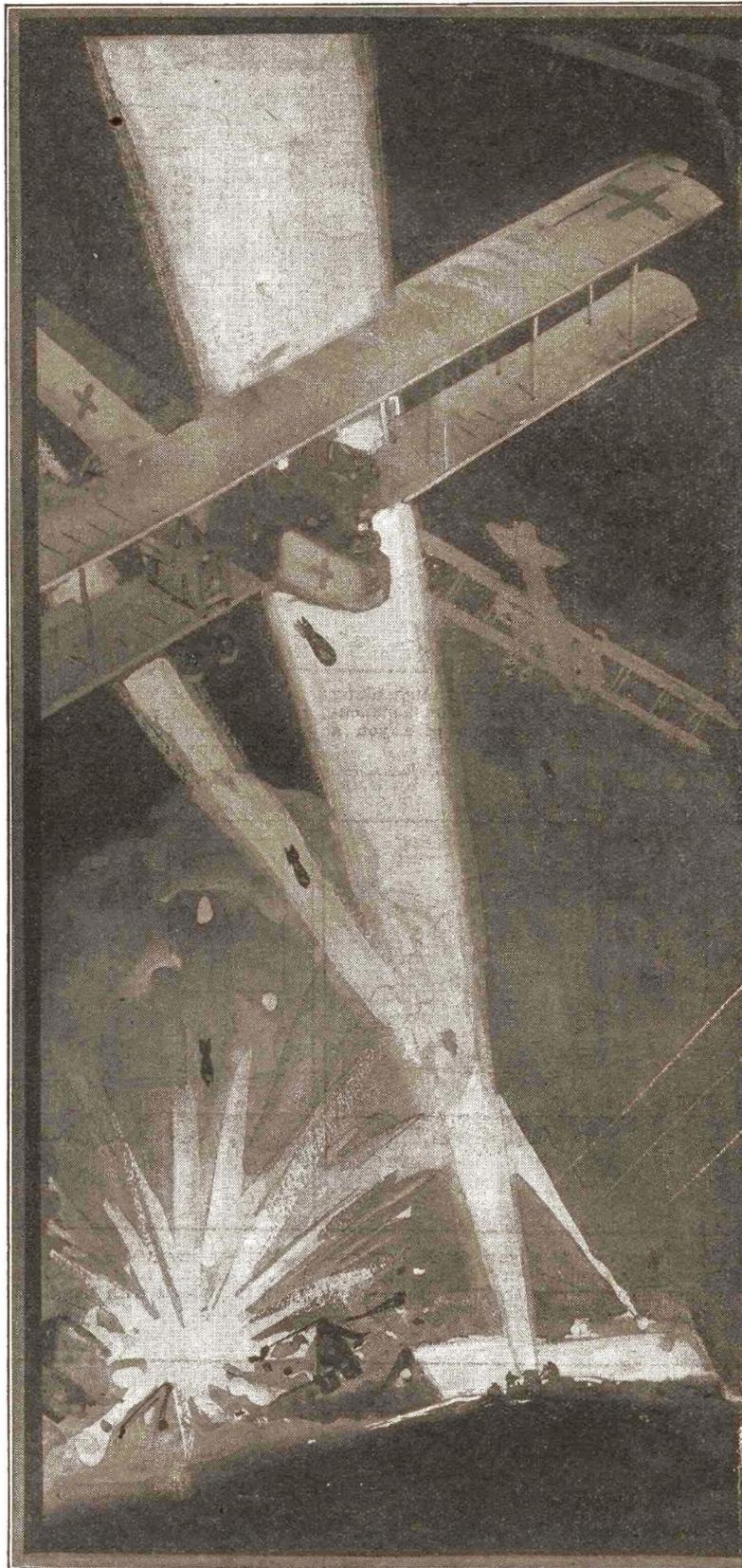
THE Commanding Officer of the 7th Marines threw down the three-months-old copy of the *Photographer's Digest* which he had been reading. He looked across the desk at the two replacement pilots who had just reported for duty.

"All of twenty-one years old," he mused. "Green as grass—probably can fly enough to keep from cracking up. Can't hit the side of a barn with twin Vickers at twenty feet—and undoubtedly think they will shoot down von Richthofen at dawn tomorrow."

Aloud he said, "Sit down, gentlemen. My name is Wayne. We are glad to have you with us." He paused for a minute. Unless Colonel Jackson had changed his tactics, these pilots had undoubtedly been told that he, Chuck Wayne, was crazy, that he was cracked on the subjects of gunnery and photography.

The colonel hated Chuck with an unreasoning hatred born of fear. Chuck knew too much about him. Back in Chuck's home town, Jackson was a saloon-owning politician. Because of his political power, he had been appointed a colonel in the National Guard. When the fortunes of war brought them together in France, Colonel Jackson started in to get something on Chuck. He wanted to push him out of France before the Marine captain told some unsavory facts about the colonel's crime-laden past. He was determined to break Chuck, if possible.

These boys had undoubtedly heard Colonel Jackson's



Fingers of light pointed into the heavens as the searchlights spotted the grim Gotha marauders.

story. There was no use mincing words. "How much gunnery practice have you had?" asked Chuck.

A ghost of a smile flickered between the replacements. Chuck had guessed right. Jackson was up to his usual dirty work. "We passed the usual course in gunnery at the pilot's replacement pool, and—" one of the pair commenced, but Chuck interrupted him.

"That's all I need to hear," he said. "I know the rest of the story by heart. You were told that you didn't

(Continued on page 69)

FLYING ACES PICTORIAL FLYING COURSE

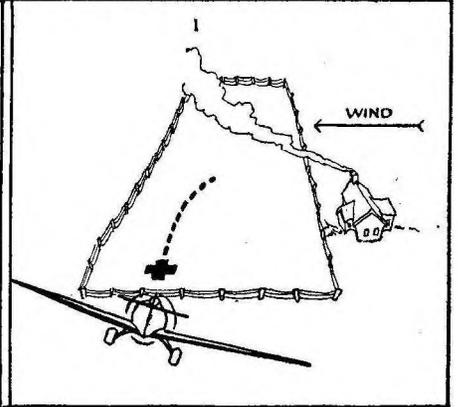
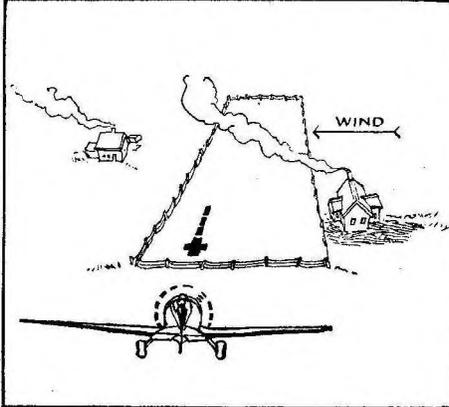
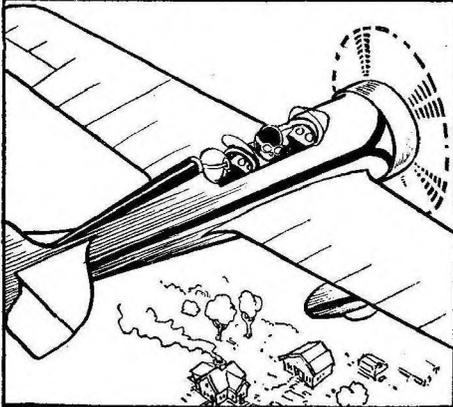
ACE MCGOY YOUR INSTRUCTOR

LESSON NO. 14



ACE - WHAT ARE CONVECTION AIR CURRENTS?

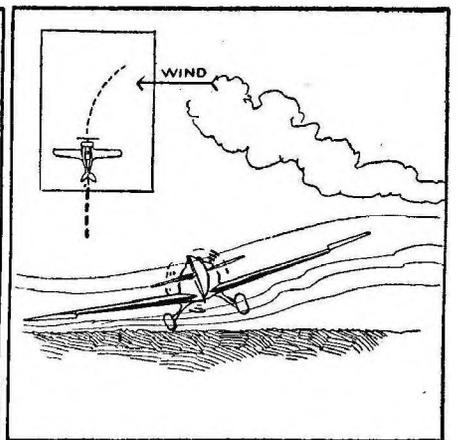
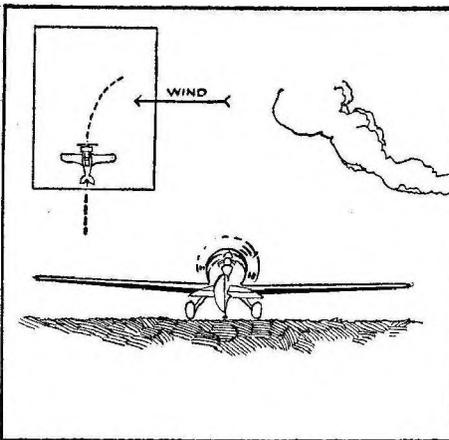
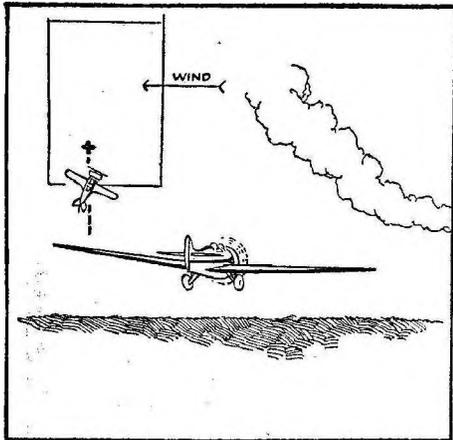
UNCLE SAM IS LIKELY TO ASK YOU THAT ONE - CONVECTION CURRENTS ARE UP AND DOWN CURRENTS - RISING BECAUSE OF THE HEAT OF THE EARTH - THEY DESCEND AGAIN WHEN THEY HAVE BEEN COOLED BY HIGHER ALTITUDES - WE CALL IT "BUMPY AIR."



You fellas are gettin' far enough along now to try some of the more difficult maneuvers in flyin', so I'm gonna give you a cross-wind landing.

The purpose of the cross-wind landing is to get into a long, narrow field when you're forced down. We'll pick out a little cow pasture up ahead, and approach it, nosed slightly into the wind.

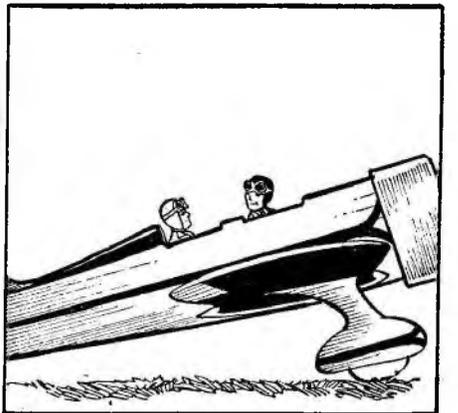
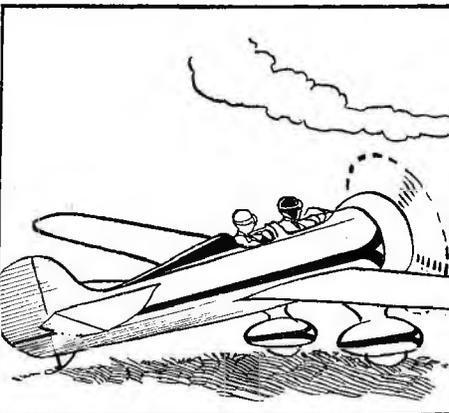
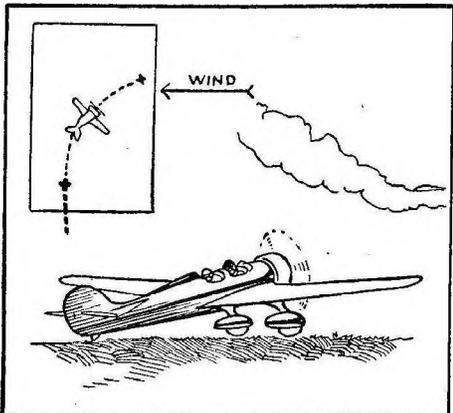
Approach it with a little excessive altitude, with the windward wing slightly down, to compensate for your drift. Let her slip just enough to keep you in line with the field.



Then hole 'er into a yaw, or fishtail, until you lose all your flyin' speed, still keeping her headed slightly into the wind. Then wing down a little.

At the moment she quits flyin' and drops to the ground, kick rudder down-wind to align the wheels with the direction the ship is traveling.

Be sure you don't let the cross-wind get under your wing and ground-loop you - but if it does, kick her nose into the wind and give her right stick.



As you lose speed, gradually turn her into the wind. Remember at all times to keep the windward wing down slightly.

Cross-wind landing is a good thing to know how to do - but never attempt it when the wind is over twelve or fifteen miles per hour.

It should be practiced out on a pasture, or anywhere away from a busy airport, because in doing it, you're likely to cut off another ship. Besides, it's against airport regulations.

Next Month - Cross-Wind Take-offs



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 contributions which we can use here, FLYING ACES will pay \$1. No contributions will be returned unless a stamped, self-addressed envelope is enclosed.



Oh, well—today is Saturday!

GOING—NOT COMING

He: How's your boy friend coming along with his flying?
 She: Oh, he took a turn for the worst, last Sunday.

PUSSY-FOOTING

Mrs. Jones found Mrs. Smith, the aviator's wife, in tears. "What's the matter, dear?" she asked, anxiously. "I'm worrying about Harold, my husband," sobbed Mrs. Smith. "He's been trying to lose our cat, and as a last resort, he took her up in his plane this morning. He said he was going to drop her overboard at 3,000 feet."
 "Well, what's there to worry about?"
 "Everything. Harold isn't home yet—and the cat is!"

HUMPH!

Mechanic: Say, that cigarette ad is pretty original, hah?
 Ace: Oh, I don't know. Sixteen years ago I got a lift with a Camel.

THE "I'S" HAVE IT!

Curious: How could that poor aviator go crazy from sky-writing?
 Cynic: He tried to dot an "i".



Ach, Adolph, I cannot help worrying about Heinz. He catches cold always when he goes out in the rain like this!

FROM START TO FINISH

The C.O. had just received special orders, and passed them on via a green newcomer. "Hey, you," he called, "go over to B Hangar and bust up that crap game. Get all the pilots over here at once for special orders."
 "Yes, sir," said the newcomer, tearing off to Hangar B.
 It was a good three quarters of an hour before he returned.
 "Where have you been?" roared the C.O. "I said to bust up that game at once."
 "Well," the newcomer said, sheepishly, "I did it as fast as I could, sir, but I had only two bits to start with."

THE FLYING P. T.'S

(Editor's note: This parody on the popular song, "The Man on the Flying Trapeze" was sent to us by one of our readers.)

Oh . . .
 They soar through the air with the greatest of ease,
 Those daring young men in the flying P.T.'s,
 Their wings they do wobble and rattle and flop,
 Their motors are skippy and most likely to stop.

Oh . . .
 Their actions so graceful all the girls do adore,
 Their flips and their flops as skyward they soar.
 They're awful heart-breakers, this squadron of sheiks,
 But the planes they are flying are a circus of freaks.

Oh . . .
 Their take-offs and landings are worse than a crime,
 But every last one thinks he could land on a dime.
 They come down to landings on three points or four,
 In ground-loops, nose-overs, crack-ups and more.

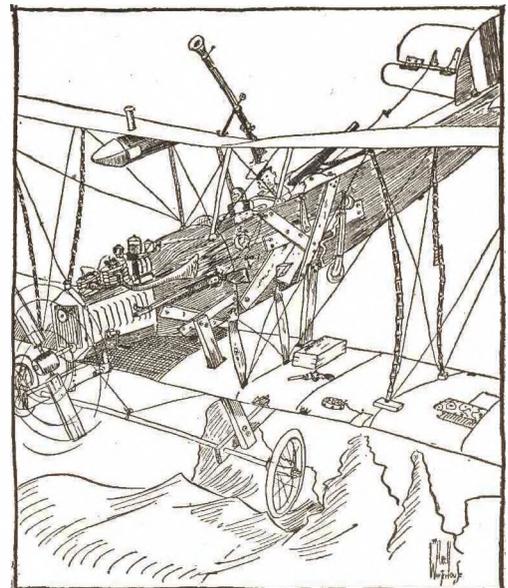
Oh . . .
 They'll either make pilots or corpses, they say,
 So with careless abandon they fly on their way.
 Wild-eyed and snarling, they burn up the breeze,
 Those daring young men in the flying P.T.'s.

FOOD FOR REFLECTION

An Army Air Corps unit was having a visitor's inspection tour, with the inescapable feminine critic pointing out faults in everything.
 "My," she said, in utter disgust, as they went through the officers' quarters, "is that thing on the wall another of those horrid Air Corps insignias?"
 "No, ma'am," retorted the lieutenant. "That's my mirror you're looking in."

JUST FUN FOR PHINEAS

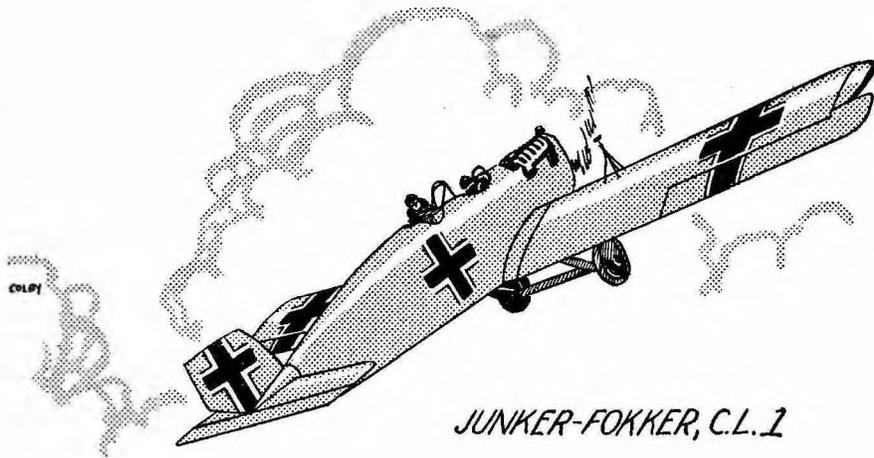
Voice over phone: Major Garrity, a Lieutenant Pinkham was crashed out in No-man's-land, and is in great danger.
 Garrity: Well, what of it?
 Voice: This is no joke—
 Garrity: Then it isn't Phineas Pinkham.



IMPRACTICAL AERONAUTICS—No. 67 An Early Bristol Fighter

This ship, according to experts in air lore, is the machine that started the World War, but had absolutely nothing to do with finishing it. It is our Mad Anthony Mainbearing's first Bristol Fighter, showing the earliest attempt to place the lower wing below the fuselage, and thus provide sleeping space in case of forced landings. It was entered in the Across-the-Alps race of 1903, with the result that the Swiss chocolate output of that year was cut to a minimum.

War Planes Album



JUNKER-FOKKER, C.L.1

JUNKER-FOKKER C L1

THIS armored fighter has drawn considerable comment on both sides of the Atlantic during the past few years. One school is loud in its praise of the C L1, while another has downed it into the mud of derision. The ship is a product of the famous Junkers firm and was built after Tony Fokker took a financial interest in the outfit. Junkers, an enthusiast on metal structure had put

out several models, combining duralumin and wood, but was not satisfied until he had produced an all-metal machine. Fokker backed him, and the final result of his labors was the all-metal wireless C L1 low-wing monoplane, powered with a 160 Mercedes.

Considering everything, the ship was much under-powered for the work it was supposed to do, but in those 1918 days, there was little

choice in power plants. The CL1 was supposed to have been designed for trench-strafting, and for combatting the low-flying efforts of the British in Belgium. A few of these machines reached the Front, but they appeared to make little headway.

In design, we see the typical Junkers corrugated dural sheet covering, stretched over dural tubing and incorporating the skin-stress features so popular today. The armored sections of the ship were beneath the motor and around the cockpits. In this ship, however—unlike the design of the A.E.G.—the armor plates were used as stiffeners and strength plates and were actually incorporated into the design of the ship.

The pilot on this ship was given one fixed Spandau, and the observer had a choice of two movable Parabellums or one movable Parabellum and a semi-fixed Spandau mounted to fire down a tunnel in the fuselage. The oval framework behind the pilot's head was a safety device to prevent the ship from crushing the occupants, in case of the machine turning over after a bumpy landing. The details of the speed and specifications are not available.

A.E.G. ARMORED BIPLANE

THE first machine of the armored type was brought down inside the British lines by an R.E.8 (of all things) on May 16th, 1918. The British Air Ministry gave it a thorough inspection, and records on it are far more to be trusted than most particulars given out since the war by the German officials.

It was built in February of that year by the Allgemeine Elektricitats Gesellschaft, from which firm the initials A.E.G. are taken. The works were at Henningsdorf - by - Berlin. The ship was an orthodox biplane, equipped with a 200-h.p. Benz engine. A Mercedes - Daimler radiator was hung beneath the center-section, and had a shutter arrangement for controlling the flow of air over the tubes.

As far as the armor itself goes, it was evidently nothing more than an experimental proposition, for the plates were simply screwed on into the steel tubes of the fuselage and in no way added to the structural strength of the machine. The armor itself was 5.1 mm. thick. Its total area was 105.8 square feet, and it weighed 860 lbs.

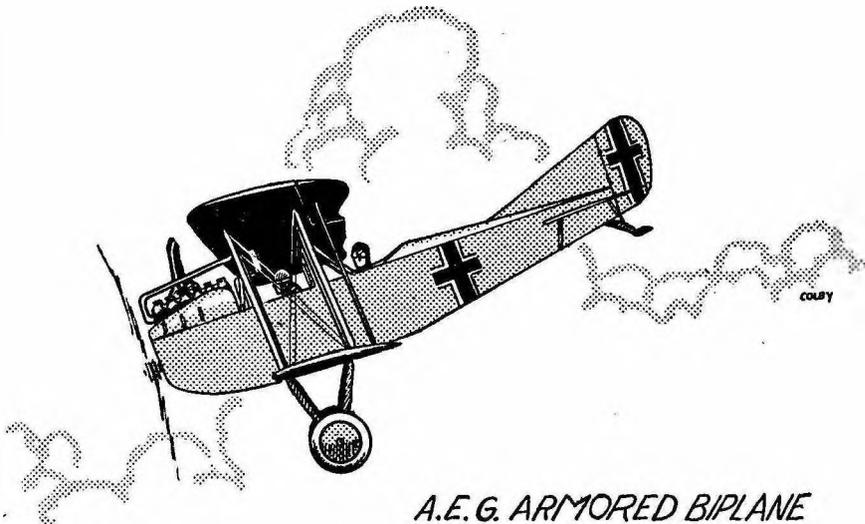
In tests by the British, the armor was found to be useless up to 500 yards against R.F.C. armor-piercing ammunition. With the ordinary rifle and machine-gun ammunition, when

the shots were fired at little or no angle, the armor withstood the bullets up to within about 50 yards. The armor was placed to cover the two main cockpits and the lower section of the engine. Plates were also set beneath the cockpits, and there was an armored bulkhead behind the observer to protect him from attacks from the rear.

An interesting feature of this ship is the fact that the pilot was given no fixed gun. There were two Span-

daus mounted on a frame set to fire at a 45-degree angle out of the bottom of the rear cockpit. A movable Parabellum gun was swung on the typical German ring mounting, and the gunner was expected to handle all of these weapons himself. No wonder an old R.E.8. shot it down!

No details of the performance of this ship are available, but with the weight carried, as compared to the power available, 100 m.p.h. must have been about top speed.



A.E.G. ARMORED BIPLANE

The armored ship seems a logical improvement in war planes, yet they were never taken seriously until late in the World War—and then only by the British and the Germans. This month we present four representative machines in the armored class—the German Junker-Fokker C L1 and A.E.G. Biplane, the British All-Metal Bristol Fighter and Sopwith Salamander. Bristling fighters, all!

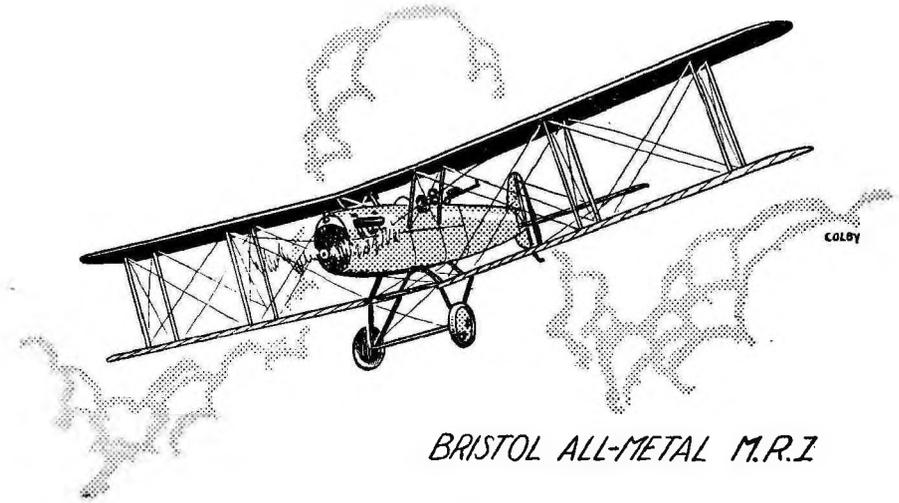
ALL-METAL BRISTOL FIGHTER

THIS machine was manufactured by the British and Colonial Aeroplane Company of Filton, Bristol, England. This later became the Bristol Aeroplane company, of the same address, and made the modern Bristol Bulldog. Also, if reports are true, it is now part of the great Hawker Aircraft Co. of England.

The All-Metal Fighter was not built originally for the Western Front, but for use in countries where extremes of heat and cold were to be encountered.

While it was not actually listed as an armored machine, the M.R.1, as it was known, carried special armored plates about the cockpits which were made to look exactly like the sheet metal used for covering over metal framework. In other words, the enemy was not warned that they were encountering an armored airplane.

This ship also carried the latest in gasoline tanks. It was a double tank, made reasonably fireproof by a layer of live rubber placed between the two tanks. A bullet passing through the tank tore the metal, but the live rubber was supposed to swell



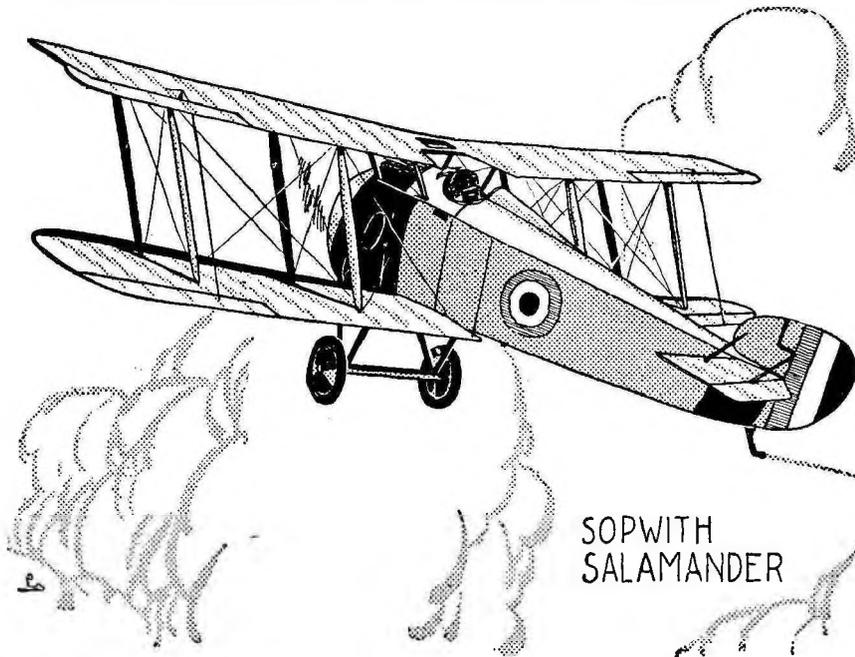
BRISTOL ALL-METAL M.R.1

and fill the hole within a few seconds. They got added weight but reasonable safety from tank fires or explosions.

The M.R.1 was powered with a British Wolseley "Viper" of 170 h.p. or a 200-h.p. Sunbeam "Arab" engine. It had a top speed of 110, loaded, and at 5,000 feet did 106. It landed at 47 and climbed to 10,000 feet in 20 minutes.

The extent to which the all-metal business was carried in this machine

may be noted in the fact that even the wings and their covering were metal, and steel struts were used. The ship could be taken apart and shipped much more easily than the usual type, and it is interesting to note that between this model and the regular Bristol Fighter there was only 80 pounds difference in weight. The regular Bristol, however, with a 250 Rolls-Royce, could do 125 top, and could out-manuever any two-seater of its day.



**SOPWITH
SALAMANDER**

SOPWITH SALAMANDER

HERE'S the bristling beauty of them all, the Sopwith Salamander, as wicked a sky pirate as ever screamed through the air lanes over the trenches and back areas.

They made no bones about this one. It was designed to create trouble, and they left nothing undone to attain their ends. Anything that would give the Germans a bad night's sleep was put into it and when they got through, it weighed 2,945 pounds.

Compare this to the 1,959 pounds of the Dolphin, which was considered a heavy ship.

The Sopwith Salamander was primarily a ground-strafer. She was built for contact-patrol work in cooperation with the infantry. As it was expected to do much low flying, it had to be protected, so they slapped on a thin but efficient sheet of steel armor around the pilot's cockpits and around its tanks. When it flew into a barrage of machine-gun fire, it

sounded like old home week in a boiler factory—but none of the slugs ever penetrated.

The Salamander was known as the T. F. 2 in official circles. Few of them came out to France until 1918, when they created a wild sensation. They were fitted with a 200-horsepower Bentley rotary, the same engine that was in the Snipe. They could do 125 miles per hour and carried 29 gallons of gas.

The Salamander was a veritable flying arsenal. The early type had four machine guns, and a later model was fitted with six. There were two Lewis guns fitted on the top plane. These could be drawn back and reloaded with ease by the pilot. Next came two Vickers guns, in front of the pilot's face, that were synchronized to fire through the prop. Next came two more Lewis guns, in the lower part of the cockpit, that were fixed to fire at an angle of forty-five degrees through the floor.

With this arrangement, a pilot could barge over the line, and while flying just over the heads of his enemy in the trenches, could give them a wicked burst of fire from the lower Lewises. After that, he could have a bang at the enemy balloons with his top guns, and then spend the rest of the morning diving on moving troops and sending his cards from the snarling noses of Vickers guns.

Quite a nice little plaything, if you get what we mean.

Troop Ship of the Skies

Air Battles of the Future. No. 3

THRILLING STORY BEHIND THIS MONTH'S COVER

By C. B. Mayshark

WAR in the air! What would it mean in the future? Armadas of fighting ships in grim formations, thundering into attack at terrific speed? Darting scouts bristling with guns directed from a ground base? Giant dreadnaughts of the sky in battle formation, answering the commands of the Air Admiral as he paces the bridge of his battle-plane?

All this—and more! There is another side to the air war of the future. What the raiding cruisers and monitors of World War days were to the elements of attack, the new troop carrier would be to the future war in the air. A great flying boat, capable of transporting several hundred men, weapons, demolition devices and transport destruction equipment, could swoop down out of the skies from bases several thousand miles distant, and before ground troops could be brought up to lay down temporary lines of defense, these flying boats could be gone, after paralyzing whole sectors, battering important base points to bits and—what is more terrible—destroying the morale of the civilian population.

Let us picture a possible raid of this type—say five, perhaps ten years from now.

At the present rate of improvement in service equipment, we can easily picture a United States Navy patrol station leader faced with the astounding report that an unknown troop transport has been seen heading toward the eastern coast of the United States. The formality of the declaration of war leaves everyone concerned with the problem of learning who and why. But the orders state in crisp, terse sentences that the mysterious troop transport must be blocked off and prevented from making a landing on the mainland.

A Captain Sully and a Lieutenant Stevens, crack contact men of the Twentieth Squadron, are shown the message and ordered off to do the interceptor job. Unfortunately, their equipment is nothing more up-to-date than the Curtiss Goshawk, a fine ship in 1934, but hardly an interceptor in 193—. Still, there's a job to do, and Sully and Stevens take it on. The former, a soldier to his stubby fingertips, realizes the seriousness of the situation. The latter, still in the prime of youth, regards it a great joke and, probably, the nightmare of some sleepy-eyed transatlantic liner radio-operator.

The trim but service-weary Goshawks are warmed up. Once in the air, Captain Sully turned his thoughts to the mysterious orders he has in his pocket. Troop transports are ordinary things. Every country's air force has them—has had them for years, but machines under this classification have never been regarded as particularly effective because of restrictions in accommodation of personnel and equipment.

The Navy pilots have been speeding close to the water for only a few minutes when what they thought was somebody's bad dream turns into stark realism. Thundering along close to the water at a good rate of speed, a giant flying boat comes into view from out of a cloudless horizon.

With a gasp, Sully jams his foot down on the rudder control, and the fighter lurches to the left. With Stevens close behind him, the Navy pilot darts out of firing range of the huge transport. After banking around and flying along parallel with the mysterious air monster, Captain Sully has time to make a more comprehensive inspection of the ship.

Between two wings which have a slight degree of dihedral, there are seven motor nacelles, all set in the same plane. Each nacelle carries two motors—one driving a tractor and the other a pusher air-screw. There are a total of fourteen engines, the aggregate energy of which is fourteen thousand horsepower.

Each motor nacelle is supported by a main strut and also by two smaller struts which connect with the trailing edge spars. These smaller struts take up the forward thrust, which is generated to a very marked degree when two

thousand horsepower is unleashed. The engines are cooled by means of a special liquid cooling agency, air cooling being impractical when engines are set in tandem. Cantilever construction is employed in the wings, the ribs and spars being built entirely of a light-weight composition metal.

The hull of the ship is connected with the lower wing, through which an extension of the hull passes. The center motor nacelle is built upon this extension. The control cabin is located forward of the leading edge of the lower plane, where the best possible line of vision is obtained, and from where most of the ship can be viewed. This facilitates immediate action in case anything goes wrong with the controls, motors, or anything else important to the flight of the ship.

The hull of the ship is divided into three sections, the central section being large and the other two small. In the central section there are accommodations for 275 men. All their equipment, including rifles, pistols, ammunition, blankets, gas masks, and extra clothing, is carried in the forward compartment, each man's supplies being stowed in a separate closet. The galley and various other stowage compartments are located in the aft section of the hull. Gasoline and oil tanks, as well as extra motor parts, are also carried in this section. Minor motor difficulties can be repaired in flight by means of a catwalk which connects the motor nacelles. Space is provided in the two outboard pontoons for auxiliary gasoline tanks.

It is safe to assume that any invading nation would not send a transport full of buck privates into the United States, because even 275 armed soldiers are not likely to be particularly effective unless placed where they can make a certain type of raid on a weakly defended point. Instead, this transport is probably loaded with experts in bridge and railroad demolition. It would carry highly trained machine-gun and light field-gun crews who would scatter for a certain distance and throw up a defending ring of steel and fire to cover the workings of the experts. These, in turn, would no doubt destroy first the transatlantic cable stations, high-power radio towers, important bridge and railroad junctions. There is a possibility that they would head for one of the great ammunition plants on the New Jersey coast or the noted weapon works near Bridgeport.

But what of Sully and Stevens?

By this time, they have hurled their fighters into action. Their wires scream, and they pound down with an angled fire from their 30-caliber guns. The gunners aboard the transport ship reply with heavy-caliber fire, and the Goshawks tremble under the pounding spray. Guns appear in the port and starboard turrets aft of the wings.

Sully gives a signal and they both switch in their 50-caliber guns, hoping that the high-pressure stuff will batter into a vulnerable spot and at least head the raider off. The fire continues, but the troop-carrier goes on, while her gunners harass the defending Goshawks.

The Goshawks stagger and falter. At last, there is an ominous rattle in the ammo cans—and their fight is over. They have no more cartridges, no more fight. They surge down once more in a screeching dive, full into the flaming guns of the raiders. It is an ineffectual gesture, but they have nothing left to do.

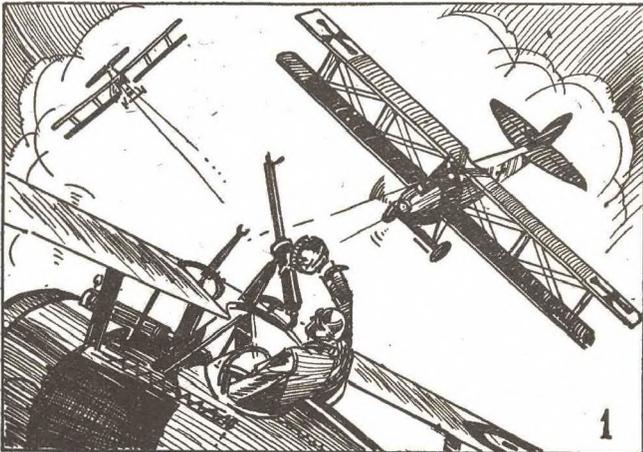
The grim troop-carrier hurtles on, and the two gallant American airmen are left helpless. They have given their best with what they had to use. Is the enemy to score because of better equipment, or will our services be up to par if the time ever comes? We have the men and the guns. Can we get them into action and ward off any threats that may darken our shores?

The troop-carrier roars away into the mist that shields the mainland. Where? What is its objective?

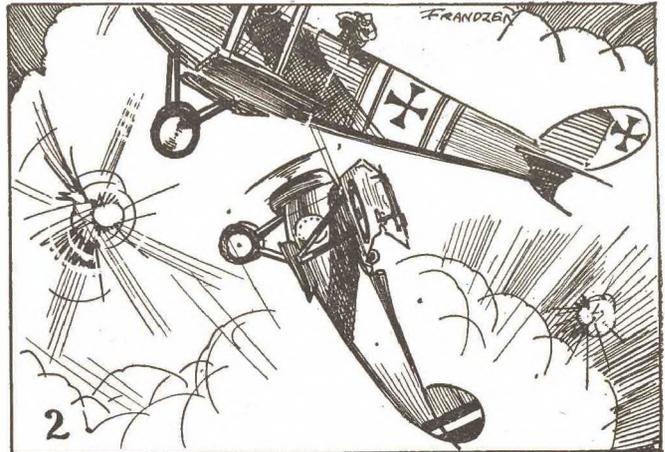
The two battered Goshawks return to their base, frustrated but not beaten. They know the troop-carrier will have to return, and they hope to have something in hand to send it on its way. If this situation ever arises, will we have the air defense to cope with it?

Lives of the Aces in Pictures

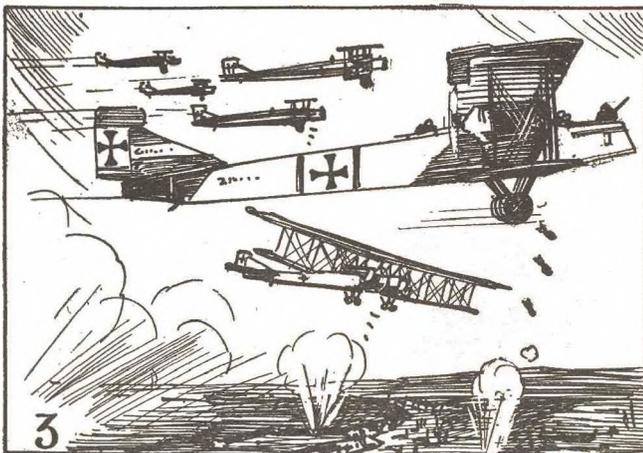
XXXII—Captain Wendell W. Rogers, Canadian Ace



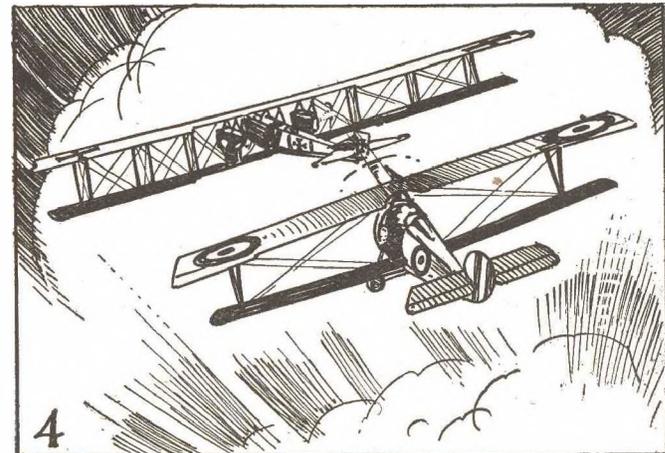
1—Captain Wendell Rogers, Canadian ace, and the first to down a Gotha in France, quickly made an excellent record in 1917. Behind the German lines on one occasion, he spied a two-seater leaving its drome. He stalked the German, emptying a Lewis pan on him without results. Rogers was in the ticklish position of fixing a new pan when the two-seater ripped away the side of his machine.



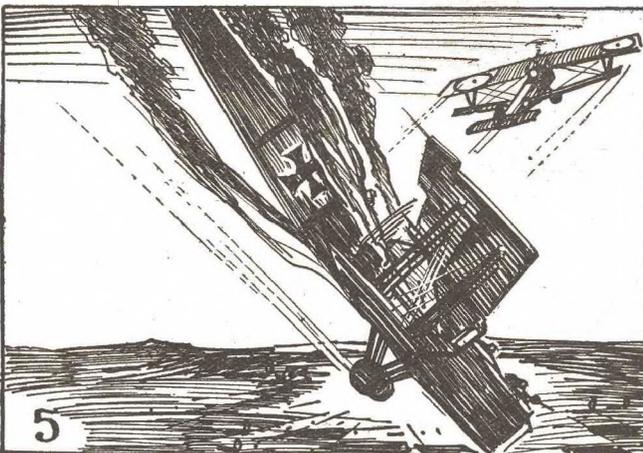
2—Rogers reversed the role on the Germans when he came back at them with his damaged Nieuport. He zoomed up under the two-seater, spraying its floorboards with a stream of bullets. He barely escaped a collision with his enemy as it spun through the air out of control. Rogers had downed his eighth with this victory.



3—About this period, the British forces were confronted for the first time with Gotha squadrons which in great numbers were engaged in bombing troops daily around the Ypres salient. Fighting scouts were sent out to combat the monsters, and reports of their failure to repress the attacks made Rogers a keen student of Gotha construction.



4—On Dec. 12, 1917, Rogers determined to test his theory of fighting the big ships. He and two companions met the Gothas. Thirty-four machine guns greeted the three Nieuports. Rogers flew above and dived on the last Gotha of the formation. He juggled his machine to get exactly behind the Gotha's tail.



5—The rear gunners in the Gotha fired at the daring Nieuport, but their bullets had no effect. Rogers kept his position. He got within thirty feet of the Gotha's tail before his fire was effective. The Gotha fell in flames—the first to be downed in France. This victory brought Rogers the Military Cross.



6—At 18 years of age, Captain Wendell W. Rogers, enlisted in Canada. This was in 1915. However, impatient at delay in getting to the Front, he joined the R.F.C. in 1916. He downed 11 German planes, but became especially famous for his success in downing a Gotha. This victory was important psychologically, as well as intrinsically.

Here's the Northrop Gamma Victoria

Transport planes play a great and important part in present-day aviation. For that reason, we present this month plans and directions for one of the best of these—the Northrop Gamma Victoria, a six-passenger ship. And remember—you can build three different types of models of this ship from the plans given.



THE Northrop Gamma Victoria is a six-passenger plane designed with all the modern instruments of our present-day transports. Features of visibility, passengers' comfort, sound-proofing and ease of service are some of the points of this ship. The Northrop-developed split trailing-edge wing flaps are one of its main features. This development produces a large reduction in the landing speed and gliding angle, permitting the plane to fly in and out of obstructed fields hitherto considered unsafe for the average pilot.

The fuselage is of monocoque type, with longitudinal stiffeners and large, oversized reinforcing rings. The fuselage is covered with smooth metal skin formed to the contour of the wings and fuselage. The landing gear is a full cantilever, with oleo-pneumatic struts enclosed in quick-detachable streamlined fairings. The wing is a multicellular structure, covered with the same metal as the fuselage. Multicellular structure is also used on the empennage. The tail wheel is adapted to make a 360-degree turn.

Six gasoline tanks of 340 gallons capacity are installed in the center section of the wing. Twenty gallons of oil are stored with the engine.

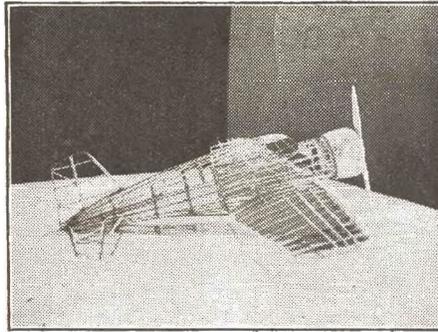
Performance (Other figures on Sheet 1):

Climb at sea level.....	900 feet per minute
Service ceiling.....	18,000 feet
Absolute ceiling.....	20,500 feet
Top speed.....	200 m.p.h.
Cruising speed at 75% power altitude.....	182 m.p.h.
Landing speed, full load.....	58 m.p.h.
Landing speed, normal load.....	48 m.p.h.

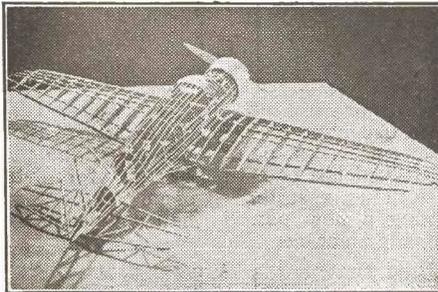
FUSELAGE

THE construction of the fuselage is comparatively easy, since we are going to use the jig. The jig is shown half-size on Sheet 5. Double this size and trace it upon a sheet of 1/16" balsa. Mark off the positions of the formers and cut the jig out. The formers are then cut out of the same stock. You will notice that the cutouts of the formers have notches. These notches are used to slide the formers onto the jig.

With the formers in place, glue the 1/16" square balsa strips onto the formers as shown on plan. After the string-



Two pictures of the uncovered model of the Northrop Gamma Victoria, built according to the plans given here. From these you can get an excellent idea of the framework of the model.



ers have completely dried, remove the jig by simply pulling it out from the front. Obtain a small block of balsa and carve the rear piece so that it fits onto the last former, as shown on plan.

The half formers are then glued in place, and the ribs placed around them. The window braces, which are made out of bamboo, are also glued between the two stringers shown on the plan. Reed is used for the outline of the front window. The top of the window is constructed of solid balsa carved to the shape shown on the plan. It is advisable to carve the block while it is on the ship.

Next, cut out your body ribs and glue them to the formers. The leading and trailing edges are the same as the main sections of the wing. Glue a small strip of 1/16" reed from the center section (rear) to the next former in back. This is clearly illustrated on the three-view layout. Shape the leading and trailing edges to a smooth finish. Sand off all rough spots that may have formed. Otherwise, you will not obtain a smooth covering.

To obtain a smooth covering at the point of intersection of the wing and the fuselage, glue small strips along the formers and body, forming a smooth fillet. Former number 1 is attached to former 2 by means of 16 small pieces of balsa cut to the shape shown on Sheet 1. The cowl is cut so that it fits tightly onto the front former.

COWL

THE cowl is constructed of four pieces, cut separately and glued together. The inside is sanded to a clean and smooth finish. A two-inch motor is inserted into the bore of the cowl. Attached to the motor is the motor stick.

By Avrum Zier



After the inside has been completely finished, sand the outside and give it a few coats of banana oil.

WINGS

IN constructing the wings the hardest part will be the cutting out of the different ribs. After this is obtained, trace the wing as explained on the plan. First, pin down your rear spar; then tack your ribs in place, placing a small amount of glue at each joint.

The top spars are next glued in place. The leading and trailing edges are placed on before they are sanded. If you wish, you may place the ribs two inches apart, instead of one inch, as designated on the plan.

The aileron is constructed separately. It is attached to a false spar. It may be made to move by using tape or aluminum. Thread is used to insure greater strength.

EMPENNAGE AND PANTS

THE tail unit is constructed of shaped ribs, having 1/16" dowel as the spar. If the builder desires to have the tail unit movable, it will be necessary to use two dowels. The dowels are attached with a metal sleeve made out of aluminum. Thread is used to give the tail added strength. Both the leading and trailing edges are inserted into the rib, as shown on the plan. When you are placing on the stabilizer, it will be necessary to cut it in half and then reglue.

Cover the complete tail before attaching to the body. The stabilizer is made to rest on the passing stringers, and the rudder rests upon the top stringer.

The pants are constructed in two halves. The inside of each half is hollowed out so that a wheel, of the size shown on plan, can easily rotate. When installing the wheels, use eyelets. Otherwise, the wheel will not turn properly. Attach the pants to the center-section of the wing. Fillet the ends in with small strips of balsa and sand to a smooth finish.

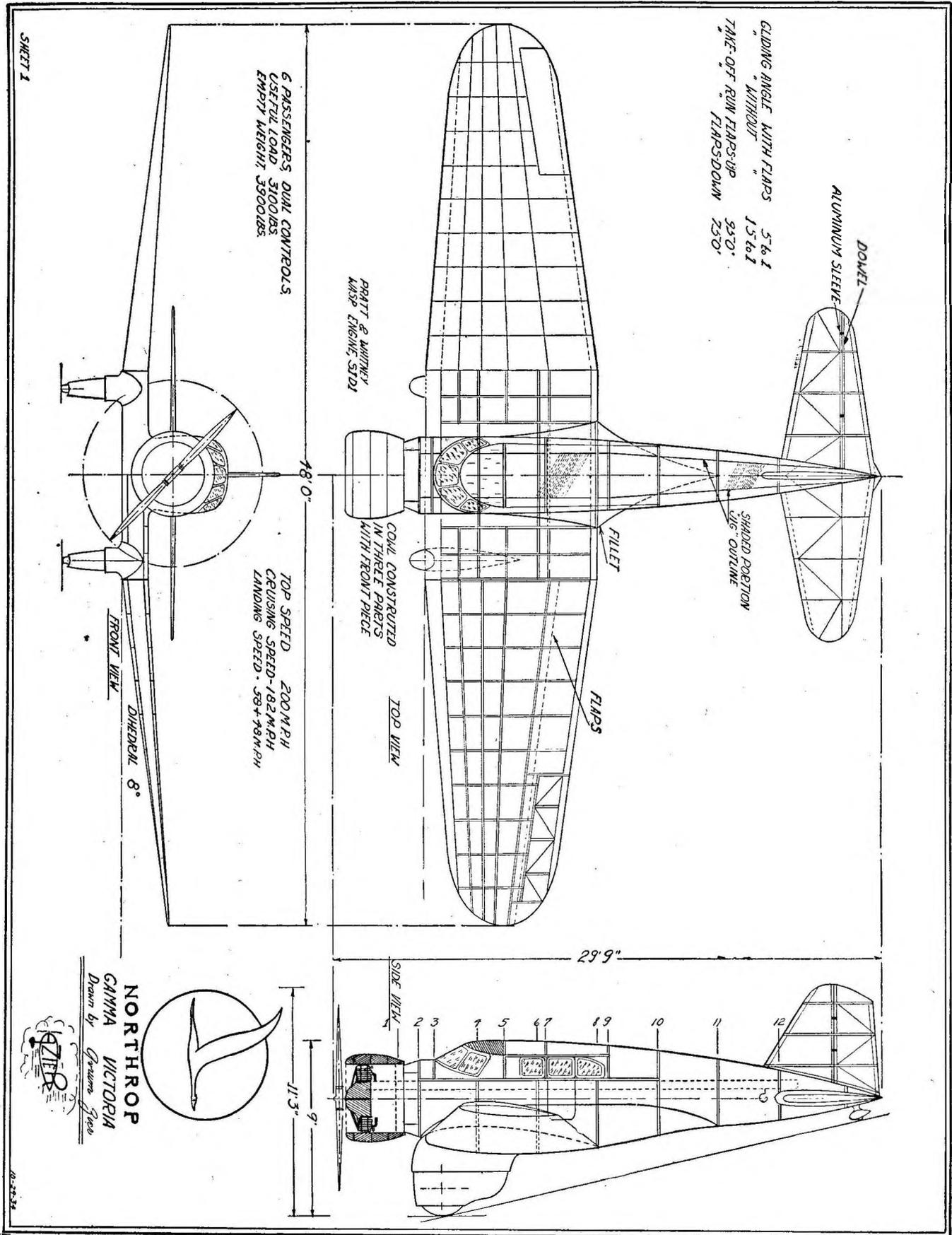
ASSEMBLING

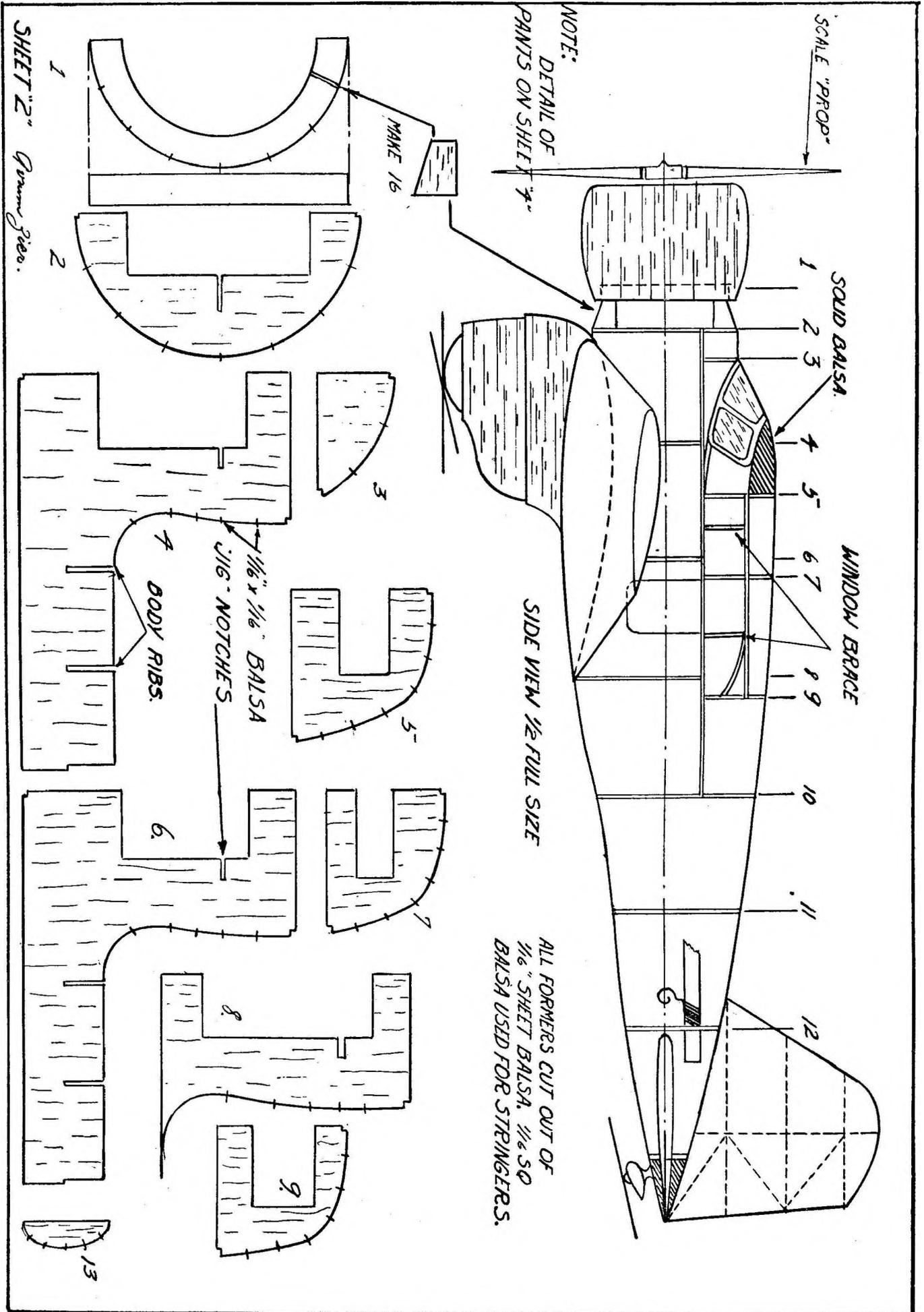
DUE to the fact that the ship is built without any external bracings, it is important to take great care in assembling the parts.

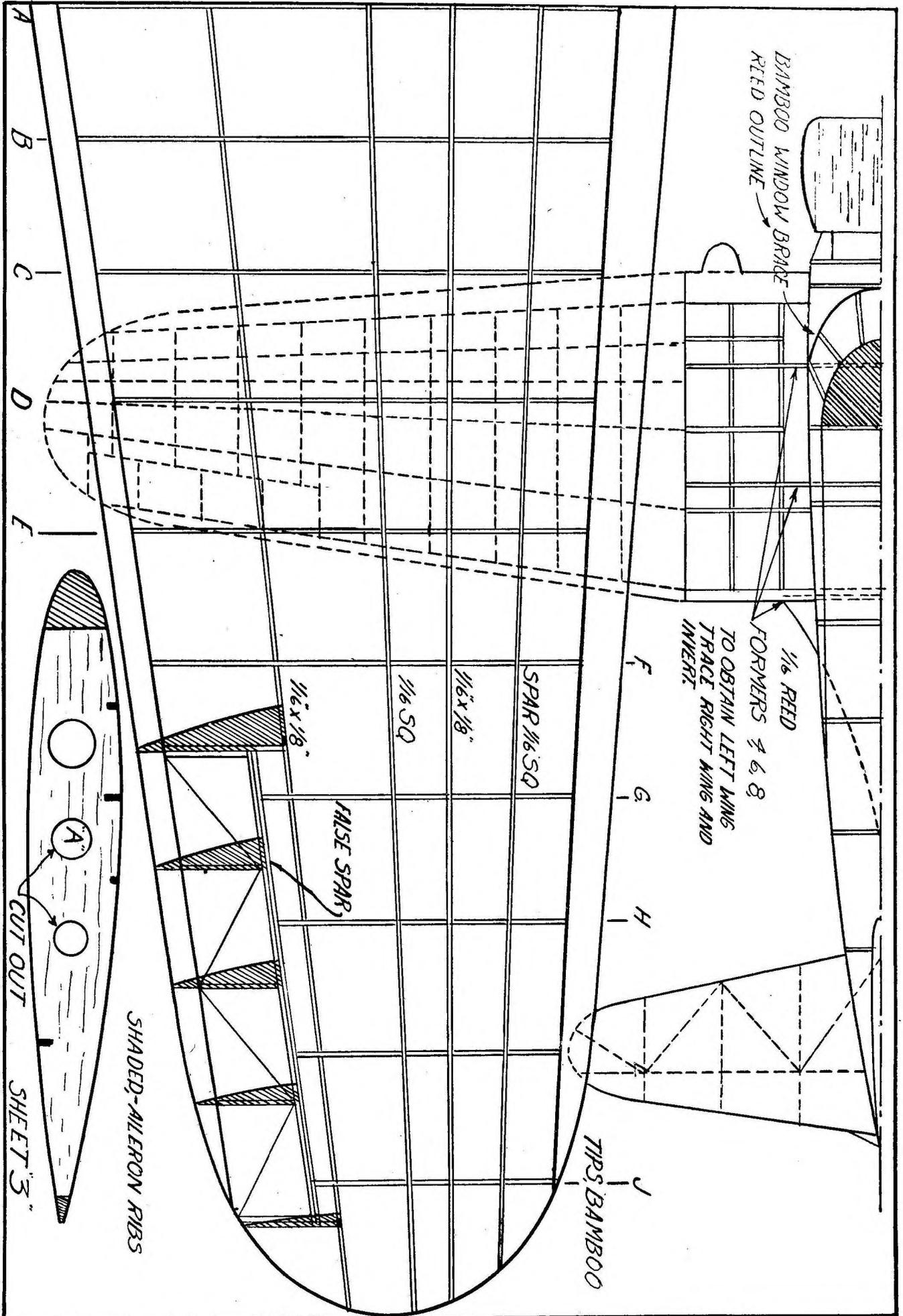
Install the stabilizer first. Line it up with the front of the motor. The leading edge of the stabilizer should be lowered so that it forms a negative angle of about 1 degree with the center line, or line of struts. The rudder is next glued in place with a slight angle off the top center line to the right. This will help eliminate propeller torque.

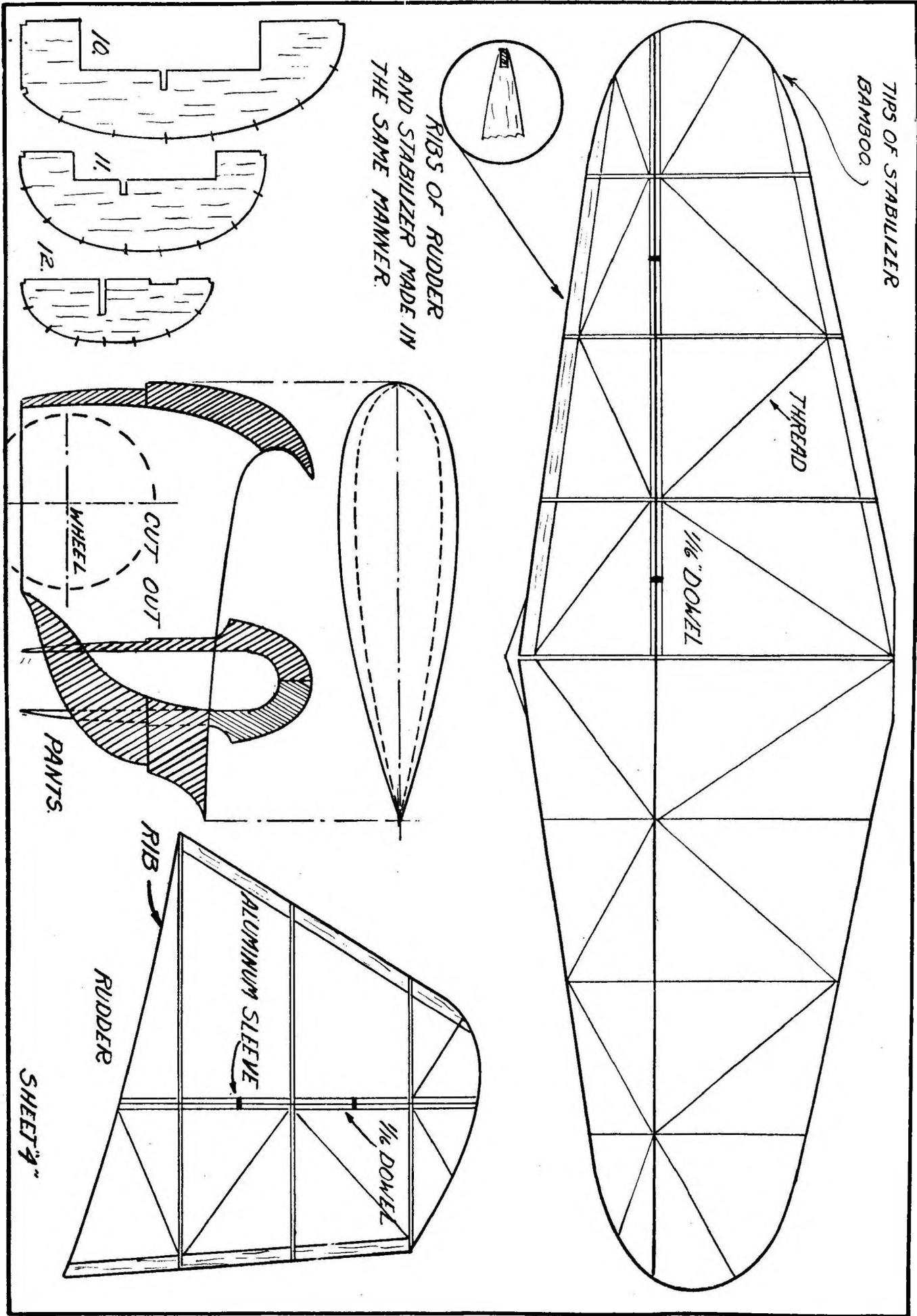
When placing on the two half-wings, make sure to have the proper amount of
(Continued on page 80)

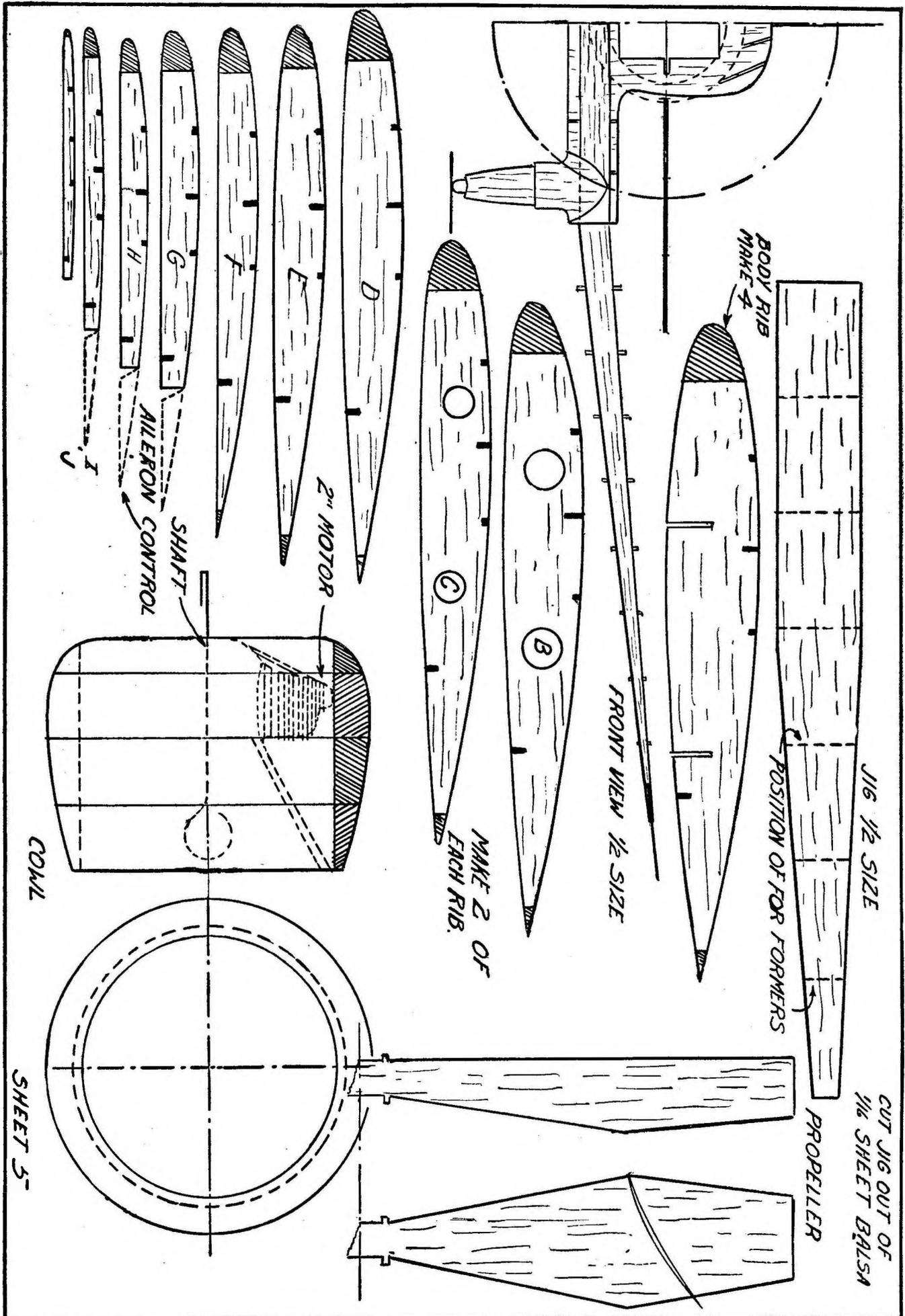
NORTHROP GAMMA VICTORIA—Sheet 1











COWL

SHEET 5

Build the G.A. Flying Life Boat

The United States Coast Guard has won for itself quite a name in aviation circles. Because of the interest in its activities and ships, we feel that you FLYING ACES readers will be especially interested in the plans presented this month—for the General Aviation AF-15, Flying Life Boat which the Coast Guard uses. It's an unusual ship!

A RESUME of the growth of the Aviation Service of the U.S. Coast Guard may be of interest to you readers before starting construction on the General Aviation Flying Boat. For this brief history, the writer is indebted to an officer of the Coast Guard Air Station at Cape May, N. J., who writes as follows:

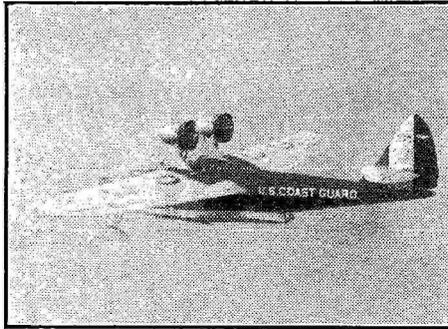
"On August 29, 1916, Congress passed a bill authorizing the Coast Guard to establish ten air stations, 'For the purpose of saving life and property along the coasts of the United States and at sea, contiguous thereto, and to assist in the National Defense. The Secretary of the Treasury is authorized to establish, equip and maintain aviation stations, not exceeding ten in number, at such points on the Atlantic and Pacific coasts, the Gulf of Mexico and the Great Lakes, as he may deem advisable, and to detail for aviation duty in connection therewith officers and enlisted men of the U.S. Coast Guard.'

"In that year, several officers of the Coast Guard were detailed to a course of instruction at the Naval Air Station at Pensacola, Florida. Their training was no more than finished when the United States entered the World War and the Coast Guard began to operate with and as a part of the Navy. In 1919, when the Coast Guard recovered its identity and severed its connection with the Navy, plans were laid for the establishment of the first Coast Guard Air Station. Accordingly, in 1920, an Air Station was established at Morehead City, North Carolina. The station consisted of about six pilots, thirty enlisted men and eight seaplanes. The planes were Navy patrol planes of the HS-2L type, Liberty-powered. Although the air stations were authorized, no money for building them or for running expenses had been appropriated. The Morehead City station died a natural death after two years of operation, due to lack of funds.

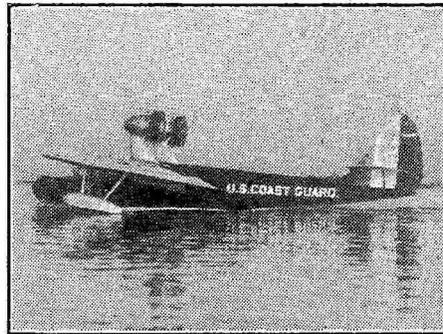
"Later, in about 1926, an air station was established 'on a shoe string' at Gloucester, Mass. Here the spark of life was maintained for several more years. In 1926, the Cape May Air Station was established. During this period, Loening Amphibians were used. A year later, Congress appropriated \$400,000 for the development of seaplanes in the Coast Guard. The General Aviation Flying Boats were built and have been in use the last two years.

"More recently, the P.W.A. has furnished the Coast Guard with \$2,000,000 with which work has commenced on new stations at Miami, Florida (completed); Salem, Mass.; St. Petersburg, Florida; Biloxi, Miss.; Charleston, South Carolina, and Port Angeles, Washington.

"We are now buying a number of Grumman Amphibians and Douglas Amphibians for the new air stations."



From these two pictures of the actual ship flown by the U.S. Coast Guard, you can get ideas for your model of the G. A. Flying Life Boat. Note particularly the twin motors mounted above the wings.



The General Aviation Flying Boat is a twin pusher. It is powered with two Pratt & Whitney "Wasp" engines, which are mounted above the wing on steel tube struts. Three-bladed Hamilton-Standard props are used. The engine nacelles are of welded steel tube construction, covered with metal and streamlined. They are interchangeable, designed to take from 400 to 600-h.p. engines.

Four fuel tanks, with a total capacity of 440 gallons, are located in the wings. Remote control valves provide selectivity, and interchange between any of the four tanks and to either engine.

To the main forward structure of the hull, the wing is attached. From the trailing edge of the wing, the portion of the hull back to the rear end takes a monocoque design. The entire hull is covered with a riveted alclad flat "skin."

The main portion of the hull is divided into four watertight compartments, and access from one to the other is made through watertight doors. In the nose of the hull is a cockpit with a watertight hatchway for the stowage of marine gear. Aft of this is the enclosed pilots' compartment, seating two side by side; behind, are the wireless operator's and navigator's compartments. A third compartment under the wing is used for general utility purposes—the stowage of life saving equipment, stretchers, etc.

The beaching gear consists of two light aluminum "legs" pivoted at their upper ends to the front spar, and having at their lower ends small, low-pressure wheels. These "legs" are normally carried longitudinally under and partially submerged into the wing. They

By Jesse Davidson

may be dropped and swung forward when they are engaged, and supported by side levers which are projected from the right and left chines respectively. A tail wheel, which is retracted into the lines of the after-step, may be rotated 180 degrees and locked so that it projects below the keel.

The tail unit is constructed of welded steel tubing and is fabric-covered. The rudder is balanced by means of auxiliary surfaces set in advance of the hinge line. The elevators are also balanced by inset hinges, while the stabilizer is adjustable from the control cabin.

The ship weighs 7000 lbs. empty, and, fully loaded, 11,700 lbs.

The drawing of the AF-15 looks rather complicated and is somewhat difficult to work from, since the plans are small. Have the drawing enlarged by photostating—the larger the better, because the model will appear more excellent in the increased size.

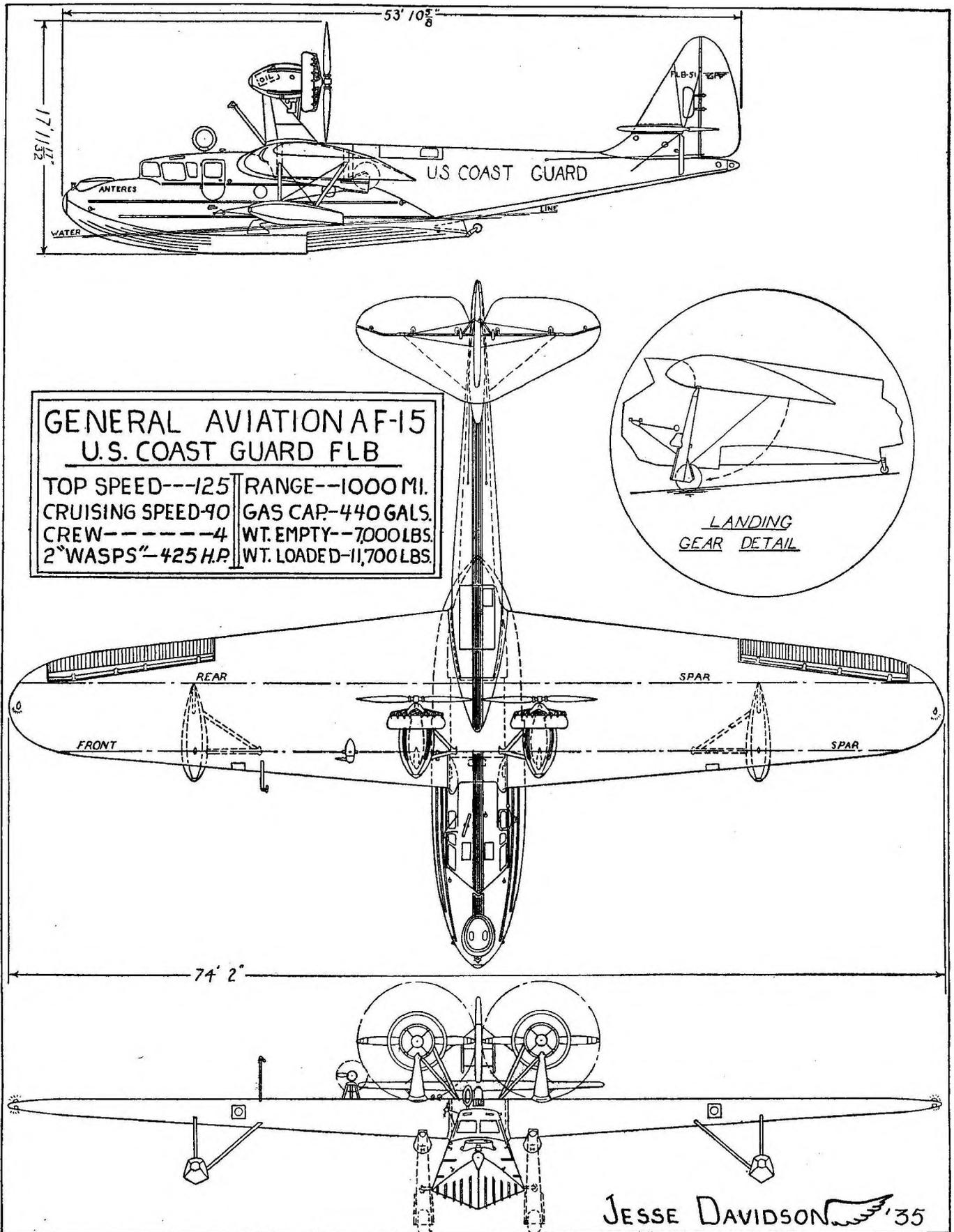
The entire model is best made from balsa. The wings, tail units, nacelles and ring cowlings are made in the usual manner. Note that the ring cowls are mounted with the tapered edge facing the rudder. The outboard pontoons are attached to the wing with struts made from streamlined bamboo. Bamboo, streamlined, makes good strong struts, and the use of it is suggested for the motor braces. The motor mounts are made from streamlined balsa to which are cemented the nacelles.

The construction of the hull requires care, and the inexperienced model builder will find himself making more than one before he gets the correct shape of the "V" bottom and steps. The control cabin is to be cut out and fitted with two control wheels, side by side, a miniature instrument board, rudder pedals, etc. Also carve out the forward cockpit. Use sheet celluloid for the windows of the cabin. The beaching gear should be left extended, as well as the tail wheel. Be sure all surfaces are sanded thoroughly before the paint job.

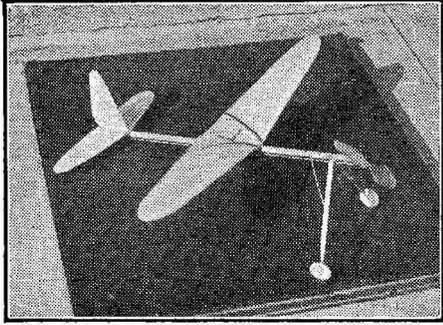
The colors of the AF-15—or FLB, as it is sometimes referred to (Flying Life Boat)—are as follows: The entire hull is Austin blue, and aluminum below the water line. The wing is painted yellow. Looking from the rear of the ship, the left side of the wing has U.S. in black letters; on the right side is C.G. Looking from below as the ship flies overhead, U.S.C.G. is painted on the right of the underside of the wing. U.S. COAST GUARD is painted in white on both sides of the fuselage, aft of the trailing edge of the wing. The ring cowlings are done in red, while the nacelles, struts and prop are aluminum. The rudder is red, white and blue nearest the fin.

The Coast Guard insignia is painted on both sides of the hull near the nose.

Build the G. A. Flying Boat

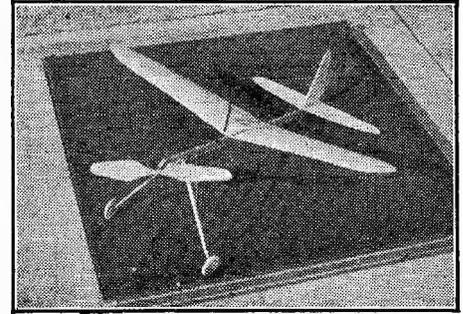


Flying Aces Outdoor Stunt R. O. G.



A clear view of the Flying Aces Outdoor Stunt R.O.G. Every one of those clean lines shows you what this model can do in the air.

To watch a real airplane stunting in the skies is a great thrill. But even more exciting, perhaps, is to stunt your own model airplane. This month we present plans for a great little stunt model, the Flying Aces Outdoor Stunt R.O.G.—and in addition, give you some directions for putting your model through its paces. Get to work on these plans, and you'll have a ship that will thrill you with its loops, spins and barrel rolls!



Build the model shown above—take it outdoors—and then watch it go through its maneuvers. It's great sport!

By Julius Unrath

THE average model builder sooner or later tires of endurance models and seeks new fields to conquer. The Flying Aces Outdoor Stunt R.O.G. described in this issue is somewhat the same in construction as the Outdoor R.O.G. that appeared in a previous issue. Because of this, I am devoting most of my time this month to instructions on flying the model, rather than building it.

However, there are two important changes in construction. These are as follows:

- (1) Small dihedral angle ($1\frac{1}{2}''$) so that the model will turn more easily.
- (2) Adjustable controls for stunting.

STUNT FLYING

Loop—This is one of the simple stunts. First move the wing so that the center of gravity is at the trailing edge of the wing. Over-power the model with two extra strands of rubber. When launched the model will zoom steeply and go into a beautiful loop. Sometimes as many as four or five loops are possible.

Zoom—The wing in this case should be put about $\frac{1}{4}''$ forward of the center of gravity. This will cause it to zoom but not loop.

Spin—Over-power the model with at least four extra strands of rubber. Move wing forward to zoom position. Bend the rudder excessively to the right. This will cause the model, when wound, to zoom straight up, because the torque will overcome the bent rudder. As soon as the power diminishes, however, the model will slip over into a perfect right-handed spin.

Figure 8—Don't over-power your model! Bend the rudder to the right (only slightly). The model will leave your hand, circle two or three times to the left and then as the power and torque diminish, the model will circle to the right until the power is exhausted. Then it will glide down to a beautiful three-point landing.

Barrel Roll—Excessive positive wash-in and wash-out should be given the wings. The rudder should be bent considerably to the right. Two extra pair of rubbers should be added. If enough wash-in and wash-out are given, the model, when launched, will execute two to three perfect rolls.

Many more stunts can be executed, some of which could not even be thought possible by a pilot of a large plane.

Please enclose stamp when asking for information.

Questions and Answers

1. Is there any difference between the angle of attack and the angle of incidence? If so, what is it?—Jack McCann, Troy, New York.

Yes. The angle of attack is the angle formed by the wing with the line of flight. The angle of incidence is the angle formed by the wing with the thrust line of the fuselage. The angle of attack varies with the plane, while the angle of incidence is constant.

2. What is a low center of gravity and a high center of gravity? Which is better for stability?—Albert Hall, Lakewood, Ohio.

The center of gravity of a ship is the point where all three axes meet. If this point is below the wing, the plane is said to have a low center of gravity. If the point is above the wing, as is the case of a low-wing

job, the plane is then said to have a high center of gravity. The low center of gravity is the best to have, since it offers greater stability.

3. Which is best to use for covering—banana oil, ambroid, or flour paste?—Seymore Schwartz, New York.

Of the three, I believe banana oil is the best to use in placing on the covering. The banana oil evaporates, leaving only a small amount on the wood, but enough to hold the paper in place.

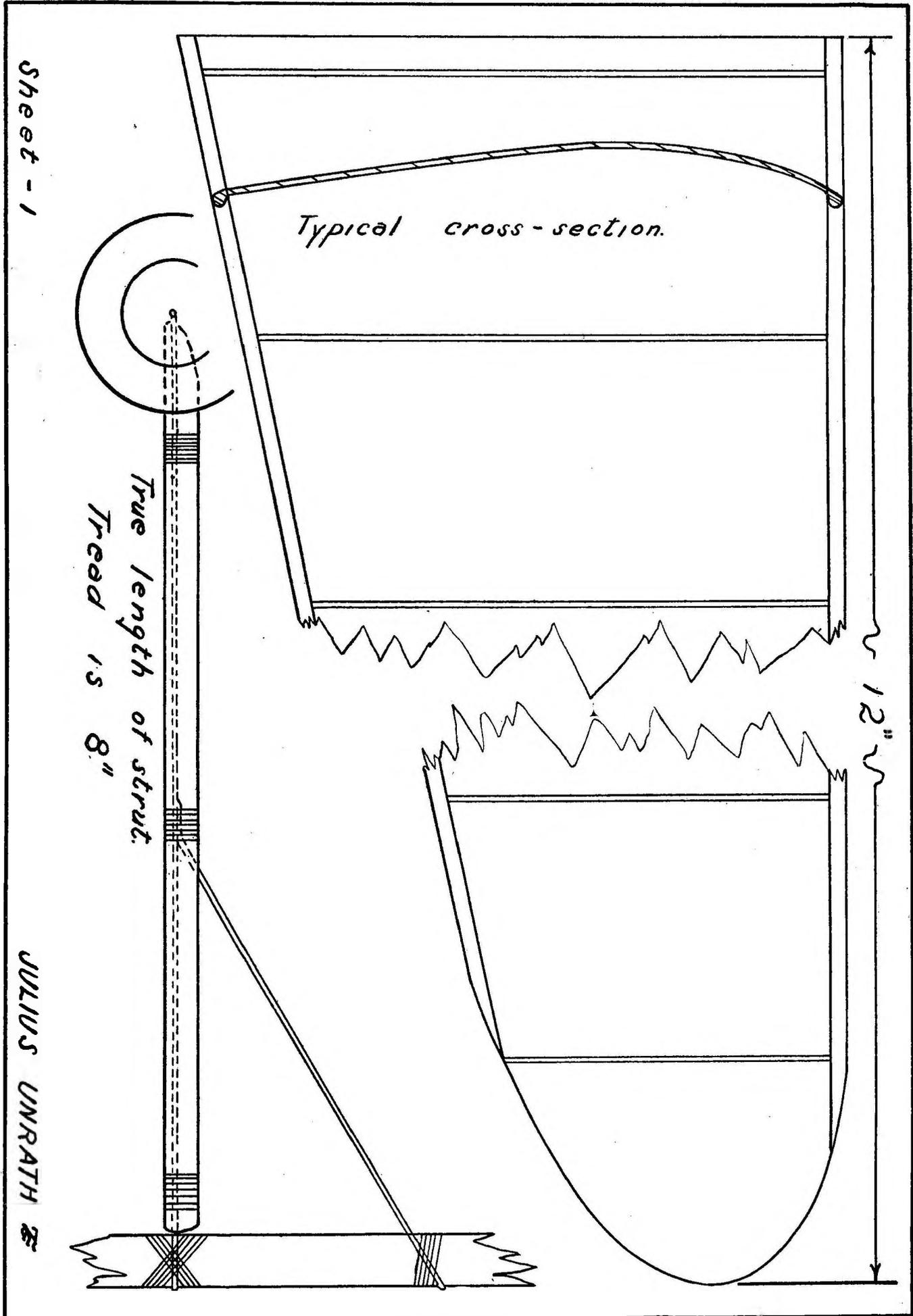
4. Explain the lift drag ratio (L/D).—Arthur Zaritt, Dallas, Texas.

The lift drag ratio is the lift over the drag giving the resultant lift. As long as the lift is a great deal stronger than the drag, the plane will fly, but should the drag become stronger than the lift, the plane will not fly. As

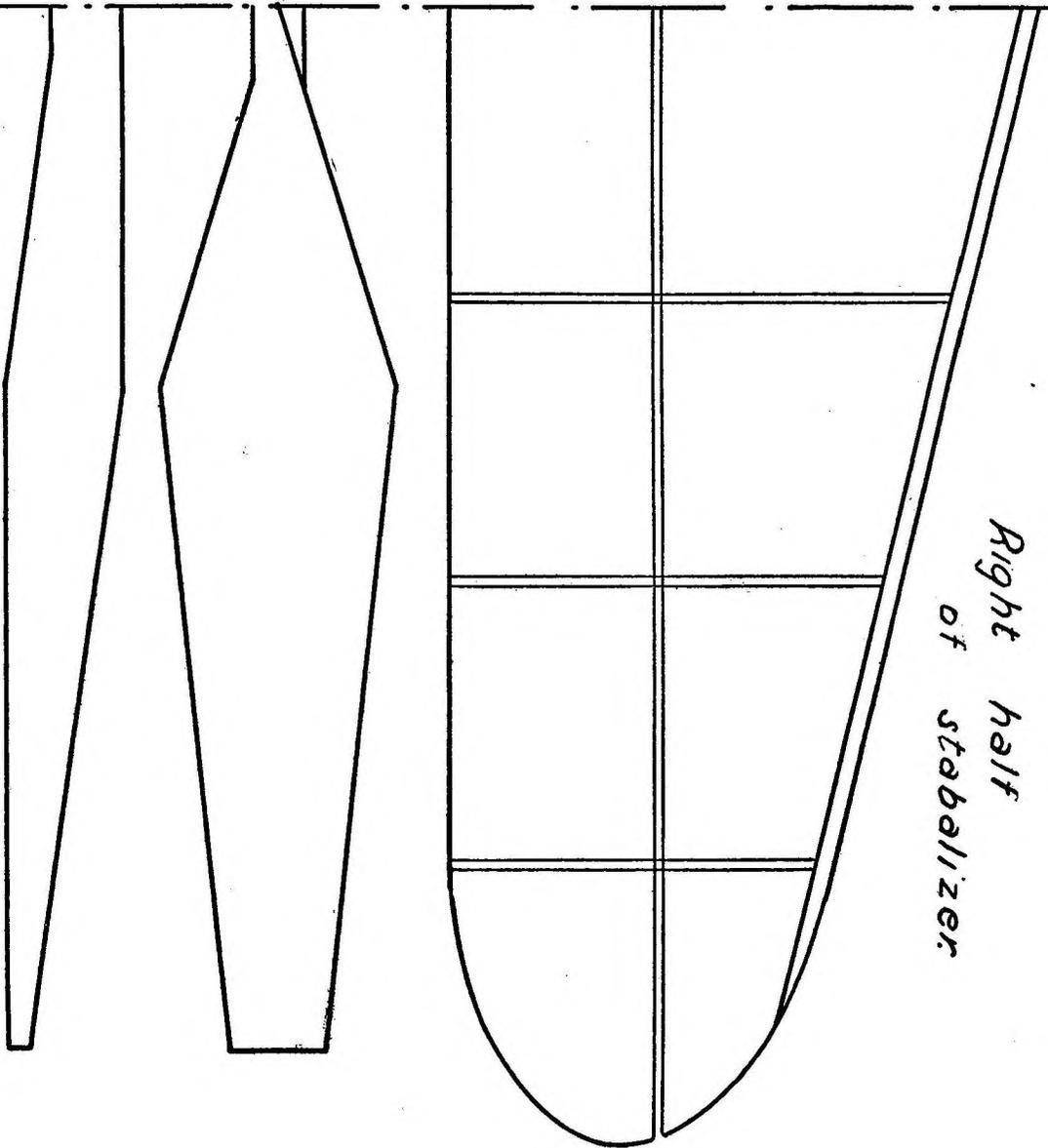
the plane noses upward, the angle of attack becomes greater, thus causing lift, but when the ship reaches the critical angle, the lift will not become greater. This angle is usually reached at about 15 degrees. Once the ship has reached the critical angle, the drag starts to become greater, causing the ship to lose a great deal of lift. If the ship continues past the critical angle, the result will be a stall and then a spin.

5. What is a monocoque-type plane?—Edwin Kann, Baldwin, Colorado.

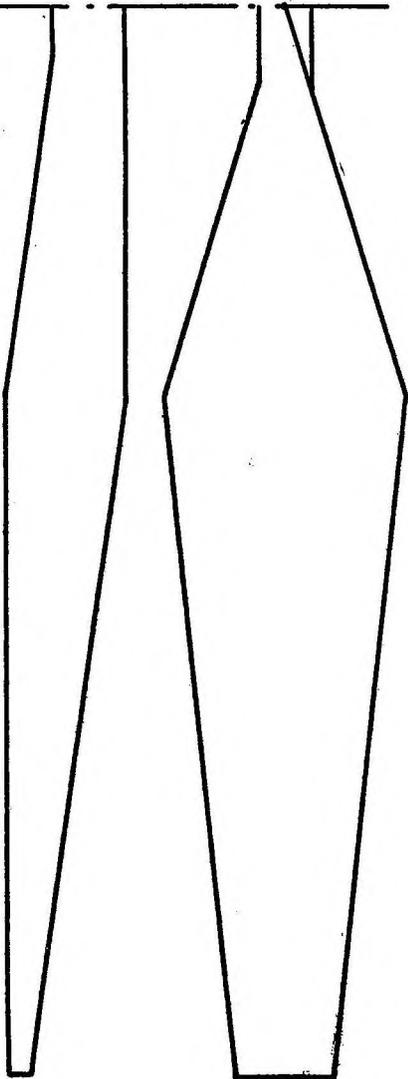
Monocoque refers to the fuselage of the plane. The fuselage is made up of a thin shell of wood or metal. The inside has only supports to keep the shell's shape. No longitudinal members are used on this type of fuselage. The monocoque type is becoming increasingly popular.



Right half
of stabilizer

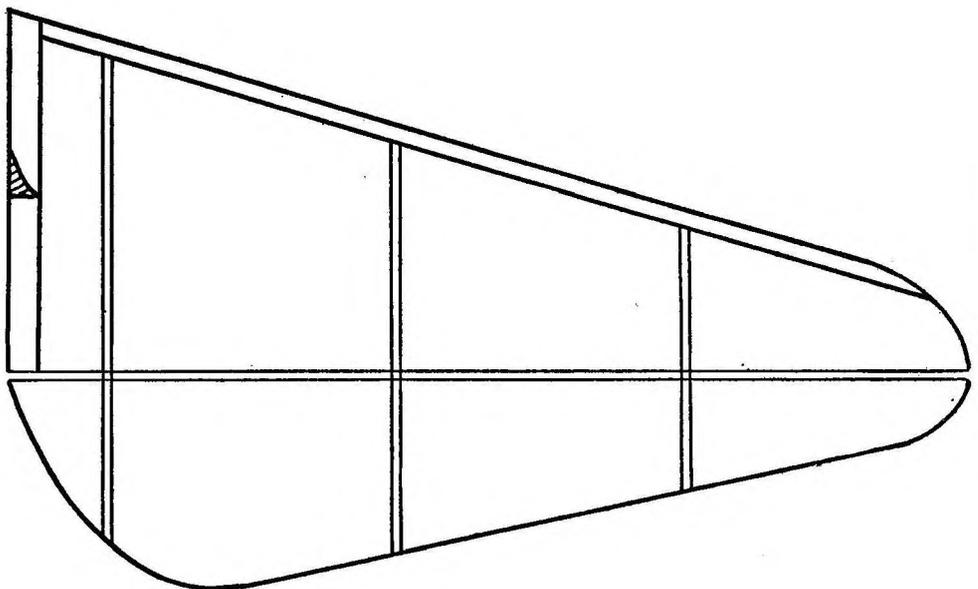


Right half of prop.



Sheet - 2

MOTOR-STICK MEASURES -
 $\frac{3}{16}$ " x $\frac{3}{8}$ " x 20"



JULIUS UNRATH

From the Model Builder's Workbench

In this department FLYING ACES presents a fund of practical, concrete information direct from the model builder's workbench. Model builders are requested to send in their own hints and suggestions, and for all usable contributions, FLYING ACES will pay from one to five dollars, depending on length. All contributions should be typewritten, if possible, and none will be returned. All diagrams should be drawn in India ink.



ROTARY MOTOR CYLINDERS

A METALLIC finish can best be obtained with "gunblack" or machine-gun blacklead. The liquid variety—graphite suspended in alcohol—is most suitable. For paper parts, two thin coats are best; but for balsa, more is required. Do not put on too much at one coating, because the graphite will flake off. Tires and exhaust pipes can be done with this material.

Grate polish is good for lubricating wooden wheels revolving on wire axles. The grate polish can be dropped into the bearing on a thin piece of wire. When the alcohol evaporates, a deposit of graphite is left. The process can be continued until a reasonable amount of graphite is formed, after which the wheel can be fitted on its axle. This method of lubrication improves the turning of the wheels, and consequently betters the take-off.

Realistic cylinders are made by wrapping writing paper around a piece of dowel sanded to the diameter of the cylinder bar, and cementing. Fins can be cut out of paper which has been covered with a fairly thin coat of cement. Give the finished body of the cylinder a coat of cement, too. The fins can then be slipped over the body of the cylinder and placed in correct position. The completed cylinder should then be brushed with acetone, or dipped in it. This dissolves the cement momentarily, while fastening the fins neatly, without an excess of cement to spoil the appearance. Oddly shaped cylinder heads will have to be made out of balsa with thread for finning. They are cemented to the cylinder barrel when finished. For flat-headed cylinders of rotary motors, thin card discs are satisfactory.

Coloring the cylinders brings in the grate polish again. Brush on two thin coats of this liquid. After it is dry, polish with an old toothbrush. To be absolutely correct, the cylinders should really be left unpolished—dead black; but shiny cylinders look better on a model.

These methods give the most satisfactory results in making the ordinary rotary motor cylinders. And here is one more note for accuracy: the 150 H.P. Bentley Rotary I, and the 250 H.P. Bentley II had aluminum cylinders with steel liners. The former were used in the Sopwith "Camel" and the latter in the Sopwith "Snipe." Remember, then, that aluminum dope will have to be used for coloring these cylinders.

J. F. C. ANDREWS.

FREE WHEELING

SINCE wheels and landing gear are essential to an R.O.G. model, and any flying model, in fact, it is a good thing indeed to be able to make good wheels.

For flying models, wheels of a laminated type may be used. The laminated balsa wheel should have the thicknesses with the grain at right angles to each other, for strength. Balloon tires are popular, but often too heavy. Therefore hollow wheels are good for this purpose. Several rings of balsa are glued together and two side disks are glued on the sides. The wheel is then sanded to the correct contour, and a bushing is inserted.

For exhibition models, and scale flying models, the following wheels are attractive and sturdy. A balsa disk of the desired diameter and thickness is cut out. Then a ring of the same outer diameter and a width of the desired tire section is glued on. If the builder so desires, he may put one on each side, but only the outer side needs one. Then comes a piece of aluminum with a diameter slightly larger than that of the hollow formed by the tire part on the disk. A wedge, formed by two radii whose outer ends are about $\frac{1}{8}$ " to $\frac{3}{16}$ " apart, is cut out and the edges of the aluminum disk are glued or soldered together. The modified cone which results forms the disk cover for the wheel. A small round hole is cut near the edge of the disk, or a similar black spot painted on. This is the hole for the valve. The disk is then glued in the hollow of the wheel, and if desired one is made for the other side. When the wheel is sanded, painted, and drilled for the axle, you may consider that your task is completed.

Rubber-tired wheels are sometimes desirable for exhibition models, but are a little costly. By following these instructions you can easily make good ones. An outer disk of the size wanted for the hub or disk of the completed wheel is glued on one side of a disk three or four times the thickness of the outer disk, but three-quarters the diameter. Rubber tubing is measured to fit the hub and the ends are glued together, and then glued to the half-completed hub. An outer disk, the size of the first, is glued to the open side. The tire and disk are then painted. The disk is drilled for an axle. Bushings may be made from paper, rolled around wire of the desired axle thickness. Aluminum tubing or brass bushings may also be used.

CARVING THE PROPELLER

TAKE whatever size block you need for the propeller and examine it for its qualities. Is it light, soft, and straight-grained? A beginner should select a white, soft, straight-grained piece, as this is much easier to carve than a heavier piece.

Using a ruler, measure the length of the block, divide the length in half, and spear the wood at this point with a pencil. Using a tri-square, slide it along the stock until it is over the pencil dot. Rule a line over this point. You now have a perfect center on any portion of the block. There are various shapes to propellers, so make your own design on a piece of cardboard or tin. Cut this template out, lay it on the block and trace around it. The template is made in half, so that both blades will be the same shape.

With a pencil, shade out the waste portions of the block, and with a coping saw, cut away the shaded portions. Now sandpaper the semi-finished propeller all around.

Take a strong needle and very carefully put it through the wood where the pencil dot is, pushing it all the way through. Turn the prop a few times to see if it wobbles. If it works correctly, take the needle out and apply cement to the entire hub, being careful not to let any seep into the shaft-hole. After the cement has dried, sand it into the pores of the wood. This makes the propeller stronger.

Now comes the hardest part of the whole procedure. On the ends of the block, mark out diagonal lines, using the proper pitch. About $1\frac{1}{2}$ times the diameter is the average. Carve the wood down to the diagonal lines, sanding lightly between shavings. Do not dig into the wood, but shave away a little waste at a time, always sandpapering lightly. When the desired thickness has been obtained, cease carving and use fine sandpaper only. Push needle through the hub now, and you will appreciate having made the shaft hole earlier. Balance the prop by sanding the heavy blade lightly. Give entire prop three coats of undiluted dope, sanding down between coats.

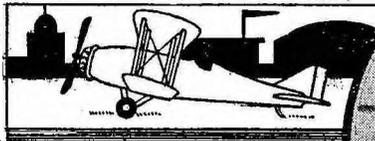
Make the propeller shaft, then remove the needle and insert the shaft. Bend a square U in the part opposite the hook. Push this U into the hub and apply cement all over it. The prop may be painted, but this adds weight.

CHARLES BLACKWOOD.

(Continued on page 79)

HAPPY LANDINGS

BY ARCH WHITEHOUSE



The Future of the Light Plane

The many light plane fans all over the world have reason to feel victorious over the outcome of the MacRobertson Race from England to Australia, won by a De Havilland Comet. That this race should bring marked results in the development of the light plane field is pointed out this month by Arch Whitehouse. In this department, FLYING ACES gives Mr. Whitehouse free rein to express his own personal views on various phases of aviation.



THE greatest air race in history has been over for quite a long time now, but all the lessons taught in that classic event have not been brought out. It was very easy to point with pride to the displays put up by the two American transports, and no one will deny their show. The sporting side of the affair was the victory of Scott and Black, for after all we must admit that they won—and how!

But to the writer, the outstanding feature of the race was the showing of the light planes. The DeHavilland Comet was nothing but a light plane compared to the second and third place ships, and if you can find any one interested enough to print the complete reports of the race, you will be startled to see just how well the light planes did in the 11,000-mile event.

If the MacRobertson Race did nothing else, it certainly should have encouraged the light plane manufacturers and the light plane clubs. If a light plane powered with two little Gypsy motors can outrace great transports fitted with two 700-h. p. motors in a 11,000-mile run from one side of the world to the other, there should be some hope for a ship with a light engine and reasonably cheap construction in the ordinary air field.

The big drawback to the light plane sport in this country is the typical American urge for power. They want light planes, but with their light planes they want 500-h.p. motors and 200-m.p.h. speed. The manufacturers were unable to give the air-minded public all these features with the money the same public can spend. The result is that we get nothing.

It has always been my contention that a properly designed ship incorporating sensible features in the wings can be flown, with safety and reasonable speed, with nothing much more powerful than the average light

car engine. The De Havilland Comet was an example of design *versus* horsepower, and the company deserves much credit for its sporting effort. The same can be done in the light plane field without reaching into the bag for freak designs and thunderous horsepower.

There are plenty of light power aero engines built in this country that are capable of flying a good light plane under all circumstances, and unless the American manufacturers see the light soon, they are going to face the prospect of watching American light plane enthusiasts sending abroad for their ships, just as they did a few years ago in the matter of gliders. Not so long ago, the country was being flooded with Moths and Avians, and some one had to scamper about and buy up the manufacturing licenses to stay in the game. While we have the bulge in the matter of high-speed transport ships, we have a lot to learn about the light plane business.

And America is supposed to be air-minded!

There is no reason in the world why American manufacturers cannot give the public a neat two-seater light plane powered with a 100-h.p. motor that will offer a top speed of about 125 m.p.h. and land at 35 to 40 m.p.h.

Can they? They'll have to.

THE NEW AIR WAR

PERHAPS you have noticed it—perhaps not—but we are facing a terrific air war, right here in the United States. It started during the MacRobertson air race, too, and perhaps that is what put you off. It is still going on at this writing, and getting a lot of publicity.

They've even got Captain Eddie Rickenbacker up in the air about it—doing transcontinental trips and

dawn-to-dusk shows every other day or so to prove, we believe, that the new Douglas air liner is faster, better, bigger, prettier, more comfortable than any other ship.

There's the story—the great battle between the Boeing and the Douglas plant. It started some time ago, when the Dutch tried out a new Douglas and the Germans bought a couple of Boeings for their air lines. Tony Fokker bought up the Douglas manufacturing license and decided to build the ships in his Fokker plant in Holland. And when he went across the Channel and told the English all about this marvelous ship, Boeing entered one of their planes in the England-to-Australia race (with the assistance of Warner Brothers Pictures)—and the fight was on.

Douglas wisely left their ship in the hands of Parmentier and Moll, two great Dutch pilots who knew the Australia run like the lines on the palms of their hands. The new Boeing was left in the hands of Turner and Pangborn and, by the way, when you want the second-best effort of the big race—after that of Scott and Black—don't forget the great navigating show put on by Turner and Pangborn, who had never been over the route before. Anyway, the Douglas won the transport race against the Boeing—there were no other transports in it—and the war flamed out anew. Boeing made the most of the fact that theirs was the only real 100 per cent American show—which was true, for it was a real American ship flown by American pilots—so Douglas came back with the cross-the-continent flights which put their ship on the front page again.

The Boeing 247 is the favorite ship of the United Air Lines, which run across the country from Newark to Cleveland, Chicago and on to San

(Continued on page 78)

Here and There in the Air

In this department, FLYING ACES presents some of the odds and ends of aviation—interesting facts about flyers and their foibles, news picked out of the sky here and there. We hope you like it.

FAMOUS FIRSTS

THE first airplane Diesel engine was used in a plane that made its initial flight on September 19, 1928.

The first airplane loop-the-loop was accomplished by Lincoln Beachey at San Diego, California, on November 18, 1913, followed on November 28, 1913, with a triple loop.

The first airplane moving picture show was given on October 8, 1929, in a transport plane 5,000 feet in the air. A delicate filament lamp specially prepared for the occasion was unaffected by the vibration of the motors.

The first airport to receive an A-1 rating from the Department of Commerce was the Pontiac (Michigan) Municipal airport. The rating was obtained on February 11, 1930.

The first ambulance air service was organized in New York on October 21, 1929.

The first flight made by an autogiro in this country was sponsored by Harold F. Pitcairn and took place at Willow Grove, Philadelphia, on December 19, 1928.

The first dirigible balloon contracted for by the United States Government was built by Captain Thomas Scott in 1908. The water-cooled engine used in the balloon was the first of its type constructed by Glenn Curtiss, and now reposes on exhibition in the National Museum.

The first glider and cambered wing, with a curved surface, were made in 1895 by Oliver Chanute.

The first radio in an airplane was used in February, 1912.

The first attempt to refuel in mid-air was made on June 27, 1923, by two Air Corps planes. A 40-foot hose was used in the experiment.

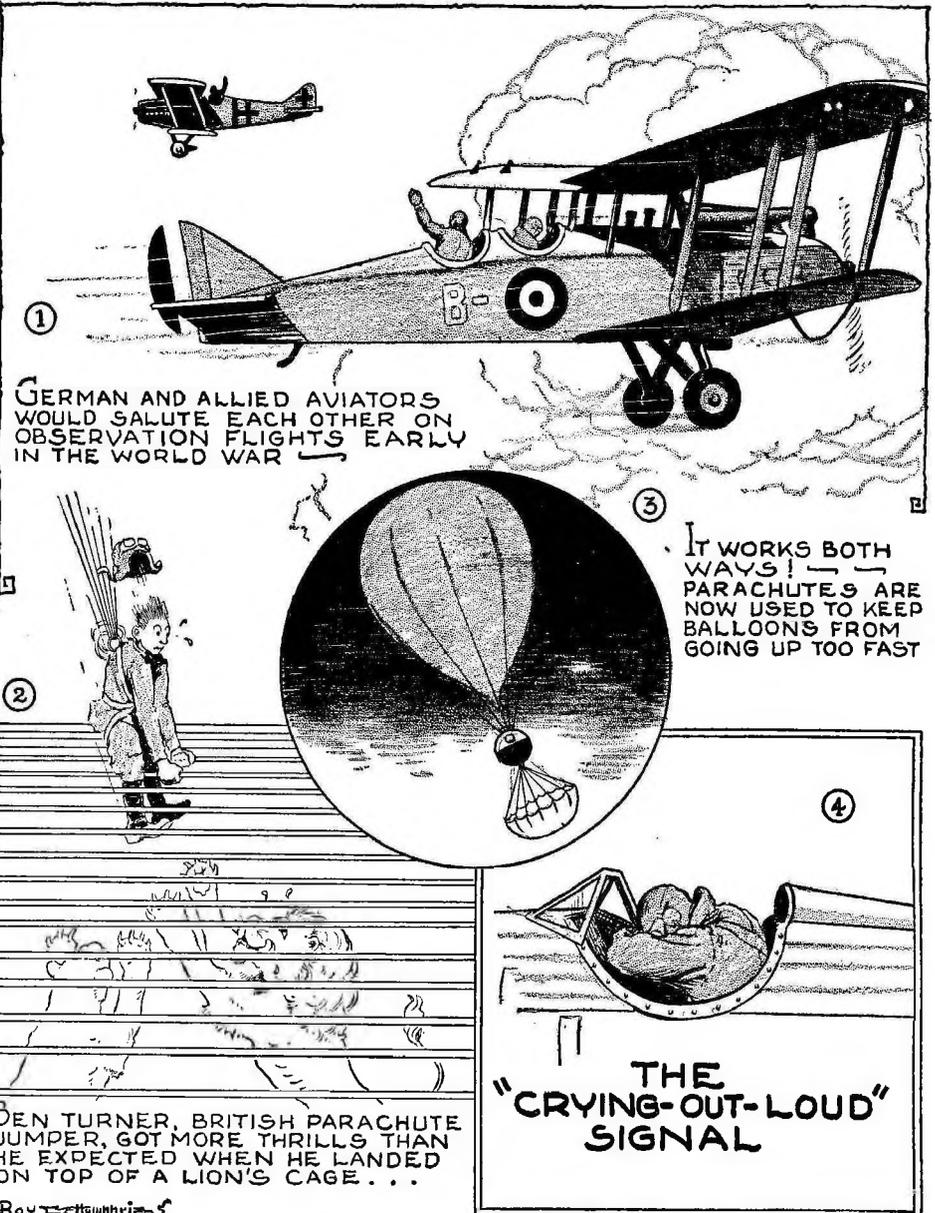
The first war night-flying scout group was the 185th Pursuit Squadron. The squadron went to the Front on October 5, 1918, assigned to the Meuse-Argonne section.

SHORT FLIGHTS

FOREST patrol by airplane was used in five of the eight national forest regions during 1933. A total of 489 flying hours was devoted to this work. In addition, planes transported 971 men and delivered 164,930 pounds of emergency equipment . . . Chased by a meteor! That's what Airmail Pilot Hiram Sheridan said happened to him near Texarkana, Ark. He said he had to swerve to avoid a collision with the blazing celestial body which later fell at Texarkana . . . Los Angeles County, Calif., now has a sheriff's squadron all of its own. It is composed of 26 volunteers, including movie stars, famous pilots, and rich sportsmen. They are subject to call on a moment's notice and in their own planes—in case of a man-

PILOTOPICS

By ROY HUMPHRIES



Stories Back of the Above Pictures

1—In contrast to the death struggles of aviators of opposing armies in the latter part of the World War, it was not unusual for German and Allied airmen to salute each other on observation flights in the early days of the war, as their planes carried no armament.

2—The thrill of landing on a lion's cage after a 1,000-foot parachute drop over Surrey, England, was more than Ben Turner bargained for. His parachute caught in a tree above the cage, and for an agonizing ten minutes he was trapped on top, while the lions attempted to reach his legs. The keepers rescued him with the use of a fire hose.

3—The usefulness of the parachute is well known as a device for preventing people from falling to earth too rapidly. Now a need has been found for preventing balloons from going up too rapidly, and the parachute, with its widespread air resistance, is being used for this purpose.

4—If a pilot in flying formation in the Navy's famous "Fighting Six" pursuit squadron puts his head down on his arm, as though he had suddenly burst into tears, his comrades know it is their "crying-out-load" signal—air pantomime that he has to make a forced landing.

hunt, a flood, earthquake or a search for lost planes and people

The Azores must be expecting new air traffic from Europe and North and South America. They are making preparations to accommodate it and have already erected a double-duty lighthouse air beacon on the island of Terceira. . . . Air currents at different levels may often travel in exactly opposite directions. On the Pacific coast recently a pilot flew northward with a 40-mile-an-hour tailwind. He met a southbound pilot flying 4,500 feet higher up, also with a 40-mile-an-hour tailwind

An airplane is being built in France in which Maurice Rossi, co-holder with Paul Codos of the world long distance flying record, plans to beat the round-the-world time of Wiley Post, won last year in the Winnie Mae in seven days, 18 hours, 14½ minutes. The plane's builder is Rene Couzinet, who recently submitted plans to the Air Ministry for a stratosphere plane to fly between Paris and New York in 17 hours The New Lockheed Electra, recently tested, is declared to be the fastest multi-motored transport plane in the world. Designed to carry 10 passengers, two pilots and a heavy cargo, the all-metal ship can do 215 miles an hour.

. . . . On their trans-Pacific hop from Samushiro, Japan, to Wenatchee, Washington, Clyde Pangborn and Hugh Herndon, Jr., covered 4,457 statute miles in 41 hours and 13 minutes in a single-motored 425 h.p. Bellanca monoplane. . . . Aerial "hurricane alarms" may be in vogue along the Texas Gulf Coast if present plans materialize. Army airplanes equipped with sirens fly over the danger zone, and in a few minutes warn thousands to seek places of safety H. F. Steen, general manager of the U. S. Airways, made a deal with a man that for every town he air-marked, \$1.00 a letter would be paid. The first town marked was Tonganoxie — \$10.00 Mrs. Amelia Earhart Putnam's trans-Atlantic solo flight was made exactly five years after Lindbergh's flight. Lindbergh flew 3,600 miles in 33 hours and 32 minutes, while Mrs. Putnam flew 2,026 miles in 14 hours and 56 minutes.

Five landing fields in the territory of Hawaii have been named in memory of Air Corps pilots who rendered conspicuous service overseas during the World War. The auxiliary flying field at Port Allen Military Reservation has been designated as "Burns Field," in honor of 2nd Lieutenant James Burns, who was awarded the Distinguished Service Cross for extraordinary heroism in action. He was killed while performing a photographic mission. The four other fields named in memory of Air Corps pilots are Bellows Field, in honor of 2d Lieutenant Franklin D. Bellows; "Suiter Field," in memory of Lieutenant Wilbur C. Suiter, who was killed while performing a reconnaissance mission at low altitude over enemy territory; "Morse Field," in honor of 2d Lieutenant Guy E. Morse, and "Putnam Field," in honor of 1st Lieutenant David E. Putnam, who was awarded the Croix de Guerre by the French Government, and the Distin-

guished Service Cross by the United States Government for extraordinary heroism in action. He was killed while in combat with seven Fokkers which had attacked an Allied biplane

THOSE QUESTIONS OF YOURS

FOR years I have tried to maintain a question and answer department in this magazine. During the past few months, it has been getting away from me, for more and more letters continue to pour in. It would make things a lot easier if you would display more care in writing in. In the first place, to assure getting a reasonably prompt answer, I advise that you enclose a stamped and self-addressed envelope with your letter. Ask the question or questions you desire answered, but confine them to as few as possible. I cannot attempt to get jobs or to advise on inventions or aviation stocks. I cannot get you into the Army, Navy or Marine Corps. You can always get the latest on requirements for the various services at your nearest Recruiting office or by writing direct to the service headquarters in Washington, D.C.

I can give you information on machines all over the world, or on wartime ships, pilots and squadrons, but there is no time to go into long discourses on technical subjects where drawings and plans are involved. I can-



not send you photographs of ships or three-view blueprints of them for model making. These can always be purchased from dealers who advertise in our publications. I can advise on books and where to get them. I can advise on instruction, schools or the purchase of aircraft, but for once and all, please do not write in asking for the home addresses of famous airmen or aces for their autographs. We can no longer attempt to give them out. We wish to keep friends with most of them, and we realize now that we have been placing a great burden on their shoulders by giving out their addresses to those who hound them for autographs.

In other words, be concise, write plainly, enclose a stamped and addressed envelope and try to keep the number of your questions within reason. And last, but not least, do not enter aviation-question contests and expect me to answer the questions for you. This is hardly playing the game, as I see it.

Citation and Awards of the Flying Aces Club

The Distinguished Service Medal of the Flying Aces Club has been awarded to the following members of G-2 for exceptional services to the club:

Russell Miller	August Precissi
William King	Alston Schmutz
Harold Tear	Charles McBee
Bob Rousseau	Jim Doran
John Bores	Neil McNabb, Jr.
Roger Goodeve	George Kurczek
Charles Geeting	Angelo Russo
Walter Zak	S. E. Andrews
Nicholas Motto	Ernest Karvonen
Gaston Auger	John McArdle
Walter Allen	Nat Fleisher
George Forman	Jack Donovan
Fred Whitaker, Jr.	Elmer Schultz
Robert Thompson	

The following winners of the Distinguished Service Medal of the Flying Aces Club have been given the first award of the bronze props for additional services to the club:

Sam Daddato	Walter Held
James Eikum	Russell Feiereisel
Adolph Betterini	Donald Kyler
Bob Noon	Ralph Henderson
Robert K. Field	John Guest
Donald Keynton	Rod Penfield
Merrill Goss	Leo Hershkowitz
Kenneth Locke	Charles Tibbits
John Westgate	Melvin Kaplan
George Marvin	Col. Imlay
Raymond Schultz	Joseph Pospisil, Jr.
Douglas Fadden	Fred Smith
Kenneth Clifton	Louis Wozniak
Saul White	Wilbert Baumgardner
John Marshall	John DePinto
Dennis Stone	F. L. Piet, Jr.
John E. Sawhill, Jr.	Stanley Mazzotta

The following winners of the first award of the bronze props have been given the second award of the bronze props for additional services to the club:

Charles Ames, Jr.	Robert Lister
Frank Luniewski	John Cazzalino
Alexander Taylor	John Perry
Charles Boyd	Donald Hopkins
Edward Allen	George Staros
Elwood Campbell	

The following members of G-2 have been cited by the Flying Aces Club for exceptional services to the club and are being considered for the Distinguished Service Medal:

John Donnellan	David Horowitz
Railey Macey, Jr.	Ralph Norman
Louis H. Ouren	Henry Bukowski
Earl Baggs	Sanford Dinetz
Arthur Look	John Arnold
Arthur Newman	Joseph Cameron
Fred Phillips, Jr.	Raymond Dowsett
Joe Steen	Charles Heinrich
Kenneth Zarrilli	Henry Hermanovich
Violette Sorensen	Edmund Scarchilli
Robert Simonson	Herbert Thiele
Clinton Weeks	William Purviance
Ernest Slavin	Leeland Reeser
Geraldine Pyl	Carl Ulanowicz
Jack Sullivan	Ted Jacobs
Jack Cody	Edward Wozniak
Harold Lloyd	Donald Lieter
LeRoy Wilderman	Dana Cunningham
Alfred Costen	Norman Wrightson
Leslie Papier	Edward Nasin
John Tromantante	Robert Goldman
Donald Ballhaus	Blakley Hargis
Sidney Schulman	

A CALL FOR VOLUNTEERS

JOIN THE FLYING ACES CLUB

Honorary Members

President and Mrs. Franklin D. Roosevelt
 Casey Jones Rear-Admiral Byrd
 Wiley Post Capt. Edward Rickenbacker
 Al Williams Colonel W. A. Bishop
 Col. Scaroni Major G. A. Vaughn, Jr.
 Gov. Gifford Pinchot Mrs. Gifford Pinchot
 Major von Schleich Willy Coppens
 Lieut.-Col. Pinsard General Balbo
 C. E. Kingsford-Smith Josef Veltjens
 G. M. Bellanca Amelia Earhart Putnam
 Capt. Boris Sergievsky Senator David L. Walsh
 Colonel Roscoe Turner Lowell Thomas
 Lieut.-Col. Theodore Roosevelt

Official Charters

F.A.C. Flights and Squadrons are recognized only when they have been awarded Official Charters. These Charters are illustrated to depict the various steps of advancement in aviation, and the wording is in keeping with the high ideals and purposes of the Club. They are printed on a very fine grade of paper and the names of the Squadrons are hand-lettered. Charter applications must always be accompanied by a complete list of members with their addresses. For the Flight Charter send 25c, for the Squadron Charter 50c, to cover costs.

Get Your Own F.A.C. Stationery!

You can now order direct from us your own official F.A.C. stationery. The paper is of high quality, the Flying Aces Club letterhead attractively hand-lettered. And the price to you is amazingly low!

100 Sheets, postpaid
 for 25c

Also

Official F.A.C. Pennants
 6 for 10c 20 for 25c

February Application for F. A. C. Membership

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
 Street
 City State

Mail this application, and with it, enclose a self-addressed, stamped envelope. Canadians send an International Reply Coupon worth 5c. British send a smaller coupon worth sixpence.

No Dues—No Red Tape—It's Easy To Join—Easy To Form Your Own Squadron!

To advance the cause of aviation, over 35,000 men and women, boys and girls, without any limitations of age, race, creed, color or boundary, have joined together to form the Flying Aces Club.

It is easy to join, easy to become a regular member of the famous F.A.C., the largest aviation club in the world. Just clip the application coupon at the bottom of the left-hand column on this page, fill it in and mail it with a stamped, self-addressed envelope for the return of your Official Membership Card.

That's all that's necessary. It costs nothing—no dues—no red tape. After getting your Membership Card, you will be all set to go ahead and qualify for your Cadet and Pilot's Wings, the Ace's Star and, perhaps, the Flying Aces Club Distinguished Service Medal. It's up to you. But the first step is to fill out and mail the Membership Application Coupon to National Headquarters.

Form an F. A. C. Squadron

More than ever before, interest in aviation is growing, and growing fast. There are more flyers, more passengers, more gliders, more model builders than ever. In other words, you will find it comparatively easy to find a group right in your neighborhood that is just as keenly interested in aviation as you are.

Tell them about the Flying Aces Club, the largest aviation club in the world. Tell them about FLYING ACES Magazine, the Club's official magazine. Tell them about the interesting stories and articles, the model building plans and actual flying instructions that appear in each issue of FLYING ACES. Tell them that they, too, should join up, should be one of the fast-growing army of men and women, boys and girls who are actively working to promote the development of aviation through the Flying Aces Club.

To organize a Flight, you must have at least 6 members, including yourself. For a Squadron, you need a minimum of 18 members. Flights and Squadrons conduct their own meetings according to the wishes of their members. Headquarters lays down no rulings in this respect. The whole idea of the Club is to form a common meeting ground in an international organization of aviation enthusiasts.

Remember, each new member must fill out and send to GHQ the Membership Application printed on this page. Remember, too, that whenever you write to Headquarters and expect an answer, send a stamped, self-addressed envelope for your reply. This is important!

Volunteers for G-2

G-2, the Inner Circle of the F.A.C., is open to a restricted number of members who are qualified for Secret Service activities. Those who are chosen will have unusual opportunities to win the Club's Distinguished Service Medal.

All who are accepted will be given a secret number and identification card as well as the secret code. Assignments will be made by letter and code.

If you wish to volunteer, send a letter to GHQ giving your age, education, occupation and your reasons why you would be a good G-2 agent.

AWARDS AND HONORS

The D.S.M.

The Flying Aces Club Distinguished Service Medal is the highest award of the Club and is given to those whose work on behalf of the F.A.C. is "beyond and above the call of duty." It has been awarded for obtaining prominent men and women as Honorary Members, for exceptionally successful activity in the promotion of the Club, for outstanding work in covering the secret assignments of G-2.

Winners of the D.S.M. who merit further awards will be given beautiful bronze props. Worn on the ribbon of the D.S.M., they may be compared to the bronze palms awarded to winners of the Croix de Guerre. The highest award of the F.A.C. is the D.S.M. with three props.

The Ace's Star

The Ace's Star is awarded to regular members of the F.A.C. who have qualified for their Cadet and Pilot Wings and who have succeeded in enrolling five new members in the Flying Aces Club. Each new member must fill out the Application Coupon below. Get five of your friends to do this, send in their applications all together and win the F.A.C. Ace's Star.



Save This Coupon for PILOT'S WINGS of the Flying Aces Club

All enrolled members who have already won their Cadet Wings are eligible for Pilot's Wings. This coupon, with four other similar coupons from any other four issues of FLYING ACES Magazine and 10c, entitles Cadets of the F.A.C. to Pilot's Wings. Do not send in this coupon alone. Save it until you have five of them. Then, send them in all together with a self-addressed envelope and 10c to cover cost of wrapping and mailing. Only one pair of Wings to a member. If you lose yours, send 25c for new ones.

Canadians send International Reply Coupon for 15c. British send one shilling in coin or International Reply Coupon for one shilling.



Save This Coupon for CADET WINGS of the Flying Aces Club

All members who have Official Membership Cards are eligible for Cadet Wings. This coupon, with two other similar coupons from any other two issues of FLYING ACES Magazine and 10c, entitles members of the F.A.C. to Cadet Wings. Do not send in this coupon alone. Save it until you have three of them. Then, send them in all together with a self-addressed envelope and 10c to cover cost of wrapping and mailing. Only one pair of Wings to a member. If you lose yours, send 25c for new ones.

Canadians send International Reply Coupon for 15c. British send one shilling in coin or International Reply Coupon for one shilling.

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

Flying Aces Club News

Line up on the Flying Aces Club tarmac for hot news from fellow F.A.C.'s all over the world! Organization of the first squadron in Ireland, an interesting letter from a new honorary member in Czecho-Slovakia, several new Canadian squadrons—these are some of the high points in this month's news.

And there are many others. Let's go!



HAPPY landings, F.A.C.'s! There's so much news to share with you this month that we're not going to waste any time on preliminaries. You've all heard a good deal about Major Paul Guerrero's Philippine Squadron which he has organized from his home in Tacoma, Washington. Major Guerrero sends us this very interesting letter from a former Governor General of the Philippines, Francis Burton Harrison, who has accepted honorary membership in the Flying Aces Club.

"Many thanks for your letter notifying me that the Filipinos of Tacoma and vicinity have formed an active air organization for the promotion of aviation in the Philippines," Mr. Harrison writes: "This is a subject in which I have been greatly interested, and I have always deeply regretted the abandonment by the Philippine Government of the splendid aviation squadron organized there during the war. The Filipinos seem to me peculiarly well fitted for skillful and successful aviation, and I wish you and yours the best of luck with your enterprise. I should be very glad to be named as an honorary member of the Philippine Squadrons."

Thank you for sharing that letter with us, Major Guerrero, and we know that every member of the F.A.C., along with Mr. Harrison, wishes you the best of luck.

Other new honorary members who have joined our Club include P. S. Demers, Representative of the Maine State Legislature and President of the Sanford-Springvale Stamp Club, one of the largest in New England. His membership was secured by Arthur Poulin, Jr., Goodwin St., Springvale, Me. From Leroy McBrown, of 520 Green Ave., Brooklyn, N. Y., comes word that he brings two new honorary members into the Club—Mr. Edward Fay, of the U. S. Commission, and Mr. Robert Holmes, City Marshal. We are glad to welcome these new members.

Now for some news from our most active squadrons throughout the country. We'll start off with the Cleveland (Ohio) Squadron, led by Major J. P. Tumulty. And are those F.A.C.'s doing things! Major Tumulty's last report tells us that at their most recent meeting they made definite plans for their next model meet. You may remember that we told you about their last one. Well, the spring meet is going to be bigger and better, with the addition of two events, a model race and a relay race. They recently held a meeting at which all members were instructed in model building by the actual demon-

Would You be Interested in Getting an F.A.C. Uniform?

Quite a large number of inquiries have been received at National Headquarters about an F.A.C. uniform. We will be glad to adopt an official uniform if enough of you fellows want them. If you are interested, drop a line to the National Adjutant of the Flying Aces Club at 67 W. 44th Street, New York City. Be sure to enclose a stamped, addressed envelope for a reply. Tell him what kind of a uniform you would like and how much you would be willing to pay for it.

stration of the building of an S.E.5 by Major Tumulty. Another idea they have worked out is a word game, in which each member will make up a list of all the three-letter words from the name of this magazine, FLYING ACES, the winner to receive an S.E.5 model as a prize for the longest list. Here's luck to the winner!

From Chicago, Ill., comes news of another model building contest being held Christmas week by the Chicago Squadron under Major R. A. Blocki. All members are building a model of the Douglas DC-1 Air Liner, and prizes for the best model are being awarded at a special festival meeting on Christmas Day. This lively squadron now has 24 members who hold regular weekly meetings. At these gatherings, one member gives a talk each week on some phase of aviation. A great idea!

Colonel "Chuck" Davis, head of the Eastern Pennsylvania Division of the F.A.C., and leader of our first squadron, sends word that things are humming, as usual, in his part of the world. One of his squadrons (they call themselves the Keystone Yellow Jackets) has a new commander, William Burke, who himself has a \$7,000 plane, and is getting the members interested in a training plane bargain. That's what this Club is for—to get its members actively interested in flying.

Several new F.A.C. Flights have been organized down in Philadelphia, Pa., by Major Charles Riley, our busy and energetic leader in that section. One of these is a feminine flight, and Major Riley writes us that they're every bit as air-minded as the masculine Club members.

And here's something that should interest you. It's too late for you to tackle this season, but it certainly is something for you athletic Club members to think of for next Fall. Carl Ulanowicz, of Grand Rapids, Mich., writes us that he has organized an

F.A.C. football team in his squadron, and they have been playing all season. Most of them are former High School players. Their record so far—four victories, one tie, and one defeat. That's a great record, boys. "We have met up with some pretty stiff opposition," Carl writes, "and sometimes end the game in the same condition as if we had been in a crack-up." He doesn't tell us how the other teams looked! Come on, you other future All-Americans—start organizing that football team so that you'll have it ready to meet all comers next season!

Here are two calls for help. Harold Tear, of 1317 Thomas Ave., Roanoke, Va., is organizing a Squadron and wants all other F.A.C.'s in Roanoke to contact him right away. Up in Dorchester, Mass., Eddie Munzing is forming a Clyde Beatty Squadron of the F.A.C., and wants to hear from all interested members in Dorchester and Roxbury. Write him at 188 Blue Hill Ave., Dorchester.

Things are humming up in Canada, too, with the F. A. C.'s. In Montreal, H. J. Howe, who was one of the first to start a Squadron, says that his gang is out to get the biggest number of Ace's Stars in Canada. We hope you get it, but you'd better step lively, for in Toronto, Dave Lindsay has a pretty active Squadron of both boys and girls, and they're out to get all the F. A. C. honors in a hurry. Let's see which one of you will win out. Perhaps the Montreal members had better get in touch with Saul White, of 3902 Drolet St., Montreal, who is also organizing an F. A. C. outfit. He wants members of sixteen years and over.

From Nova Scotia comes interesting news of two new Squadrons. Roderick E. J. Smith, of 5 Murray Ave., Truro, Nova Scotia, wants to meet all the Club members in his town, for he has many plans for a group that should interest you. Also, in Bridgewater, Nova Scotia, Robert D. Simonson sends word that his flight is working well. He has compulsory courses in aviation instruction, with examinations for members, and a grading of five ranks. "When my boys all become first ranking members," Simonson writes us, "I will guarantee that they have a pretty fair knowledge of what aviation is doing for the world today." And that is certainly something every F. A. C. member should know!

And now for news of the first Squadron to be organized in Ireland! Brian Murphy, of 109 Seville Place, Dublin, is the Squadron Leader, and although he now has the required number of members for a Squadron, he still wants other

(Continued on page 80)

Airmail Pals

The department is for all of you who want to swap letters with other F.A.C.'s. All requests for Airmail Pals must be written on a separate sheet of paper, and will be printed in the order received.

From the Emerald Isle

Dear C. O.:

It was in this city of Londonderry, that Amelia Earhart landed after her Atlantic flight. This was also the hopping-off place for General Balbo's armada. We also have an R.A.F. flying-boat base with five Supermarine-Southampton flying-boats stationed here.

All this ought to be interesting to airmail pals. I hope so, anyway. I am twenty-two, and have two other hobbies beside aviation—stamps, and cycling. Will others with these hobbies please write?

Sincerely yours,

JAMES CUNNINGHAM.

8 Sunbeam Loe., Bishop St.,
Londonderry, No. Ireland.

A Flock of Requests

Dear C. O.:

Will you please publish this letter in FLYING ACES? I have lost the address of Dean Brandon, of California, and would very much like to have him write me again, if he sees this.

Here are some more requests. I want ink-slingers who know war-time planes from brace wires to motors. I particularly want to hear from a German who knows all about Fokkers, from D-1's to tripes. Finally, I would like to hear from the fair sex. I am 18, blond, six feet tall, and a member of the 110th Observation Squadron, Missouri National Guard.

BOB JACKSON.

1416 N. 20th St., St. Louis, Mo.

A Request

Dear C. O.:

I want to hear from F.A.C. members in France, England, Scotland and the U.S.A. I have lost the address of Andrew R. Johnston, of Glasgow, Scotland. If he reads this, will he send me his address?

ANDREW R. GIBSON.

1949 Spencer St., Philadelphia, Pa.

Bouquets for FLYING ACES

Dear C. O.:

I am an old member of the F.A.C., and one who thinks FLYING ACES is the best magazine out. Your stories are great, especially the crazy ones about Phineas Carbuncle. Your plans can't be beat, either. Up to date, I have built almost every one you have published. One of the planes built from your model flew 47 seconds, at a height of 100 feet.

I'd like to hear from other FLYING ACES fans, girls and boys both.

Sincerely yours,

JOSEPH B. GRIVE.

23-48 95th St., East Elmhurst, L. I.

Born In India

Dear C. O.:

I am a keen model builder, and have just been building the Curtiss A-8 Attack. I was born in India, and lived in Burma until I came to this continent, three years ago. I have been nearly

all over the world. Maybe that's why I am always thought much older than fifteen, which is my real age. Fifteen or fifty, though, all you FLYING ACES readers will be welcome on my drome. There is no age limit.

Cordially,

ANGUS PATERSON.

4690 Oslen Avenue, Vancouver, B. C., Canada.

Professional 'Chute Jumper

Dear C. O.:

I have served in the U.S. Army Air Corps for six years as a professional parachute jumper. Right now, I am earning my bread and butter hopping off plane wins. Wish to hear from youse guys and youse gals of the FLYING ACES Corps.

Just an umbrella springer.

TONY NOVICKY, JR.

100 Broadway, Melrose Park, Illinois

Any Australians Around?

Dear C. O.:

I am eighteen years old, and airminded. I collect plane pictures and will trade the ones I have. I would like to correspond with some one in Australia who can trade a Kingsford-Smith stamp. If you don't have said stamp, don't let that stop you.

KIWI ROBERT PARKER.

1417 Page St. N. S., Pittsburgh, Pa.

(Continued on page 42)

In order not to keep you waiting so long for Airmail Pals, we are printing here a list of those who want to hear from other F.A.C.'s. We are sorry that we do not have space to print the entire letters, but the right-hand column will give you an idea of the writers' interests.

Name	Address	Description
FRANK J. HAYDEN N. MORTON STONE	218 New Milford Ave., Dumont, N. Y. 570 West 204 St., New York City.	Plane builder—aren't we all? 13. Brown hair, 5' 6"—and that's all we know.
EDWARD R. PETTY	1518—18th St., Des Moines, Iowa.	Knows all about Browning machine guns.
LLOYD F. RICE	323 Sterling Ave., Mamaroneck, New York.	Cowboys and cowgirls his weakness.
ALBERT DELUCIEN	31 Chapel Rd., Seat Pleasant, Md.	Likes to fly and read—one at a time.
NORBERT GUMBINGER EDWARD PISZEZEK	7316—31st Ave., Kenosha, Wisconsin. Route 1, Norwich, Conn.	13. Says he has dark, curly hair. Wants old banjo or guitar; will swap for one.
R. WETHERALL	3 Perrett St., Rozelle, Sydney, N. S. W., Australia.	If you like sports, write him.
JOHN CAMPBELL	155 Delaware Ave., Dongan Hills, S. J., New York City.	Will trade for model gas engine—if it runs.
LARRY KUSZMAUL BILL HOKE	2634 So. Massey St., Philadelphia, Pa. 715 N. Shamokin St., Shamokin, Pa.	20. Air student for seven years. 17. Has 900 one-view plane photos and plans.
HOWARD MILES	314 S. Broadway, Tyler, Tex.	Westerner, looking for new friends.
HENRY REIHL, JR.	42—20th Ave., Paterson, N. J.	Wants letters from girls especially.
JOHN BACCO	Lost Creek, West Virginia.	Has extensive aviation information.
FRED GAYLORD, JR.	603 West Sullivan St., Olean, N. Y.	13. Wants aviation info. See above.
ARTHUR ASCHANES	4480 N. Oakland Ave., Milwaukee, Wis.	13. Will anyone part with a war medal for him?
CECIL ARBON HELEN DALY	9 Faraday Rd., Ipswich, Suffolk, England. 7201 Almeda St., Arverne, N. Y.	Ex-Royal Air Force pilot. A lass who takes aviation seriously.
MARK COBERT	1088 Bryant Ave., N. Y. C.	16. Keeps technical notebooks on aviation.

War Veteran's Son

Dear C. O.:

Just a line from an F.A.C. cadet down in Dixie. I read your magazine every month, and is it great? Donald E. Keyhoe and Joe Archibald certainly can tell some fine yarns.

My dad, Edward H. Fetner served as sergeant with the 81st Division, 306 Supply Train, during the war. I'd like to hear from any other boys whose fathers served with this outfit.

I am thirteen years old, and would like to hear from any boy or girl from 12 to 1200 years old.

EDWARD H. FETNER, JR.
1401 Woodrow St., Columbia, S. C.

Plays With Dynamite

Dear C. O.:

I am a noncommissioned officer here at the Frederick CCC camp, and am in charge of the dynamiters—which keeps me pretty busy. But I'm never too busy to write. I have studied aviation for ten years, and that ought to make me a good airmail pal for young men and women who are air-minded.

Success to you all,
JOHN GILCHRIST.
CCC Co. 2302, Frederick, Md.

Another War Vet. Relative

Dear C. O.:

I would like to hear from anyone interested in war-time aviation. My uncle belonged to the 141st Aero Squadron, stationed at Toule, France, during the war. He is now a captain in the U.S. Air Reserve. My only war-time experience is in building models of war-time planes, of which I have built fifty. Let me hear from you all, soon.

MATT PORTZ.
105 East 1st St., Springfield, Ohio.

Shell Out, Lads!

Dear C. O.:

I want to trade for any old shells, guns or what have you, in the war line. I want this information for the legion home here. I can promise loads of information about the war for anyone who will write to me. We have a trophy room here, too, and I can give out information on machine guns, etc.

Soldier correspondents would be right up my alley, and people in foreign countries will get an extra welcome from me. I am eighteen, but I am Ye olde aviation booster,
ERNEST C. SEILER.
1210 N. Rogers Ave., Springfield, Missouri.

The Lady Wants Thrills

Dear C. O.:

My interests are many, but above all I like adventure and excitement. I want to hear from people all over the globe, of any age or sex. Aviators, Royal Mounted Police, parachute jumpers—all you who do thrilling and interesting things, write to me. I am twenty, blue-eyed, and a pen pusher par excellence.

Sincerely yours,
CORALINE BARNHART.
Box 49, Route No. 2, Kingston, Ohio.

Experienced Air Passenger

Dear C. O.:

I am sixteen, and have had considerable experience as an air passenger. I can answer all questions about the Ford trimotor, as we have the one that was flown by Floyd Bennett to Greenly Island, to rescue the Bremen flyers. I have also been a passenger in a D.H. Moth during a stunt hop in one of the air meets here at Niagara Falls.

I am six feet tall, and have blue eyes, dark hair. I will answer all letters—let the postage mount as it will.

BOB JOHNSON.
940 Huron St., Niagara Falls, Ontario, Canada.

Here's a Nice Offer

Dear C. O.:

I would prefer to have real pilots for pen pals, but everyone else, regardless of age, is welcome on my tarmac. To the first three fellows who write, I will send a list of German aircraft from 1914 through 1918, with information on their speed, horse power, number of men flying them, etc. So please turn on those writing Vickers of yours, won't you?

Expectantly yours,
JIMMY JOHNSON, JR.
1524 Front St., Georgetown, S.C.

Works in Aircraft Plant

Dear C. O.:

I spend my days working at an aircraft plant, and my evenings studying and designing models. I have spent ten years in the aviation game, and know the design of almost all American planes.

Lately, however, I have learned that education isn't quite everything. In other words, I am lonesome, having been too busy to make many friends. Even though I have had the fun of flying a plane, feeling the joystick in my hand, I still feel the loss of comradeship. I would like especially to correspond with people in Canada, England, France, Spain, Germany and Prussia.

I am cutting my switch, now, and turning off my ignition.

Happy landings!
WALTER NAPIER.
84 Quincy St., Buffalo, New York.

Paging Robert H. Dalton

Dear C. O.:

I would like to get in touch with Robert H. Dalton, 720 Linden Boulevard, Brooklyn, N. Y. As wireless operator, I was working with him and several other fellows—all F.A.C.'s—on plans concerning interplanetary travel. I have not heard from Bob Dalton, for some unknown reason, for many months. Should any of the other boys who were working with us see this letter, and know of his whereabouts, will they please write to me? I shall appreciate hearing from them, in any case.

I also want to make contact with F.A.C.'s in Argentina, Brazil and Spain. Males only! Prompt replies are assured.

ROBERT SOUTAR.
875 Main St., East, Hamilton, Ontario, Canada.

A Musical Note

Dear C. O.:

I would like to correspond and swap things with model builders. I would also like to hear from musicians, as I have played the cornet for over four years. To the first five who write me, and send a swap list, I will give a full-size sheet of model tissue. How about it?

Sincerely yours,
F. LEROY HART.
Fairland, Oklahoma.

Has Piece of Lindy's Ship

Dear C. O.:

I have been trying for a number of years to get the German cross, or the British cocardees from the wings of planes shot down during the war. I will trade a piece of the ill-fated Akron for either the cross or the cocardee I have mentioned.

I also have a piece of Lindy's ship, the "Spirit of St. Louis," which I will trade. Souvenirs, or no souvenirs, write me, every-body.

HENRY ROBERTSON.
5 Laurel Ave., Summit, N. J.

Just a Few Pictures

Dear C. O.:

I have an air scrap book, in which I have a collection of over two thousand pictures. Building flying models, and reading FLYING ACES are my other hobbies beside picture-collecting. I heartily welcome British and Yank correspondents. I also know a fair amount of French, so come on, France! I will keep up a lively correspondence with all of you who write. I am 15, blue-eyed, light-haired.

SEYMOUR WEINER.
4720 Avenue I, Brooklyn, N. Y.

A Request

Dear C. O.:

You were good enough to put one of my letters in Airmail Pals some time ago. I received a great many letters, but before I could answer them all, I had to go to a hospital. Many of the letters were lost while I was there. If the unanswered correspondents would write me again, I'll try to remain topside long enough to answer them.

Also, if any new ones will write, I will—via letter—take you to some of the remote places of the earth, for I am still

A Soldier of Fortune,
PAUL BASS.
1024-J St., Hoquiam, Washington.

An Early Start

Dear C. O.:

I have been interested in aviation ever since I was eight years old, and have tried to keep tabs on all developments. That's why I like your magazine. It contains everything in the way of aviation, from model plans to all the dope on the big fighting ships. I also have to know all this stuff because I am going to join the Army Air Corps.

I would especially like to hear from some experienced pilots, male or female, in or out of the F.A.C.—although they all ought to be in it.

EDWIN E. PITTENGER.
Box 119, Grafton, Illinois.

All Questions Answered

This section of FLYING ACES is at your service, F.A.C.'s. Send in your questions and requests for air information, and we will be glad to answer them here in the order received.

* * *

Norman Bishop, Haverhill, Mass.:—I can't tell you where you can get helium for a model Zeppelin. Write to the helium division of the Navy Air Service in Washington. No, it does not burn. Write to the Curtiss people or any good model airplane supply house for three-view layouts of Byrd's ship.

Elmer M. Boat, Pella, Iowa:—We cannot give out back numbers of FLYING ACES, but keep on, and you'll soon catch up, because we are repeating the ones already published.

Burton Bjorge, Blair, Wisc.:—No ship, unless it is designed as a "tail-less" plane, can fly without a tail. At least, I wouldn't like to try to fly it. There are tail-less planes, called flying wing ships, but they are especially designed for this trick.

Herbert Green, Methuen, Mass.:—The official Chinese insignia is the Chinese republic flag on the rudder of the ship. The Polish insignia is a white square, with smaller red squares one quarter the size of the large one, placed in opposite corners.

James Tod, London, England:—American squadrons are divided up into Flights, where they are up to strength. Each Flight is usually designated by some marking, such as a colored band on the wings, or around the fuselage, but there is no set rule on the question.

H. Manwearing, Mons Barracks, Ahmedabad, India:—Thanks for your fine letter on FLYING ACES magazine. Glad you like it so much. You're a member all right. Regards to Gandhi and all the boys out there.

Hugh Anderson, Woodlawn, Ontario:—Capt. Roy Brown was flying a Sopwith Camel when he defeated Baron von Richthofen. The rest of your letter requires too much space to answer. The triplanes of the war were fast climbers, but not so hot on maneuverability.

E. A. Scheibel, Jr., Arlington, Mass.:—The Massachusetts Institute of Technology gives a course in aeronautical engineering. That's right at your back door. Or is that too tough a school for you? To give a full description of all single-seaters of today would take the complete magazine. We'll do an article on that later.

Donald Craft, Minneapolis, Minn.:—Where were you during the war? Were there any Spanish aces? Spain wasn't even in the war. She was neutral.

Wayne C. Brubaker, Terre Hill, Pa.:—I do not know where you can buy a Fokker D-7. Try some of the second-hand companies in California.

Gilbert Sacher, Chicago:—I believe you now have to sign on for four years' service if you graduate from an Army flying course. Better make sure of this, however. Several changes have been made lately.

Ronald Carter, Richmond Hill, L. I.:—The Howard racers were built by Howard, himself. Write to him for all the price information and details you desire.

Alex Flax, Brooklyn, N. Y.:—Thanks for the clippings, but we can't use them. We must have real photographs, not clippings from newspapers and magazines.

Russel H. Bassel, McQueen, Okla.:—Thanks for those clippings. No, I had not seen them. Interesting, eh? After those Benson stories in SKY BIRDS. Well, you never know.

A. J. Raffo, Brooklyn, N. Y.:—I can't give you the information you desire on the squadrons at March, Crissy and Bolling Fields. These squadrons change around, at times. The average life of a modern combat plane is probably no more than eighteen months. Write to R. R. Martin, 1615 North Western Avenue, Hollywood, California, for plane pictures.

Isaac Lazar, Knox, Indiana:—You had better get in touch with some good light plane company such as the Heath Aeroplane Company of Niles, Mich.

Maurice Hensley, Elkton, Va.:—Frankly, I do not know of any concern making and selling gliders at present, but you can get full information from the National Glider Association, 1504 Dime Bank Building, Detroit, Mich.

Theodore Howard, Brooklyn, N. Y.:—Why not try a personal visit to the Haaran High School and get all that information you want, first hand?

Irving Frier, Couvert, Mich.:—It is important to be in good health to become a pilot. If your teeth are bad, you should get them corrected, anyway. You can get a limited commercial ticket for about \$800.

Robert Van Tatenhouse, Holland, Mich.:—There were several squadrons of two-seater Spads in action at the Front, mostly used by the British. They were not so hot. Write to the Army Air Service for the other information you desire. Frankly, I do not know.

Charles G. Westcott, Minneapolis:—How many gallons of gas would it take to fly around the world? You've got me. It depends on the motor, or the number of motors you use.

Robert A. Boyce, Savanna, Ill.:—Not knowing just what this "pilot tutor" you mentioned is, I can't say much about it. I didn't see the World's Fair. Too busy answering air questions.

John Phelan, Walpole, Mass.:—The lack of air pressure at high altitude is what causes pilots to suffer nose and ear bleeding. The pressure of the blood coursing through the veins is too strong for the light outside air pressure to withstand. It's no fun, either.

Rosemary Buehing, Tuscola, Ill.:—There were no official squadron insignias in the German Air Service. A few pilots used personal insignias, but the practice was not widespread.

Joel B. Whitten, Knoxville, Tenn.:—I do not know anything about the ship the British are building to recapture the world's air speed marks. There are lots of rumors, but none worth considering.

James Anderson, Detroit, Mich.:—Thanks for your nice letter in red ink. You certainly are on the warpath. Don't worry about that one gunner. He can take care of himself. If you've ever gone down on a rear gunner who has a stationary platform to work from, while you are trying to get a bead on him with your own ship dancing about wild, you'd have little sympathy for him. He can be a tough guy. I know. I've been in both spots, and still think the rear gunners in the War shot down more than all the single-seater pilots put together.

Jess Holladay, Roseville, Cal.:—Your idea of a photo club is good. I'll look into it. The magazine *Deutsche Flugillustrierte* was a one-shot. By that I mean it was put out in one issue as a sensation. I cannot find out who printed or published it, as it was sent to me by an English friend who is in school in Germany. *Flight* is illustrated and costs 35 shillings a year to a U. S. subscriber. The Sopwith company is no more. It is now the famous Hawker Aircraft Company of Kingston-on-Thames, Surrey, England.

Canadian Flyer, Militia, Man., Canada:—If you are a Canadian, you certainly have been spoiled in the making, somewhere. Your language was pretty raw, but you evidently have not been reading FLYING ACES very long. We have printed long articles on McLeod, McLaren, Brown, Collishaw, Barker and Quigley, with full cover-illustrations of their exploits—so many, in fact, that many of our American readers have complained that we have given the Canadians too much space. So there you are. Next time, have the courage to sign your name.

Harold Lloyd, Baltimore, Md.:—The private pilot's course includes an elementary tuition in engines and rigging. A high school education is desirable but you can take flight training in a private school without that much.

Don Dennis, Springfield, Mo.:—We do not have three-view drawings of the British Nieuport Nighthawk. We'll see what we can do for you, however.

Howard B. Cook, Rochester, N. Y.:—Photographs of war and modern planes may be purchased of R. R. Martin at 1615 N. Western Avenue, Hollywood, California. Send for his list.

Harry Zippe, South Ozone Park, N. Y.:—I would not like to be in a D.H.4 that started a spin at 100 feet. You might get out, but I doubt it. Send a stamped and addressed envelope next time.

Philip Canale, Brooklyn, N. Y.:—Your questions cannot be answered, as you do not state any special ship. I can't tell you how many gallons of gas a plane carries and how far it will go on that load unless I know what plane you have in mind.

Harry Kelly, Jr., Bethlehem:—I can't tell you anything about any war pilot unless you tell me in which army he served. Was the Sidney Brown you mentioned in the American, Canadian, British or Australian Air service?

Dominic Balzano, Carbondale, Pa.:—The initials S.I.A. stand for the Societa Italiano Aviazione of Turin, Italy. Major Baracca was Italy's greatest ace, with 36 victories.

Raymond Robinson, Poulshoro, Wis.:—Planes have been propelled by Diesel engines and by steam engines, and are still undergoing experimental tests. The Spad is now manufactured by Bleriot, and the Nieuport is now made by the Nieuport-Delage Co., of France. The Nieuport 28 was more popular at the end of the war than the Spad.

Fred Kobos, Chicago:—There is no record of Captain Rickenbacker's engaging and defeating any of the well-known German aces, but he might have—without knowing it.

Marinus Vander Poll, Seattle, Wash.:—An attack ship is a machine designed to attack personnel and light material objectives, by means of machine-gun fire, light bombs and chemicals. Pursuit means the destruction, by offensive action, of hostile aircraft in flight. Get the difference? The details of regimental rank and insignia will be given you at your nearest Recruiting Station.

John Keane, Turtle Creek, Pa.:—About that Air Service League I wrote about—I feel it too important a job for me to take over. Some one with a more general aviation background, like Captain Al Williams, should be the head of it for a starter. Probably we can get it started from the F.A.C., but nothing has yet developed that gives us justification for going ahead right now. Keep talking it up, anyway.

Don Beekman, Mansfield, Ohio:—The Navy insignia includes the red, white and blue vertical stripes on the tail, and the squadron numerals on the fuselage. The Army has horizontal stripes, and the Marines have Navy stripes with the Marine insignia on the fuselage.

Edward Lynch, Brooklyn, N. Y.:—You can get official 16 m.m. film of Air Service views from the Photo Section of the Signal Corps, in Washington, D.C. They are good, too.

Robert Tannenhill, Euclid, Ohio:—The square-cut crosses on German ships were used only on machines made during 1918. Any ship showing the Maltese Cross was built and flown prior to that date.

Jack Moore, Woodstock, Vermont:—Udet is credited with 62 official victories. No, I do not think he would send you a picture or an autograph if you wrote to him. These aces are up to their ears in letters of that kind.

F. V. Pallav, San Francisco:—Udet did not go in for garishly decorated ships, and you will note he is still alive. Voss painted his ship with a black and white checkerboard design, and left the wings white underneath and earth-brown on top. He is also said to have had a black skull in a white circle beneath the opening of his cockpit.

Edgar Drake, East St. Louis, Ill.:—Thanks, Edgar. Glad you like our editorials. We are trying to do our best along that line. We'll get that Air League yet.

Norman Shapiro, New York City:—Sorry, but we know of no Jewish aces in the U. S. Air Service, but we do not have full religious records of the men who are listed as aces. Perhaps some of our readers can give us some information on this. Did you see my explanation of the gun-gear in the March, 1934, issue of FLYING ACES? That should explain it all to you.

Bill Mellinthin, Los Angeles:—The four leading German aces were: von Richthofen, 80 victories; Udet, 62; Lowenhardt, 56; and Voss, 48. Total, 246. The leading Allied aces were: Fonck, 75; Mannock, 73; Bishop, 72; Collishaw, 68. Total, 288. The four leading British aces, which would include McCudden, 58, would have a total of 271.

Donald Beiming, Cincinnati, Ohio:—Unofficial figures show seventy American airmen who scored at least five victories in the World War. We cannot publish the list here, but will attempt to do so later on, when we can get official figures.

Edward E. Mlodoch, Chicago:—Full details and photographs of the new Douglas transport may be had by writing to the company at Ocean Park Boulevard, Santa Monica, California.

Richard Henke, Blue Island, Ill.:—Guynemer, Dorme, Thieffry and Mannock all disappeared leaving little trace of what really happened to them. The Spad was the most popular ship with the Americans, but it was not an American ship. No American-designed ships ever reached the Front.

J. K. Hulbert, Jr., Shipshewana, Ind.:—Your letter is not clear. Why not write direct to the firm that makes the machine you refer to?

Bernard Nolan, Philadelphia:—I do not know where Major Charles Biddle now resides, but I believe he flies out of your city regularly. The details of physical fitness and education for a mechanic's ticket will be given in full by writing to the Chamber of Commerce for Aviation, in Washington. The Fokker triplane was known as the DR-1.

P. Linnel, Yonkers, N. Y.:—I believe there is a display of war-time aircraft at Roosevelt Field. There is another display on the boardwalk at Atlantic City. This is a good exhibition.

Howard Dehls, Glendale, N. Y.:—This question has been answered too many times now. If the observer was an officer, he usually got credit for any ship his guns brought down, but if he was an enlisted man, it usually went to the pilot.

J. C. Fish, Hull, Yorks, England:—Most aircraft companies in this country will gladly send you pictures and three-view layouts of their products, if you write and explain that you wish them for model making. Get a list out of "All the World's Aircraft."

Salvatore Licitra, Brooklyn:—You must be sixteen to take a private pilot's certificate, and you must attend any school long enough to pass the Department of Commerce examination. Three months should be plenty for a private ticket.

Hugh A. Reynolds, Toronto, Ontario:—It is true that von Richthofen flew a Fokker triplane when he went to his death. I personally do not know if he ever flew a D-7. It is more than likely that he did, but he seems to have preferred the triplane. Mannock, regardless of what any Canadian book may have to say on the subject, is officially credited with 73 enemy planes. Just because you come from High Park, don't go high hat on us. Mannock is top man among the British, like it or not.

Robert L. Drummond, Waltham, Mass.:—The care and maintenance of instruments is given in an interesting book called "Aircraft Instruments," by H. Eaton and other specialists. It lists for \$5.00 and can be obtained through any good bookseller. You must send a stamped and self-addressed envelope for a personal reply.

Lawrence Pyle, Chester, Pa.:—Thanks for the offer of the photos, but we happen to have plenty of the ones you mention. You can get photographs of foreign ships from R. R. Martin, 1615 North Western Avenue, Hollywood, California.

Reg. Chapman, Calgary, Alberta:—The Hawker "Fury" is the fastest single-seater fighter in squadron service today. The Shrike and the A-8 Attack are the same ships, except that the Shrike has a radial and the A-8 has a water-cooled motor.

Robert Schipp, New York City:—The Salamander was a British Sopwith machine. Fonck is still alive but Quentin Roosevelt was killed in France. The Spad did about 110 m.p.h.

Charles Holmes, Washington, D. C.:—Appreciate your letter on the amateur pilot, and can see your side, but unfortunately we do not seem to find any of the type you draw. There are some, somewhere, I suppose, but they are few and far between. Still, if we get together this way, we might find a way out. The real amateur needs no curbing with legislation. It's the rattle-brained guy with a cheap motor and a lot of lumber who requires government restraint. Unfortunately, there are more of those than there are of the type you may represent. Thanks for your interesting letter, however.

Bert Meyer, Marcus, Iowa:—Write to the National Glider Association, Detroit, Michigan, for details and plans of modern gliders.

Dick Eadie, Sydney, Australia:—Glad you like FLYING ACES. The big air race to Australia caused quite a stir here. You must have seen the fun down there. The figures you mention in your letter are taken from a German ship. They mean weight of machine, 680 kilograms; full load, 235 kilograms, and gross weight, 915 kilograms. The von Richthofen triplane is said to be in the Exhibition Building in Prince Alfred Park, in Sydney. Haven't you seen it? A gravity tank is usually an emergency tank fitted high in the center-section to provide fuel in case the main fuel tank is punctured.

Peter Bowers, Los Atlas, Calif.:—The Germans used black or white squares according to the general background of the ship used. For instance, if they had a white, or light-colored ship, they used black crosses. If the ship was dark red or black, they used white crosses. Simple, eh? They changed to the straight-sided cross in 1918. Why? I don't know, unless it was more distinct, or easier to paint. The Russian war-time insignia was indicated by red, white and pale blue cocardes. Turkey used a crescent with three stars inside the points. The U. S. insignia you mention is not known to me, but it is interesting. I would like to see that book.

James Strole, Jr., Bloomfield, Calif.:—Hawker is the only well-known ace to have been brought down by von Richthofen. Lothar von Richthofen was credited with bringing Ball down at one time, but it is certain now that he did not. He was probably ganged-up on, and several German pilots got him. There is no record of who actually brought Luke down. He was killed after his plane landed for refusing to surrender.

Earl Huff, Hudson, Mass.:—The Curtiss firm is located at Garden City, Long Island, and the factory is at Buffalo, New York. I can't give you the information you desire on the Great Lakes Trainer or the Waco. Want to get me in a jam? For the 7,987th time—the Snipe was the fastest ship on either side of the Front.

William Miller, New Rochelle, N. Y.:—The Bristol Fighter could out-maneuver most single-seaters, and, with the rear gun in action, could out-fight almost any single-seater on the Front. Experts have declared that the Bristol Fighter broke the back of the German Air Service. The Handley Page was in more action than any of the Vickers Vimies, so there is no way of comparing their worth. The British insignia is blue on the outside and red in the middle. I flew Camels and Bristol Fighters. The Spad was very sluggish on the controls.

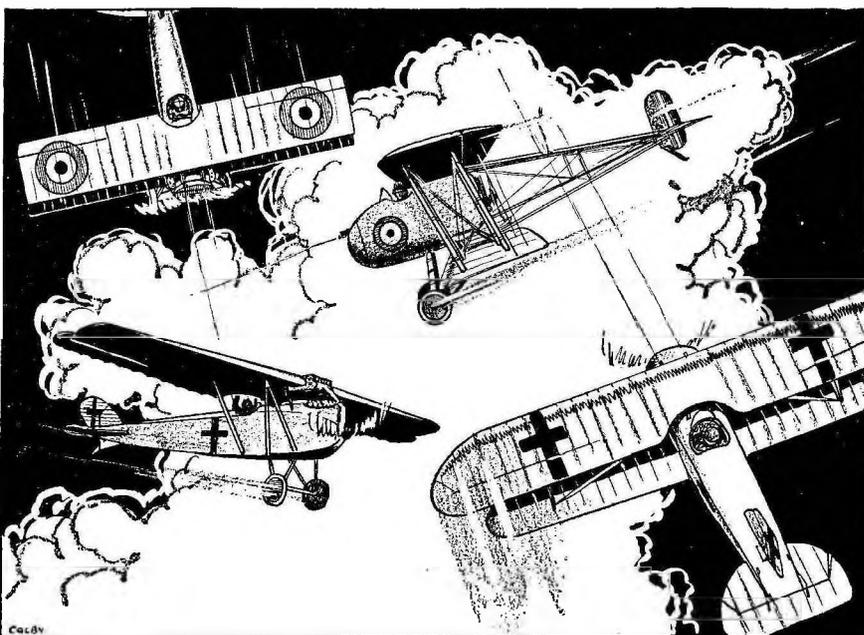
Donald A. Fee, Toronto, Canada:—The Browning gun is fired and timed by an electrical device, the main details of which are secret. I do not know which single-seater is the most heavily armed today. They don't hand out that information on a plate. Don't say I do not answer your letters. This is about the third time I've answered your mail.

Frank Sylvia, Roxbury, Mass.:—I do not know anything about your problem. You had better see a Department of Commerce physician in a case like that. Sounds as though you ought to be able to fly. Good luck to you!

Thomas McDevitt, Washington, D. C.:—Much fighting was done at high altitude during the war. Several times we were scrapping between 18,000 and 20,000 feet up. The bombers, fully loaded, reached about 12,000 feet.

Frank Higgins, Jersey City:—Your question is the strangest I have ever had—"Was there any ace who shot down enemy planes before the invention of the synchronization gear, and then lived to shoot some down with use of the geared gun?" There is little way of telling. Hawker shot ships down with a gun that was fixed to fire past the gun tips at an angle from the center of the machine. Later he flew D.H.2's and fired a fixed gun, but it was not synchronized. Boelcke probably did, and no doubt Immelman did, but the question is too unsettled to have a definite answer. This one is going to cause some fun.

MISSING WORDS CONTEST, No. 10



Win a Flying Scale Model of the BERLINER JOYCE OJ-2 in Missing Words Contest No. 10

FIVE PRIZES

- First—Flying scale model of the Berliner Joyce OJ-2, popular modern fighting ship.
- Second—Regulation flying helmet and goggles.
- And Three Prizes—Kit for S.E.5 model—guaranteed to fly.

To Win This Contest:

In the above picture the artist has told a story—and the same story is told in words below. Some of the words have been left out—for example, Vickers Vampire is the word missing from the first line of the story. What you should do to win this contest is fill in all the missing words to fit the picture above. Send us the list of missing words, in their correct order, with a letter telling us whether you are now or ever have been a member of any aviation or model building clubs other than the Flying Aces Club, and if these clubs are still in existence, what are their names and addresses.

Here's the Story:

The pusher propeller of the single-seater
 churned the air frantically as the
 sought to escape the streams of bullets from the
 that was coming at him from the side and the
 that roared towards him head-on. Bullets from the
 screaming across the ever narrowing space, tore his
 and sent splinters flying. The Vickers in the
 of the attacked ship chattered in answer at the
 now almost upon him. Suddenly from above dived a
 with wires screaming and its twin
 spouting tracers at the monoplane below. The
 suddenly threw up his arms, and toward the
 roared the pilotless monoplane. The two
 narrowly escaping collision themselves, saw the
 crash head-on into the roaring, darting
 whose pilot was so busy firing his
 that he had failed to notice the
 that had dived at the other
 and had saved the pilot of the battered
 from probable death. Both the
 and the monoplane, with its dead pilot, fell to
 a roaring furnace. With its tricolored
 gleaming upon its wings, the rescue ship and the
 flew away toward the fluffy
 in the distance, where they had first sprung the

Don't Forget:

The winners of the contest will be judged by the correctness of their list of missing words and by their letters. All decisions by the judges will be final.
 Be sure to mention in your letter the name and number of this contest, and the issue in which it appears. All answers on Missing Words Contest No. 10 must be mailed by the time the next issue of FLYING ACES is on sale. Send to

Missing Words Contest No. 10
FLYING ACES Magazine

67 West 44th St.

New York, N. Y.

It the Next Issue of **FLYING ACES** ~ An All-Star Number!

Fiction ~

New "Philip Strange" Mystery Novel

By Donald E. Keyhoe

One by one those dromes disappeared. No one knew where — and no one could be found to admit they had ever existed!

Hell-Cat Haunt, by Alexis Rossoff

The famous Hell-Cats return in a thrilling mystery of a haunted tarmac.

Horse Flyers, by Joe Archibald

Yoicks! Phineas rides to hounds — in a Spad. But, as he says, it's more fun to be the fox!

and others

Fact ~

A Sea Hawk's View of the War Games

By Kenneth Brown Collings

Exciting first-hand view of our Navy's aircraft carriers in their war maneuvers.

Outguessing Death, True Story

By Lieutenant H. Latane Lewis II

Where skill and daring save flyers in the most dangerous of stunts.

and Other Thrilling True Stories

Model Building ~

Complete Model Plans for the
Waco F-3, Latest Model
New De Havilland 86
Flying Aces Mystery Ship
and Others

Also ~

Amazing Stunt Photos, Pilotpics
F.A.C. News, War Planes Album

And on the Cover ~

Martin Bombers vs. Armed Transports
A Thrilling Battle Over New York City!

In the
March **FLYING ACES**

On Sale
January 24th

John Ripley, Hingham, Mass.:—Major Seagrave was killed while testing a motor boat in England, not at Daytona Beach. This is at least a different question.

Frank DiDonato, Brooklyn, N. Y.:—Your two-year course at a technical high school would not be considered a two-year college course if you applied for a flight cadet appointment.

C. Williams, Beacon, N. Y.:—All war-time rotary motors had the principle of cylinders revolving around a main crankshaft. The Le Rhone, Glerget, Monosoupape and Bentley were all motors of this type. See Page's "A.B.C. of Aviation" for details of the principles of operation.

Harold Leich, Connelville, Pa.:—The human body falling from a plane drops at a speed of 150 feet in 2½ seconds, according to the latest from parachute makers.

Eugene Monk, Roswell, N. M.:—The top speed of the Fokker D-8 was said to be 122 m.p.h. Allied and German records do not agree, however. The Germans claimed that it did 135. Captured ships in tests failed to show better than 122.

George Pickersgill, New York City:—The square on the rudder of the Commodore you mentioned was painted red.

J. M. Durham, Irvington, Calif.:—You might try Wrightson and Pierce, Heston Airport, Heston, Hayes, England, for war-time ships. I know of nowhere in the United States where such ships may be purchased, unless you poked around some of the movie-lot hangars out there in California.

Norman Reinhardt, Knight's Landing, Calif.:—The article "Flying in China," by Harrison Forman, was printed in the March, 1934, issue of **FLYING ACES**.

Alden Jenk, San Francisco:—The Fokker D-7 was probably the most popular German plane on the Front, from a German point of view. For the 6,789th time, von Richthofen's record was 80 enemy planes. He was shot down on April 21st, 1918.

Frank Bidwell, Palo Alto, Calif.:—We have advertisers of war plane pictures in **FLYING ACES** all the time. They are the only ones I know of in the United States. I know nothing of a 320 m.p.h. plane being tested by the Navy, but there may be one.

Charles Truax, Jr., Washington, D. C.:—There is no way of learning how much the Germans paid for a Fokker triplane. Fokker was paid 25,000 marks apiece for his D-7's, and his first contract for 400 brought a sum of ten million marks.

George Winkelman, San Francisco:—Your idea of showing model plans for small airdromes will be taken up later. It seems good.

Ralph Balsler, Chicago:—We will give you a solid scale model of a Gotha in a short time. The S.E.5 had a Lewis gun on the upper wings. Ratchet guns are another name for movable guns used in the back seat of all two-seaters during the war.

Herbert Tost, La Porte, Indiana:—You do not have to have a college education to enlist in either the Army or Navy. You do to get a commission or an appointment as a flight cadet.

E. J. Van Dam, New York City:—Most reserve corps are made up of ex-regular Army or Navy men. Why not apply direct to the O. C. of the unit you are interested in?

Stanley F. Bogdon, Plymouth, Pa.:—The war planes in general were much stronger and more airworthy than most writers of fiction would have you believe. The British have selected a new fighter based on the general design of the Supermarine S-5. We showed it recently in SKY BIRDS. You should get both mags. A modern parachute costs about \$300.

Charles Culver, Orbisonia, Pa.:—The Handley Page was far better than the Gotha. A few used two-way wireless sets during their long-distance raids, but the messages were in code, not speech. The Camel was a better all-around ship than the S.E.5, but the S.E. was easier to fly. Major Baracca was killed during the war. Don't you read FLYING ACES?

Peter McLaughton, Toronto, Canada:—There were plenty of Pups at the Front, during their day. The detail of all war-time machine guns was shown in an article I did for FLYING ACES in the March, 1934, issue. That should give you all you want. The F.E.2D. did about 97. I did not know Captain Fairclough. I was in No. 22, and he was in Nos. 21, 23 and 24, so we missed each other.

Guy Circhione, Stoneham, Mass.:—The Piaggio racer has been landed on many occasions, and recently we received a circular from the Italian factory on it. I do not know all the details of the landing secrets, but evidently they have landed it several times. The prop is stopped at a horizontal position and the ship drops down on the hydrovanes at a speed much lower than its top speed, of course. That's all I can tell you, for the whole thing has been much of a secret.

James W. Murphy, Halifax, N. S.:—S. E. 5 stood for Scouting Experimental No. 5 type. The Fokker firm is still in business in Holland, not in the United States. A.E.F. stood for American Expeditionary Force. There are about five large manufacturing concerns making aircraft in Canada, and many turning out parts.

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Baron of Death

(Continued from page 4)

again. It was bad enough to dispatch kids up into those war-rent skies, but when one of them got it before he even got up. . . . The coldness and harsh impersonalness of the C. O. was all a mask. A man needed a mask.

He lowered himself heavily into his swivel chair. "And I suppose you youngsters," he muttered without looking up, "solemnly swore to get this Baron Death, eh?"

The trio flushed. The C. O. spoke again, head still bowed.

"The moment I learn any pilot of mine is trying to get this baron, I ground him, if the baron already hasn't, permanently. Corpses make rotten pilots. God knows that the 79th, we Hellbirds, fly hard and—" He broke off. Hisso mutter drifted down from the sky and he listened, trying to single out the planes, count them.

"Dawn patrol coming back." He rose and walked past his switchboard orderly and to the door. He opened it and stood leaning on the knob.

Blue-gray Spads bearing a crimson harpy, a bird of hell, perched on the fuselage side, settled over the drome. One touched. Another slammed in and bucketed across the field, then a third, and two more. The sixth glided in, pancaked, bounced, then taxied. It kept cruising along the ground, wobbling a little. Then the hand at the controls went limp altogether and it began to run in drunken arcs about the field.

A band of mecs rushed toward it. The seventh ship, preparing to come in, zoomed out of its path in the nick of time. The crash-and-fire alarm was already clamoring.

The runaway ship curveted in another arc. Then a pilot leaped out of his pit and came at it laterally. The unguided ship whipped toward him, but the pilot succeeded in clutching the leading edge of the lower wing, and hung on, dragging the ship around in a ground loop.

A pursuing mec threw himself at the horizontal stabilizer, and another overtook the crate, leaped onto the stirrup, and cut the ignition switch.

A little knot of pilots gathered. Orderlies trotted from the emergency dressing tent with a stretcher. A limp thing was cradled out of the pit, and they took him away in the litter.

Poffer was bellowing orders. Fellows came up. Beside Mort, Berlin Joe was cursing in a husky voice.

"Take out C flight, Captain Fellows, immediately. Sector patrol. And take these three fresh replacements with you. We can let these kids crack!"

The tall Fellows with the burnt-out eyes saluted. Then he gazed thoughtfully after the litter bearing the recently landed pilot away.

"Poor devil! It was just last week he had Baron Death himself cold and held his fire because the baron's guns jammed. . . ."

In a turmoil of clattering Hissos and exhaust-hosed dust, the trio stood in their baggy flying suits.

"Get this straight, boys," Fellows bawled at them. "Stick to formation. If we sight an enemy, fire one burst and pull out. Do anything else—and you endanger the life of a valuable pilot. Okay?"

Berlin Joe and Wiley nodded quickly. The kid who was known as No-Orders Mort, didn't. Fellows sneered.

"Tough bird, huh?"

"No," Mort yelled back. "But I don't like running."

Winners of Missing Words Contest No. 8

First Prize—ROBERT P. BECKMAN, Northampton, Mass. *Second Prize*—GEO. GRAHAM, Los Angeles, Cal. *And Three Prizes*—CECIL PARKER, Houston, Tex., RUFUS BAXTER, Memphis, Tenn., and PAUL NICHOLSON, Terre Haute, Ind.

"All right. Maybe you'll like this better." Fellows folded a gloved fist under Mort's face. "Which is what anybody who disobeys orders gets when we come down."

He turned on a heel and strode down to his ship. Mort climbed into his plane, his face a frozen mask.

This wasn't one of the eggcrate Jennies of Kelly Field, nor a low-powered Sopwith Pup or one of the Morane Parasols of Issoudun. It was a two-mile-a-minute, 220-Hissoed shark of the skies. Those air-lined Vickers breeches spewed real, lethal lead. If he made any mistakes up there, it wouldn't be a question of facing a sarcastic instructor when he returned. But a Hun might pat himself on the back as he checked up another to the credit of his victory bag.

Mort realized he was playing for keeps now.

Fellows swung up his long arm, and the first ship bucketed down the drome.

The ten ships soon dropped into echelon formation, Wiley and Berlin Joe in number three and four position on the right side of the V, Mort himself third back on the left.

They climbed steadily to ten thousand, crossed the Moselle. The rail lines looked like threads glittering in the rising sun. Mort checked his instruments, then warmed his Vickers as he saw the man ahead do the same. When he next glanced overside, they were crossing the lines. Trenchworks wormed below, half-shrouded in ground mist, gun smoke. It looked peaceful. Graves do, too, Mort thought.

Then a chill hit him as he spotted a couple of ships in the north. The sunlight shone on the black Maltese Cross markings. Fellows wagged his wings and they turned south. Mort began to have an ugly suspicion that they'd bear

away from any combat if Fellows could help it.

Minutes passed. Then he saw it—a lone Fokker, ahead, below, even then banking and heading back for Hundland. The kid swung his eyes up to see what Fellows was going to do.

The big flight leader had turned around in his cockpit, his hand up to warn the rookies to hold back. Mort's fingers twitched, eager to open the throttle, to nudge the Bowden controls.

Something drew his goggled eyes to the cumulus chunk again. Wing tips, the checkered ones of the Blacktail circus, were knifing from it. Mort blinked. In that split second, he had a sickly vision of the runaway ship when the dawn patrol had come in, of the sodden thing they'd lifted from it.

A blow of his gauntleted arm sent his goggles up, revealed his eyes, bleak. He had decided. Hell with orders! And his Spad wrenched out of formation, wingslipped, then lunged in a fierce dive eastward.

The Huns edged out of the cloud bank about a mile away. They saw that the Yank flight hadn't been tricked by the decoy ship. The Spads were at no disadvantage for altitude, and Jerry decided he wanted none of them. The Fokkers began to swing in a wide, single column bank eastward.

But there was another ship between them and the eastern horizon—beneath them, too. They hadn't thought to look that way. Wings dripping cloud moisture, they prepared to pull out, and that lone Spad tobogganed up the sky face. It was No-Orders Mort.

He was swallowed momentarily as he roared his nose into the same cumulus. Then he emerged on the upper side, and came stabbing down at the third Fokker in the file that didn't even know he was there until his first burst rattled off its engine hoods.

Mort's second burst peppered the camel-back. The tracers drew chalk lines across the sky, straight into the trapped pilot's pit. The Boche wrenched once as if fanged by a snake; then he was a limp form shuttled around inside his safety belt as his unguided D-7 whipped in the fatal spin.

Mort slammed straight down after him before the surprised flight could even get him in their ring sights. He sledged past the whirling crate, began to flatten as the altimeter needle jumped crazily around six thousand. The Fokkers were still bearing eastward. It would have been crazy to risk a vengeance dive on him with that whole Spad flight waiting.

Up a thousand above the Fokker file, he made out another black-tailed Boche ship. It seemed to be circling idly, like a gull, and it made no move to come down. Mort guessed it had been there all the time.

He streaked for the home drome. The landing-T was dotted with ships when he brought up the field. Fellows and the flight had gotten in.

Mort almost washed out the landing trucks setting her down, weaved slowly up the field, slapped off the ignition switch. He pulled off his helmet. It seemed as if he couldn't get enough air. When he looked up, Fellows was standing just inside his wing tip.

"Like to speak to you, lieutenant," Fellows said.

Mort clambered out and shuffled up to him.

"I always keep promises," Fellows said, and his left fist shot out. It came like the jab of a crowbar, hard and true. Mort caught it on the jaw. He sat down heavily. Fighting against the nausea of the killing he'd done, he tried to scramble up.

It was Fellows' big paw that reached down and yanked him up. "The drinks are on me, kid."

Mort looked at him as Berlin Joe and Wiley came up.

"Like hell they are, captain," he said quietly. "And I'll do it again. . . ."

CHAPTER II

THE KING KILLER

A LITTLE before dusk that evening the trio of rookies piled into a cycle and side-car and bucked a constant tide of lorries, ambulances and troop columns on the road to Neufchateau. A few kilos behind the curve of the Meuse there, they stood bare-headed in a thicket of white crosses while a bare box was lowered into the ground. It was Allen.

The slow, heavy rumble of the heavies was the only taps. They stood, awkward, sad, as two Frog gravediggers shoveled on the dirt woodenly.

"I guess his luck just ran out," Berlin Joe muttered. "And ours will too, some day. And it won't be long—in this game."

"Let's go back and have a drink," Mort said. "Pete would want us to."

Wiley swore. "You're hard, Mort. You haven't got a heart." But he followed back to the cycle. When they drew up on the edge of the tarmac again, they sat silent a few minutes. Mort sleeved some of the road mud from his face. Maybe it was something else, too. All he could think of was that kid back there, planted in the soil of France before he even got a crack at the game.

Mort's hand dropped from the throttle grip and closed over the empty air of the night as if he were extinguishing a match. Berlin Joe's words, as he climbed stiffly out of the side-car, were like a punch in the teeth. It was as if he'd read Mort's mind.

"You know, this Baron Death—"

"What about him?" Mort asked sharply.

"He almost got another of us today," Wiley burst in a thick whisper. "We didn't mean to say anything because we figured your nerve might—"

"Don't worry about my nerve. I don't."

"Mort," Berlin Joe rubbed his thinning hair, "when you hit that Hun and dived, did you happen to look back afterward?"

"Sure."

"Didn't see a Boche crate all alone up above the others, just sorta cruising around like a lazy buzzard, did you?"

Mort nodded.

"That particular buzzard," went on the glum-faced Berlin Joe, "was the bird who got Pete Allen—Baron Death."

Mort swung off the cycle. "It couldn't have been! He'd have dived on me, could have, easily."

"It was the baron." Wiley seconded Berlin Joe. "I saw that skull insignia plain as day on the side of his ship."

"I did, too, Mort, and I said to myself, 'He got Pete, and now it'll be Mort and what chance will Wiley and I have?' It was Baron Death."

Mort nodded once. "Captain Fellows was right," he said. "I'm going to tell him so."

Mort made his way down to Fellows' hutment. At his knock, the flight leader bade him come in.

Jim Mort put his back against the closed door and hesitated a moment. That sock in the jaw wasn't easy to take or forgive, but he stuck out his hand jerkily.

"You were plenty right today, captain. I just learned Baron Death was up there."

Fellows was writing a letter. He put down the pen, got up and took Mort's hand.

"I suppose I'll be grounded when the C.O. checks your report."

Fellows snorted, and his burnt-out eyes flickered a moment. "I should ground a rook who gets an E.A. on his first combat flight! Bah!"

"Thanks, captain."

They stood awkwardly. Mort noticed the girl's picture on Fellows' table.

"Your girl, captain?"

Fellows made a wry face. "The other fellow's girl. Guess that's why I'm here."

"Oh, sorry. Say, that Baron Death didn't dive on me today when I struck. He could have. Do you know why he didn't, captain?"

Fellows gave him a long look. Then he got out a bottle of brandy, a couple of glasses, and said not to call him captain. They had one. Fellows refilled the glasses and pushed out a chair.

"He could have killed you if he'd wanted to, Mort."

"I know."

"Well, there's your answer. He didn't want to. Why?" Fellows' rangy shoulders said that with a shrug. "Get the facts, rookie. This Baron Death isn't the best of the Boche aces, Not by quite a shot. Ten-twelve Jerries I could name off-hand that have bigger victory bags than his. And yet our men fear him—well, not exactly fear. Let's say he sorta haunts 'em—more than any other pilot they have. Why?"

Fellows hunched forward over his long, outflung legs.

"Why? Because he's sorta like a lazy buzzard. He seems to hunt when he pleases—maybe when he gets hungry. Mind you, I've seen him do before what he did today—let cold meat pass right under his nose. And I can't tell you the

answer to that one. But when he goes out to kill, he kills—always."

Fellows fed the kid facts. There was one period of almost two weeks to the day when Baron Death had failed to get a *descendu*. Then he nipped five in one day—killed two, shot to pieces the engines of two more, watched them glide to safety when he could have finished them off, and forced a fifth down behind the Boche lines. He could have killed that one, too, if he'd wanted, Fellows said.

"Try and figure a bird like that!"

Mort shook his head. He couldn't.

"I don't know much more. The devil seems to fly damned near twenty-four hours a day. And what impresses our boys is his nerve. He crosses our lines and crosses 'em deep, again and again. Often twice in a day. Solo patrols, too. That's when he does his ground-strafting."

Mort sat thinking of that one time he'd seen Baron Death strafing. The Fokker had swung perilously low, yet Mort recalled how little the Boche seemed to hit.

"And he's one regular old owl for night work." Fellows took up the story again. "That all fits the pattern, crazy pattern though it may be. But that white helmet of his—they say it's paint with phosphorus—is some training camp ace's trick. It marks him, makes him a regular target. And he's too smart a bird for that stuff—smart as a clawing tiger in a dogfight. You'll see some time."

Mort shook his head. It was like some fantastic dream, yet his own life was evidence of the truth of Fellows' words.

"Yep, he must spend damned near as much time behind our lines as behind his own. You'd think he was one of us. That's your Baron Death! A cockeyed king killer! A sky tiger who unsheathes the claws when he feels like it. A lazy assassin on wings. Your answer's as good as anybody's."

THEY sat in silence for a while. A sentry's tread sounded on the duckboard outside. Mort lit a cigarette. Fellows' eyes grew to pinpoints when he saw the way that match was extinguished. Jim Mort didn't seem to notice that.

"Anything else?" he asked the flight leader.

Fellows' heels scratched the floor as he straightened his sprawled legs with a jerk. "There is," he said. "I never told anybody else. Don't know why I'm telling you. Ever hear of Caldwell, the Canadian ace?"

"Biggest victory bag in the R.A.F."

"Correct. Ran across him in Paris once. It was just about two days after I saw him take a powder when he had the altitude on the baron. We were pouring down a lot of the fizz water. And I asked him about it. The Canadian didn't know anything, couldn't remember it."

"Yes?" Mort urged as Fellows paused.

"Maybe I had a lot more of that fizz

water in me than I realized. Anyway, I put out a subtle hint to the effect that maybe he feared the Baron. He should have knocked me down. Instead, he just smiled, told me there were reasons, and ordered another bottle. And I happen to know he isn't afraid of a damned thing. I trained with him in an R.A.F. pool."

"And he actually took a powder from the baron?" Mort asked.

Fellows nodded. "The best flyer in the British army. And maybe it was the same reason that made Pierre Renard, the Frog ace, miss him when he had him cold in his sights. Renard, the best shot in any escadrille!"

Fellows got up and stood before the fire, his back to Jim Mort. Jim leaned over to mash out his cigarette. His eyes couldn't help catching the lines of the letter Fellows had been writing.

"If I should fail to return, please see that this reaches my mother, Mrs. A. J. Fellows of 269 Bridges Street—"

Mort looked up. His eyes met Fellows'. The latter shrugged.

"Guess I'm getting to be an old woman. Just got a hunch, that's all. Something inside tells me I won't be getting up in the morning. This is maybe my last night."

There was absolute silence. Then Fellows flung around on Jim Mort brusquely.

"I might as well tell you the rest. I don't know it's so. Haven't got any facts. But you must admit it's the only answer that fits the crazy pattern. I believe this Baron Death is a—"

The moan of a distant but hard-riding plane crept into the hutment. In the space of seconds, it became a drone, then a heavy roar.

"Mercedes," said Fellows. He picked up his hat.

Mort jumped before him. "You believe Baron Death is what?"

"I could swear he's a—"

The blast of the *alerte* siren drowned out everything. Feet began to beat on the duckboards. A door close by slammed. Mort and the flight commandeer went out.

The clamor of the Mercedes thundered down from directly overhead. A small search of the A.A. defense unit armed up through the dark, fingered a swift-cleaving checkered wing.

Somebody near Mort and Fellows yelled, "The Blacktails!"

The search beam veered leftward to strip more of the darkness, speared a hard-diving fuselage. It was the same ship—only one, it seemed—and the eye of the yellow light glittered squarely on the insignia on its fuselage, a skull. It was Baron Death!

The adjutant and Poffer came running along as the baron whipped low and sprayed the tarmac with m.g. fire. His Spandaus chattered away as he swooped. The quartette in front of Fellows' hutment crowded back against the wall.

Then the Fokker flicked up out of the search, roared over the hangars, and was gone.

"Just got a call from Wing H.Q. A Boche squadron was reported to have crossed up near Vouziers." The C.O.

drew a big hand down his face. "But that was only a few minutes ago. And the baron was entirely alone."

He began giving orders in a calm, tired voice. A few field lights flickered on. Ships were trundled from the hangars, wound up. Poffer named the leader of D flight to go up. More lights flickered on along the landing-T. A Spad shot down it, bounced once, then ascended steeply. Others began to trail out behind it. The tail assembly of the last grew faint down at the other end of the field. The lights went out.

Beside Mort, Fellows breathed a sigh of relief. "Glad he didn't send me. I never had such a hunch before. But I guess everything's all right now. Might as well tear up that letter—"

That was all Captain Fellows got a chance to say. There was a blasting roar, powerful as a concussion. It was like the forerunner of a tornado. The universe seemed one diapason of engine sound—and they heard the heavier, deeper drone of Mercedes.

The Boche had glided down silently on them with the prevailing northeast wind.

The crash of their diving ships was like the forerunner of a hurricane. Then the storm was on the Hellbirds.

Spandaus gnashed their leaden teeth furiously. Checkered wings slashed low in the dark and beat the Hellbird tarmac with a lethal scourge. As they swept over, Mercedes deafening, they began to send magnesium flares over-side.

Somebody clawed at Mort's sleeve. "Mort?" It was Wiley.

"Steady, fella."

"Joe's up there!"

"Joe? Berlin Joe?"

"Yes-s. A man keeled over just as he was climbing into the pit. Joe and I had run down to the hangars with the gang from the messhall, and Joe jumped to his place."

Mort envied him. "Good man!"

"But why the hell doesn't he come down and get those Huns?" Wiley screamed.

The Boche swept off the south end of the field. Fellows stepped between the two men.

"Haven't got time to make the A.A. trenches. They'll be coming back. Better get inside."

Fellows and Wiley did. Mort was too fascinated to go in. The curtain was about to go up on a spectacular show.

It went up with a bang. The Blacktails came whipping back, wing-slipping down out of a vertical bank. Once, twice, Mort made out the vague shape of a wing in the dark, then only the flickering stab from exhaust stacks, the frothing muzzle glow of Spandaus. A stray slug clipped dirt at his feet. He distinctly heard the tinkle of broken glass.

The Blacktails were on the field. Magnesium flares began to drop and D flight of the Hellbirds came diving on them.

The field searchlights knifed up through the blackness. A tumbling moil of checkered wings and ghostly Spad fuselages was unfolded. A Fokker burst into flames in mid-air, tank hit. An-

other tried to swerve from the rain of Vickers fire, tripped a wing on the hard-packed tarmac, and somersaulted over and over before its wings crumpled. Two more Fokkers came down, one to crash with shattered controls, the other to make a forced landing. A stray, down-boring slug drilled the top of the pilot's skull as he straightened in the pit with lifted Very pistol to destroy his ship.

Then the Blackbirds went away from there, seeking safety in the night. D flight tried to get another of the stragglers as A.A. searchlights for kilos around began shredding the darkness. One by one, the field lights blinked on. Figures spewed from the mess, from the hutments, ventured out of the hangars.

Three Fokkers of the checkered wings lay on the Hellbird drome, one of them comparatively unharmed. The fire-scarred skeleton of a fourth perched ludicrously in the hedge of lilacs beyond the south side of the field. The drome was comparatively unharmed. There were a few holes where small bombs had hit, and one side of an empty hangar was knocked in from concussion. The Blacktails hadn't had time to make a direct hit.

Poffer came sauntering down from the line, cursing pleasantly. There hadn't been even a single casualty. He turned out to inspect the sound Fokker as D flight began to straggle in.

Wiley stepped out of the hutment, Fellows' brandy bottle in one hand. They watched the ships wheel up to the line, the men climb out. Jubilant, they trooped down to the mess bar to celebrate. It was seldom they got home a wallop like that against the arrogant Blacktails.

One after another, in bunches, they passed the two rooks, two pilots brought up the rear. One of them was over six feet; he couldn't be Berlin Joe. Mort and Wiley waited. The pair neared, and a ringing laugh rang from the shorter one. Doleful Joe had never laughed like that.

It wasn't he. It was a pilot called "Preacher" Holland—"Preacher" because he neither drank, smoke nor swore. Berlin Joe had not come back.

"IT'S that Baron Death," Wiley whispered hoarsely. "He's bad luck to us. Every time he comes around, one of us dies. First it was Pete Allen. The baron didn't exactly kill him. Now he appears again—and Joe gets his. He—"

"Save that for the Old Ladies' Home," Mort growled. He stepped forward as the adjutant came along the duckboards from the hangar line in the fitful glow of the still burning magnesium flares. He'd ask him.

The adjutant turned back to bawl an order, then stood staring up at the sky in the south. Mort followed his gaze. Two searchlights were crisscrossing haphazardly. The two white arms bisected high up, wavered like thin tentacles in a high wind, steadied. And in the intersection of their beams, two darting ships were revealed in the tangle of a dogfight.

They went around and around in a wild, tight, tilted circle. One yanked up on its back, then risked an inverted zoom. The second whiplashed under it. You could imagine the deadly thrust of m.g. fire probing up for the climbing crate. But the second rolled, wing-slid, then came around in a knifing arc.

They were like a couple of moths cavorting in the tip of a flame up there—cavorting in a macabre dance.

The adjutant in front of Mort fumbled for the field glasses slung on his hip. He focussed them, then whistled between his teeth.

"What, sir?"

The adjutant answered without lowering the glasses. "One of our boys has got Baron Death up there!"

One of the ships had darted out of the light beam. The other came around in a stiff reversement. The first reappeared, and they hurtled at each other, parallel to the watchers on the drome of the Hellbirds. A crash seemed imminent.

Then one broke and came arcing toward the north.

"He made the baron give," the adjutant announced in a hushed voice.

The searchlights untwined. One ran down the sky rapidly to the eastward. It trapped one of them.

"The baron running for it!"

The other bus was lost somewhere in the cloak of the night. The baron's ship got out of the stabbing finger of the searchlight, but another, directly below him, found him. And the A.A. stuff began to blossom around him. The baron slanted downward.

"Smart Hun," murmured the adjutant. "Going like a bat, and hitting lower so they can't get their trajectory adjusted."

Still there was no sign of the Hellbird bus.

"I've heard of his doing strange things," the adjutant spoke again, "but never taking a powder before or—"

The second crate appeared. It dived down the light beam on the baron's Fokker. The baron tried to roll. They could see his checkered wings tilt up. He whiplashed and stood on his tail to get in a murderous burst. But the down-hurling Spad kept coming.

The noses of the two ships seemed about to mesh, but they slid by each other. A split second afterward, the baron's bus was whipping down in an uncontrolled spin. The Hellbird Spad had slapped its wing with all the power of its toboggan.

The adjutant stopped breathing. Mort's fingernails dug deep into his palms. Those two ships had sheered so close that the pilots might almost have shaken hands. And now the Fokker of the skull sign was out of control. Baron Death was cold meat.

"Here he comes," the adjutant said breathlessly.

He saw him start first with his glasses. The Hellbird Spad tore out of its loop and zoomed in grim disdain of the safety factor. He corkscrewed into a chandelle.

"Smart!" the adjutant breathed. "If

that wily Boche is faking—" He said no more. For the Spad sledged up right past the spinning ship that was coming down like a falling leaf. Over it, the Spad leveled out and circled as it watched the baron come out of the spin. The Fokker whipped around on a wing tip, streaked into the east—was gone.

Twice afterward, wheeling, slapping searchlights poignarded it briefly. Then it was gone beyond the lines, safe.

Back on the Hellbird tarmac, the adjutant and Mort stood frozen. The adjutant's binoculars were still fastened to his eyes as he stared unseeingly into darkness. After a while he lowered them and turned around.

"He had him cold."

Mort nodded. They waited. Wiley advanced from the hutment and began to jabber. A Spad dragged the dome. The field lights flickered on, and the Spad buzzed in from the west and fishtailed dangerously into a cross-wing landing. Berlin Joe Smith got out and stood pawing at blood that trickled from a bullet slash across his face.

The adjutant led the way to him. "You had that—"

"Got separated from the flight when I went up," Berlin Joe explained gruffly as he stared at the blood on his glove. He didn't want to meet their eyes. "Lost the drome completely, and I ran into that Hun south of here."

"It was Baron Death!" Wiley burst out.

"You had him, lieutenant. . . ." The adjutant waited.

Berlin Joe kept staring at his hand. "Gun stoppage."

There was nothing to say.

Wiley spoke, anyway. "Why, you passed so close once you could have seen his face."

Berlin Joe looked up then. "I did. He had his goggles up. He looked like—" Then he broke off.

And suddenly Jim Mort knew Joe was lying about that gun stoppage. Mort's arms shot out. And he leaped on Joe, grabbing for his throat. They hit the ground. The adjutant and Wiley tried to tear Mort loose, but he fastened his hands deeper. He wanted to tear Berlin Joe's throat out. Baron Death had as good as killed Pete Allen. The baron was the kind of a wolf who ground-strafed helpless men. Mort's eyes met Joe's. And Berlin Joe was looking at Mort, singling out each detail of his face even as his throat rattled for breath, looking at him with a peculiar fascination.

Mort let his hands go limp. He got up.

"Sorry, Joe." He stood a moment, undecided. There was something, something. That haunting thing came to him again. Berlin Joe's hypnotized stare had almost told him what Joe's lips had refused to say. Mort couldn't quite figure it. Maybe he was afraid to.

A shudder shook his frame. Then he turned and walked slowly back toward Fellows' hutment. Fellows had been about to say something when the attack came, had been about to tell him what he thought Baron Death really was. That might solve the mystery of the

king killer of the clouds who only struck when he so deigned, the man whom great aces had refused to hunt—a Boche whom, now, little Berlin Joe had let escape.

Mort entered the hutment. "Fellows," he called into the dark. "Fellows?"

There was no answer. He fumbled around until he found the light and turned it on. His eyes first fell on that letter the captain had been writing to his mother. There was a splotch of red on it, still sticky. Blood! Then he saw Fellows.

He was slumped on the floor in front of the table. And Fellows had been correct about his hunch. The stray bullet that Mort had heard as it punctured the window had carried the flight commander's number.

Fellows wasn't going to answer any more questions.

CHAPTER IV

THREE-POINT IN HELL

MORT couldn't sleep. There seemed only two things—what the late Fellows had been telling him about the death baron, and that look in Berlin Joe's eyes when he'd had his hands on Joe's throat.

Wiley's oblivious snore across the room infuriated him. He got up, jerked on a suit of coveralls over his pajamas, and wandered out into the night. It was about an hour before dawn. Already vague figures of mecs were trundling out the patrol ships.

Overhead, the dimming stars looked like moth holes in a gigantic blanket. He walked swiftly down to the mess hall, to the operations office, then cut over toward the east side of the tarmac. A heavy began to toll mournfully up on the Front. It got lighter in a wan, jaundiced way. Something darted between the scudding clouds.

Mort blinked up at the thickness. There was a diving wing, so dim it might have been an apparition. Then it became reality, a pair of checkered wings of one of the Blacktail Fokkers. It sledged down, ripping for the Hellbird drome. Dipping low, it flattened and passed over Mort, the thunder of its Mercedes finally being carried back on the wind. Somehow, he sensed it was Baron Death himself.

"Damned Hun!" Mort growled. "Wasn't satisfied with the show last night so—"

Something chuted down from the side of the ship. The running figures at the other end of the drome froze in their tracks. It was a hand bomb.

The Fokker swooped up over a hangar, flipped on its back, rolled out of it and was swallowed in the grayness of the east a moment later. The thing that had dropped from its side unfurled a long streamer. The wind carried it backward swiftly, over Mort's head, down toward the lilacs.

Mort swung and chased after it. It was snarled in a low branch, a tight-wound packet. Mort worked it free. It was addressed "To the Pilot of the

79th Whom I Had the Honor of Engaging in Combat Last Night."

Mort hesitated but a moment. The ground guard was still some distance away. He tore it open. Typewritten, at the bottom was the signature of "Baron Death."

Mort sucked hard on his cigarette. The note was for Joe, who'd let the baron escape when he had him cold meat. Jim Mort read it.

"Shortage of petrol forced me to pull out of our fight last night. Should you care to take up where we left off, I shall be on my *Staffel's* dawn patrol this morning. Please do me the honor of dropping out when we sight each other so that we can engage single-handed. I shall await you over Conflans."

He stuffed the note inside his coveralls as the other men came stomping through the lilac bushes.

"See where it came down, lieutenant?"

"Think I'd be slopping around in these bushes if I'd found it?" Mort snapped back. He ambled off.

"They all bellyache when they draw the dawn patrol," the ground-guard corporal muttered.

But he was wrong about Mort. Ten minutes later, when the rising gale brought in a driving, drenching rain that made a morass of the field and flying impossible, Jim Mort swore thickly.

The squadron was grounded all day. Men sat around the mess and smoked endless cigarettes. There were sounds of a raucous phonograph, the clink of glasses at the bar. The hours wore away grudgingly. Mort and Berlin Joe came face to face. They didn't speak. Mort's eyes bored into the other, and he turned away quickly.

The lean, bleak-eyed rookie slept about an hour that night. He was waiting for the dawn, and he grinned a little when it came fairly clear, with fair visibility. When the others came down for the dawn patrol, he was waiting in his cockpit, coveralls slung on over his pajamas, the baron's message underneath.

The flight leader's arm semaphored up; his helmet streamers crackled out in the slipstream as he bucketed down the field. There was a tenuous ground mist, but it was clearer upstairs. Mort whistled off-tune as they crossed at the St. Mihiel salient. Now was his chance to get a peek at that baron bird. Maybe he'd learn why men didn't kill him. That ghost stalking the back of his mind was like an itch. It demanded settling.

They prowled the Front. Below, the trenchworks lay wreathed in a soupy murk. In a rift of it, they picked up the rail-line between Verdun and Conflans. Then swung down the second leg of the patrol triangle. The heavens seemed deserted.

Suddenly, the Hellbird point's flippers waggled, and he was zooming toward the dome of the sky. Mort put his stick against his flat belly and spotted the enemy coming out of the east—Blacktails, ten of them, to six of the Hellbirds.

FLUTTERING out of formation, a Fokker leveled southward. Mort's insides became a cold lump. He made out the skull sign on its fuselage, then the baron's white helmet, cupped like an egg in the cockpit. Mort put his teeth together and banked southward himself.

He rolled flat. They started to veer together. The baron's arm went up in a curt wave. Seconds passed.

The next moment, the gauntlet was flung in—the baron's gauntlet. Sudden and careless as a wind-blown leaf, deadly as a striking cobra, he was over on his back, zooming. The zoom ended in a roll, a vicious down-lunge, the streamers of tracer tracking the sky.

Mort couldn't breathe as he rolled his ship from the line of fire. Cutting the throttle, he whipstalled to nab the baron in his sight. The baron wasn't there. Lead rattled against the floorboards. Mort looked down at the ship of the skull sign thrusting up, spat, and poured the gun to his Hiss as he tipped on his back.

Seconds later his firewall vibrated under a spatter of lead. Instrument dials washed out under the destructive probe of another burst. His skull burned, and a headache took up residence with the sudden punch of a riveter's drill. His goggles clouded. He pushed them up. When his glove came down, there was red on it.

With controls reversed, he dived precipitately, full-gunned. For a hasty side-glance had shown him the baron slashing in on a wing tip at his broadside. Mort went down, and Baron Death wing-slipped to tail him closer than a bill-collector. It was Death, C.O.D.

Mort rolled desperately. The lead poured into his tail assembly, crawled up his empennage, spattered on the camel-back. Mort steepened his dive. A look in the segment of his dashboard mirror left showed him the Hun ace directly on top of him.

He cut the gun and inched the stick back. The Fokker nose swelled in the mirror, as if the latter were being transformed into a magnifying glass. The glass became too small for the blunt front. The boss of the prop appeared to be inches from Mort's rigid right shoulder, and his ship curveted slowly, steadily, out of the dive as it quivered under the lash of the baron's Spandaus.

The Boche broke. He had to, or crash himself as well as his foe to destruction. The baron wasn't fighting that way. Mort was. Under him, the baron roared, sheering close with the manner of a man who wanted to finish the business as efficiently and as soon as possible. That was his error.

Cutting his gun still more, Mort juggled the stick, and the fish-tailing Spad settled on the Fokker. There was a jerk, a brief instant with the two ships locked in mid-air. The Spad's trucks contacted the Fokker's upper wing panel, and fabric ripped. The Fokker fell free in a spin and started to go down.

Mort dived on him. One instant, the baron's ship was a whirring pinwheel of crazy-patterned wings below. Mort goosed the Hiss, fell away on a wing tip, then lunged down. His fingers convulsed on the Bowdens controls. His eyes narrowed through the ring sight. And there was no baron. Then he knew the mettle of the wing-master with whom he fenced.

The baron swirled in a wild chandelle, then came diving. As the Hiss began to stagger, Mort limped into a nimbus formation. A load wire flailed back at his face. He tore out on the underside, saw an inboard strut crumple before his eyes, knew the wily Baron Death still hounded him.

The slipstream jammed his breath back into his teeth. He right-ruddered. Wing bolts groaned. His left wing bank, hacked by Spandau fire, wavered, but the Spad came around on a wing tip, thrust up. Mort whipstalled and loosed his Vickers on the baron, just pulling from his dive.

An electric current galvanized Mort's body. He had the baron! The Boche got in one final burst just before his nose came up. It sprayed wildly between the Spad's wing panels, ricocheted off the engine hoods. One didn't. Mort found that out later.

Pouring the gun to her, he climbed after the spiraling baron. He raked his fish-tailing empennage, sent a lather of Vickers lead up the camel-back toward the white-helmeted globe of the baron's head. His mouth went flatter and harder when he saw the Boche lurch as if hit.

He tried to pour more gun to the Hiss. Something was wrong. The Fokker was outclimbing the Spad easily, leaving it farther and farther behind. Mort spat a curse. The Hiss was clamoring as if it threatened to tear loose from its bed. A cloud of steam hissed back over his face. Half-rising in the almost vertical pit, he went berserk, screaming into the slipstream, pounding on the nacelle, cursing the baron, his Spad, all creation.

He'd had the Boche ace cold—and now, by a fluke, an ironic twist of fortune, he'd lost him. A stray slug had punctured the Spad's water jacket. The wide-open, overheated engine was freezing up fast. Dropping down onto his cushion, Mort shuttled his stick forward and watched the horizon rim creep over his radiator. He dropped fast, wing-slipping toward the nimbus to give the baron the slip.

But the Boche sky king flipped over and sledged down. He literally danced that Fokker around the sky to spear the dodging Mort. The Yank rolled, spun, goosed his Hiss in spasmodic spurts, but the Boche nailed him as he came over and plummeted in broadside to rake the Spad's nose with a fierce rafale of fire.

The oil lead went, and Mort batted off the ignition switch just in time to save pistons from going through the heads. The show was over. Motor dead, Mort's lone synchronized gun was out. He was helpless. He sat rigid, pre-

pared to make his exit as the Fokker flashed around to get behind and slightly over his tail.

"A three-point in hell," Mort muttered into the striking stillness surrounding the down-gliding ship. One brief, accurate and final sputter from those Spandaus . . .

It never came. Mort twisted around. The baron seemed to be smiling.

The Yank rookie straightened to control his fast-falling ship. He expelled a sigh. He knew he was going to live. Yet, at the same moment, he swore some more. The pattern was crazier than ever. Here was a *Staffel* king-bird who'd issued a personal challenge to vindicate himself, then refused to finish off his foe with the traditional *Todesschlag*, mercy-shot.

The Spad's altimeter was washed out. Mort poked his neck over the cockpit rim. He was at less than five thousand. Trenchworks wormed below.

The Yank was gliding parallel to his own lines, but even as his watched, the gale out of the west pushed him farther over No-Man's-Land. Grimly, he put his tail to the wind, sloped the Spad down, then yanked the nose up to get back behind his own lines. He couldn't make it. His horizontal elevator was half-jammed. Flapping, torn wing fabric cut down the flying speed. The left wing bank was on the verge of crumpling. And the baron still rode his tail.

MORT slammed the Spad down in a hard dive, with the hacked, lead-ridden ship trembling like some doomed animal. The gray murk came up to meet him, very like a dead sea. The Spad bumped, nose bucking, right wing flipping up.

Mort fought his controls, then was almost licked as his ship pancaked a hundred feet. He got her nose down harder and regained rudderway. A droning scream rose in his ears. A moment later, the Spad almost went on her back and the Yank maneuvered desperately out of a threatened tailspin. He knew then. He was in a barrage tunnel.

One side or the other, strafing with their heavies to set the scene for an attack, was drilling shells over that sector. Wildly, the dead-engined Spad careened down. Mort was snapped back against the crashpad, yanked against the safety belt.

Wrenching around, he looked for the baron and saw him westward, cork-screwing up. Winging through that barrage tunnel was blind suicide.

It happened. A puff enveloped the Fokker—and the Fokker shuttled out of the bottom of the blossom of smoke, right wing dangling, coming down hard.

There was a shudder as Mort's wing tip contacted ground. The ship was pivoted around, rending, tail pin-wheeling. Mort tore at the safety belt, got half-free as the nose went down and she stood on her boss. He was flung clear, stunned as he catapulted head-first into a hummock.

A few moments later, with red trick-

ling from his nose and mouth, he staggered up, sucking the rarified atmosphere hungrily. He went down again, half-buried with earth as a short shell dug in scarcely twenty yards away. Through the din, he heard the cork-popping sound that told him a howitzer was working.

An attack was impending. The sector was under grueling fire. And Second Lieutenant Jim Mort was between the two lines.

He ran a few strides before he made out, through a rent in the mist, a shell crater. He made it on hands and knees, nerves reeling, jaw slack, teeth loosened, as a whining scream announced another howitzer shell. It railroaded over his head. Mort tumbled into the shell-hole.

He tried to figure which direction the Allied lines were, but after his ground-loop, he'd lost all sense of direction. The thunder of the heavies became intermittent as the barrage began to lift. They'd be coming over soon, from one side or the other . . .

He tried to listen. Water splashed directly behind him. He whirled, yanking at his side arm. The mist wasn't so heavy down in the big shell hole itself.

There was a man down there in the bottom. He'd flopped in from the other side. He began to sit up in the puddle in the bottom, finally forced himself erect in the mud. He turned around and saw Mort, pulled out a Luger wearily. His powder-smirched face was hard to see at first.

But it was Baron Death himself—the baron, with the side of his white helmet partially un-muddied.

"Put 'em up, Kraut! I got you!"

Mort advanced stiff-legged down the side of the hole, waving his automatic. He froze. Then he realized he had known all the time. The ghost that had haunted the back of his mind had not been laid; it had returned to life, full-fledged reality.

For Jim Mort of the Hellbirds faced the death baron—and might have been looking at his own reflection in a mirror. Jim faced his double, his twin. Clinton Mort, his twin brother, was Baron Death!

CHAPTER V

THE TRAITOR TWIN

A HOWITZER went "pop-p-p" again. Baron Death, Clint Mort, had backed to the other wall of the shell crater. He stood blinking. Luger leveled. Badly shaken by his crash, he failed to recognize anything but the danger at first. His lips were drawn, dark lines in the haggard mask of a face sad beyond words. His eye sockets were sunken, circled, haunted. Fatigue had put a stamp on him, implacable, bitter, mirroring the dregs of weariness.

He peered out from that face. "Jim—it's you?"

Jim Mort, the Yank, nodded. "Me, rat! You—you traitor!"

Words couldn't hurt the baron. Jim Mort's rage was lost in the other man's

delight, the delight of one who evidently seldom tasted it. He said "God!" And there was all the fervency and gratitude in the world in that single word.

Lowering his gun, he reeled forward, gauntleted hand outstretched. Jim Mort steeled. He'd always been crazy about Clint. Perhaps that was what was now driving him into a cold fury bordering on insanity. Clint's doing what he'd done hurt him, made him feel cheated.

"I'm going to kill you, Baron Death," he said, "shoot you down like a traitor, you—you—" He couldn't say any more. His voice must have been almost entirely lost in the noise roaring around them. But the baron gathered what he meant from his face, his gestures. The baron swayed wearily, shaking his head, a man spent and sated with all the carnage and bloodshed.

"You can't kill me, Jim! I'm your brother, your—"

"You're a dirty traitor! You've been shooting down Yank kids, kids from your own country." Jim's voice choked up in his throat again. His finger trembled on the trigger. It was hard to pull, terribly hard.

It seemed suddenly quieted around them. The barrage had lifted. From somewhere, men were coming over. The slow rumble of hundreds of feet, the sucking sound of boots in mud, drifted to the shell hole.

Clint Mort, Baron Death, stopped swaying. Though they were twins, he seemed older than Jim now—perhaps because of what he'd been through. It was too late for sentiment or explanation with that hot-headed kid.

Jim's mouth went jagged. It had to be done. Coursing blood thundered in his temples and threatened to burst his brain. He saw it all now. Baron Death? Of course. Their surname meant death. Mort—death. No wonder the Germans had christened him Death. And to deal with death—well, fire with fire . . .

The baron was scowling. "Let's not both be damned fools! One of us can live and fly again. You can shoot me—but I'll shoot you as well."

Jim Mort didn't say anything.

"Why should we both die? One of us can escape."

"Not you!" Jim snapped.

"Troops are coming. From what side?" He shrugged in his svelte-fitting *feldgrau* tunic. There was a small black-and-white ribbon, symbol of the award of the Iron Cross, first class, knitted through a buttonhole. "That's the gamble. One of us a prisoner—" He broke off. A look of pleading crossed his weary, bitter face. "I could explain—"

Jim Mort's bitter laugh drew a rifle bullet that whizzed over the shellhole from somewhere out in No-Man's-Land.

The baron knew his answer. "All right. Still, why kill each other? One of us can live to fly again."

Jim Mort hesitated, automatic inching down. "Do you know which way the Boche lines are, Cl—" He started to say his brother's name, then stopped.

The baron shook his head. He, too, had lost his sense of direction in the crash. The wind was no help; it wasn't blowing on the ground now. The mist walled them in, left them blind.

"I'll agree," the Yank twin said slowly, "on my own conditions." It was hard to shoot a brother in cold blood, even though he was a traitor.

The baron brother merely shrugged.

"If the Americans come over first, okay," said Jim Mort. "But if it's those Heinie mates of yours, start shooting—because I will!"

The baron started. He peered across the shellhole into his Yank brother's face. It was implacable.

"All right, Jim," the baron muttered, biting his lip.

It began to drizzle a little. A machine gun chattered.

Clint Mort, the baron, stood up straight, peered at something beyond Jim's side of the shellhole, and lifted his hands slowly above his head. Jim turned to squint into the mist. Baron Death hurled across the crater and brought his Luger barrel down over Jim's head. He struck as lightly as he could and still be effective.

Jim Mort folded up in the mud. The baron looked down at him, face twisting, sad and self-hating.

He steeled himself. Swiftly he went to work, stripping off his *feldgrau* uniform and white helmet, shivering in the bleak morning air. It was easy to get off Jim's coveralls. All he had under them were pajamas. The baron smiled wistfully at his twin. Then his face steeled again.

A couple of minutes later, he straightened. Quickly, impersonally, he swapped guns and identity tags. He worked the white helmet onto his brother's head. When he was finished, he stood in the coveralls of an American flyer, and Jim Mort lay stunned in the *feldgrau* of a *Jagdstaffel* pilot.

Baron Death gripped his brother's limp hand. "Sorry, Jim. You'd never have believed me . . ." His voice broke. "Rotten, but every second is precious now—to us."

He stopped. Men were looking over the rim of the shellhole—American infantry. Some of them scrambled down. Machine guns began to chatter, lacing the mist with lead. One man fell into the crater and lay very still. Red ran from his head into the water.

A non-com and the baron exchanged words. The baron pointed to Jim and said he wanted the Boche pilot taken back. Then he hurried back toward the Yank lines. He hated to leave Jim, but he had to get back there, effect contact before Jim came out of his stupor and identified him. Seconds were precious, precious in terms of lives, regiments, divisions.

A couple of infantrymen started to hoist Jim Mort out of the shell crater as their mates went on in the advance. The m.g. fire doubled, redoubled in intensity. All hell seemed to erupt in one belch, and Yank doughboys came streaming backward, broken, disordered. Somebody yelled to the pair get-

ting Jim Mort out of the shellhole. The Boche had surprised with a heavy counter-attack.

The two dropped Mort and scaled the side of the crater, to disappear in the mist westward . . .

MORT opened his eyes on a world that reeked of antiseptics. Nausea gradually ebbed. He made out figures in blood-stained white tunics. It was an emergency dressing station.

He forced himself up on an elbow. "Baron Death—"

"Ja, Herr Hauptmann! You are Baron Tod. Ja, ja. Gott, but you speak it. English, like an *Englischer* himself!"

Mort peered at the medical officer. The man had spoken entirely in German. The emergency dressing station dugout was filled with a jargon of the guttural tongue. Mort blinked at a passing litter. The man on it wore a Boche uniform.

Then Jim Mort knew.

The medical officer, beaming behind thick-lensed spectacles, cleared up the last doubt. Ah, but it had been by the grace of fortune, and God be thanked!

The damned *Amerikaners* had attacked, and the sons of the *Vaterland*, counter-attacking, had discovered Herr Baron in the shellhole. The man who had found him was waiting outside now. Perhaps, if the good baron would consent to shake his hand—*ja?*

Mort nodded numbly, head swirling with bewilderment. A proud, smiling trench soldier came down the steps with an orderly and stumbled in his embarrassment as he gripped Mort's hand fervently. The man's eyes welled with tears of emotion. Mort hardly saw him. He was desperately trying to adjust himself to the situation. They took him for Baron Death.

Distaste, hate, welled in the impetuous Mort. For a moment he was tempted to blurt the truth. Then he remembered. Clint, Baron Death, was behind the Yank lines, able to pass himself off as Jim, his twin. Mort sat up and slid from the table.

"I'm all right," he said steadily, in German.

"Perhaps." It was hard to tell whether the doctor was suspicious or worried. "But the way you were talking in English—"

"My head. Just a little twisted," Mort explained calmly. "Thought I was a prisoner behind the—the damned enemy lines."

"You have two bad scratches there, Hauptmann, and perhaps it would be wise—"

"Scratches only! I shall rejoin my *Jagdstaffel*." He lit a cigarette with shaky fingers, instinctively extinguishing the match with closed hand.

The doctor saw, smiled. "Exactly, Hauptmann. After all, you are *unüberwindlich*! I have seen your foes up there—like that match. Outside, a staff car awaits to take you where you please."

"My *Staffel* drome." Mort drew deep on his cigarette, walked up the dugout steps, and climbed into the Benz.

Twenty minutes later, he was put down on the drome of the Blacktails, Fokker *Kampfflug* F-25, the squadron of Baron Death. He was Baron Death now.

A Fokker flight was circling the drome, preparatory to landing. One ship wobbled badly, engine staggering, wing fabric lead-shredded and flapping as it settled. But the incoming flight was forgotten, ignored as the man the birds of the Blacktails knew as Baron Death stepped from the staff car.

Pilots came running from the line. Somebody stuck his head in the mess door, and a bunch hustled out. More issued from the low-lying French farm that served as a barracks. They crowded around the car. Mort's hand was pumped, his back slapped.

"Gott sei dank!"

"Baron, they can't kill you, can they?"

"Teufel, I owe him a hundred marks and he has to come back! Isn't that my luck, Kussig?"

The thin-legged, V-faced man addressed as Kussig smiled through a glittering monocle. "The baron has a little account to settle with me. I hope he has not forgotten his promise."

"They said you were blown to bits, hit by a shell in mid-air," another pilot put in.

Mort sized up the man called Kussig. With the guttural German crackling around him, hemmed in by the grinning pilots, Mort fought for control. The slightest slip of the tongue would finish him. Kussig was a beanpole of a man with glassy blue eyes and an aristocratic bearing.

"My promise?" Mort replied in German, shrugging good-naturedly. "Of course I have not forgotten it. Any time you say, my good friend!"

Kussig stiffened. His monocle fell from his eye. The chatter of the other pilots broke off abruptly. Mort realized he had made a break somehow. He stepped into the breach casually, taking Kussig's arm.

"I must pay my respects to Herr *Excellenz*, eh? Gott, but my legs, they are wobbly. Help me down to the office, Kussig."

Kussig stiffened, then turned and started toward a low, elephant-iron shack beyond the farm. Mort sighed inwardly with relief. He had weathered that and covered up his ignorance of the whereabouts of the operations office.

A flight commander turned from his still revving ship and joined them. He shook hands with Mort heartily.

"Those Hellbird Yanks, they are going crazy since you were reported down, baron. Two of my flight missing, and neither of them shot in the air."

"Was ist?" Mort, in the rôle of Baron Death, asked.

"I can't understand it. Two of those mad *Amerikaners* herded them behind their lines and forced them down. One of our men fired his ship. I saw him. But the other—" He shrugged.

AT the operations office, he waited in the orderly's room while the recently landed flight commander made

his report to the colonel inside.

When he came out, Mort marched in and saluted the pudgy, square-skulled man behind the table. The colonel of the Blacktails was a typical Junkers officer, flowing mustaches with the Kaiser-curl, hard eyes, rigid-backed.

"Hauptmann Tod reporting, *Excellenz!*"

Herr Oberst got up slowly. His eyes were unfriendly as he nodded. "Ja, so I see. Like the bad penny!"

Mort steeled himself against the shock. The *Jagdstaffel's* king-ace being received like a poor relative when he'd been thought dead? It didn't make sense. Mort swore to himself.

"Something I have done, Herr Oberst?"

His Excellency's mustaches puffed up. "Not what you have done—*nein!* What you are!"

Mort sparred for time. "I have always tried to be a good soldier of the *Vaterland* and—"

"Soldier? Do not use that word. I am a soldier."

"Of course, *Excellenz*, you—"

"Quiet! I am a soldier. What you are, we both are aware. Soldiers of my breed do not care for those who do not fight from the front!"

The phone tinkled in the orderly's anteroom. In the silence that quivered between the Blacktail commander and the bewildered Mort, a signal-corps man entered. He read a report from Wing H.Q.

An enemy aircraft had been seen to land several kilos south of the drome. The plane had been destroyed and its pilot had escaped into the woods. Searching parties had not as yet apprehended him. All units in the sector were warned to be on the lookout.

"So, so, so," chanted the colonel. He turned to Mort, now Baron Death, as the orderly left.

Hands fisted at the piping of his *feldgrau* breeches, the Yank kid was leaning across the table. "I neither understand nor care for your remarks, *Excellenz!* If there is any doubt of my ability, let me go up."

The colonel sneered, then pulled open a drawer. He jabbed a sealed, tightly-rolled tiny packet at Mort, picked up the phone.

"The *Kriegsrichtenamt!* Sector headquarters!"

Calmly, Jim Mort tapped a cigarette on his wrist and gazed out the window. Inside him, something had gone cold as stone. The *Kriegsrichtenamt*, the Boche Intelligence! They suspected—somehow.

A scratching voice came from the other end of the wire. The colonel extended the phone toward the dazed Mort.

"Herr Baron Tod sprechen," Mort said slowly.

"Cut! This is Praulen. You are able to fly?"

"Ja."

"Your commander gave you the packet?"

"Ja."

"Cut! You will take off exactly one

hour from now and fly it to the usual rendezvous behind the enemy lines. Report to me on the wire when you return. *Das ist alles.*"

The receiver clicked at the other end. Mort's limp hand let the instrument fall heavily to the C.O.'s table. He stood stricken, beaded with a cold sweat. The colonel blinked, said the baron could not be feeling well, said he would send for his orderly to escort him to his quarters.

Dumbly the Yank kid nodded. Now he understood why a soldier of the old school like the colonel hated him. For Baron Death, Clint, his brother, had been a spy.

Mort's teeth suddenly ground with rage as he remembered the pact he and Berlin Joe and Wiley had made that morning Pete Allen got his on their way up to the squadron. To get Baron Death!

And he, Mort, had spared a backstabbing spy as well as a traitor sky-killer!

CHAPTER VI

THE DEATH DUEL

A SERVILE, stooped clod, the personal orderly of Baron Death, helped Mort across the field to the farmhouse barracks. They went up the stairs and down the narrow hall to a room. Inside, the orderly closed the door. Mort poured himself a drink of brandy from the bottle on the table and drained it in a gulp.

When he turned to the orderly again, he involuntarily took a step backward. The man had changed. In place of the humped, heavy-footed army servant, a steel-eyed, stocky man stood there—and he was the same man.

"Captain!" He crossed the room in swift, decisive strides. "Don't delay. Kussig suspects it now. Sooner or later, he'll know! Do as he asked you last night."

Jim Mort looked down. Maybe he was dreaming, but the orderly had spoken English. The Yank decided to gamble everything.

"Say, what the hell—"

The orderly's hand clapped over Mort's lips as knuckles rattled the door. It opened, and Kussig half-bowed in the entrance. The orderly was again the obsequious batman, corking up the bottle, picking up the used glass.

Kussig waited until the man had clumped out. "You take off soon, perhaps, Herr Baron?" he asked them.

"Not for an hour," the bewildered Mort blurted before he thought.

Kussig smiled thinly. "Then we can settle that little matter now, perhaps?"

"Ja. Why not?"

Kussig screwed his monocle in tighter. "Excellent. I shall meet you at the end of the road in—say—five minutes?"

"Ja."

Kussig left. And Mort yanked the brandy cork with his teeth. He didn't bother with a glass. He felt like the inmate of a madhouse. Clint, his twin brother, the strange Baron Death—a

spy. And now the orderly . . . Mort's head was going in circles. Kussig suspected what? What had he asked the baron to do last night?

The more he learned, the more confusing it got. His hand closed over and extinguished the burning match. He came to a decision. The best thing he could do was to climb into a crate and get over to his own drome as fast as he could. For the real Baron Death, a confirmed spy who could impersonate Jim himself, was somewhere behind the Allied lines.

He went downstairs. Down at the hangars, he picked out the sergeant-mec and told him to get a ship warmed up for him.

"Ja, Herr Hauptmann, at once. The other ship of yours—that washed out last week—it is ready now."

Mort nodded and headed for the road winding from the back of the drome. There was no sense in exciting suspicion by pulling out before he told Kussig he couldn't do whatever it was he wanted. He'd hardly reached the main road when the lank Kussig appeared, walking quickly down it.

"You are ready, baron?"

"See here, Kussig," Mort told him. "I'm damned sorry, but I've got to take off—"

"In an hour, you said!" Kussig snapped. His hand flipped up from his hip, bearing his Luger. "I think I have accepted enough of your excuses, baron."

Mort eyed the gun, then Kussig, steadily. A question might damn him now. It was thin ice. So he nodded, "All right."

"This way. There is a secluded field down here where we will not be disturbed."

Kussig's voice was quiet, with an ominous ring. He waited until Mort, whom he supposed to be Baron Death, had stepped in front of him. Single file they went down the road about three kilos.

"Here!"

An abandoned beet field extended on the left. Mort didn't see it at first. His eyes were riveted ahead. He could have sworn that a figure had dodged back at that turn ahead. They went into the field.

"See here, *Leutnant* Kussig," Mort said, halting. He decided it was time to find out what was in the wind. "This is one stupid idea of yours—"

"Extremely stupid—for you, baron," Kussig bit off sternly, "inasmuch as I happen to be a crack shot."

Mort's nostrils tightened. He began to get the drift of it. "I dislike killing another son of the *Vaterland*, *Leutnant.*" It was a bluff. Mort was a rotten shot with a pistol.

"Another? As if you haven't killed thousands already!" He paled with fury. "Why, you—"

"Let's save the names," Mort said coolly. "You seem to think—"

"I know you're a spy! I can't prove it, but—"

"Of course I'm a spy. Ask the colonel. It is not a pleasant business, but when the *Fatherland* demands—"

"Bah!" Kussig was livid, lank frame

trembling with fury. He shifted his Luger calculatingly in his palm. "Baron, you are a spy for the English. You know it. I know it—though I cannot prove it. Perhaps you do not recall my meeting you in the house of that woman who was arrested as a French agent by our *Kriegsrichtentamt!*"

A LORRY rumbled by. Mort realized there was no sense in denying it. Clint had evidently been seen there by this Kussig.

"But, *Leutnant*," he said, "if you were there, does that not make you a spy, also?"

Kussig shook his head slowly. His glassy eyes got misty. "Hardly, baron. It's a matter of record that I applied to H.Q. for permission to marry. You see—I was in love with her." He broke off, shaken with emotion. "They executed her. I visited her in prison. She confessed to me she was guilty."

Mort felt genuinely sorry for Kussig then. But the German pulled himself together.

"Enough." He said something else but the rumble of a passing lorry drowned it. "So I challenged you to a duel. You accepted. If you should be fortunate enough to kill me, you will have nothing to fear. You have my word that nobody but us knows. You are ready?"

For answer, Mort drew his sidearm. He didn't hate Kussig. In fact, he hardly thought of Kussig himself. It was what he said. And Jim Mort's jaw was stuck out and a half-grin played around his mouth, even though his eyes were bleak in the face of the crisis.

For Kussig had cleared Clint Mort, his twin brother. It was obvious. Clint was flying with a *Boche Staffel*, posing as an agent of the *Boche Kriegsrichtentamt*, even, to serve as a spy for the Allies.

Mort swore under his breath, happily. He felt like running around and kicking up his heels. Another lorry thundered by. Then Kussig was saying something about turning back to back, taking ten paces each, then turning and firing when the next lorry passed. That would be their signal.

They put their backs together.

"I hate you, baron, but you are a brave man, I admit," Kussig said. "You probably know I was the crack shot of my regiment."

And they started pacing off. Gripping the Luger butt until his hand sweated, the reckless Mort, more reckless than ever now, walked steadily. Overhead, a plane droned. His eyes lifted upward. Sunlight speared momentarily through the gray ceiling. It looked as if the ship was a Spad, but he couldn't be sure.

Then he was taking his ninth step. The tenth was hard. It probably meant death. He was a rotten shot himself. And Kussig . . .

A camion was coming around the bend. Mort twisted his head to watch the road. It took that lorry hours to appear. Mort knew what he was going to do. The hell with turning and stand-

ing like a fool target, even if it was the proper duelling code! He'd whip around, dive for the ground, fight Indian fashion. Kussig would miss the first shot, possibly the second. Then . . .

The lorry snorted into sight. Tigerishly, Mort whipped around, prepared to lunge headlong. He froze, instead. For *Leutnant* Kussig stood, back still turned to Mort, arms lifted, and Kussig's thin voice, shrill with startlement carried across the field.

"*Grosser Gott*—how did you get there? You swine! You fight like a—"

The answer came. Mort thought he was hearing echoes of his own voice. A figure rose from the brush at the other side of the field and advanced on the bewildered Kussig with leveled gun. It was Clint Mort, the real Baron Death!

"HOW did you get around there?" Kussig cried again.

Jim Mort himself hustled up from behind. At the footsteps, Kussig half-turned. Long jaw sagging, he gagged on words of astonishment. Instinctively he brushed a hand across his eyes.

The Death twins went to work swiftly.

"Play with me this time, Jim," Clint Mort begged.

"Damned right, baby!"

Without a wasted moment, they trussed up Kussig with his suspenders and boot laces, gagged him with his silk handkerchief. Unceremoniously they carted him to the bushes and dumped him in.

"Don't hurry about getting out," Clint Mort advised him in German. "When you hit home with that crazy story about seeing double, they'll demote you for drunkenness! Jim!"

"Clint! I've been a fool!"

They gripped hands. "You understand then, Jim?"

"More than that. I know what a bird you are now."

The real Baron Death slid his automatic back into the holster. It was he who'd been reported by Wing as having landed and destroyed his ship a few kilos from the Blacktail drome. Clint grimaced as he briefly explained how it had all happened.

It had been during training in England. Cadet after cadet had been killed when his plane crashed with useless controls. Clint had recognized a mec as a headwaiter from one of the *Deergrasse* restaurants of the Heidelberg days. He was trapped with metal-corroding acid in his possession. The British I. D. had been quick to recognize the value of Clint's former associations. He had been inducted into the I. D., finally worked into a *Boche* squadron.

"It's rotten, Jim, having to kill my own countrymen sometimes. I have never killed unless I had to. Sometimes I wouldn't even bother attacking. When I figured the *Boche* were getting suspicious, I went out and got myself a victory."

Those behind-the-line strafings had been only to cover his flights to make contact with the I. D. "The worst

marksman in the world couldn't have done any worse shooting than I pulled when I dived," Clint said.

Jim just stood grinning. He felt good all over. All the mystery about the famous Baron Death was cleared—and so was his brother, and the family name. He knew now why Berlin Joe had refused to kill the baron in that night dogfight. Joe had recognized Mort's twin.

"Now, Clint," Mort chuckled, gripping his arm, "we can both haul out of here!"

Another lorry cruised by the field. The baron turned his head away, then up at the Spad still drifting overhead.

"Not me, kid! You've got to get out, though."

"But Kussig will tell—"

Clint's lips thinned. "We'll see about that. I've got to play it out till the break comes." That same bleak look that was Jim Mort's came into his eyes. "Anders—that's my orderly—can take care of poor Kussig."

"Clint, I want to play it out with you!"

"No, kid. Duty—well, all that rot. We're soldiers. Two Baron Deaths would gum the works. Your very presence here endangers me."

His voice became cold and dry as he lapsed into his double-spy rôle, giving orders. Jim was to get off with that packet, get in touch with Allied Intelligence the moment he landed, turn over the packet to them.

"And you?"

"French farms all have vegetable cellars. We of the I. D. learned the Blacktails were coming into this drome in advance. There's a tunnel to that cellar now. Anders will take care of the rest."

"But if I take off, how will you explain your presence here later?"

That old, bitter, weary mask crept over the baron's face. "Perhaps Kussig would like to take one last flight—unknown to the squadron, of course. A private affair . . ."

His hand held Jim Mort's hard. He turned and walked heavily back to the bushes. After a while, Jim Mort went back to the road and toward the drome. He lit a cigarette, hand clenching over the match as if it were a human being, a hated thing.

"They better be careful what they do to Clint . . ." he said, and swung back onto the tarmac. From the door of the operations office, *Herr Oberst* nodded curtly as he passed.

"*Hals und Beinbruch*," he called. Broken bones and broken neck, it meant translated. It was the *Boche* good-luck token, meaning exactly the opposite. Mort had a hunch the C. O. meant it literally. He only grinned back and waved as mockingly as he thought Prussian discipline would permit.

"Ants in your pants, brother," he muttered under his breath.

DOWN at the Fokker with the skull insignia, he took the white helmet the chief mec handed him, clenched his teeth, and jammed it down over his bandages. The mec said something

about an E. A. being spotted hanging in the vicinity. Mort tautened.

"But one of those *Schwein—ach*, they mean nothing to the *Herr Baron. Nein!*" The mec grinned broadly.

Mort hesitated, but there was nothing to do but take off. Every second he delayed exposed Clint, the real baron, to that much more risk. He climbed in, goosed her, then signaled them to jerk the chocks.

The wind was on his tail. Taxiing to the end of the landing-T, he ruddered her around, then stormed back, gently flexing the controls. The rain of the day before had softened the low-lying Boche field. He poured more gun to her to get up flying speed. Peering through the prop shimmer, he saw the chief-mec suddenly begin dancing around and pointing skyward. Mort glanced up. At first, he saw nothing.

Then, down in the east, he spotted that Spad roaring at the Blacktail drome. It fishtailed, then curveted over on a wing tip, slicing down. Mort caught a glimpse of the Hellbird insignia on its fuselage side. Desperately he goosed the Mercedes. In his eagerness, he flooded it. The engine choked, stuttered. The Fokker wobbled as it lost speed.

And the blazing Spad slashed down toward Mort, who was in the ship with the insignia of Baron Death. A fierce rafale of lead slammed at the Fokker. Mort right-ruddered, drooped a wing dangerously close, and got out of its path. The zipping Spad executed a tight loop and came down like a thunderbolt on his tail.

Under full gun in the muddy earth, Mort ran like mad, fishtailing the Fokker for all he was worth. Vickers slugs in a veritable froth of tracer flushed the air around him, hacked at the Fokker wings, washed out a strut completely.

Mort twisted around. His blood ran cold as he got a brief but clear look at the Yank pilot close behind. His goggles were up, and his long hair whipped back in the wind. It was the high-strung Wiley—Wiley, who had the nerves of an artist, was afraid of being afraid, was emotionally keyed to try anything.

Mort cut the gun in desperation and huddled in the pit as the wide-open Spad blasted over him. He couldn't blame Wiley. The kid was keeping their solemn vow to get Baron Death. The baron had caused the death of Pete Allen, and the Hellbirds would think he'd gotten him, Jim Mort, too. Wiley was keeping his pledge—like a madman.

Mort watched him swirl above the hangars, then flop over on his back and come back upside-down. He speculated a moment on abandoning the ship. Then he discarded that idea as he saw the *Staffel* pilots rushing toward the ships being trundled unto the line. Wiley would be needing help soon.

L EFT-RUDDERING, he sent the Fokker racing diagonally across the field, tried to lift her nose. She bounced once, then started to climb

sluggishly at the steep angle. And Vickers lead rattled at the tail assembly, hammered the camel-back, chiseled the edge of the cockpit. Jim Mort flattened and risked his trucks in a pancake landing.

Seeking to throw the wild Wiley off, he made a complete turn. Wiley went into a half-roll and a bank, with wing tips bare yards from the ground, but he was so wrought up that his aim was crazy. The wing fabric of the Fokker's left bank was a sieve of bullet holes, but the man Wiley believed was Baron Death himself stilled lived. Wiley saw that in a long, backward glance. He saw, too, that several Blacktail Fokkers were bucketing off from the line, that one was already tobogganing up. Wiley kissed the scarf his mother had knitted for him. It was good-bye.

He stood the Spad on its tail and went up—but not far. He looped, then came down perpendicularly. The engine shuddered in its bed. The wings bent back. Wing bolts screamed. Wing fabric began to peel. For Wiley was hurling that Spad full-gunned onto the taxiing Fokker with the skull insignia.

"I'm coming to you—but I'm going to send somebody to hell first!" he screamed into the breath-paralyzing slipstream.

Mort looked up just in time. That Spad was blasting at him like a veritable lightning bolt. He jabbed rudder, tried to dodge. An inch of the streaking Spad's rudder, a half-inch of the elevator, made Mort the bull's-eye for the Spad boss again.

Mort poured the gun to the careening Fokker. But Wiley had the foresight of the damned that moment. The Spad veered, focussed on the Fokker. Wiley didn't bother with guns any more. It was his swansong. He was giving the Fokker hell-room—and nothing else.

Mort shot one glance upward. Then he thanked God he had forgotten the safety belt, straightened, and leaped from the pit. He hit the ground running, stumbled, rolled like mad.

There was a split second of rending sound, a shuddering blow, the concussion of the explosion, then a terrific vacuum as the air was sucked from the vicinity. Mort rose dazedly, reeled, then backed from a guttering sheet of red flame.

After a while, he was aware of the clamor of the fire and crash siren, equipment rushing toward the wreckage, then backing. Nothing could be done. Poor Wiley, who'd never been meant to be a soldier, was beyond anything but God.

Mort stood with tears coursing down his cheeks as the flames, gobbling the fabric, reduced the two locked ships quickly to a charred skeleton of twisted steel. Two of the Blacktails roared down past him, landing. A chubby pilot said:

"All *Amerikaners* are crazy. They deserve to die."

Mort struggled with the itch to smash his face in as two more of the Blacktail Fokkers that had taken off to deal with Wiley settled down. The

fifth taxied so close to the Yank that he was half-blinded by the hosing of the exhaust as it spewed black carbon fumes when the gun was cut. On the *qui vive*, Mort turned his head slowly, unable to believe his ears. A sixth Fokker was coming in.

Only five had taken off. Somehow, he knew that. The sixth ship hauled up halfway to the line, unnoticed in the confusion attending the desperate attempt on Baron Death. A stumpy figure dropped from the fuselage, swept his eyes over the pilots.

Jim Mort had a cigarette in his lips. It had been the one he'd taken off with. Senses reeling before the speed of events, he tried to suck on it to steady himself as he walked away from the cluster of men. It was out. He put a match to it, inhaled with gratification.

He looked up in time to see a grease-ball point him out.

"*Baron Tod?*" asked the pilot who'd landed in the sixth ship. The mechanic nodded.

The pilot walked slowly toward Mort. He was garbed in a pair of loose-fitting coveralls, right hand stuck into the front of them. It was impossible to tell who he was, or what his nationality was.

"*Baron Tod?*"

Mort nodded.

"I have something for you, Baron Death," the sixth pilot said in clumsy German. And his hand began to slide from inside his coveralls. There was the glitter of a gun barrel. The man pushed up his goggles for better aim.

It was Berlin Joe. He'd come to keep his vow, too.

CHAPTER VII

THE LAST BLUFF

THERE was nothing Mort could do—he realized that in a split second. Berlin Joe believed the baron had gotten him, too. If he tried to explain, it meant capture for him, possibly for Clint, the real baron, too. Berlin knew that he and Clint were twins after that night fight, and probably would not believe him.

The burning match scorched Mort's fingers. Instinctively his hand fisted over the match, extinguishing it.

Berlin Joe, gun half drawn, saw and froze. Only one man he'd ever known had extinguished a match that way.

"Jim—Mort?" he gasped.

Mort strode quickly to his side. "It's me. What the hell are you doing here?"

Guardedly, the stunned Berlin Joe explained. When Jim had gotten killed by the baron, as they believed, they had resolved to keep their end of the pact at once. All afternoon, they'd hunted Fokkers, seeking to ride one down. Joe had succeeded. Then they'd planned the rest of it—to land in a Boche ship on the Blacktail tarmac, seek out the death baron, and shoot him down.

"Wiley went haywire. He hopped off and I followed—too late, I see."

Mort nodded, then pulled himself together. "We got to get out of here. Nothing we can do now . . . Come

on. Let's go."

The mec crew were already rolling Berlin Joe's ship to the drome.

"We're licked before we start," the pessimistic Joe growled. "I got this gun here—"

"Keep it out of sight. This joint's lousy with ground guards so the little Blacktails won't get their pockets pcked. Keep your nose straight!"

Boldly he strode down to the line and singled out the chief mechanic.

"Get me a replacement ship ready at once. Quick! And turn around my friend's—Captain Rickten's ship! Jump! Come! Fast!"

But the chief mechanic hesitated. He had his hands full anyway. The crash had disorganized his ground crew, and orders were orders; discipline was discipline. *Herr Oberst* had not given the command . . .

Quick-witted and cornered, Mort remembered his Prussian classmates at Heidelberg. He reacted like a Prussian. With his gauntlets, he slashed the man across the face.

"When Baron Death gives the order, there is obedience or—"

The trembling man saluted, gobbled. "*Ja, ja, Herr Excellenz! Ja! So gleich!*"

He went about it. Mecs were kicked in the pants. Waterboys' noses were tweaked. A rigger was told what his father and mother had sprung from and how far. But the ground crew were confused anyway—what with the rush of getting ships off when the lone raider hit, the crash, the fire, ships to be trundled in. Now the slave-drivers wanted two more to go out.

Two wing tips locked as they tried to turn Berlin Joe's bus. A hangar door jammed in the wind. Nobody could find a wrench for one of the petrol tanks. But the two crates were finally readied. A mec hopped into the replacement bus, gave the signal to another to wind her up. Contact! The Mercedes sputtered, died. On the second attempt, she continued firing irregularly.

Berlin Joe leaned close to Mort. "This is tempting fate too far. Hell's goin' to pop soon."

Mort swaggered cockily. "Don't you know Baron Death is the chief hell-popper hereabouts? When the baron—" He stopped short.

Joe's face had fallen a foot. "There's a guy with a vegetable garden 'on his face giving you a dirty look!"

Mort swung around. It was *Herr Oberst*, puffing his mustaches furiously, and at his elbow was the lank Kussig himself. A ground-guard patrol backed them. Kussig started to bellow, and the Boche commander motioned them away from the hangars.

"It's he," ranted the excitable Kussig, popping his monocle back into his eye every other word as it fell out. "It's he—he and the other look exactly alike! They're both Americans. In the field, they—"

"Silence!" roared the colonel. "You are either mad—or very, very clever. What does this mean, *Herr Baron?*"

With a magnificent bluff, Mort shrugged. "Suppose you ask *Leutnant* Kussig that! After all, is it my fault

if he has been imbibing too deeply of *Schnapps?*"

Kussig sputtered at Mort's coolness. The *Herr Oberst's* eyebrows went high. After all, it was somewhat dangerous to beard one of the damned *Kriegsrichtenant*, and Kussig had been drinking hard since he'd tried to marry that woman who'd been executed.

"I tell you—"

"In my office!" the colonel commanded. Reaching over casually, he pulled Mort's gun from its holster. "A mere matter of routine, you understand *Herr*—who is this pilot?" He eyed Berlin Joe.

"*Mein Freund, Herr Hauptmann—Jaswantz!*" Mort coughed to mask his hesitation. Then he added the magic word. "*Kriegsrichtenant!*"

The *Herr Oberst* bared his teeth to swear. Another of those damned Intelligence men cluttering up his drome! He thought better of swearing. "He had better accompany us," he muttered.

Turning, he led the way to the operations office. The ground guard waited out front. The colonel sent the orderly to check the ship in which Captain Jaswantz had arrived. He pushed open the door of his own office and strutted in behind his little pot belly.

"So, so, so. Now—"

He stumbled backward against his table, staring at the rangy figure who'd stepped behind the door, choking, his eyes shifting to Jim Mort, running to the opened window in the rear, and back to the man.

It was Clint Mort, the real Baron Death!

"GOOD afternoon, *Herr Oberst!*"

Jim Mort was in the room. So was Berlin Joe. But Clint hadn't counted on Kussig. Kussig dragged at his gun with a sharp cry. Clint sprang and dropped him with a blow of the Luger barrel he held. Kussig folded up. There was a body-muffled explosion as he fell with half-drawn Luger, and Berlin Joe clutched at his side and swayed. Mort grabbed him.

Joe lifted a sickly face, bloodless suddenly. "I knew I never should have changed my underwear this morning." He was hit badly. "I'm all right. But this is a hell of a nerve-wracking joint, Jim."

They got the *Herr Oberst* trussed up and gagged. Clint rammed him under his table, and led the way out the back window. Mort almost had to lift Joe through. He was bleeding internally. Jim Mort wasted precious seconds to turn back and do something with a scissors.

"We work this on a good front," Clint said as his eyes swept around. "Keep calm. Hurry—and we're licked. Let me have your goggles, Jim. They musn't recognize me. Kussig got my orderly—poor devil—when he went out to take care of him."

Three jolly, laughing pilots strolled down to the line, arms linked. The one in the center seemed to need supporting badly. Perhaps they'd had more than one little drink with the colonel.

Baron Death, in his white helmet, commanded another ship from the chief mec. The chief mec felt the welts on his glove-slapped face and got it ready promptly.

The three of them went over to the third ship when it had warmed up. It seemed for a moment as if they were actually lifting the man in the center into the pit. His coveralls parted a moment. The man was wearing red underwear.

Berlin Joe gripped Jim's hand feebly. "I'm going . . . going . . . good-bye!"

"We'll make it back," Jim Mort muttered. But he knew he lied.

Baron Death climbed into his bus. The third man swung into the third crate. There was something familiar about the way he dropped into the cockpit, but the chief mec couldn't place him. Just before the three bucketed down the field, a figure appeared in the doorway of the operations office and began to bawl. It looked like the C. O. for a moment, but the chief mec knew those long, flowing, curled mustaches of the colonel's. God, how he envied them.

The trio roared across the field, swung midway down to come into the wind. They slammed up over the hangars, the white helmet of Baron Death in the lead. At five thousand, they banked and headed westward in a line. Tracer trail ran out from the nose of Berlin Joe's ship.

Mort looked over. Joe was waving goodbye. Then he swung around and sped due east. Joe was going out, but he hoped to reach Berlin first. Mort understood.

Numbed for the moment, he sat thinking in the vibrating pit. Three men had sworn to get Baron Death when the fourth of them had been killed. Two had died on the job, but they had gotten Baron Death—gotten him back where he belonged.

Jim Mort thought some more, then he swerved toward his twin, Clint. He talked in sign language. He pantomimed punching himself in the jaw, then jabbed a thumb back toward the Blacktail drome. Strafe them, he meant. Somehow, he owed it to Wiley and Berlin Joe and Pete Allen.

His twin nodded, and the two Fokkers swung in renversements, flattened. Tracer striped the backdrop of sky as Spandaus were warmed. Then they roared full-gunned toward the Boche drome—the Twin Deaths . . .

On rainy nights, with the *Schnapps* bottles bouncing when they rolled empty off the table, *Jagdstaffel* pilots told of that lacing the Death twins handed the Blacktail drome. They had made a shambles of the ace-nest. And the pilots talked often, too, of what *verdammte* scions of Hell itself those two were in the air afterward. They winged together—and with double deadliness at dawn and dusk.

One of them, they said, had a pair of flowing mustaches soldered on his radiator rim, too. Maybe it was only rumor that a certain Boche *Staffel* commander had once owned those fine mustaches.

War of the Pacific

(Continued from page 7)

soon as fresh developments occur, they will be broadcast. Meantime, you will be returned to your home stations."

Once more the drumming of the *samisens* and the shrill voices of the *geishas* sounded through the house, but Kawano snapped the switch, and the radio was silent.

"This means the War of the Pacific," he told his wife.

"Why?"

"Because those fools in America will resent the punishment the brave Maki gave them."

"Still, that should not bother us," the woman mumbled. "Let the Army and Navy fight. They have been wanting to long enough. What reason have you to become excited?"

The man leaped to his feet.

"Because I am a son of *Dai Nippon*," he declaimed. "More than that, I was once a member of the *Nara's* crew, but deserted when I could not get shore liberty to attend my honorable mother's funeral. I served under Lieutenant Maki when peace ruled the waves. Now that war is coming, I must expiate my desertion and serve him once more."

"But, Tzuyoshi," his wife pleaded, "you can't—"

"Are you a Daughter of the Sun, a servant of our godlike emperor?"

"Yes."

"Then be like one."

The woman glanced at him. Then her rather dull face lighted, and she embraced him.

"Of course," she said. "You must go—for honor's sake."

Kawano nodded. Then the two stood side by side, facing the east.

"*Banzai dai Nippon*," the man shouted. "Great Japan—may you live ten thousand years."

(Lieutenant Commander Fukunaga here leaves one hero to take up another—the lieutenant whose guns sank the U.S.S. *Houston*. Because of the wide difference in religious beliefs between Orient and Occident, it is difficult for Americans to understand how much of the following chapter was intended to be taken literally. The escape of Lieutenant Maki discloses ancient Japanese superstitions, but it is also possible that the author is masking clever political manipulation by giving a scene which a true Oriental would recognize as a "face-saving" stratagem.)

CHAPTER II

GIFT OF THE GODS

ALTHOUGH both Japan and America knew the sinking of the U.S.S. *Houston* would lead to war, diplomats on both sides of the Pacific made a brave show at conciliation. Each sought to demonstrate to the world that hostilities were being forced upon them.

Scarcely had the news of the *Houston's* fate reached Washington when Congress was called into extraordinary session. Meantime, the President and his cabinet discussed the situation. A

note was forwarded to the Japanese government demanding an indemnity of two million dollars and the body of Lieutenant Maki.

The message caused a stir in Tokyo. Two million dollars in damages did not astound the imperial government, but the barbaric demand for a Japanese naval officer's body caused waves of revulsion. Honor forbade such action, but the cabinet drafted a conciliatory note in which it promised to bring Lieutenant Maki to trial on a charge of firing upon a friendly flag.

America, however, was adamant, and insisted on the young officer's corpse, darkly hinting dire results unless the demand was obeyed.

Still striving to avoid conflict, the Japanese Peace Party forced the lieutenant to trial. The evidence was all against him, and Maki made no attempt to defend his act, save as a matter of honor. A jury of his peers had no alternative but to find a verdict of guilty, and the young officer was condemned to death. Pale but composed, he listened to their words of doom. Then he drew himself stiffly erect and saluted those who had sentenced him.

"*Banzai dai Nippon!*" he shouted.

News of the court's decision caused rioting in Tokyo, Yokohama, Kobe and Osaka. Crowds swarmed the streets, and pleas for pardon were despatched to the throne, but the Peace Party kept them from the emperor. Finally the day came when the young officer was led from his prison and placed with his back to a stone wall. A file of soldiers took up a position in front of him.

(Whether or not Commander Fukunaga, the author, intended that the following scene be taken literally, only he can tell. Some Japanese scholars declare he did. Others assert that he thinly glazed a plot by which the Peace Party saved its face and still met the demand of the people.)

Lieutenant Maki stood facing his executioners, a smile upon his thin, aristocratic face. He had refused to have his eyes bandaged, and he glanced from one to another of the men who had come to kill him.

"Make ready," came the order of the commander.

The soldiers raised their rifles.

"Aim!"

Almond eyes squinted down the sights.

"Fire!"

The word sounded like a croak of some Gargantuan frog.

There was a crash of musketry, but Lieutenant Maki's stiffly held figure did not crumple.

"You must use more care next time," he told them. "*Banzai dai Nippon!*"

The ghastly ceremony of execution was repeated. Once more the rifles cracked, but for the second time Lieutenant Maki stood scatheless.

A group of gray-haired officers, standing to one side as witnesses,

glanced at one another, but their faces were immobile. They looked at the young man in charge of the firing squad. His cheeks were livid.

"You cannot miss this time," he told his men between chattering teeth. "Remember the rule of the gods."

The men nodded and glanced at Maki. "Please continue your honorable duty," he said in an even voice.

The young officer commanding the squad rushed through his orders. He was on the verge of collapse. He had been drawn by lot for his ghastly task, but now he felt the unseen hands of the gods upon his shoulder.

For the third time the rifles cracked, and for the third time Lieutenant Maki stood unmoving. None of the bullets had touched him.

"What shall I do?" the youthful officer appealed to a gray-haired admiral.

"What can you do? It is the work of the gods," was the quiet answer. "Thrice menaced, thrice saved."

Other gray heads nodded. An all-but-forgotten law of the ancient *samurai* was remembered. Maki was a member of that warlike clan. His life had been spared by unseen powers. Only the godlike emperor could set aside the judgment of his fellow divinities.

Tokyo blazed that night in celebration of Maki's escape. Pilgrims by the thousand visited the shrines of popular heroes. Paper lanterns gleamed the whole night through. The grave of General Nogi in Kobe was the scene of the greatest gathering in the city's history. The glory of the gods was sung on every side.

(Once more Commander Fukunaga rapidly shifts his scene. This time, he takes his readers to the American fleets preparing to pass through the Panama Canal and enter the Pacific. War has come, and each nation is preparing for the struggle that will determine the mastery of the Pacific.)

Of particular interest to American readers is the author's supposition that the American negro is antagonistic to his government. Fukunaga apparently believes that in time of war, the black man will turn against his native land. The author's declaration that Japan is the champion of all non-white races and in war time would expect their aid gives an interesting light on Oriental psychology.

While the action of the negro mess attendant in the following chapter is utterly unthinkable to either negroes or whites in America, it passes unchallenged among Oriental peoples. The presence of Japanese aerial bases in Costa Rica, Honduras and Colombia is also of more than passing interest, when it is remembered that the author is himself a former Japanese navy officer.)

CHAPTER III

THE HEEL OF ACHILLES

WITH America straining every resource to enter the war, the fleet, under Admiral Gordon, rushed through the Caribbean and prepared to enter

the Canal. America well knew that this thin stretch of water was her Achilles' heel, and all the might of the United States was used to protect it.

Sentries on land, sea and air were on the constant *qui vive*. Even before the declaration of war, American spies had uncovered Japanese air bases in Costa Rica, Honduras and Colombia. These were demolished, but even then, dare-devil aviators remained within striking distance, and their valorous attempts to bomb the Canal locks resulted in the loss of numerous American airplanes before they were finally crushed.

But the Japanese empire, in spite of these sacrifices, was not without allies in time of stress. As the champion of the non-white races of the world, it had helpers who were ready to sacrifice everything for *dai Nippon*. One of these unsung heroes appeared just when the Americans were certain that every effort to injure the Canal had failed.

Night had come, and Captain Ward of the U.S.S. *Oklahoma*, one of the finest dreadnaughts in the American Navy, was entertaining a number of commanding officers from sister ships. They were going to war, a war that would change the history of the Pacific, and their conversation naturally turned to the adventure before them.

Guarded by sentries on every side, they had no reason to fear their words would be overheard, and they discussed the future without restraint. None paid the least attention to the negro servants who waited upon them. Formerly, Filipino mess boys had been employed, but with the coming of war, these were discharged because the Americans found difficulty in differentiating between Filipinos and Japanese. The negroes, however, made docile servants and were welcomed.

So long have the American whites dominated the blacks that they had ceased to regard them as equals. Looking down upon yellow, black and brown, their racial arrogance had bred an undying hatred in the negroes. Although downtrodden by their white masters, the negro has long known that Japan is the only champion of the colored races, and they looked to the Orient for deliverance. But Captain Ward and his guests were ignorant of this as they discussed their war plans without a glance at the dark-skinned mess men who passed their plates and poured their wine.

"With the full fleet in the Pacific, we shall crush Japan," the *Oklahoma's* commanding officer told his guests. "The Japanese have tried every trick they know to block the canal, but we have beaten them. The battle squadrons go through tomorrow. Then see what happens."

But as he spoke, a dark-skinned man hovered close to his chair. He had long been exploited by the whites, and he realized that fate was giving him a chance to do something for his people. With Japan victorious, a new age would dawn for the colored peoples, and the whites would be forced into secondary position.

He smiled inwardly as he listened to the white man's boasting. The time had come when the non-Caucasian races would unite and fight for freedom. The dark-skinned hero drank in the details of the American plans and laid a counter-plot for the freedom of his race. Although, like the Unknown Soldier, his name will never be known, the negro took quick action and changed the history of the world.

Night had come when the *Oklahoma* entered the Miraflores locks. Behind the gray leviathan were some of the best fighting ships in the American Navy. Guards bristled on every side, but none were below decks, where the danger lay.

"Eight bells and all is well," intoned the watch on deck and bridge.

Then suddenly the night sky was illuminated by a pillar of crimson and gold. Flames leaped toward the heavens. The gigantic battleship seemed to shoot from the water, breaking in two as it settled back into the foaming waves.

Huge sections of armor were thrown against the precious gates. Whole turrets, with their ponderous guns, were tossed like bits of wood. The complicated machinery of the Miraflores locks was destroyed beyond all repair. More than that, the mass of twisted steel that had been a battleship lay athwart the canal, completely blocking it.

Deep in the distorted wreck lay the body of an humble negro mess servant. He had struck a blow for the colored races of the world by setting fire to the *Oklahoma's* magazines. Months would be required to clear the wreckage and repair the blasted locks. Meantime, the American fighting forces were cut in half. An anonymous ally of Great Japan had struck the Achilles' heel of the republic and inflicted a wound that might prove fatal.

(Although Commander Fukunaga's understanding of the psychology of the American negro is faulty, his solution to the problem of blocking the Panama canal is held by naval experts to be the only sure method of destroying that line of communication.)

The commander's next chapter takes up another phase of a possible war in a manner that should interest every American. The question of the loyalty of American-born Japanese has been one which has been frequently debated. The almost religious fervor with which the emperor is regarded, and the manner in which this throne worship is handed down from father to son, even in America, has often made military authorities wonder just how loyal the many thousand American-born Japanese would be in time of war. Commander Fukunaga has no doubts, and he uses this situation in one of the most amazing chapters of his book.)

CHAPTER IV

SEED OF THE SUN

ALTHOUGH the destruction of the Miraflores locks was a hard blow to the American Navy, the admiral commanding made the best he could of a difficult situation. Those ships that had passed through the Canal ahead of the

ill-fated *Oklahoma* were ordered to proceed to San Francisco under forced draft. Those held in the Caribbean steamed for Cape Horn, being forced to circle South America to join their comrades. Unknown and unsung, the humble negro had done something destined to free his race from oppression and break the chains with which the whites sought to enslave the world.

Separation of the fleet at this crucial moment threw the American Pacific Coast into panic. Rumors of raids by Japanese squadrons filled the air, and the dreadnaughts foamed through the water. At last they reached the Golden Gate and swept through the narrow channel into San Francisco harbor. Citizens were massed upon the surrounding hills. The recently completed bridge spanning the stream was black with humanity. Men cheered and women cried at the sight of those grim, gray warships.

But not all those who had gathered upon the hills wore welcoming smiles. Many faces were taut and filled with determination. The time had come for them to choose between race and country, and not one hesitated. Outbreak of the war had seen all Asiatic Japanese interned in concentration camps, but those who were born upon the continent were American citizens and could not be arrested as alien enemies. To them fell the honor of striking telling blows for the land of their fathers.

(American-born Japanese, as a class, deny the truth of this statement. They swear their fealty to the Stars and Stripes. But those who know them best shake their heads. They admit that these men would fight to the last in the American ranks against any nation save Japan, but under no circumstances would they turn against the land of their fathers. Commander Fukunaga develops this theory as his story unfolds. In the following scenes, he expounds the reason for this dual citizenship.)

Among the throngs that watched the coming of the American fleet to San Francisco were three young men who were born in California. They had dreaded the coming of the conflict, but now that it had arrived, they were ready. Their choice had been made.

Their names were Frank Kodama, George Takahashi and Henry Baba. They watched the great warships until they dropped their hooks in San Francisco bay. Then they gathered in the clubrooms of the Japanese Society of Native Sons.

"We must do something for *dai Nippon*," Frank Kodama told his companions.

"But that is treason," Takahashi pointed out. "Remember—in the public school we promised to support—"

"Treason?" rasped Henry Baba, the third of the trio. "A legal crime, perhaps, but to turn against the blood of our fathers is treachery. We are as much of Japan as though we were born in Tokyo, yet we talk of treason to these white faces. Forget it. Remember only *bushido*—the soldier's path of honor, and act according to our traditions."

His companions nodded slowly as he

continued his arguments. Other Japanese of American birth were taking advantage of their freedom to aid the empire of the Rising Sun. Railroad bridges and tunnels were being bombed, delaying the onrush of troops and munitions from the Atlantic to the Pacific seaboard. Clever secret operatives destroyed whole factories and then disappeared without leaving a trace. The thousands of American-born Japanese answered the racial call without a word from the land of the Mikado. To them it was instinctive.

"And we shall do our part," Baba, Takahashi and Kodama agreed.

Their decision made, the young men were afire with zeal. Several plans were considered, but thrown aside. The Americans' vigil was close and constant. After the destruction of the *Oklahoma* in the Miraflores locks, the whites trusted no one. Persons of Asiatic origin were not allowed to approach the great warships, now being outfitted for battle.

"The air must be our line of attack," Kodama declared.

The others nodded.

They called on Charles Axuma, another American-born Japanese, who owned an airplane. Axuma was uncertain. He had always prided himself upon being an American. He had been the loudest in reciting the oath of allegiance in the public schools, and had waved the American flag on all national holidays.

"I cannot strike the American flag," he told them, when they asked him to pilot his plane over the fleet in an attempt to bomb it.

"Then you are a traitor to your race," Takahashi accused.

But Axuma shook his head. "No," he said, "I am not—but one must save his face. Listen. Two of you are pilots. I shall drop the key of my hangar on the floor. One of you may find it."

Henry Baba nodded sagely. He had been schooled in the art of "saving the face." Being of Oriental blood, he understood the operations of Charles Axuma's mind. He had demonstrated his American loyalty publicly. He could not publicly turn against that display and retain his self-respect. Private acts had nothing to do with public.

Takahashi, Kodama and Baba filed out of Axuma's artistically appointed home. Their eyes were solemn. They had sworn to align themselves with their father's people, and they could not retreat without a loss of face.

Axuma was wealthy, and possessed a tri-place monoplane of exceptional power and speed. Being American-born, he had not been interned, nor had his ship been seized.

Their next step was to get high explosives. This, too, had been attended to by operatives of Japanese-American birth. As soon as their plans became known to the secret committee in charge, the three were supplied with bombs containing enough high explosive to sink the largest American battle-ships.

"But aim at the airplane carriers," a Japanese naval officer, disguised as a

Chinese merchant, told them.

They nodded their understanding.

Again, however, America showed its preparedness in the air. Night and day patrols flew over the gigantic *Lexington*, *Ranger* and *Saratoga*, and the three gallant sons of old Nippon were unable to get within striking distance of the American carriers. Worse still, their ship was identified, and they realized that their usefulness in the air was at an end.

"We must not lose face," they told each other, when they returned from their unsuccessful attack.

(In his next scene, Commander Fukunaga includes an incident that hardly does him credit, either as a writer or as a naval officer. It is hardly probable that in time of war, American sailors or their officers would be as heedless as the commander describes.)

Unable to damage the airplane carriers, the three young men turned their attention to the U.S.S. *Patoaka*, a strange little ship, so constructed that it was a floating and mobile mooring mast for the gigantic airship, *Macon*. After several visits to the sector in which the *Patoaka* was anchored, the three decided on a plan that would be worthy of their revered Mikado.

They awaited their opportunity, finally choosing a night when there was no moon. Noiselessly they rowed out to where the *Patoaka* was anchored. Most of the ship's officers and crew were ashore, for it was Saturday night. They muffled their oars as they neared the ship. George Takahashi slipped into the water and swam for the *Patoaka's* side. They saw him clamber up a rope, steal along the deck, and climb the stumpy mast to which the *Macon* was moored. They looked aloft. No lights burned in the vast airship. It was deserted by both officers and crew. George Takahashi was now mounting the mast with feverish haste.

Baba and Kodama watched his progress breathlessly. At last he reached the top. They tensed and stared up at the gigantic outline of the airship. Suddenly they saw it rise and drift away before the wind.

"*Banzai!*" they cried, in throaty whispers, "*Banzai dai Nippon!*"

Takahashi dived into the waters of the bay and was rescued. The wildly excited crew of the *Patoaka* was too demoralized to realize that the clever Japanese had released their airship. The great craft was swept away by the wind. None of its crew was aboard and it drifted on and on, until destroyed by the elements.

"You are worthy Sons of the Sun," the disguised Japanese naval officer told the three, when they reported the result of their adventure.

(Leaving the American-born Japanese busily engaged in impeding the preparations of the United States by every trick known to sabotage, Commander Fukunaga returns to his two heroes, Lieutenant Maki and Tzuyoshi Kawano, the radio repair man. Maki has been restored to duty and is commanding a submarine off the Hawaiian Islands. Kawano has returned to

the Navy and again is serving under his beloved commander. In this section of his story, Fukunaga shows his knowledge of maritime affairs and is less hazy than in his descriptions of events in America.)

CHAPTER V

FIRST CLASH OF ARMS

WITH both the American and Japanese main fleets still being outfitted in their home ports, the advance elements of the belligerents made their first contacts off Hawaii. Gaum and the Philippines had already fallen into the hands of the Mikado's men, and the eyes of her leaders were fixed on the pearl of the Pacific, Honolulu.

"The war is lost if we do not capture Hawaii. It must be a part of our empire," Maki told Kawano one night when they were alone. "It must be our outpost to hold back aggression from the East."

"It will be ours," the former radio man replied. "With the thousand of loyal Japanese on the island—"

"Weaklings! Women! Fit only for spies," the hero of Yangtze replied. "What have they done? They let the Americans interne them like so many cattle. We must strike the blows that will conquer. These men have been too long away from the land of the emperor."

But further disappointments awaited Maki. Not only did the Japanese residents of Hawaii fail to rise in time to seize the islands, but a clever American admiral outwitted the Mikado's submarines, and a greater part of the advance American fleet succeeded in getting into Pearl Harbor.

Maki and the other submarine commanders were indignant. They brought their underwater craft close into shore and shot torpedoes at every craft that tried to reach Diamond Head. They tightened their circle about the island, forming a cordon that defied anything afloat.

Then came an American counter-attack from the air. Wide-winged bombers swept over the blue water, circling at a height where they could see into the depths. The presence of the submarines was easily detected, unless they lurked at dangerous depths, and showers of bombs dropped from the sky.

More Americans took to the air, and the submarines were forced to remain far below the surface, except at night. Their commanders fumed at their impotence. The crews became sullen.

"I cannot endure this," Lieutenant Maki muttered one day, when they were all but resting on the bottom. "I must fight or die. The *samurai* does not cower when the enemy attacks."

As usual, Tzuyoshi Kawano was at his side, and he nodded his understanding.

"We all await the honorable lieutenant's commands," he said.

The orders came quickly. Tanks were blown out, and the submarine nosed for the surface.

"Stand by to man the anti-aircraft guns," Maki shouted as they neared the

top. "Everyone ready!"

"Aye, aye, sir."

The men dashed to their positions. A yell went through the ship as the conning tower broke free. In another moment, the gunners were scrambling up the ladder to take their positions on deck. The Archies were hurriedly swung into position, and even the big three-inch gun on the forward deck was made ready for action.

"Now we shall fight," the men called to each other. "*Banzai dai Nippon!*"

But as the submarine broke the surface, a dot in the sky above it circled rapidly and then dropped toward the sea. Its size swelled rapidly. Wings appeared. A droning buzz swelled into a roar, and an American bomber struck at the Japanese underwater craft.

The radio operator in the American plane worked feverishly at his key. Signals flashed through the air, summoning other winged patrols. Meantime, the pilot and bomber prepared for action. Down, down, down! The tail of the big ship dropped, and the bomber peered through his sights.

But as the airplane leveled, the guns of the submarine burst into flames. Its deck became a veritable volcano as perfectly trained gunners worked their pieces at hectic speed. A cloud of shells broke around the American airship. Too high! Maki called for shortened range. There was another salvo.

The airship lurched and fell off on one wing. In another moment it was aflame, plunging toward the surface of the water.

"More coming," Kawano shouted to his commander.

"We are ready," Lieutenant Maki answered.

The sky was speckled with American bombers, but other submarines came to the surface. Radio operators had informed their commanders of the battle being fought on the surface. It was the depths of the sea against the heights of the air. Several of the American airplanes were destroyed, but the crews of the other submarine were not as well drilled as Lieutenant Maki's and two of the subs were torn to pieces by bombs.

More aircraft arrived. Tzuyoshi Kawano and his comrades fought with frenzied speed. They could see that the gunners of the other submarines were terrorized by the squalls of machine-gun fire that swept their decks when the bombers dived. Now the Americans concentrated on Maki's craft. Kawano and his comrades stippled the sky with deadly shrapnel, and more airplanes were blasted to bits.

"We'll keep after them until they haven't a plane left," Maki growled. "Good work, gunners. The emperor will know of your deeds today. Keep it up."

"We can keep it up no longer, honored one," the youthful officer in charge of the ammunition whispered. "Our shells are gone."

Maki's thin face hardened. For a moment he toyed with the short sword he carried in his belt, like every true *samurai*. Then he gave orders to prepare to dive.

"I would commit *hara kiri*, had not the gods given me life," he mumbled. "Now I must live—for my emperor."

Night was near when the submarine slid beneath the waves. The Americans could no longer see it. A dozen or more bombers had been shot down by this one indomitable submarine, but now it must run—to fight another day. Several of the U-boats were destroyed, but none would have survived if it had not been for Maki and his gunners. The lieutenant and his crew had bathed themselves in glory, but the man whose life was a gift from the gods was not satisfied. He must do something for his emperor, a descendant of the gods who had spared Maki's life.

Turning the nose of the U-boat toward the Hawaiian shore, he held the course until they were at the base of wave-washed cliffs. Then they came to the surface. A collapsible boat went over the side, and Maki rowed off into the darkness. Tzuyoshi Kawano never knew where his gallant commander went on that dark, moonless night, but when Maki returned, his narrow eyes were flashing with excitement.

Hawaii was filled with native-born youths whose hearts were with the land of their fathers. Some were attached to army and navy posts. All were indefatigable in their efforts to serve the emperor. Contacts were made, and soft-voiced heroes gave Maki information that was of the utmost military importance. He turned the nose of his U-boat toward the mother ship, where he would get in touch with the Japanese high command.

"The gods denied me a victory today when our ammunition gave out," he told Tzuyoshi Kawano, "but they have given me the opportunity to win the war for the emperor. May he live ten thousand years!"

(Commander Fukunaga's story now enters a phase of exceptional interest to students of war on the sea and in the air. He selects as his scene for the coming battle for the mastery of the Pacific a sector where the far-flung Aleutian Islands reach toward the Asiatic mainland. Strangely, Fukunaga's ideas have been reflected in the recent discussions of American naval and aerial strategists. American air squadrons have visited the Aleutians frequently of late. There has been talk of fortifying the outlying islands. Students of the war games have focussed their eyes on the North Pacific, where the distance between Orient and Occident narrows perceptibly. Undoubtedly Fukunaga's story reflects, in part, at least, the ideas of the Japanese general staff, and it is doubly interesting for that reason.)

CHAPTER VI

BATTLE IS JOINED!

FOLLOWING his visit to the Hawaiian shore, Lieutenant Maki lost no time in getting in contact with his commander-in-chief. Soon his words were flashing across the Pacific to where Admiral Nagano, commander of the battle fleets, was concentrating his forces in the vicinity of the Kurile Islands. Nagano had expected an attack

from the Alaskan sector, but now he was sure of it. Maki's clever work had given him the key for which he had been searching. The hero of the Yangtze had penetrated the inner guards of the American naval base at Pearl Harbor and had made contact with spies that had been unable to make reports. Not only was he able to learn the size and composition of the American forces, but he had found out their plans for concentration in the North Pacific.

With this information in hand, Admiral Nagano made swift disposition of his forces. Both sides labored night and day, making ready for the conflict. Lieutenant Maki was transferred from his submarine command and rushed to the Kurile to join the main fleet. With him went Tzuyoshi Kawano. The admiral called the heroic young lieutenant to his flagship and praised him for his valor.

"We attack at dawn," he told the hero of the Yangtze, "and you have earned the right to be in the van. The *Nara* shall be your ship. You made history with her on the Yangtze. May the gods see that you continue! They gave you life for a purpose. Let us hope that it is to add to our divine emperor's glory."

Maki bowed, his dark face glowing. Then he hurried to take his place on the bridge of his beloved *Nara*. No less happy was Tzuyoshi Kawano, who, still with his revered commander, had assumed charge of the six-inch gun on the *Nara's* forward deck.

The Arctic air crackled with wireless messages as the *Nara* steamed toward the east. Nagano was issuing his battle orders, while Admiral Gordon, the American commander, was also making his dispositions. On the Japanese side, a screen of destroyers swept into action. Behind them were the cruisers, driving through the waves under forced draft.

(Although a retired navy officer, Commander Fukunaga fills his battle scene with incidents that border on the ludicrous. He has Kawano perform feats humanly impossible. Either the author is determined to entertain his readers at the expense of plausibility or he is singularly inept at inventing action to suit his purposes. The story continues.)

The dim light of midnight in that far northern clime was brightened by a flash of guns as the two advanced forces came together. The *Nara* leaped forward like a charger, eager to enter battle. Tzuyoshi Kawano had his six-inch gun loaded and ready for action, but he had not yet received orders to fire. Then through the gray haze ahead, he caught a glimpse of a huge form. It was an American craft as large as a battleship.

But it could not be a battleship, the man's quick mind told him. He realized that it must be an airplane carrier, far in the van, getting into position to launch a cloud of bombers as soon as day dawned. Kawano called to the bridge, asking permission to fire, but no answer came. His words were drowned by the roar of guns from the American ships.

"I can't wait," the man told himself. "I must fire now—for love of the emperor."

But the huge bulk ahead did not waver as the six-inch gun roared out. Then Kawano glimpsed another huge shape. He dashed down into the torpedo room and unleashed one of the long, deadly fish that was in the tube, ready to go on its destructive mission.

A mighty roar came through the din of battle, and Kawano knew that his torpedo had struck home. He dashed on deck, to see the gigantic shape disappearing beneath the waves. Then he saw that the *Nara* was pointing toward another Gargantuan shape. Once more Kawano dashed down into the torpedo room. Again the compressed air shot the long projectile through the tubes, and an air-rending roar told him that the second torpedo had found its mark.

Returning to his station beside the six-inch gun, Kawano peered through his telescopic sights. The second of the American airplane carriers was sinking. Joy filled the gunner, and song sounded deep in his heart, a song praising the gods and the divine emperor.

At last day broke over the North Pacific, and Kawano saw the ocean littered with the wrecks of ships. His dark face paled when he recognized many of them as Japanese. Off to the right, the Americans had attacked in force, carrying destruction to the gallant Nipponese squadrons that had attempted to hold them in check.

Now the Americans struck at the flotilla of which the *Nara* was a member. The weight of their gun fire soon told Maki and his men that the enemy had suffered comparatively little damage. The Japanese, on the other hand, had lost six of their eight cruisers, and fully twice that many destroyers. Now the *Nara* and a few bitterly fighting companions were bearing the brunt of the American onslaught.

"Hold enemy in check at all costs." The words flashed from Admiral Nagano's flagship to the destroyers of which the *Nara* was in the van. Lieutenant Maki read the order, and fire blazed in his dark eyes. The *Nara* had been struck a number of times. Half the crew were either dead or wounded, but the hero of the Yangtze drove his little craft into the thick of the fight.

He knew that the American battle squadrons were foaming toward the scene. Admiral Gordon, on board the *Texas*, and Admiral Davies, on the *Maryland*, were leading their forces into a struggle that would decide the future of the Pacific.

A Japanese scouting plane was sighted winging through sheets of enemy bullets. It was being attacked by American pursuit craft and anti-airplane guns. The gallant pilot struggled desperately to keep aloft, but a shell almost riddled his plane as it passed over the *Nara*. The man leaped out and his parachute opened. Blood-avid Americans dived after the helpless pilot as he slid toward the surface.

At last he reached the water, and a whaleboat from the *Nara* picked him

up. He was dying, but he lived long enough to tell Lieutenant Maki of fresh dangers to the Japanese fleet. The Americans were being reinforced by a squadron of battleships and five cruisers of the *Omaha* type.

"They will reach here by nightfall," the man whispered to Maki before he died.

Maki looked down at the peaceful face of the pilot. The man had forced himself to live until he could deliver his message. His radio apparatus had been destroyed, but like a true Son of the Sun, he had flown through hell to deliver the warning. Then he had died.

(In one respect, Commander Fukunaga agrees with both American and European writers on wars of the future. That is in the part aircraft will play in the next great struggle. Strangely enough, Fukunaga's description of the final battle between the Japanese and Americans parallels similar accounts by writers in this country, except as to the end. In each case, the destruction of airplane carriers turns the battle's tide, but the American writers have found more plausible methods with which to accomplish the same end.)

CHAPTER VII

COMMAND OF THE AIR

VICTORY had settled on the American banners at the close of the first phase of the battle for control of the Pacific. Admiral Nagano ordered his advance forces to retire. Not only had a large number of cruisers and destroyers been sunk by the deadly fire of the Yankee gunners, but the arrival of fresh ships strengthened the Americans, giving Admiral Gordon a decided preponderance in heavy guns.

A council of war was called by the Japanese commander. It was plain that the white-haired chief of the Mikado's forces was badly worried. Defeat would mean the annihilation of the Japanese fleet. The future of the world, the integrity of the empire and the fate of the Asiatic nations were in his hands. Victory for the Americans would mean the continued domination of the colored races by the white. Injustice would continue to rule the world.

"If we could but command the air, our task would be simple," the admiral told the assembled officers, "but the Americans have one hundred and twenty-six battle planes ready for action against our one hundred and six. Even the well-tryed valor of our pilots and gunners cannot overcome that superiority."

"Let us try, Nagano San," Vice Admiral Horoshima implored.

"We cannot take too great chances. Numbers still count," Nagano answered. "If our air fleet should be destroyed—"

He paused as an aid dashed into the conference room and handed him a message. He read it quickly, and the lines of worry melted from his face. His dark eyes flashed.

"The gods knew what they were doing when they spared Maki," he told the assembled officers. "I have just received a message from him in which

he says that the *Nara* destroyed two of the American airplane carriers and that only one remains afloat."

A murmur swept around the circle. Then the officers leaped to their feet as though in answer to a command.

"*Banzai dai Nippon!*" they shouted. "*Banzai, Nagano!*"

A gesture sent them back to their seats, and the admiral spoke in short, crisp sentences.

"You, Horoshima San," he addressed the chief of the air forces. "Get forty-five combat planes and eighteen heavy bombers from Chichijima."

"But Nagano San, they are to be used only as a last resort."

"That time has come," Nagano broke in. "Make speed."

The air leader arose and saluted smartly. Then he hurried to the radio room.

Nagano now issued his orders to the commanders of the surface craft and submarines. Two plans of battle had been prepared. He turned to the one in which Japan would have superiority in the air.

"You, gentlemen," he told the ship captains, "are the ones to be held in reserve."

"Reserve? But, admiral—"

"A new age has dawned, and we are the nation of the Rising Sun," he answered. "Japan must conquer swiftly and decisively. We have tested our ships against the enemy and have been defeated on the surface. Now we turn to the air. We shall—"

An aid raced in from the radio room. The aerial scouts far in advance of the badly battered destroyers had sighted the American battle fleet. The face of the Nipponese commander hardened as he appraised the enemy force.

"They have thirteen battleships and fourteen cruisers, deployed in circle formation," Nagano told his chief-of-staff, "but only one airplane carrier remains—the *Saratoga*."

"Yes, sir—and your orders?"

"I will give them when the combat planes and bombers arrive from Chichijima."

"Yes, sir."

(Fukunaga describes the tense atmosphere of the flagship as the admiral awaits the coming of the bombers. Finally they arrive and he appraises the force. Then follow orders singularly like those used by the American writers in describing a final struggle between the two fleets. This similarity is understandable when it is remembered that both American and Japanese authors are reflecting the strategy of their own governments. Although supposedly secret, the general plans of both nations are known in Washington and Tokyo. With his air forces massed, Nagano is ready for the test, and his combat orders are issued. The story continues.)

A cloud of pursuit and scout ships raced through the dawn of the North Pacific to be followed by squadrons of gas-equipped bombers. These, instead of lunging in to join the attack upon the American air units, flew swiftly in a circle around the fleet. Within a few minutes after their appearance, the cruisers and battleships of the republic

were circled with a cloud of smoke that extended into the air for more than a mile.

The superior numbers of the Japanese fighting planes soon drove the Americans from the sky. Admiral Nagano had hurled one hundred and sixty-nine hard-fighting war eagles into the air to meet and crush the seventy-six Americans. The issue was decided in less than half an hour. Then came the swift drama that changed the history of the world.

With the air virtually cleared of American planes, Nagano flashed a signal that sent eighteen of the most powerful bombers known to modern science winging toward the American fleet. Each carried enough high-explosive bombs to destroy three or more battleships. They rose at the sign of their leader and winged swiftly toward the cloud on the horizon behind which the American fleet was maneuvering.

Nagano watched their departure with inscrutable eyes. He knew that his own fate and the future of Japan and the Asiatic peoples were riding the wing tips of those huge bombers. He stared into the sky until he could see them no more. Then he strode to the wireless room to receive the reports of the combat's progress.

Few of the great battles of history were decided with such speed, nor was ever a victory more complete. Guarded from the few American planes still in the air, the huge bombers swept over the wall of smoke that held the Yankees prisoners.

Then they dived down. Their armored sides turned back the squalls of steel from the enemy's anti-aircraft guns. Each of these air leviathans attacked a capital ship. The roar of their bombs deadened all other sound. Dropping so low that they could not miss, they released tons of high explosive. The shocks of these detonations effected magazines deep in the bowels of the Yankee ships. Mighty dreadnaughts shuddered, as though with fright, then split like overripe melons and sank beneath the waves.

Circling after their first attack, the bombers swept back to complete their task of destruction. The Americans fought bravely. The desperate valor of those who are doomed marked their gallant struggle, but it was useless. One by one, the finest ships the United States had ever launched were torn to bits. Flagships pitched to their doom, and commands fell as ship after ship was destroyed.

At last the pitiful remnant of what had once been a powerful armada wirelessed its surrender to the Japanese commander-in-chief.

"Let them live," Admiral Nagano radioed to his aerial chiefs. "Too many brave men have died already."

The victorious bombers withdrew from the scene of carnage. Then through the smoke screen surrounding the thoroughly defeated American fleet nosed a line of Nipponese destroyers, the gallant but battered *Nara* at their head. To Lieutenant Maki, hero of the *Yangtze*, fell the honor of putting a prize crew on board the American flagship. The man whose act had started the war had been spared by the gods to perform the duty which ended it.

(The American theory of victory without conquest is scouted in the closing chapter of Fukunaga's sensational novel. Instead of being satisfied with a victory for racial equality and domination of the Asiatic mainland, the story shows that Japan would demand heavy payment from the vanquished. He concludes his story.)

CHAPTER VIII

WOE TO THE VANQUISHED!

PEACE followed quickly in the wake of the destruction of the American battle fleet. Although some of the war party urged that Japan should take possession of California and other Pacific Coast States, the emperor graciously permitted the Americans to retain their mainland possessions, after surrendering all islands formerly under the Stars and Stripes.

The Solo Skipper

(Continued from page 16)

got some secret method of camouflage, an' that's the hell of it all. We're bein' cut to pieces, without a chance to do anythin' about it." The non-com's voice had risen to almost a scream with anger, and from necessity to shout above the thunderous roar of the bombardment.

Mud Collier was touched. "I'll bet a month's pay our Air Service never locates those guns." Those words stung him. So that was the opinion these battered infantrymen had of the Air Service! And young Dan was up near the enemy wire, trying to grab a prisoner, trying to attempt some means, in this hell, of getting information on those deadly guns which seemed to spring

from nowhere, yet brought disaster.

"In a minute, that forward barrage will die down, sir," resumed the corporal. "Then you'll hear a smaller, sharper ruckus. It'll mean that the Jerries have spotted our patrol. It'll be egg bombs you'll be hearin', an' Lugers, an' the clash of steel . . . An' I gotta stop here an' listen to it!"

Mud Collier's throat convulsed. He knew the picture the non-com had drawn was not one of bitter pessimism, but one of fact. He, Mud, didn't have to stop here and listen to it. He got to his feet, then ducked quickly as a Maxim spitefully swept a sleet of lead in low across the wretched wasteland. Collier slipped and tripped over some-

Further generosity was shown by the Japanese throne in permitting the American people to retain their independence and continue their republican form of government without serious interference, although an indemnity was demanded that would make even that rich nation stagger for years.

As a result of the victory, the aerial forces of the island empire were enlarged until they dominated a large part of the civilized world and insured the equality of all races.

(It is only at the conclusion of his book that Fukunaga returns to Tzuyoshi Kawano, the hero of its opening. This he brings in when the victorious fleet is steaming for its home port to be acclaimed by the Japanese people. Admiral Nagano is seated on the after-deck of his flagship when he receives another message from Lieutenant Maki.)

"I have the honor to inform you," the message read, "that the destruction of the American airplane carriers, *Lexington* and *Ranger*, was the work of one man. He is Tzuyoshi Kawano, once a deserter, but a man who returned to fight for his emperor at the outbreak of war. He has been badly wounded, but the surgeon tells me he will live."

And Kawano did live, to be honored by the Emperor in person. Millions of happy Sons of the Sun hailed him as one of the greatest of Japan's heroes. But Tzuyoshi took his honors modestly. He remained in the navy, serving out the time he had missed because of desertion. Then he returned to his wife and family in Dairen.

Maki remained in the Japanese navy and attained high rank. Although Kawano was the more spectacular of the two, the people never forgot that Maki's life was a gift of the gods. A fund was raised by popular subscription to erect a statue in his honor. It stands today on Waikiki beach not far from Honolulu, now a part of the far-flung Japanese empire. Flowers adorn it. Japan will never forget the hero of the *Yangtze*.

thing. He recovered and pulled himself up on that something, then started, as the corporal clutched his elbow.

"That's Cullum, my buddy, sir," he bellowed. "Got a Maxim slug between the eyes about an hour ago."

Collier's mind seemed to run berserk. Here was something that had always touched him, the courage and loyalty of the infantry. Cullum was dead. Cullum's rifle was about somewhere. There were bombs. Mud picked up a sack of Mills bombs and slung it across his shoulder. He then grabbed the dead man's rifle, and before the corporal could stop him, he had hurled his big frame out into the blinding lights of that murderous strafe.

THE way forward was blocked by crashing demons of hell. Time and again, Mud was forced down face first into a stinking morass—the slimy maw of a waterlogged crater. But he reveled in its stench and muck. This was the action he had loved in the old days, for it had brought him in closer touch with the actual terror of war, and it had brought him in closer touch with his associates, those devil-may-care doughs.

Now he got to his feet and raced for the cover of an old battered brick wall. It was at this point that the new, local barrage ceased; and then the spiteful crash of whining bombs took up the devilish concerto. He thought he heard a man yell. It might have been Dan. But no—Dan wouldn't yell so close to the enemy lines.

Something cut the skipper across the face. He grimaced and spat blood from his lips; then he dived into the remains of an old refinery and dropped to a shell hole. He was fingering the safety pin of a Mills bomb when a dark form loomed before him. He glimpsed, silhouetted in the flame beyond, the shape of a scuttle helmet—and then another, and another. Off to the left there was some engagement, a hand-to-hand fight—Dan against a German patrol sent out to get him! Here, right before Mud, was a new patrol. The man he looked at was a burly officer, and he was leading out into No-Man's-Land a detail of men up through some tunnel shaft.

Collier's breathing came in sharp hisses. He had stumbled on something of value. This was an engineers' detail. They were coming up an air hatchway, and that meant something sinister. It meant that this detail of men had finished their tamping in of explosives in a deadly mine beneath the American lines. Soon this air hatch would be battened down, and then . . . Mud gulped hard. A sudden fury racing through his being was restrained. He checked the mad impulse to hurl his first bomb into the midst of that detail of engineers. No! A better plan would be to stalk the outfit and then—well, he wanted a prisoner. That's what Dan had come out for.

The German officer now turned and growled out an order to his men. The main party strode off, leaving two sappers at the shaft. These men began to work sealing up the air-shaft. It was Collier's big moment.

He crept in closer, his finger itching on the pin of that deadly Mills; and then he lifted his big frame and tossed—but not directly at the sappers. He flung the bomb off to the right, where it crashed not twenty feet away from the air-shaft head. He dropped the bomb sack and hurled himself forward, automatic clutched tightly in his right hand. A man swung on him. His Colt spewed flame, and his one hundred and seventy pounds of weight hurled forward in a perfect flying tackle. He fell heavily, a limp shape beneath him. That shape stirred, and Mud swung.

As he trussed up the unconscious shape, Mud caught a stir at his back. He heard the clash of boot metal on the old steel at the old refinery. He swung.



Advertiser's CONTACT

A LITTLE NEWSPAPER DEVOTED TO A BIG CAUSE ★ OF, BY AND FOR FLYING ACES CLUB!

VOLUME 8

FEBRUARY, 1935

WHOLE NUMBER 18

ILLINOIS SQUADRON NO. 4 BUYS FROM ADVERTISERS—AND HOW

Pennsylvania Outfit Goes In For Gliding

Robert Freeman, F.A.C., D.S.M., of 332 East 6th Street, Erie, Pennsylvania, writes that the outfit of which he is a member has recently purchased a glider. It isn't a new one, but the fellows will soon have it as good as new. Then, more members of the F.A.C. will be getting into the air . . . and that's where we're all heading.

Come on, you flying and gliding enthusiasts! Get your planes and gliders registered at G.H.Q. of the Flying Aces Club.

Ammunition for Members Working for Their D.S.M.

Here's some high-powered ammunition for those members who are working to win their D.S.M. by getting new advertisers for FLYING ACES. One company that sells air pistols and rifles, fire arms, binoculars, telescopes and microscopes, wrote us on November 20th: "Our first advertisement in the October issue of your publication brought us 43 inquiries and original orders for about \$65.00 up to date. Have not had time to check up on additional orders received from these inquiries, but we will find many more."

This was a small advertisement that cost only \$15.00. That small investment brought in \$65.00 worth of orders plus a good deal more. Very evidently, it pays to advertise in FLYING ACES.

For you fellows who have been writing to manufacturers, asking them to advertise in FLYING ACES, this is a point which they should not be able to ignore. It's proof positive of the real value of FLYING ACES. What more can they ask?

Get busy now. Tell a few of those advertisers who are not using FLYING ACES what a wonderful magazine this is. Pick out those advertisers who are using other magazines and whose products you would like to buy. Tell them about FLYING ACES and how valuable other advertisers are finding it. Tell them to write to G.H.Q. for full information about rates.

There's a D.S.M. waiting for you. You'll get it just as soon as any one of the advertisers to whom you write starts to advertise in FLYING ACES, providing that you can prove you were instrumental in getting the advertisement. That's fair enough, isn't it?

Major R. A. Blocki, F.A.C., D.S.M., of 8135 Stewart Avenue, Chicago, believes in patronizing those companies whose products are advertised in FLYING ACES. Not only does he himself buy from FLYING ACES' advertisers, but the other members of his Squadron follow his lead.

Major Blocki writes, "The 4th Illinois Squadron ordered from their local dealer twelve kits of a plane advertised in FLYING ACES, despite the fact that most of the members had heretofore traded with another company. This other company has never advertised in FLYING ACES, so, although we like their kits, we are patronizing another dealer who sells kits that are advertised."

Very evidently, Major Blocki and his fellow members are aware that the success of those advertisers who do use FLYING ACES is of paramount importance. They realize that more advertisers mean more money with which to carry out the plans for an even bigger and better FLYING ACES. G.H.Q. is deeply appreciative of such a sense of loyalty to the F.A.C. and its official magazine.

Let's hear from some of you other fellows who are patronizing FLYING ACES' advertisers with just as great a degree of loyalty.

F.A.C. Rifle Teams Looking For Competitors

While G.H.Q. is going ahead with plans for a National F.A.C. Rifle Contest, teams are already being formed. Some of the enthusiasts just can't wait to get into competition. One of these is Bill Meeker of 1053 Abbeshire Avenue, Lakewood, Ohio, who writes, "We would like to have some matches with other teams. I would suggest the official National Rifle Association 50 foot, five bull targets."

We have also heard from Bill Neulkom of 1831 East Second Street, Duluth, Minnesota, Walter G. Anner of 3687 Wilmington Avenue, St. Louis, Missouri, and G. B. Aldridge of 1034 N. Clay Avenue, Springfield, Missouri . . . all of whom are burning up to start shooting.

G.H.Q. would suggest that in all contests, National Rifle Association rulings be adopted and followed. For those who want information about these rules, write the National Rifle Association, Barr Building, Washington, D. C.

As a very important matter of record, G.H.Q. would like to have all targets after contests are over. If contestants desire, G.H.Q. will be glad to act as referee. In this case, each contestant should send his targets to the National Adjutant of the F.A.C. at Headquarters.

Two men were staggering out, dragging with them a limp, unconscious shape.

That shape was Dan Collier! In a moment the kid was in his older brother's arms.

"Go get that Jerry prisoner, boys," Mud jerked at the Yank bombers. "Tote him in for questioning. I'll bring in—Dan."

And just before dawn, Mud staggered in through a gap in the American wire, with his kid brother across his broad shoulders. But the kid was dead. Dan Collier had gone out, in the line of duty, attempting to find a solution to the enemy's supremacy on this sector. And Mud had been on the job to carry him in.

As he questioned the young German sapper, later, there was a snarl in Mud's voice. He was seeing red. This man before him represented the German army, that deadly instrument which had murdered his only brother, his only kin.

"We know about the mine," snarled the skipper. "Never mind that. We want information on those new guns, and of the *Staffel* which guards them. Where are they? Speak, or I'll have you split apart, piece by piece." Collier had majored in German at Yale. His language was very forcible. It was taking effect. The man before him was utterly cowed. Life to him was very sweet at this moment. He cracked.

"The guns—*ach, Gott!* I should not tell you, but they are dug in in the Valley of Z behind Montreuse. They are camouflaged, by being dug in on hinged tables. *Herr Hauptmann*, had I not a young wife, who is at this moment lying at the point of death at Dusseldorf, I should die rather than give this information to you. The *Staffel*—it is screened by the Woods of Fontaine. I know no more. I have told too much. Circumstances have forced me to become a traitor."

Collier turned and bit hard at his lip. This war business was a terrible business. He loathed himself for having squeezed information from this youngster who had, by circumstances very close to his heart, been obliged to betray his Fatherland. It was devilish, and yet Mud Collier had just brought in his own next of kin, his last of kin, the kid brother he had almost raised from a little child. It had been Mud's savings which had put Dan through school; Mud's fists which had blasted Dan free from many a fracas in those school days. It was war, this state, and now the big flying skipper, mud-plastered and stained with blood, was ready to go back into the sky, into that vengeance trail which would take him, like a lone wolf, down into the Valley of Z.

"See that this boy is treated well," he jerked at a top-sergeant standing by. "I want to know that he has the best of care. Find out at once his young wife's address and see that she is informed of his safety. Goodnight, all. Send Dan's body out for burial. I'll make arrangements on the outside. I'll send a detail up for my Spad."

With his teddy suit over his arm, Mud lurched out into the blinding

night. He must get back to his squadron, and tune up another Spad.

The American lines would be evacuated at this point, long enough for the mines to explode harmlessly. But the doughs would be waiting near by, to rush the crater, while the artillery pounded back the German attackers who wanted that crater, too. Mud Collier had saved a lot of lives tonight, but his job was only half done. And as he floundered on along the battered communication trenches leading out, his keen mind was plotting, planning. This served to free that mind from those avalanching thoughts of young Dan....

MUD! Mud! Mud! As he flew the lone dawn skies, Mud Collier grinned. They called him Mud because of his love of adventure up forward with the infantry—that mud which now covered up his brother Dan. Mud had sent word up that Dan was to be buried as near as possible where he fell. Dan would have liked to know that they had placed him where many thousand of heroes had been placed in that last long sleep.

Mud! Collier could taste it yet, and still smell the odors of that vile, death-drenched muck of No-Man's-Land, that place where the cream of nations' manhood was obliged to roam, and live and kill—and die. He was proud of his *nom-de-guerre*. He had been instrumental in saving hundreds of lives. Hundreds of bodies would have skyrocketed up above the hellish blast of those twin German mines, had not the brother of Dan Collier gotten information on the time of the blast.

And now this man they called Mud was going out alone, to look for the secret German field batteries, those .77's which were gradually pruning down the Allied troops; and those German planes which rode herd on the batteries.

Vengeance! Mud Collier knew that on the ground he could only be considered a puny unit against the colossal forces of the enemy. But skyside, with a knowledge of the whereabouts of the secret *Staffel* and batteries, he felt himself a power.

Now he gunned up his Hisso and clipped through a veil of drab, running cloud strata. He was barely clear of the cloud banks before a couple of Archies opened their demoniacal fire on him.

A burst of shrapnel rocked his Spad over on her port wing tips. He pulled her out and went screaming earthward in a mad, plummeting dive, only to rear the ship up on her tail again, in a death-inviting zoom. He scored the sky with every maneuver he knew, until at last he gained the cover of another murky bank of clouds. And now he knew he was in the vicinity of the woods at the fringes of the Valley of Z.

He cruised for nearly five minutes, touching up the edge on his nerve fibres, which had been frayed ragged in the running of that hellish gauntlet of fire thrown at him by the anti-aircraft batteries. Now his lips split in a grin.

He touched down on his stick and thrilled to the scream of his rigging in the wind.

As he cut the clouds, his brows jerked up beneath his goggles. He was looking into a line of flashes that were like the leaping, darting tongues of monster vipers; and then he looked only into peaceful terrain. Those flashes had blinked out. His heart hammered hard against his ribs. There was no sign of a gun below, and yet he hadn't been guilty of just seeing things. He had witnessed the mad splashes of flame being spewed from the throats of those hidden guns.

Quickly he hurled his ship at the clouds again, and then, in a moment or so, tossed her down. Again those long black muzzles belched their deadly flame. Mud Collier blinked. There are times in the life of a man when, even when wide awake, he wonders at some spectacle, whether it is really so, or whether he is just dreaming. It was so with Mud. His C. O. at 48 Squadron had warned him not to take this trip, alone, in his present mood. Other members of 48 had remonstrated, but Collier had shaken them off. He was here, alone in the pre-dawn skies, almost directly above the flaming batteries of death. A cold sweat broke out over his body. Here was information that was of priceless value to Allied headquarters.

Another battery, and another, thundered into action. It was that time, one hour before dawn, when on both sides of No-Man's-Land, artillery awakened to hurl its venom across the lines, into the lines, in a deadly, harassing bombardment which lasted until the break of dawn. It was the hour when infantrymen hugged their battered firesteps, crowding against crumbling parapets, while tons of steel and H.E. plundered their positions.

Mud could see it all, could feel it all, and out of it came the vision of Dan, his kid brother, fighting out near the enemy wire, hoping to establish something definite in the interests of his buddies who were, hourly, getting blasted from this life.

Vengeance! It was naturally the dominant thought in Mud's mind, but then there was the thought of those infantrymen generally. These thoughts sprang the trip wire of all Mud's sense of regard, of loyalty. He had only one life to give. It had been a badly battered life, at that, in the past year or so. Several wounds had distorted his once handsome features. One of his shoulders was hunched up, and though he tried to hide it, there was a suggestion of a limp in his left leg. Swiftly now he pricked location of those batteries on his map. He had enough to bring about their destruction. But he had so far seen no sign of an enemy plane, no sign of the secret forward *Staffel*.

He ran his plane along the edge of the floating cloud strata, searching through the half-light for some sign which would give him a clue to the position of the *Staffel*. But below there stretched only a seemingly deserted valley land. Now he spotted a small woods, and a flaming splurge of thought struck

his mind. He pushed down on his stick and roared earthward toward the woods. If he couldn't locate the *Staffel* from the sky, he was determined to do his utmost from the ground. His move seemed mad-brained. Why didn't he get back with the information he had picked up on the location of the batteries? That in itself would have been a grand coup. But Mud had turned this matter over in his mind. Somewhere here there was a flight of enemy ships that had, up until now, turned back every attempt on the part of the Allies to get through to this point.

"You needn't kid yourself that you are being given a free pass into this sector," Mud told himself. He knew that there was something sinister, ominous, at the back of this absence of enemy planes. His tires had barely kissed the turf of the meadow beyond the woods when his conjecture was materially supported. He caught the sudden throaty roar of a sky motor—another, and another. Out from behind a fold in the land ahead there zoomed a flight of dull gray Albatrosses!

MUD gasped. He had never played that fold in the land for a piece of cleverly constructed camouflage. Actually that knoll beyond didn't exist. It was a piece of artistic cleverness on the part of the German camouflage section. It had caught Mud Collier off his guard; and now a million deaths seemed to dance before his vision. His Hisso was idling over. From above, a hailing avalanche of lead began to drench the woods area. The Mercedes motors above were growling like unleashed tigers as the flight of death roared above the meadow.

In a flash, Mud's mind was made up. He knew that to attempt to take off now would be folly. He had dropped into a cunning trap. He broke from the ship and dived for the cover of the nearest patch of scrub bush. But he was forced to move on, for those hellions above were clipping the underbrush all about him.

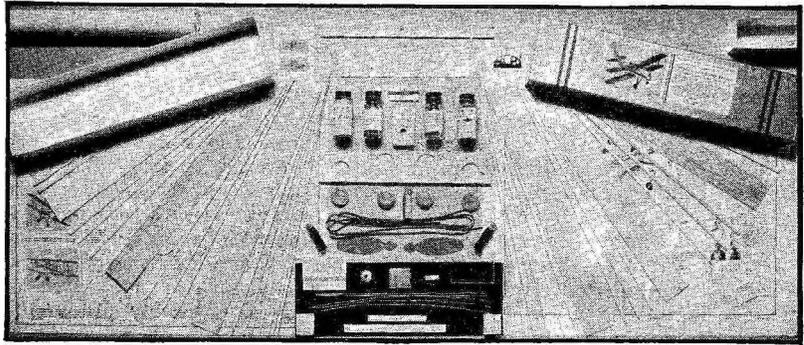
Collier reached the woods, blowing hard. He began to swear, cursing himself for foolhardiness. For a long period he fell victim to this bitter mood. But suddenly he snapped to life. This was no place to give up. He had a Spad on the ground close by, and her Hisso was ticking over. He had information that must be taken back to headquarters. He had chosen to run that mad gauntlet; and the running of that gauntlet was not completed. He pushed off, making a circle to the left through the woods.

Suddenly, as he reached the easterly fringes, his ears caught the raucous blast of a sky motor. He darted to the underbrush and peered out. From that phoney knoll of camouflage, he saw a miniature eruption. The knoll seemed to split apart, as if at some explosion, and from the center of that burst emerged a plane . . .

Mud Collier gulped hard, choking a gasp of astonishment. That ship was no German Albatross. It wasn't a German ship of any type, but an Allied

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Kit SF-1G, postfree as all C-D's

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Spad! A look of something akin to horror distorted Mud's battered features. Here was the key to the whole sinister mystery of Allied failure on this sector. Here was a spy, a two-timer flying the pit of a Spad.

No wonder Dan Collier had been cut down in No-Man's-Land. Every bit of American information of importance had been carried to this secret *Staffel* of death by that pilot now cutting up into the western sky. Mud tried hard to determine the markings on the Spad's sides, but a film of mist blurred his vision. He was trembling in every limb from a mingled storm of inward elements—anger, sorrow for the passing of his kid brother, despair, due to his trapped situation. Every emotion and harassing element possible seemed to scourge his mind. But there was in the back of that mind a deep-rooted element of sheer pugnacity. Fighting Yank guts, it could be called. That film of mist before Mud's vision changed to a film of red. He swung, and shot a keen searching glance at the surrounding sky. The German patrol had moved off, satisfied that they had cut Collier down in the underbrush. At any rate, it was now a job for their ground forces to capture this lone *Amerikaner*.

Still keeping close to cover, Mud trotted through the timber in the direction of his ship. His Colt automatic was digging hard into his right hand. In his ears was the "thrum-m-m" of that spy Hisso. Mud wanted that man, that two-timer, more than he wanted anything in life now. Vengeance! Sky vengeance! He was thrilled with the opportunity of overtaking that scudding ship and cutting down her traitorous pilot in sky lane combat. Perhaps this would be his last fight. Who could tell? But he intended to take that man down to Valhalla with him, if there he must go.

The crash of half a dozen Mauser rifles blasted from the copse across the meadow as Mud neared his ship. One of his legs buckled under him, but he dragged himself, swearing, to the ship, emptied his automatic over the rim of the pit, then floundered aboard. Now his hunched right shoulder gave him a grim crouch above the stick. With a snarl, while lead seared sky past his head, or thumped into the Spad's hull, he rammed home the throttle and darted across the narrow neck of meadow. He slapped his rudder hard, and swung about. He touched his stick trigger before pulling back on the stick, and a deadly spray of lead met those charging groundmen who poured volley after volley of lead at the escaping Yank's Spad.

Mud's brows jerked up. His every nerve fibre tingled now. It seemed as if he were reaching up out of hell's pit, with a host of devils clutching hard at his heels. But he was clearing, getting up. His Hisso was warm, and pulling fine. Out of range, Mud shot a glance back over his shoulder. In the dim distance, he caught the blur of Hun ships. A grin split his features. He had out-guessed the members of the secret *Staffel*, and now, in anticipation, he swerved to the front. His eyes glimpsed the

scudding spy ship, a mere speck ahead.

"I'll get you, blast you," he growled, "even if I have to chase you all over France!"

And now he settled down with throttle into the last notch. A faint eye of light was winking from the Spad ahead, and Mud snarled bitterly. That pilot was signaling in code to the German anti-aircraft batteries. It got under Mud's hide. Soon, he would be forced to cavort through the sky like a gambling hawk in order to clear that hellish gauntlet of red-centered shrapnel. But he was going through, in spite of everything. He wanted to catch that running spy over Allied territory—and then, even if he crashed, his buddies would find the information the Allies required most from a search of his maps. He was utterly prepared, now, to throw all his chances of life into an effort to bring down that spy pilot. And then—he could pass along, feeling that he had squared up for Dan's death.

MUD COLLIER might never have caught that Spad ahead had it not been for the fact that it suddenly took a sharp turn left, to head into the southwest. It was not yet full dawn. There was still time left in that treacherous, ominous hour when front liners' lives were in the balance. It suddenly dawned on Collier that something ominous was in the wind, and then he had it. Those mines, beneath the American lines!

The Boche would be ready to blow, perhaps twenty-four hours ahead of time. And that two-timing Spad pilot was going to observe the shoot. He could see the ship circling now. He was right! The spy ship was covering the American sector below which the German mines were ready to be touched off. A low groan escaped the Yank sky man. He had suggested that the lines be evacuated. Had that been done? If not, the picture would be terrible . . .

Then, even if this move had been made, that spy pilot would carry the word back to the secret *Staffel*, showing the position of American troops. The enemy engineers would hold their hands, and stall off the blowing of the mines, thus permitting the German infantry to creep forward gradually and establish themselves in the evacuated American lines. No matter from which angle Mud viewed the situation, a menace presented itself—a deadly menace, for the American troops commanded one of the most important positions on the Western Front.

"Reckon it's up to you, Mud Collier," Mud told himself. He watched the Spad dip in low, and scud across the frontline and outposts. Mud pulled quickly up for the shelter of a cloud bank. He wanted cover and altitude now, for just as soon as the Hun Archies spotted him, and began to plaster the sky, the spy would be warned.

Scarcely breathing, the Yank cut up into the sloppy drift cloud bank and roared his Hisso out in full blast.

Mud's blood seemed to be racing with the force of a millstream as he cleared the end of the cloud strata. Now he

must go down and chance his life against all that the German ground gunners had to offer. But he was amazed to find himself over No-Man's-Land. It took a few seconds to pick up that spy ship again, but he found it just circling back to eastward from deep into the Yank lines.

A sudden blaze of fury fired Collier's being. On the strength of that spy pilot's information, many of those trusting doughs below, who exposed themselves fully to the ship, would be blasted out of this life, as Dan had been.

He touched down on his stick, and his Spad responded in a power dive which threatened to tear it apart.

Collier's thumb tramped down hard on the stick trigger. From the cockpit of the spy ship the pilot flung out his arms, gesticulating madly. But Mud Collier's mind was made up. He wasn't falling for any of these attempts at friendliness. The lid was off, and a thousand eyes below wondered at the spectacle above, as that deadly Spad from the heights dived like a flaming comet on a similar type of ship. Those infantrymen imagined that some American pilot had suddenly taken leave of his senses—that he was running insanely wild. Mud was running wild, but he was entirely sane.

And now a splash of flame burst from the spy ship's Vickers. The fight was on. No longer could the enemy agent attempt to bluff his way back to his lines with the deadly information he possessed. He struck hard up to meet Collier's diving bus, Vickers yammering wide open. The Yank felt a nauseating pain in his already damaged leg. A black mist enveloped him, and his ship commenced to heel into a spin. But the blast of cold air, as his head momentarily lolled overside, revived him, and that black mist vanished.

The Hun agent had come roaring up to level altitude. He was continuing up when Mud suddenly twitched back his stick, and screamed topside into a sky-splitting Immelmann. He was forced out again. A loop saved him as the spy demonstrated a super-ability at the controls. Lead was showering Collier's Spad. It suddenly sheered off toward the German lines, floundering into a falling leaf.

At once the spy struck down, his face livid with hatred—and glee. His thumb was coiled about the stick trigger. Here was his big moment. One sharp burst and the fight would be over, and then he could tear straight across the enemy lines back to the secret *Staffel*. But that floundering ship below suddenly flattened, dipped her nose a bit, then tore skyside with throttle full in.

There was a savage grin on Mud's face as he watched his Vickers tracer streak through the other's wings. The spy rocked hard against the side of his pit, recovered, and pulled over in an Immelmann. He was tearing to westward now, but Mud Collier was on his tail, a swaying, ugly form above his stick. He suddenly pitched his ship down in power and smacked the stick trigger. A roaring burst of fifteen

rounds belched from the muzzles of his Vickers. It was enough.

Mud sagged forward. He had instinctively cut his engine and was now only dimly conscious of direction and altitude. He seemed to be flying through a black fog, down into a fathomless pit.

But with his last spark of consciousness he backsticked and slapped his rudder. A sudden rocking jolt and grinding crash was all he remembered as his ship blasted into the willow scrub below

This time Mud didn't wake up in the forward zone, but away back of the lines in a white-roomed hospital, and he only stayed awake long enough to satisfy himself as to his whereabouts. That deep, powerful anesthesia unconsciousness was too claiming, and he slipped back easily into its waiting arms, a grim smile of satisfaction on his battered face. By now, Allied headquarters had all the information they wanted on that secret *Staffel*, and those deadly, hidden batteries.

Raid of the Unseen

(Continued from page 17)

need anything further. You were warned that your new C.O. was bugs on the subjects of gunnery and photography. Forget the photography—that's only my hobby when I'm not working.

"But, gentlemen, I am going to tell you something, I am a nut about guns, and rightfully so. A lot of new pilots come up to the 7th Marines, believing that they know all about shooting. And until I changed the orders, and damned near got a general court for doing it, they frequently got a real shooting lesson the next day. Got it from some experienced Jerry pilot. The trouble was that the lesson didn't do them any good. When it was over, they were dead!"

He paused to look at his listeners. The smiles had vanished from their faces. There was something about Chuck Wayne which inspired confidence. "The Marines," continued Chuck, "are not new at this fighting game. We have taken lessons from blood-crazed Moros in the Philippines, from slant-eyed Boxers in China. We have been to fighting school in Cuba and Central America. We have learned that the first function of all soldiers, even flying soldiers, is to shoot and to hit what you shoot at, the first time, and every time. Poor flying is bad, but poor shooting is fatal. I'll be damned if I'll send any pilot over the lines until he shows me that he can shoot. So tomorrow morning you start circling the field and diving at that row of targets at the far end. When you can hit them from all angles, you can start flying with our regular patrols, but not before."

Chuck knew that this order would cause trouble for him. His insistence on gunnery practice delayed new pilots a week or more in getting into action, and that delay gave Colonel Jackson

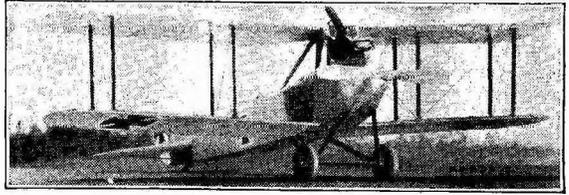
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his excuse to hang him. According to the colonel, when pilots graduated from the pool, they were ready for action. He had ordered Chuck to use them immediately. So far, Chuck had ignored the order, but a show-down was inevitable.

A low rumble shook the windows of the headquarters hut. "R-u-u-m-m-p-a-w! R-u-u-m-m-p-a-w!" An uneven vibrating buzz sounded dully in the east.

"The Gothas," said Chuck, briefly. "Never heard them before? No? Well, you will from now on. Every night about this time they come across. You can damn near set your watch by their raids. G. H. Q. is wild about it, too. It's uncanny, the way they are registering hits."

"We heard something about it down at the pool," answered one of the newcomers, as the rumbling grew louder. "There is a lot of talk about spy work being responsible. Only no one seems to have any idea how the spies transmit their signals to the Gotha pilots."

By this time, the roar of the giant bombers was so loud that conversation was impossible. The three officers walked to the door of the hut and looked aloft for the enemy. A myriad of searchlight beams danced up and down the sky in an effort to pick them up. Archie guns blazed away from every conceivable angle. It was a pandemonium of futile effort, for the Gothas rumbled on.

"They've passed us," yelled Chuck, as he noticed the evident nervousness of his new pilots. There is something about night bombardment that turns the bravest men's blood to water. The uncertainty of where the blow will fall, the invisibility of the attacker, the horror of suspense. . . . Death in the heavens—the sword of Damocles waiting to fall—where? From the direction," he added, "they must be after the canal locks at Gravelines."

"Wh-e-e-eee! Wh-i-i-s-s-sh! Bw-ong!" A prolonged crescendo whistle was followed by an infernal crash. A cataclysm of destruction rent the night. The earth trembled as the first Gotha laid its egg. About two miles to the west, the heavens lighted up as if the aurora borealis had suddenly appeared over Flanders. Another terrific explosion followed, and in close succession, two more.

"They carry a signal one-ton bomb apiece," yelled Chuck. "Four bombs mean four Gothas." The rumble of Mercedes motors faded out over the English Channel as the night raiders picked the safer water route home. "They're away safely again," growled Chuck. "Damn them! I wonder what they hit this time."

Just then the phone rang in the office, and he went inside to answer it.

"Captain Wayne?" asked the signal corps operator. "Hold the line. Colonel Jackson is calling."

Chuck grimaced his disgust. There was a delay in locating Colonel Jackson, and Chuck asked the operator if he had any news as to the result of the Gotha raid.

"Plenty!" replied the signal corpsman. "And it's bad. They wiped out two canal locks, and that ties up ten supply ships. Here's Colonel Jackson."

"Wayne!" the colonel's harsh voice bellowed over the wire. "In tomorrow's raids you will use those two replacements who reported to you tonight. I'm confirming the order in writing this time, so you can't evade it."

"That's murder, colonel, and you know it," answered Chuck. "There is no reason why you should let your personal hatred for me get two green pilots bumped off."

"Silence!" roared Colonel Jackson. "Those are my orders, and I don't give a damn what you think. Major Borden is bringing a French Intelligence officer over to see you tomorrow. He is looking for ideas and trying to solve the secret behind the success of these Gotha raids. You're never any good to anyone, so you won't know anything to help him. But you can act as if you were intelligent and treat him respectfully, anyway." A click in the receiver told Chuck that the colonel had disconnected the phone.

Choking with rage at the insults, Chuck turned from the instrument. A look of grim determination spread slowly over his countenance.

THE next morning, a clammy ground fog made flying impossible. "That postpones the show-down with Jackson for one day, at least," thought Chuck, as he finished his breakfast.

A mud-smeared touring car pulled up outside the mess hall. Major Borden, wing operations officer, came in, accompanied by a youngish man in the uniform of a captain of French infantry.

"Howdy, Chuck," said the major. "Shake hands with Captain Renault of the French Intelligence. He is gathering dope on the Gotha raids."

"My department, captain," began the Frenchman, in precise English, "has been entrusted with a mission of grave import to the Allied cause. You are, no doubt, already familiar with the fact that the recent night bombing raids of the Gothas have been extraordinarily successful."

Chuck nodded his head and laughed. "Afraid I am," he said. "Saw one at first hand last night."

"We are sure that it is spy work," said Captain Renault, "but we cannot figure out how the spies are communicating with the pilots of the Gothas." The Frenchman paused a second, as if turning something over in his mind. "Captain Wayne," he continued. "I am about to ask the impossible. At least, it would be impossible for any other outfit but yours. I have heard so much about the accuracy of your shooting that I think you might have a bare chance of success. We would like to see one of those Gothas. And a wrecked one will not do us much good, either. We want one here on the ground in an undamaged condition. Can you get us one, captain?"

"That's one big order," said Chuck. "What do you expect to find, in case they succeed?" cut in Major Garner.

"That is anyone's guess," replied Renault. "Your friend, Colonel Jackson," he added, with a sly smile at Chuck, "seems positive that it is directional radio."

"If that old—" Chuck began, but checked himself. "I mean to say, if Colonel Jackson thinks that, you have got me interested. Does he know what you are asking the 7th to do?"

"Not yet," answered Renault.

"All right," said Chuck. "I'll make you a bargain. If you will keep it quiet until it's over, we'll try to get you a Gotha. It won't be any bed of roses, either. Those gunners that Fritz is using in the bombers are the cream of the lot. They are mostly picked shots from the old Imperial Army. They are the only gunners at the Front who can compare with the Marines in accuracy, so it will be a hot show." As an afterthought, he added. "I'm gambling on a hunch. I won't tell you what I think the method of communication is, because I admit that I'm only guessing. But I think Jackson is wrong when he says it's radio."

"Très bien," laughed Renault. "It's a good bargain. I'll say nothing until the show is over. The next time they try a raid in this vicinity, make the attempt. They are aiming at the Channel ports, so it will not be long."

Chuck spent the afternoon instructing his pilots in their parts in the coming show. There was joy in his heart at this chance to justify his insistence on gunnery practice. If ever a show called for hair-line accuracy, this was it. And if his hunch about the communications method should happen to be correct, well—anyway, if the 7th put this across, Colonel Jackson wouldn't have a leg to stand on.

Darkness had fallen before the pilots sat down to a belated supper. Suddenly a window rattled. Conversation stopped on the instant. "Roombaw! Roombaw!" Very faintly from the eastern horizon came a dull rumbling. The Gothas! Pilots gulped cups of coffee and dashed for the door. They ran into their cubicles and grabbed flight gear. Mechanics streamed from their huts and ran for the hangars.

They were closer now. "Rumpaw! Rumpaw! Rumpaw!" They heard the unmistakable drumming of the tri-motored Gothas. Jerry never could seem to get those three motors synchronized. Always their drone surged in waves of sound, like breakers on a distant shore. Rumpaw—rumpaw—the devil's tattoo! Freight trains of the air—the Gothas were coming!

"All clear! Contact!" The sound of motors reverberated down the starting line as the mechanics turned them over. Pilots polished their goggles and climbed into the cockpits. From the command ship, Chuck gave the "All ready" signal. He taxied onto the field and turned into the wind.

Closer came the Gothas. Fingers of light gyrated up and down the heavens as the searchlights tried vainly to spot the marauders. Chuck kept the 7th sitting at the far end of the field, motors churning slowly in the gloom. He wait-

ed until across the rising moon he caught the cross-barred shadow of a Gotha. In a flash, he gave the Camel the gun. He raced madly down the field in a curving, crooked take-off which kept the silhouette of the raider always across the silver circle of light.

A less alert squadron would have been thrown into hopeless confusion by that twisting take-off. But the veteran pilots of the 7th followed the difficult course as a matter of habit. They skimmed the trees and raced across Flanders. They raced to meet the invader—to meet an ever growing shadow over Flanders . . . destruction over France . . . cargo of red death for the Allies!

On and on came the Gotha. Chuck led the 7th in a tight circle as they waited his approach. Half a mile—the moon flashed on a Camel's wing. The Gotha saw them at last. Slowly, it banked into a ponderous turn in an effort to escape.

The 7th understood their orders. Kill the three gunners—but miss the pilot. That meant shooting at close quarters, hair-line accuracy.

Wires screaming and motor howling, Chuck dived under a huge lower wing. The gunner up front was his meat. He found a blind spot under that umbrella-like overhang. He eased his throttle to avoid overrunning his target. He brought his nose up to rake the front cockpit.

It was no use. He couldn't get a sight from where he was. He would have to slide over. That would put him squarely in front of the gunner in the rear. There was no other way; he'd have to do it.

HE pushed on a little right rudder, raised his right wing, and slipped to the left. Now! But before Chuck could touch his trigger, a crashing, flaying hail of Spandau lead smashed through the side of the fuselage all about his body.

"Brat-a-tat-tat-tat." It ripped the fabric to shreds. The Jerry gunner riddled the Camel from nose to tail.

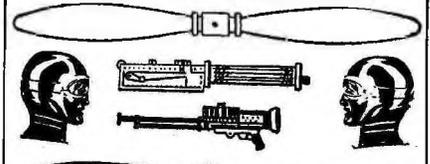
Chuck centered his sights on the crouching figure in the front of the Gotha. "Chig-a-chig-chig-chig!" The bucking stammer of his Vickers mingled with the jangling clatter of the Spandau. Chuck saw the figure in front of his guns stiffen, turn—and slump forward on his gun.

For an instant Chuck dived for speed. Then he zoomed upward toward the Gotha again—under the rear cockpit to get that Kraut who had almost ruined his aim, and his neck besides. Up he came, Vickers hammering a song of death. Even as his tracers ate their way into the cockpit, he realized he was too late. The 7th had already accounted for his quarry. A soldier can only die once. And the three German gunners were all dead.

The Gotha pilot attempted to turn to the left. Three Camels closed in alongside—ghostly shadows in the moonlight which came from all angles to cut him off, to force him to straighten out. He tried vainly to turn to the right, but he was cut off there.

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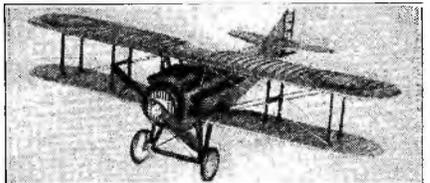
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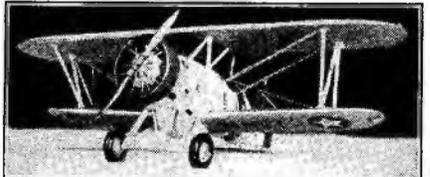
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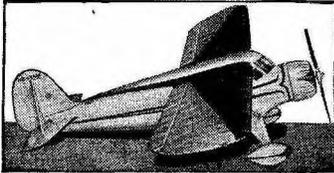
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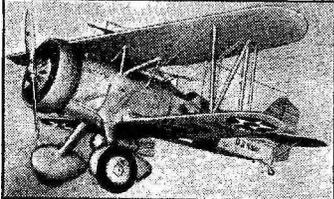
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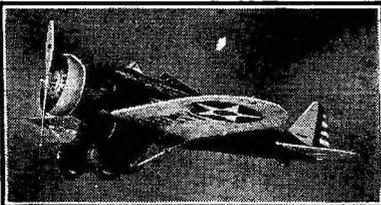
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Something flashed in the German pilot's hand. A Luger slug crashed into the instrument panel in front of Chuck's face. A brave man, that German pilot—but he would have to be have.

Chuck turned his nose toward the Gotha and squeezed off a burst. The bullets cut a neat pattern in the side of the cockpit, not six inches from the pilot's back. He dropped the Luger. Perhaps he understood; perhaps the Luger was empty. What difference? He was headed for the tarmac of the 7th.

It was a strange parade, a ghostly procession. A bullet-riddled Gotha, with a cargo of dead men. Escort of Camels above, below, on both sides—only inches away, forcing the Gotha down, forward and down—down to the tarmac of the 7th Marines.

The lights flashed on; the huge bomber lumbered over the boundary markers and rumbled to a stop. Chuck rolled alongside as its wheels touched the earth. Unless he missed his guess, that pilot would try to burn his plane.

Yes! There was a flash of flame as he struck a match. Stark bedlam broke loose on the ground. Three machine guns spoke simultaneously from the line of hangars. The pilot crumpled in his cockpit; mechanics rushed over and put out the tiny flame. Chuck smiled. He had figured well.

Captain Renault was waiting. Chuck hailed him, and together they climbed aboard the Gotha. Quickly, the dead Germans were lifted out. With flashlights, they searched the interior of their prize.

"*Nom de Dieu! Sacré bleu!*" growled Captain Renault. "Colonel Jackson is one bad guesser. I see no radio here. Nor for that matter, anything else," he added.

Chuck did not answer for a minute; he was trying to figure out a peculiar opening beneath the pilot's feet. The hole itself was natural enough; most bombers had similar holes so that the pilot could watch his target as it passed beneath him. It was about two feet square, and covered with a peculiar opaque glass. It was that translucent glass which Chuck was studying.

"Captain," he said, "I'm still playing my hunch. We'll take her off, just the two of us. I'll tell you all about it in a couple of minutes, just as soon as we get into the air."

Parachutes were never used in the Camels but there were two of the type the balloonists used in the headquarters hut. These they had been using for experimental purposes. Chuck sent an order on a dead run to get them. He dispatched another for two Colt 45's and extra clips of ammunition.

The motors of the Gotha had been idling as they worked. Quickly Chuck searched for leaks in the gas tanks. One was riddled. He found the pet-cock in the fuel line and disconnected that tank. He called for chocks under the wheels; he revved up the three motors.

The orderlies returned with the chutes and pistols. Chuck handed one of each to the Frenchman and told him to don the breeches harness; he climbed

into the other one himself. They fitted the balloon-chute cones outside the cockpits.

"Pull the chocks!"

With a roar from the three Mercedes, the Gotha trundled down the field.

"Captain Renault," said Chuck as they taxied. "I may have the answer to all this spy business."

He cut the inboard motor, turned into the wind, pushed the throttles forward. The huge tail gradually lifted from the ground and they gained momentum. They were off!

CHUCK circled the field for altitude, then turned the Gotha's nose towards Calais, resuming the same course it had been flying when they forced it down.

"This course should take us over their intended target," Chuck shouted above the din of the motors. "Let's hope we see it. No lights should be showing down below. But watch the ground closely through that window. You may see something just the same."

For perhaps ten minutes they droned across the endless dark fields. Not a flicker broke the blackness of the countryside. For three war-torn years no lights had burned in Flanders. A light at night meant a spy at work—a spy marking the goal of the Gothas. And a light to guide the Gothas was also a light to guide the *gendarmes*. No spy ever lit more than one beacon. French vengeance was swift and certain. A signal torch for the Gothas meant a grave for a German spy.

Suddenly Renault gripped Chuck's arm. "Look! Look!" Excitement quivered in his voice. "A light! Below us!"

A tiny pin-point of fire glowed steadily through the translucent window. Without changing his course, Chuck spoke into Renault's ear. "Make sure you have its position spotted. Then look over the side and find out if you can see it without looking through that window." The Frenchman peered over the cockpit cowling.

"*Sacré bleu*, captain! It disappears. Incredible! It is gone!" Renault slid back into his seat. "But no!" he cried. "It is there. I see it clearly through the window."

Chuck was exultant. "That's just what I thought," he said. "It's infra-red. Photographers have always known that there were infra-red rays of light, but they have not known how to make them visible. Jerry has doped out a sending device and a detector. A spy has the lantern there on the ground. Its light is absolutely invisible to anyone who does not have the detector which is that window pane under our feet. Have you got the place spotted? What is it?"

"The St. Jean munitions dump."

"Get ready to jump out! We have the detector. We can nail that spy and his sending lamp. That's why I brought the chutes." Chuck kicked his foot through the glass panel and picked a sizable fragment from the frame. G-2 would need that sample. He slipped it into the pocket of his flying suit.

Brr-up! A hail of lead crashed into

the Gotha. Down from the silvery sky rained a stream of tracers. Chuck felt their white-hot breath, felt them claw at his arm.

He saw Renault clutch his side, half-spin in his seat—mortally wounded. The dying Frenchman lurched sideways in the cockpit. He clawed at Chuck's head, and drew his mouth to the Yankee's ear.

"Chemin de fer—the train-shed. The light is on the roof of the train-shed. *Vive la France!*" Renault pitched forward on his face.

Spads—the night was alive with Spads. From all directions they poured searing bullets into the helpless bomber. German bomber? Of course it was a German bomber. There were the gaunt black crosses on its gargantuan wings. Boche meat—carrion for the blazing guns of France.

How could those pilots in the Spads know that this Gotha was different? How could they know it was flown by a Yankee, or that they had killed a French officer? How could they tell that they were wrecking the greatest Intelligence coup of the war? Gotha, night raider, murderer! Lead for a Gotha, death to a night raider, flames for a murderer!

Desperately Chuck kicked his rudder and hurled the huge bulk of the Gotha straight into the heart of the seething mass of Spads. Collision? What difference? Anything else meant death. The suddenness of his move opened a lane between his attackers, and they scrambled to avoid the awkward wings.

In the second of respite, Chuck climbed over the side, and hurled himself into the darkness below. Down and down he plunged; the earth rushed up to meet him; there was a jerk at his groin. For a full second his heart stood still. This was an experimental chute; would it open? It was already clear of the leather cone.

Slowly, the white silk billowed out above his head. With another jerk, his descent was checked, and he floated gently. He looked for the Spads—and here they came. Would they pot him now that he hung helpless, shoot him like a dog? Chuck held his breath. The Spads held their fire. Those French pilots were soldiers, not murderers.

Chuck twisted in his broad webbing harness and worked the shroud lines of his chute around until he faced downwind. He struck the ground with a jolt, and tumbled headlong before he could spill the wind from his chute.

He scrambled to his feet, gun in hand. The most important job was yet to be done. He was within the confines of the St. Jean munitions dump, and in the distance he heard the hoarse cries of sentries and the shuffle of running feet. That spy would grab his apparatus and take to his heels; there was no time to waste.

Chuck glanced hastily about him in the shadowy maze of buildings and loading platforms. He got his bearings, spotted the train shed, beyond and to the right. Noiselessly, he slipped through the gloomy alleyways. Quietly, he crawled the last fifty yards.

The train-shed roof was silhouetted against the moon. A figure scuttled across the light on his hands and knees. Chuck raised his arm. The .45 barked twice.

The stooping man struggled to his feet. He clawed wildly at thin air, tumbled to the ground. The spy was dead, with his tell-tale lantern clasped in his lifeless arms.

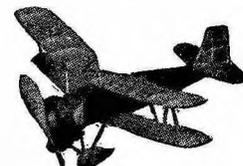
A French staff car carried Chuck to G.H.Q. It was dawn before the astonished general staff finished asking questions and examining the captured infra-red ray apparatus. Numb with fatigue, Chuck did not think to wonder why a gold-braided French general rode with him when the car again took the road for the home field of the 7th. But he did vaguely notice that the entire wing was drawn up at attention when they drew up in front of Headquarters. The major was waiting as they climbed from the car.

"Major Borden," said the general, "I return to you a great pilot. It is my very great honor to escort a brilliant officer to his own comrades. When our own Intelligence had drawn a blank, his quick thinking and prompt action saved the day." He turned to Chuck.

"Captain Charles Wayne," he said, "the Republic salutes a brave man. France thanks you." The general leaned forward and looped the red ribbon and medal of an Officer of the Legion of Honor about Chuck's throat.

Major Borden was the first to shake Chuck's hand. He leaned over and whispered in his ear. "It might interest you to know," he said, "that G.H.Q. is issuing orders making gunnery practice compulsory for every squadron on the Front." He paused and smiled, then added significantly, "Colonel Jackson has developed some very mysterious cramps in his stomach. He is being sent home for treatment. I thought perhaps you'd like to know!"

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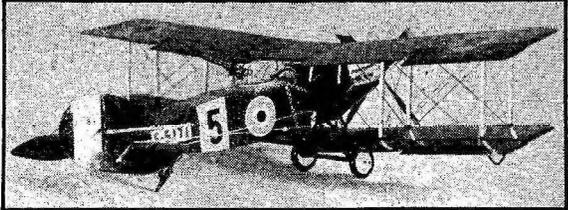
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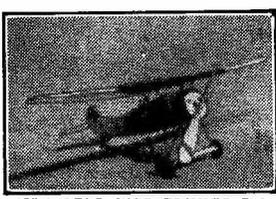
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Crêpe Hangars

(Continued from page 11)

Follow me, Lieutenant—er—what's your name? I'll show ya where you'll stay the short while you may be with us."

In desperation, Phineas held out his hand. "Shake!"

Jitters gripped the hand. Bz-z-z-zzz! The little man rocked back on his heels.

"Haw-w-w-w!" guffawed the jokester with genuine enjoyment. "It's a buzzer. I got a battery in my pocket. 'G'night," cut in Major Tiptlett. "You'll be on the early go, Pinkham."

"H-huh?" stuttered the Boontown trickster. "Er—yeah." In a daze he followed Jitters to the hut.

"Eight guys had that bed," Jitters offered, "an' the spring is like new. Well, goodnight."

"I doubt it," groaned Phineas.

MORNING brought no sunshine to the drome, or to the hearts of the Thirteenth. Just before the take-off, a pilot approached the flight leader.

"Here's the two cigarettes I owe ya from last night. Ma said never to go out owin' any debts, an' I would rest better under the sod, cap'n. You look worried."

"Yeah," replied the flight leader. "I was tryin' to remember all night if I put enough stamps on my will that I sent home last week."

"Haw-w-w-w!" Phineas forced out. "Just watch me, an' I'll show ya why insurance companies like to sign me up. There ain't a Kraut that lives that kin knock me off."

"I'd be careful about loopin' that crate," the flight leader warned him. "It was cracked up only yesterday, an' our ackemmas are rushed."

"Uh-huh," the flyer from the Ninth said, his face sagging.

Once in the pit, Phineas sighed and pawed at a clammy brow. "An' I passed up a court-martial! Bump Gillis was right. I am not even half bright."

The funereal Thirteenth Squadron pilots were not half bad when it came to fighting the Heinies. It was Phineas who was the worse for wear on the return of Tiptlett's flight from a brush with a flock of Pfalz ships. The end of his top wing was nude of fabric, and a strut hung by a thread. Phineas landed the Spad upside-down and yelled for succor. When he had been dragged out into the clear, he sat up.

"Look here, major," Phineas yipped to Tiptlett, "that Spad was almost the death of me. I refuse to—"

"You've got to die some time, don't you, Pinkham?" the C. O. said simply.

"Would ya mind if I postponed it a bit?" Phineas cracked with delicate sarcasm. "What a joint!" He rose and went to his hut, where he slumped down on his cot. Pilot Jitters looked at him solemnly.

"Pinkham," he began, "do ya believe in reincarnation? I would like to return to the world—if the Heinies get me—as somebody else."

"I don't blame ya," sighed Phineas.

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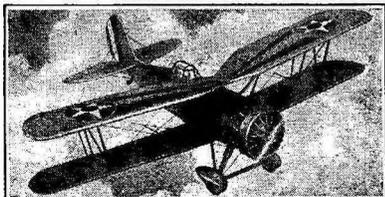
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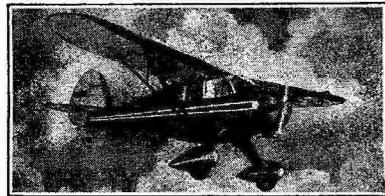
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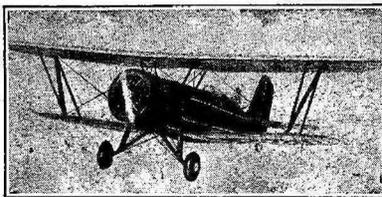
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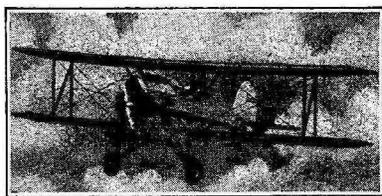
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as his hand came in contact with the stick of dynamite. Even during the crash landing, he had forgotten it. However, it was a pair of eyeglasses which he brought to view from his pocket.

"I'm gittin' old," he began. "Gittin' bleary in the lamps, loitnants." That brought a laugh. The outburst of mirth fanned the dying embers of Pinkham skullduggery to flame. He looked toward the Von who was devouring the letter. The writing became magnified fifty times. It was in passable English.

"—und der Herr Oberst von Gluten he does not read well der English," Phineas read, "Ach, he is der Dumkopf or he would know du bist der only one, Karl. Married by him is I'm, ja, but it should nein be so long yet. Mein Vater, he makes me marry der gross schwein, as it is rent he owes him by der house. But we find yet der way, hein?"

Suddenly the Von whisked the letter out of sight into the pocket of a coat which was draped over a chair beside him. The Staffel leader had come out into the room. The quick gesture set Phineas to adding two and two.

"Well," he said to himself, "things are pickin' up. Boys, would I like to shellac that Gotha! Huh, I wonder . . ." As the Herr Oberst von Gluten walked toward him, Phineas rose. "Keep back," he exclaimed desperately, "or I'll blow you all loose from your pants, you bums." He yanked the dynamite stick from his pocket and waved it around his head. "I'm goin' out through the door," he grinned, "an' if anybody stops me, well—"

"Ha, ha," laughed a Von who had slipped up from behind. "It iss der Pingham yoke, ja?" He whisked the stick from Phineas' hand and held it up for all to see. "No more iss it he fools mit us, hein, chentlemen?" the Boche flyer chuckled. "Der fake iss it, odder-vice vhy it shouldt nodt go off when he cracks oop, hein? Look, I toss him by der fireplace vunce. Ha, ha—ho, ho!"

"He-e-ey!" yowled Phineas. "You damn fools, it's real, as—"

It was too late. The stick went sailing toward the hearth, and plunked into the heap of burning logs. Phineas flat-

tened himself just as the whole house seemed to lift and go into a spin. The force of the stick exploding had knocked a souvenir from a shelf—a dud shell. But the dud had decided to be a dud no longer.

B—o—o—o—oom! Beams and plaster rained down on the addled Vons. Burning embers from the fireplace shot out into the breeze, and the breeze wafted them to a clump of dry bushes huddled against the side of an ammo shed. The bushes were ignited and crackled merrily. Boche greaseballs went into a panic, and before they got organized, the ammo shed went haywire. Tracer bullets slithered through space and made lace out of the drome.

Over by the giant Gotha was a petrol wagon loaded up with cans of Mercedes pep. A tracer slipped through the midriff of one which was not quite full, and then hell broke loose in earnest. Bang! Gobs of flame spewed down on the giant wings of the super Gotha.

Phineas Pinkham lifted a beam from his neck, clambered to his feet, and then fell over a Von who was making funny signs with his fingers. The old Pinkham brain clicking, Phineas made a grab for a Heinie dress overcoat and wrapped it around himself. A Boche, partially recovered, made a futile effort to grasp the Yank as he lifted a visored cap from the floor. Phineas just spread the Boche out with a wallop on the chin, and then made his exit from the heap of rubbish which had been a house. Unchallenged, he made his way to a bomb shelter at the edge of the field and crawled inside just as another explosion shook the atmosphere and loosened beams in the shelter.

"Haw-w-w-w!" Phineas was himself again. "Did they git fooled!" It was very dark in the shelter, and he struck a match. Holding it aloft, he discovered the stub of a candle which he lighted. Then he sat back against a supporting beam in the dugout, and began to take an inventory of his chances of getting back to la belle France. Verily, they seemed as slim as a wasp's waist.

"Well, it's better than bein' with Tiptlett," the errant Yank mused, and unwrapped himself from the Boche coat. Something caught the Pinkham eye—rough letters made with indelible ink on the inside of the German lapel. They spelled *Leutnant Karl Hiffelhoff*.

"Boy, is that a find!" He chuckled, and feverishly began to explore the pockets. The letter he had hoped to find was not there.

"Oh, well—" the Boontown flyer sighed, "I—er—" A broad grin split his homely face from ear to ear. "Huh, he put it there. Now if it is only blown away some place. Ha, I will take a chance if—"

Out of the ruins of the house two Vons were crawling. They met head on.

"Dumkopf!" raged the Herr Oberst von Gluten. "You t'row der dynamite, hein? Ach, I should show you—lookk, der Gotha, in liddle pieces yedt. Der Kaiser, he vill giff you der medal, bah-h-h-h!"

"How, Excellenz, iss idt I know,

hein?" jerked out the goggle-eyed Boche pilot. "Iff der trick idt iss nodt, ve get fooled, und if der trick it iss, what? Maybe you know all der time, ja. Vell—" The Herr Oberst's fist ended further argument.

Quickly, the Boche Staffel rallied. Vons ran wild all over the place looking for Phineas. It so happened that Leutnant Karl Hifflehoff himself finally crawled into the bomb shelter and surprised Phineas in the act of grabbing three winks. He jammed a Luger close to the Pinkham short ribs.

"So I gedt you, ja?" the Boche flyer yelped. "I see der light shine by der dugout. You gedt shodt now."

"OH, I don't think so," grinned the prisoner. "It's lucky you happened in, ha, ha! If I should give the Herr Oberst a letter I found in this coat of yours, it would be just too bad. Haw-w-w-w, it iss mein Vater who made me marry der pig. For der rent it iss owed on der house, yet. Haw-w-w-w! I got a pair of cheaters I have fun with, an' I read your mush letter an'—"

"Ach, Gott!" exclaimed Pilot Hifflehoff. "Where iss it yedt? If der Herr Oberst he finds it, ach—Leutnant Pingham, I make it der bizness deal mit you, hein?"

"Oh, I'm always open to settle things outside of court," chuckled Phineas. "My terms is to say you did not find me, and have a Fokker ready for me about seven p. m. I expect you to get a Heinie flyin' suit to me, too. When I get upstairs, I'll drop you the letter. Haw-w-w-w!"

"Ach, I could make you giff der letter to me, oopstart," the Jerry snapped, waving his Luger. "You are making by me der trick."

"It's a crime to shoot a prisoner by yourself, and you know it, you sausage-sniffer," grinned the unfazed Yank. "Take it or leave it!"

"I take it," growled von Hifflehoff. "I coom by here mit der flyink soodt after der mess. Ach, sooch ein var, Himmel!"

When the Kraut had gone, Phineas crawled to the darkest part of the shelter and waited. As dusk crept in, he heard the sound of a Mercedes engine ticking. Nobody paid much attention to von Hifflehoff as he sauntered across the field in helmet and leather coat. The majority of the Vons were trying to figure out a place to sleep for the night.

"Pingham!" Hifflehoff whispered, crawling into the shelter. "Iss you here?"

"Not for long, I hope," replied the Pinkham voice from the dark.

"You go oudt as me," the Von explained. "Mein ship is varms oop. Joost gedt in und—ach, I hope it iss two t'ousandt bullets hits you before you gedt four foots oop."

"I imagine ammo is scarce, don't you?" grinned Phineas. "Well, I'll keep my part of the bargain an' drop you the letter. Oh, it's not on me at the minute, so don't start nothin', haw-w-w-w!"

The Von growled and left the bomb shelter.

Ten minutes later, Phineas walked

leisurely across the Boche flying field and headed for the idling Fokker. A little Heinie was on the lower wing, poking at a strut. He glanced casually at the pilot as he got into the pit.

"Herr Leutnant," he called, "sehr gut, ja!"

Phineas responded by jamming in the throttle. The Fokker leaped forward. The little Heinie monkey-wrench expert let out a howl as he felt himself fly into space like a barn swallow. Over by the heap of ruins, Leutnant von Hifflehoff smacked himself on the head with a spanner. He had to make it look good.

"Ach, who iss it vhat flies, hein?" yelped the Herr Oberst, limping out of a shack. "Was ist—Pingham! I bedt you." And then he indulged in the longest cuss word in any language.

"Himmelherrgottkreuzemillioendonnerwetter!"

Phineas, soaring into the dusk, dropped a letter tied to a bit of brick. Von Hifflehoff watched the object fall as he rubbed a big igloo on the side of his head. He put on a swell act and staggered out onto the field. A Kraut greaseball was picking up the thing Phineas had dropped. Von Hifflehoff booted him in the seat of the pants and picked it up himself. He shoved the brick weight into his pocket and headed for privacy.

"He hid me on der headt," he explained to the Herr Oberst in passing. "Sooch ein vallop, ach!"

"To the Fokkers!" yelled the Staffel leader. "Ve shouldt giff sobs mit cryingk for der cabbage headt oof yours, hein? Chase quick der oopstart. To the Fokkers!"

Leutnant von Hifflehoff, however, could not go up as Phineas was using his Fokker. The Von got into the groundmen's barracks and ripped the letter away from the piece of brick.

"Ach, sooch a relief," he sighed. "If der Herr Oberst shouldt—Himmel!" The Junker swayed on his pins. His eyes rolled around like ball bearings in skate wheels. He read:

"My dear Mr. Pinkham:

Six months ago we shipped you a set of novelties and parlor tricks which totaled three dollars and eighty-one cents. Despite the fact that we have called your attention to this matter forty times, you pay no attention. If you do not send us a money order by return mail, we will take drastic action.

(Signed) T. J. Waggernack,

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"Ach, Donner und Blitzen!" wailed Herr Hifflehoff. "Der trick again iss idt."

A groundman came in, saluted meekly, and handed something to the Von.

"Ein letter I find by der ruins. Herr Karl von Hifflehoff iss by der cover. Yours iss idt, hein, Herr Leutnant? Ach, he faints yedt! He-e-elp, eferybody, der Leutnant, he iss kaput!"

Three Heinie Fokkers and eight gun batteries tried to stop Phineas Pinkham from getting back to the democrats. With a wheel shot away, the Boontown flyer was sighted over Garrity's drome at eight-thirty in the evening, and a

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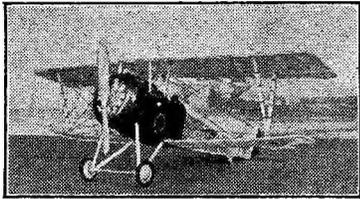
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machine gun on the ground opened up and helped him down fast. Without benefit of even candlelight, Phineas set the Fokker down lopsided, fought it all the way across the field, and finally subdued it against the very walls of the stone farmhouse.

"Hock them handens!" somebody yelled. "Come out, Heinie!"

"Aw, talk United States," yapped Phineas, as he crawled out into the clear. He sat down in the dirt, whipped off his helmet and let it fly. "Yep, it's me!" he howled. "I come back to git court-martialed. I know when I'm well off. Where is the old turt—"

"Over yelling his head off. A Handley Page outfit just called up and said they saw the super-Gotha burning up on the ground as they came back from a raid on a Boche drome. Some news, huh?"

"I am simply amazed," drawled Phineas. "I only took that Fokker you see there from right next to said Gotha. Haw-w-w-w!"

Major Garrity, Captain Howell, and Lieutenant Bump Gillis, as well as the whole works of the Ninth, came run-

ning up just as Phineas' words clipped off.

"You got that Gotha, Pinkham?" yelled the Old Man. "Here, don't sit on the damp ground. Let me help you up. Here's my hand!"

"Thanks," said the prodigal son, and grasped the hand. Bz-z-z-z! The C. O. jumped a foot off the ground and lost his bridgework.

"It is a battery in my pocket," explained Phineas with a grin. "Haw-w-w-w!"

"Haw-w-w-w-w!" joined in the Old Man. "We were fooling about the transfer. Ha, ha! It won't stick. Battery, huh? You're a scream, Pinkham."

"Haw-w-w-w-w!" mocked Bump Gillis. "This is for that glue you put in the fingers of my gloves before you left." Whack!

"Gillis," howled Garrity, "I'll bust you for that—assaulting Lieutenant Pinkham."

"Why, ya will not!" enthused Phineas, rubbing his nose. "What fun, huh, bums? It's a swell *guerre* awright. Haw-w-w-w!"

Happy Landings

(Continued from page 36)

Francisco. The Douglas is to be used on the T.W.A. and the Eastern Airways, which does the New York-Atlantic-Miami run.

Right now, the Douglas seems to have a few miles an hour on the Boeing, and a Rickenbacker in the cockpit. But wait until the Boeing boys start bearing down! All we need now is to have the Imperial Airways take up the Vultec or the Curtiss Condor and the Pan

America Air Lines contract for a few British Shorts!

THE MORRO CASTLE ANGLE

MANY readers may be puzzled about the report that the Navy will take over the hulk of the *Morro Castle* and make an aircraft carrier out of it. While there is nothing official about this, there is a possibility that such a stunt may be tried.

With Representative Vinson, recognized spokesman for the Navy, clamoring for more aircraft carriers and dirigibles with little or no money to spend on them, it is quite possible that the U. S. Navy will have a fling at building one of the much discussed flying-deck cruisers, something that has not as yet been attempted by any nation.

The flying-deck cruiser is an American idea that has come up regularly at every Naval conference, but nothing seems to be done about it. In general, the vessel is a 10,000-ton cruiser, cut down for deck-landings and carrying six-inch guns in place of the regulation eight-inchers. At first the planes to be carried were to be naval bombers. Later on, however, plans were changed, and the planes were to be scouting ships that were not intended for real fighting action.

The *Morro Castle*, which was a 10,000-ton ship, might be used for such an experiment, for from what we learn, the hull was not badly damaged. Just how valuable it would be in action is a question, however, for according to Naval experts, it would be something of a hybrid, much undergunned and certainly inefficient as a plane carrier because of its length.

There is a vessel tucked away somewhere in some designer's mind that will

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prove to be the happy medium between the great aircraft carrier and the cruiser. It has not been mentioned yet, but will no doubt include much better deck landing devices than are known now, and more efficient Diesel-power for the necessary speed.

SPEED, AND MORE SPEED

THE boys in the air continue to pound out the knots, and records topple in all directions. Where are we going?

Scott and Black thunder across the globe from London to Australia in 71 hours. The noted Italian seaplane pilot, F. Agello, raises his speed mark from 423 m.p.h. to 440 m.p.h. in a Macchi seaplane. A Douglas air liner crosses the continent in record time, and good old Kingsford-Smith pounds into San Francisco from Australia in new figures, crossing the Pacific by air for the second time. Somehow, it seems useless to print the figures any more, for before the ink is dry on the magazine paper, some one goes out and breaks them again.

Now we learn that the British are out to break all world's speed marks with a new Supermarine racer designed after the ship that won the Schneider Cup some years ago. The amazing feature of this ship—and we have seen pictures of it—is the fact that instead of the regulation arrangement of two pontoons, this machine will have but one. It is figured to break 475 m.p.h.

Heavy research has been under way for some time over there, and the British believe they have discovered something new in float design. This will assure sufficient stability for a one-float racer to enable it to take off and land under reasonably calm water conditions. The ship will not use the Italian method of running two propellers in opposite directions.

Where do we go from here?

ABOUT OUR NEW COVERS

THOSE of you who may be raising a questioning eyebrow at our new covers, and questioning the possibility of such types of aerial warfare will probably side with the reader who cannot see many of the strange aerial adventures which our writers fashion out of mere imagination. But not so many years ago, they were laughing at H. G. Wells for his conception of a war in the air. Within two years after his prediction, vast air forces were battling for life over the Western Front. All this rocket ship, stratosphere fighter and imaginative stuff you are getting is not so funny, after all.

Take the statement given out only a few days ago by Colonel Eddie Rickenbacker, America's ace of aces, before the Federal Aviation Commission. The most startling item of his statement was that in future wars whole cities

would be burned to ashes through the medium of sun rays. Airplanes would carry giant lenses to great heights and focus them to the sun's rays. The resulting heat sent to the ground would be sufficient to burn up whole cities, and thousands would be suffocated in a few seconds.

Now that's from an airman who knows what actual warfare is, and what the future may hold. It is not written by a wild-eyed air-story writer. But Rickenbacker went even further than that. "Airplanes in the next war," he said, "will pick up fast tanks and drop them over the enemy lines without actually stopping to land. Then they will go back for another load. Planes will be mounted with small cannon, and artillery battles will be fought in the air just as they are on the ground. Entire armies will be moved in huge transport planes capable of flying at high altitudes so that they can hide from enemy fighting ships."

Do you still think air-story writers and cover painters put it on a little thick?

From the Model Builder's Workbench

(Continued from page 35)

PRINT YOUR OWN FORMERS

MANY model builders, especially beginners, find great difficulty in cutting formers and bulkheads accurately. For this reason the inexperienced prefer kits with the formers and bulkheads already printed on sheet balsa, and fail to make planes from the fine plans that appear in FLYING ACES. The following is an accurate and simple method of printing or making your own printed sheets.

First lay out a sheet of tissue (a cheap, but light grade) on your workbench; then take the sheet of balsa from which the formers are to be cut, and lay it over the tissue. Next take a pencil, draw the outline of the balsa on the tissue and cut out. In some cases, the sheet of balsa will be longer than the tissue, so the sheet will have to be cut smaller, or the tissue made longer by pasting pieces together.

The next step is to take this strip of paper and trace the outline of all formers on it, making sure that all space is utilized. Next paste this strip on the sheet of balsa with banana oil. This oil will act as a varnish on the wood, besides holding the tissue to the wood.

Now cut the formers out of the printed sheet. After this is done, take a piece of fine sandpaper and sandpaper the tissue off the wood. This method may also be used in cutting out ribs and parts for a hard wood model.

ARTHUR HARRIGAN.

The Airplane in Eskimo Land

(Continued from page 13)

you and the front of your seat. After a paddle around the bay, with shore usually in sight, and the refreshing feeling that I might be able to swim

back if anything happened, I had a more wholesome respect for the Eskimos who go some distance out into the Arctic Ocean with these frail boats.



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We decided to give our Eskimo boy friend his thrill. When we had settled him in the ship and taken him up for a ride, we put the ship through most of the antics that such a heavy craft can stand. But as we leveled off after the last dip, he was still smiling with a contagious Eskimo smile, and he offered to show us something. We followed his pointing finger and saw the Eskimo bands on land and water, making their way off toward the Arctic. He told us that they go as far as they can with their cargoes and passengers in boats until the ice sets in. Then they haul out the boats, cache their extra baggage and supplies, and start on their last lap with dogs and sledges.

An experienced Arctic explorer who has known something of the lore of the Eskimo can follow these annual trails by the stone markers and cairns that are erected along the way. They run from the single stone-road marker up through the large monuments for some special event, the circles marking summer encampments, and other stores that hold down the frail kayaks in the winter.

As we left our accommodating guide and started south with the load of furs, we often turned aside from our course to study the piles of stones, readily visible on the bleak barrens, that marked the site of a hiding place of caribou meat.

A short stop was made at Tavane, a town on Mistake Bay off Hudson Bay, and one of the largest airports in the Northwest Territories. It is a shining example of how the airplane is helping in the development of the Territories. We were talking with pilots who have flown on exploration, mineral prospect-

ing and surveying trips for natural resources, and their yarns were more interesting than those of a dozen lecturers. One man had discovered copper when he tried to hollow out a rock cavern to cache some gasoline for his plane. Another spoke of dropping canned goods to an isolated prospector in the rocky barrens, far from a suitable landing place, just as though he were dropping a weighted handkerchief on some city airdrome in a target-contest.

We also met an interesting character—Father Pigeon, the Roman Catholic missionary from Eskimo Point, who is engaged in compiling the first dictionary of the Padliemiut Eskimo language. Experienced flyers claim that one of the results of his work will be the wider knowledge of conditions in outlying districts, since it will enable white men to speak with the Eskimos in their own language.

Our short trip through the land of the Eskimo was almost over as we came down the coast from Eskimo Point and picked up Churchill Point. Our gasoline stores were getting low; our eyes were becoming blurred from looking over the vast picture below us; and perhaps our backs were strained from sitting in the seats of the plane. I'll venture to say that we were all happy and satisfied when the ruined outlines of Fort Prince of Wales came up before our eyes after the trip.

The last thought that gripped me as the furs were reloaded for shipment to Winnipeg by train or by another plane was the influence that air transportation has had upon the Indians, the Eskimos, the whalers, and the fur traders in this area. And it's great fun to visit these frontiers-people by air.

Here's the Northrop Gamma Victoria

(Continued from page 24)

dihedral, 8 degrees. Cover the wings before putting them on. The pants are next glued, as explained before.

Carve the propeller with a great deal of care and make sure to obtain the proper center point before attaching the shaft. I have found that a great many boys do not find the center of the propeller before they start carving, with the result that when the propeller is completed, they are unable to find the exact center.

Give the ship a coat of silver dope

and set it away in a dustless room to dry. The plane is powered with three loops of 3/16" flat rubber.

Before attempting to fly the model, I suggest you first give it a few winds and send it into the air. If the tail drops, add weights to the nose. Should the nose drop, add weights to the tail.

I want to call your attention to the fact that you may use the three-view layout shown on Sheet 1 to construct a solid model, and the half-size three-view to construct a small flying model.

Flying Aces Club News

(Continued from page 40)

Dubliners who are interested to get in touch with him. His members build models, too, and we hope to print some of the snapshots which they have taken in a future issue of FLYING ACES. Here's luck and a flock of four-leaf clovers to you, Dubliners!

Not all the interested F. A. C.'s from across the sea are masculine. We have just heard from Mollye Poynton-Swarbrick, of Hedresford, Staffs, England, and she tells us that she has finally or-

ganized a complete Squadron. Let's hear from you again.

Other new Squadrons which have been completely organized since our last meeting are the Troy, N. Y., Squadron, led by William Tymeson, and a new San Francisco Squadron formed by Buster French, and a Johnson City, Ill., Squadron, under Jack Opdyke. Glad to have you with us, F.A.C.'s!

And by next month, we hope to have a lot more of you, F.A.C.'s!

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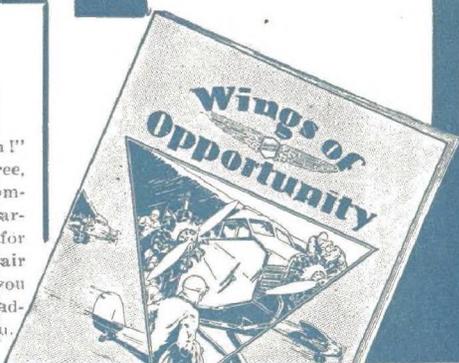


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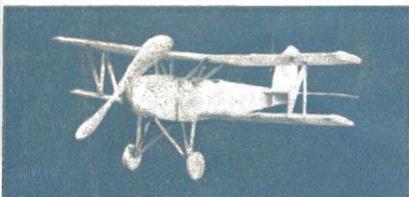
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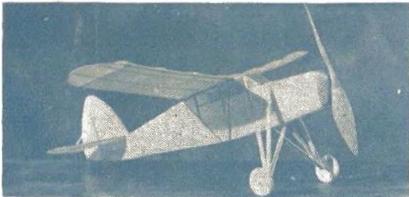
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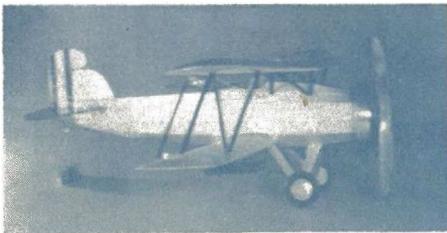


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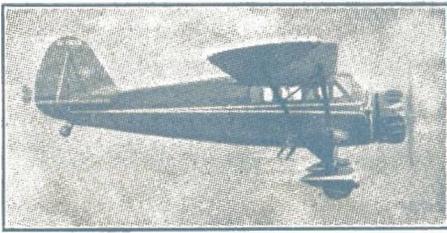
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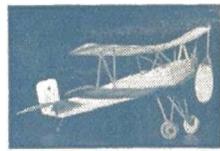
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