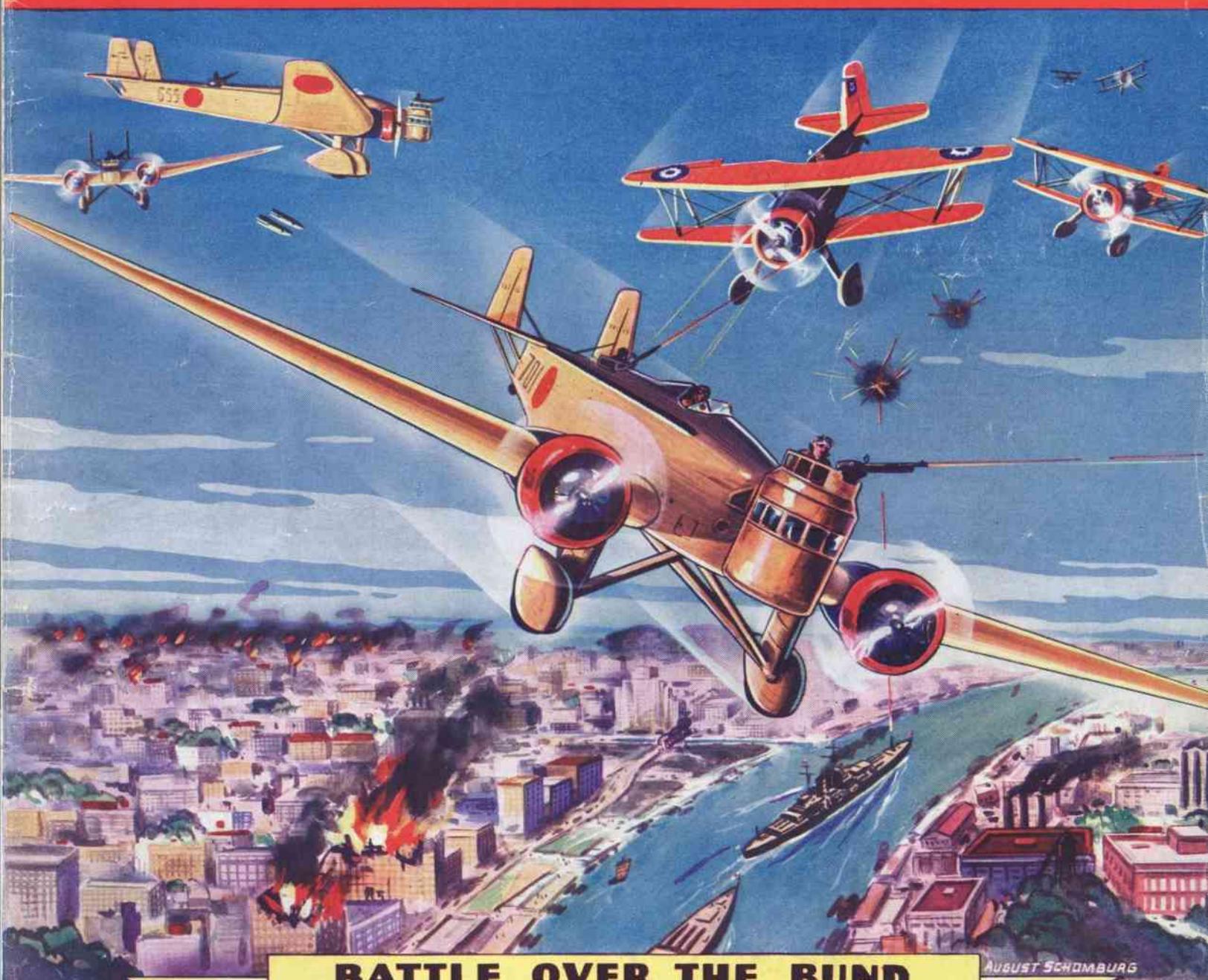


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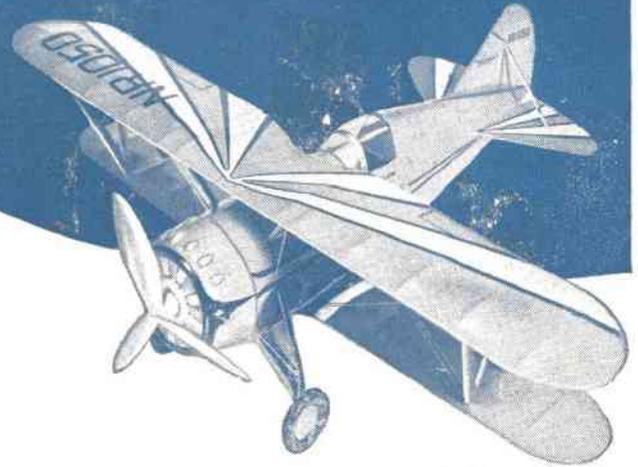
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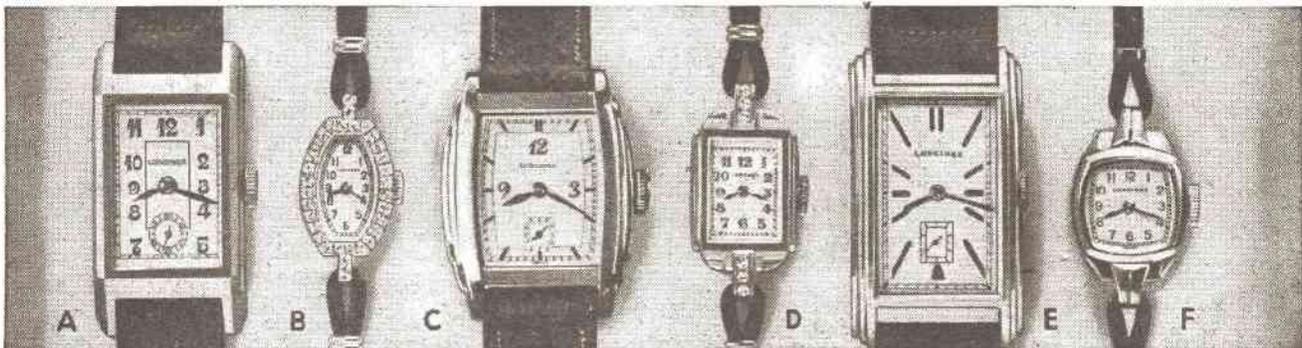


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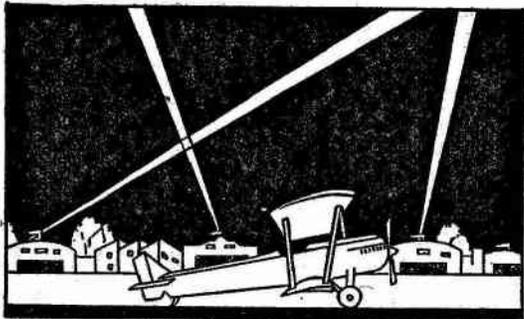
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VOLUME XXVIII

DECEMBER, 1937

NUMBER 1

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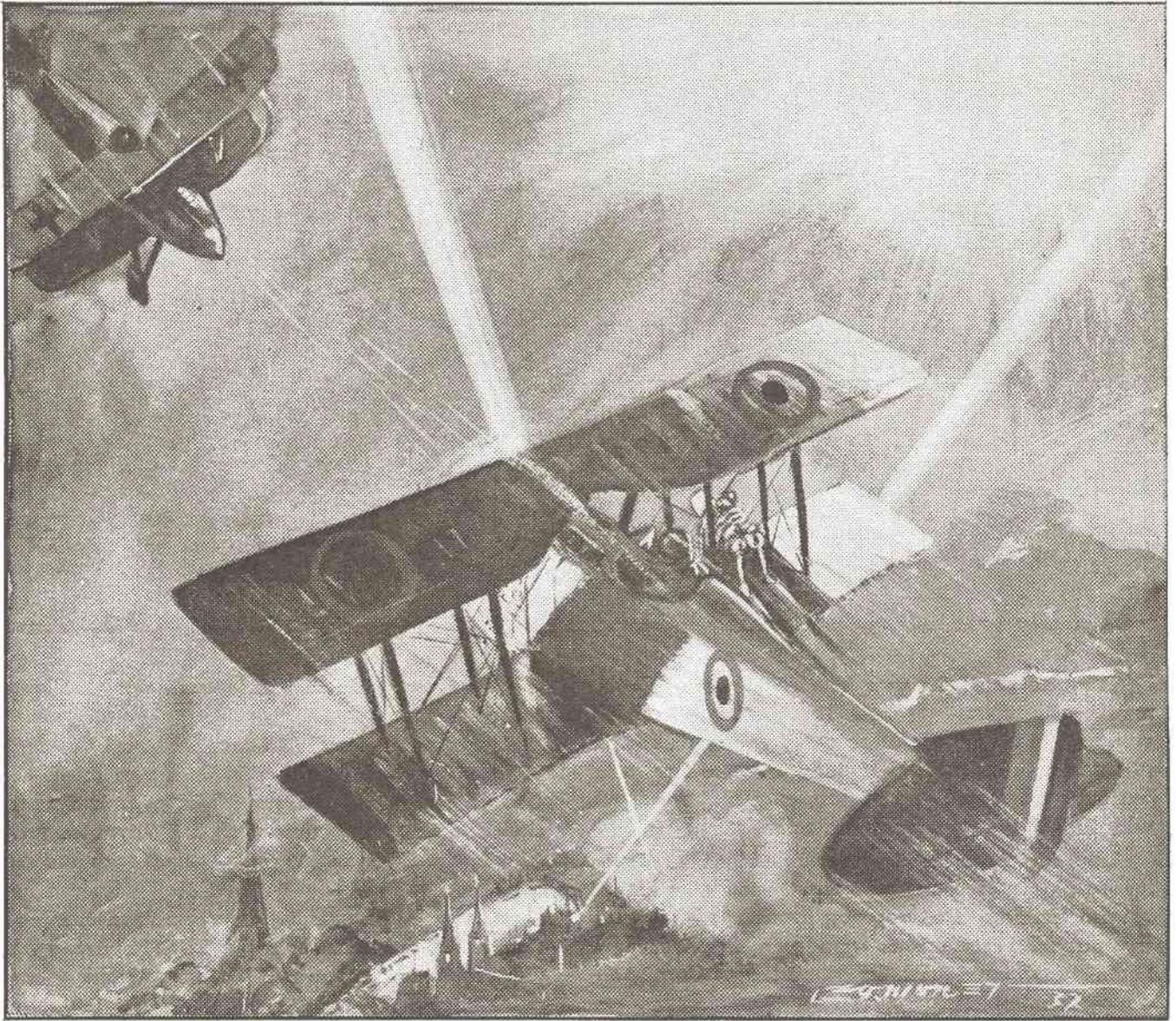
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# Skeleton From the Sky

By Donald E. Keyhoe

Author of "Hell Over China," "The Mad Squadron," etc.

## CHAPTER I

### THE GILDED SPECTER

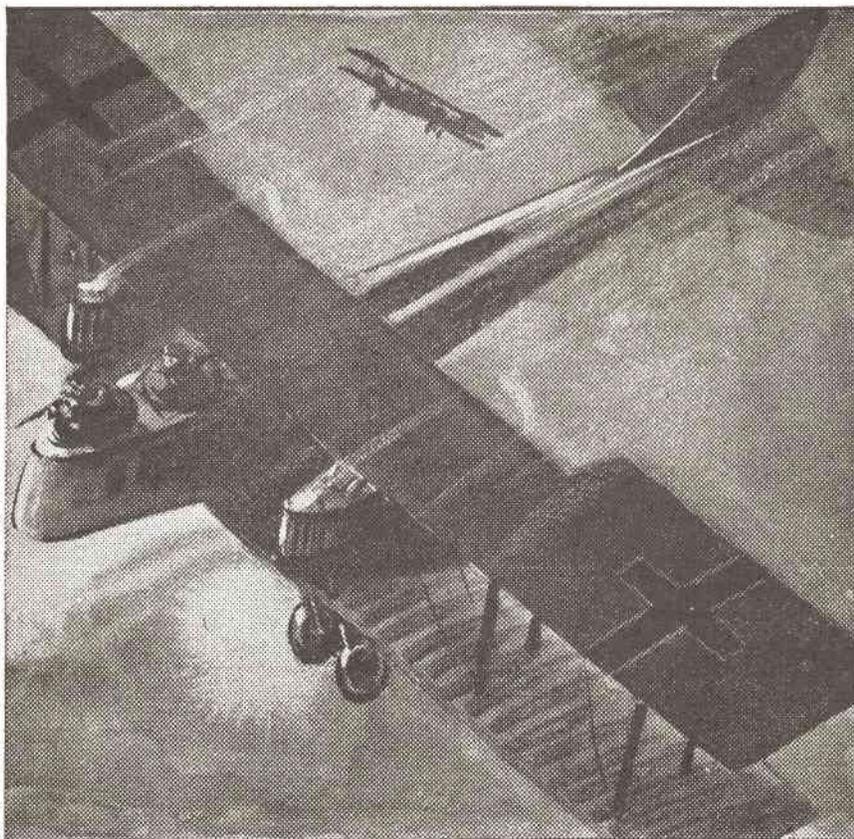
FOR the second time in as many minutes, Captain Philip Strange had the uneasy feeling that he was not alone in the sky. Wiping his oil-smeared goggles, he peered over the shielded exhaust stacks of his Spad into the somber darkness of the night. Though Paris lay almost directly beneath his droning ship, he could see not a single light, not even a hint of the faint emerald gloom which the Seine sometimes reflected from the green war-lamps on its many bridges. It came to him suddenly that there were no lights. The French capital lay there in solid blackness, like a thing afraid.

The G-2 ace stared down a moment longer, thinking of the millions of humans hidden there below, wondering at the cause for that somehow sinister blackness.

The two messages which had brought him at full-speed from Chaumont gave no clue. One had been from Marshal Foch to Colonel Jordan, chief of G-2, requesting that he personally investigate a serious information leak in Paris. Jordan, ill from overwork in connection with the approaching offensive, had detailed Strange to represent him. The other message had been from Major Andre, the explosive, lovable little Frenchman in charge of French air intelligence. It was in the personal code which he and Strange had worked out, and decoded it ran:

*Meet me at Fifth Defense Escadrille, Paris, at ten tonight. Most urgent. Tell no one, and cover your trail.*

At one time, Strange would have smiled at such a message, but he had learned that Andre never called for help until the need was desperate. With his mind still on the two messages, he nosed the Spad into a flat power-glide across the darkened city and toward the spot



*Illustrated by Leo Morey*

Forcing his eyes from that gruesome figure on his wing, Strange poured a hail of Vickers lead into the diving Albatros. But his hesitation had been costly—for a monster Gotha now roared in from behind, and already the front-pit gunner of the huge ship was raking him with a withering fire.

where he estimated the defense field to be. He had purposely swerved to avoid the banned zone of approximately five miles in diameter, prohibited to all but defense pilots after nightfall, but he knew that he might have drifted to one side. He was gazing down, ready to signal or swing off quickly in response to a probing searchlight, when somewhere down in the blackness a German Maltese Cross suddenly glowed.

Strange sat up, banked sharply to keep the cross in sight. For a second he thought it was painted on the wing of a Boche plane. But then he realized it was not moving! He shot a look at his altimeter. The Spad was less than two thousand feet high. Seen from this altitude, a cross of such appearance would be about twenty feet from tip to tip if painted on the roof of the average Parisian building.

Almost straight behind him, and about three miles distant, a searchlight stabbed the night. It was joined swiftly by two more beams, and together the three poked wildly around the sky to the northeast. Strange looked back over the Spad's tail, but could see no other ships. He was turning for another glance at the glowing German cross when something flickered in the blackness above him.

The blurred flickering steadied, became the outlines of a bony, gleaming hand. Quickly, the bony wrist extended itself, became a luminous arm. The arm whipped back in a writhing motion, and before Strange's astonished eyes a glowing skeleton materialized in a flash, as though it had dived headlong through a door opened in the sky.

As the spectral figure pitched downward, Strange instinctively ruddered aside. With a second jolt of

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Fifty feet of steel and concrete! That was the staunch bulwark which fortified the hidden vault wherein the Allies concealed the vital plans of their Western Front offensive. Impenetrable, no bomb could blast this massive shield, no human being could pierce it to pilfer those battle secrets. Nevertheless, some phantom power had tapped that stronghold—not once, not twice, but three times! And now a gruesome figure from the grave glided out of the dark heavens to mock the defenders of that mystic crypt.



amazement, he saw the skeleton straighten out, keeping pace with the Spad, its bony arms and legs flailing wildly as it tumbled toward him.

**I**N his first start at sight of this gruesome thing, Strange had clenched his Vickers trips half-way together. Now as he kicked aside, his thumb tightened and the left-hand gun

shot out a stream of tracers. The skeleton jerked to one side, leaped up into the night, twisting and writhing like a thing in agony. Strange pulled the stick back as the bony figure swung above his ship. The Spad roared up in a climbing turn, its wings hiding the apparition from view. Leveling out, the G-2 Ace looked quickly for it but saw no trace.

The Maltese Cross had also disappeared. Recalling his former course, he glanced hastily at the distant searchlights to determine the approximate location of the cross for later investigation. Then suddenly the huge wings of a Gotha bomber showed in one of the beams, but this monster ship vanished in the darkness at almost the same instant he saw it. Then he sighted a smaller ship darting past the searchlight beam and pitching down steeply.

The Spad abruptly rocked as though in a back-wash of air. Strange snatched at a toggle, dropped a flare and zoomed. In the half-second before the flare lit, the skeleton reappeared, above and to the right. He banked instantly, intending to put a burst through it. To his dismay, it spun crazily at the same moment and whirled back toward his prop. He booted the rudder, then yanked the throttle as he saw it would hit the right wing.

The impact and the dazzling light of the flare came simultaneously. There was a jolt, and the skeleton hit spread-eagled against the Spad's crossed wires. Half-wedged by the impact, partly held there by the pressure of the slipstream, the ghastly figure leered across the wing at Strange. By the radiance below, he had a clear look at it as he pushed the throttle open again. A pair of airman's goggles hung down around its bony neck, where the wind pressure had apparently forced them.

ANOTHER DRAMATIC "PHILIP STRANGE" MYSTERY

From its toes to the top of its hideous, grinning skull it was a gleaming, golden color. But there was nothing to show how it had stayed in the air and performed its weird maneuvers.

Strange's attention was centered only a few seconds on this grisly visitor from the sky, but during that interval the Spad was silhouetted by the descending flare. A savage pounding at the tail woke him to his peril. He snapped into a tight turn, looked hurriedly for the ship from which the burst had come.

An Albatros was whipping around after him, guns blazing. It was this ship which had dived past the Gotha in the searchlight beam. He clamped the trips as he tightened the bank, and Vickers slugs nipped at the Boche ship's tail. The pilot hurled his plane into a split, with Strange grimly following through. The skeleton's left arm fluttered madly in the wind as he cut loose again with the guns, and he saw that there was something small and shiny fastened to its wrist. There was no time to see what it was, for another Albatros had pitched down out of the night, and one of the Gothas was almost above him.

The tail of the first Albatros was nearly in his sights when a blast from the Gotha nose-gunner raked his right wing. Strange stabbed a brief barrage at the Boche in front of him, rolled furiously from under the other man's guns. The skeleton's head was twisted around grotesquely. Gotha bullets had shot away the goggles and pierced the skull, but the now unprotected bony face leered more mockingly than ever, as though daring the Germans to do their worst. Strange swore, for the Albatros pilots needed no such challenge.

The Spad shook under a fierce crossfire, as the two Germans plunged in. Strange crouched, yanked the stick back hard. Tracers scorched past his head. A dozen solid slugs ripped open the padding between the guns, crashed a wicked pattern in broken glass and metal along the instrument board. A job at the left rudder, and the Spad hoiked out of the fusillade into a chandelle. One of the fighter pilots left off firing as the Gotha above blocked his aim, but the other zoomed with Spandaus hammering.

**S**TRANGE whirled back under the bomber, drilled up into its blind spot. Two furious bursts smoked from his guns before he was forced to dart aside. The Gotha reeled, tilted onto its left wing. As it hung there, its pilot fighting to recover control with one motor dead, both the nose and rear-pit gunners cut loose with torrents of lead. From a twin Parabellum in the rear, two deadly red lines lanced down at the pivoting fighter. A lift-wire parted with a shrill *ping* in the roar of motors and guns. The trailing-edge of an inner-bay strut whizzed back, its bullet-torn fragments flying. The main piece struck Strange a glancing blow which his padded helmet only half absorbed, and for a moment his senses spun.

A trickle of blood came down under his goggles as he reversed toward the Gotha. He dashed it from his eyes with a savage shake of the head. The skeleton's skull shook between two vibrating wires, leering at him like a mascot of death leading him to destruction.

"To hell with you!" he muttered, and tripped the guns as a Boche wing filled his sights. An Albatros staggered sidewise, dipped, and came up with Spandaus winking hot and red. Strange stood on the rudder with a vicious thrust.

"Take it!" he snarled, and for a gun-crashing second their two streams of tracer crossed. The German pitched back in his seat, clawed wildly at his breast. His ship, unguided, went up as though for a mad, gleeful climb—wrenched off suddenly and rocketed down into the gloom.

By now, a hundred searchlights were waving from all parts of Paris, and through their pointing white fingers half a dozen Gothas doggedly forced their way. French defense planes, Breguet two-seaters, and thin-winged Nieuports, came angling up from three directions, the pilots warming their guns in quick, eager bursts as they climbed. One, a dun-colored Breguet, was higher than the rest—the only French ship in range of the German raiders. Strange saw the gunners of two Gothas open fire as it zoomed into the battle.

The man in the rear of the Breguet suddenly thumped the pilot on the back and pointed toward the Spad. With a quick swerve, the pilot hurled the two-seater after Strange. The G-2 Ace had aligned his guns on the Gotha nearest him. Then just as he squeezed the trips, the Breguet's cowl-guns flamed. He rolled hastily, out of the French pilot's fire—but under the guns of the Gotha!

With a fierce cry of triumph, the Germans swiveled their Parabellums to riddle the Yankee ship. His speed half-lost from the roll, Strange put everything into one last crazy skid. With Vickers blasting, the nose of the Spad traversed the lumbering bomber, and raked squarely by both guns, the Boche in the bow cockpit dropped in a bloody heap. In a frenzy, the rear-pit gunner slammed his twin-mount around at Strange. The G-2 pilot sat like a figure in stone as the Spad slowed to a stall. A murderous hail tore into his wings, gouged across the cowl—then his thrashing Vickers found their mark.

In the shifting glare of a searchlight, the gunner's face became a horrible, scarlet mask. The man tottered, collapsed over his smoking guns, and the stalled Spad lunged down like a cracked whip. Strange let it dive until the wires howled, then zoomed steeply. The Gotha was in the first turn of a spin, its mighty wings rotating ponderously. A bomb shot out at a diagonal from the starboard rack, and suddenly the air was filled with the falling missiles, as the Germans frenziedly tried to balance the stricken ship and recover from the spin.

Strange whipped to one side, eluded a bomb by only a few feet. The Breguet appeared just above him as he chandelled clear. Instantly, the rear-pit man swung his Lewis. Strange hurled the Spad out of range, wagged his wings in a hasty signal. The pilot of the two-seater, a diminutive figure, sprang up in his pit as a searchlight fell across Strange's face, and when the G-2 Ace recovered from the brief glare in his eyes he saw the pilot motion for the gunner to cease firing. The gunner pointed fiercely toward the gleaming skeleton in the Spad's wing, and again swung the twin-guns. Dropping his controls, the little pilot whirled and slammed his fist to the other man's jaw.

The gunner sagged down into his pit, and the pilot jumped around to his controls. In the fluctuating glow of the constantly shifting searchlights Strange glimpsed a swarthy face and bristling mustaches. It was Major Andre.

The little Frenchman flung him a hurried sign of recognition, pointed toward the skeleton. Strange shook his head, raised his hands in a baffled manner. Andre stared, ruddered in closer, then jerked his thumb toward the defense field south of the Porte de Bercy. Then just as the two ships were angling across the Seine, a roaring explosion shook the sky. Strange turned in his seat as flame lit the heavens. The Gothas had turned back, and one had been caught by a zooming defense pilot. Blasted by its own bombs, the huge ship was falling in fiery fragments into the heart of Paris.



THREE Albatroses suddenly detached themselves from the fleeing bombers and plummeted down at Strange and Andre. Strange pulled up in a screeching Immelmann, caught the tail of one attacking ship as he came out at the top. The flippers and rudder disintegrated under his spouting guns, and the diving Boche went onto his back. The violent force snapped his safety-belt, and out he went, tumbling head over heels into space. Strange felt nausea grip at his stomach, jerked his eyes from the doomed German. The other two Albatroses were converging swiftly on the Breguet. Andre threw the heavier two-seater around in an amazing renversement, clipped an Albatros wing-tip in passing. The other Boche made a lightning turn, crouched behind his Spandaus. The guns were spurting, gouging crookedly across the Breguet's tail, when Strange struck.

Five feet behind the German's cockpit, Vickers lead smoked through fabric. The pilot whirled in his seat, went white with terror. Before he could move, a dozen slugs tore through his twisted body. As Strange let up on the trips, he saw the German's mouth open in a soundless scream, then the life fled from that tortured wretch and the Albatros plunged toward the ground with a riddled corpse at the stick.

The third Albatros was racing eastward, two Nieuports on its tail. By this time, archie batteries were crashing away at the remaining Gothas, which were beyond the point where they would fall into Paris. Andre signaled eloquent thanks to Strange, quickly motioned away a Nieuport pilot who was closing in on the Spad. Flying side by side, the two air agents nosed down toward the Fifth Defense Escadrille, which was now marked by a "T" of flares.

Andre landed first, and as Strange taxied in behind him he saw that the man in the rear cockpit was regaining his senses. The two ships stopped close together not far from the administration offices, and both engines died into silence. At once, the furious voice of Andre's companion was audible.

"You will pay for this insult, *monsieur*, on the field of honor!"

"It would give me great pleasure to further beautify your face!" snorted Andre. "But I have no time to waste with you now."

He hopped down and ran toward the Spad as Strange climbed from his pit. The other man followed—a tall, blond officer wearing *commandant's* insignia, like that of Andre save that he had no wings. His eyes, heavy-lidded behind his goggles, had a murderous look, accentuated by the savage twist of his mouth where an old scar lifted it at one corner. Strange had never met the man, but he recognized him from photographs as Major Victor D'Orcy, notorious as a duelist before the war and now an officer attached to the French General Staff.

Andre had almost reached the Spad, with D'Orcy stalking behind him, when a bearded *capitaine* ran up with a squad of *poilus*. He took one look at the skeleton in the Spad's wing.

"*Sacre Dieu!*" he said shrilly. "So here is the explanation of our mystery. Sergeant, arrest this Boche *espion!*"

## CHAPTER II

### SKY TRAP

A NON-COM sprang toward Strange, but Andre intervened. "Wait!" he cried, "This man is no German. He's an American—here to help us!"

"German or not," fumed the *Capitaine*, "it is clear he is a spy and has been guiding the Gothas by means of this skeleton trick."

"Right!" grated D'Orcy. "But for some peculiar rea-

son, Major Andre defends him, even to the point of attacking an officer of France."

"I suppose I should have let you shoot down our great Allied agent!" retorted the little major.

"Allied agent?" exclaimed the bearded Frenchman. "*Oui!*" snapped Andre. "Send your men out of ear-shot."

The *capitaine* grudgingly obeyed, but he still kept his pistol lifted.

"Now," said Andre, when the squad and the assembled mechanics had fallen back, "I shall explain. This is none other than Captain Strange, the American Intelligence officer I came to meet."

The French captain's mouth popped open at mention of the G-2 Ace. Even D'Orcy seemed startled into silence—but only for a moment.

"Famous men have been traitors before," he said harshly. "If he is innocent, let him explain that skeleton on his ship's wing."



"I will—but you probably won't believe it," Strange responded. Then he related what had happened.

"A skeleton from nowhere!" snorted D'Orcy.

"Surely, Major Andre," said the bearded *capitaine*, "you do not believe this silly story?"

"Captain Jacques," said the little major, "I have learned in this war to believe almost anything. After all, this fits with the account

of the skeleton which fell into the Rue Grenelle two hours ago."

"But that one was *dropped*, you told us—while this American says his skeleton was flying along, like a bird."

"I said it *appeared* to be flying," Strange interrupted. "There's a difference."

"The story is preposterous," rasped D'Orcy. "This Yankee spy has hoodwinked everyone and is serving the Boche. As an officer of the Staff, I order—"

"You order nothing!" exploded Andre. "I am in charge here. Pull your tongue back into your head!"

"I will demand satisfaction for this!" snarled D'Orcy.

"And I will be at your service, when I have nothing important at hand," snapped the little major.

Strange stepped between the two men.

"Look at this skeleton," he said curtly to D'Orcy. "You'll see it is not fastened to my ship."

Captain Jacques shoved a bucket of burning waste close to the Spad as D'Orcy and Andre turned. The gilded bones shone like gold in the light, and the gleaming, bullet-pierced skull grinned mockingly at the four men. One foot had been shot away, as well as several ribs. But the bony figure still hung together.

"It must be hooked together with wires," muttered Jacques, "like those in the medical schools. *Oui*, I am right."

"And Captain Strange is also right," said Andre, pointing. "The skeleton is not secured to his plane. You can see where it struck the wires and slid down. There is the same luminous gilt on the wires as on its bones."

Jacques scratched his bearded jaw, turned to Strange apologetically.

"I was too hasty, *mon Capitaine*. But you must admit it is most incredible."

"I don't blame you," said Strange. "I would hardly have believed it myself. The question now is how it was done."

D'Orcy's lips curled.

"Surely the great Captain Strange is not at a loss

to explain a simple matter like a flying skeleton?"

Strange ignored him and turned to Andre. "You said another skeleton had fallen from the sky. Was it painted like this one?"

"From the report, yes," said Andre. "An *agent de police* called the War Ministry as I was preparing to drive out here. He said a mysterious bomb or shell which fell without a sound had partly demolished a house on the Rue Grenelle, and that a luminous skeleton was seen to fall an instant before the explosion. Parts of the skull and the bones were found in the ruins along the sidewalk."

"The explosion was not silent?" queried Strange.

"No, that was normal, apparently. But whatever it was, it fell silently, and it could not have come from a plane. Sound-rangers were on the alert, fearing more of these devilish Gotha raids. A plane would have been heard—unless the Boche has found means for making engines and propellers soundless."

Strange climbed onto the wing of the Spad, recalling the object he had seen on the skeleton's wrist.

"These raids, then, have been unusual?" he asked Andre as he reached the figure.

"Of an uncanny accuracy," said the little major sourly. "Ammunition factories, aeroplane plants, and other vital industries, have suffered most. The darker the night, the more the Boche seems to like it. Of a certainty, they have been guided—what is that, *mon ami*?"

"An identification tag," said Strange. He lifted the dangling left arm, but the wire at the elbow-joint broke and the forearm dropped to the ground. Jacques picked it up gingerly, and turned over the metal disk chained around the wrist-bones. Suddenly his face went ashen, and he dropped the skeleton's arm.

"*Mon Dieu!*" he cried hoarsely. "We have found Albert Lemoir!"

**H**IS voice carried to the staring *poilus*, and Strange could sense the horror which swept over the group.

"Who was Albert Lemoir?" he said to Jacques.

"One—one of my pilots," the *capitaine* mumbled. He cast a sickened glance toward the skeleton, turned blindly toward the administration building. "I will be in my office, Major Andre—if you need me."

"Poor fellow," Andre whispered, as Jacques stumbled away. "Lemoir was like a son to him."

"But what happened to Lemoir?" asked Strange, climbing down from the wing.

"He took off from this field one night and failed to come back. That was a month ago. Since then, two more of Jacques' pilots have disappeared in the same way."

"Were they on special missions?"

"No, on routine night patrol, flying Nieuports."

Strange picked up the arm of the skeleton. Some of the gilt paint smeared off on his hand. He held the gruesome relic toward the light.

"Was there any tag on the skeleton which fell in Paris?"

"I don't know," said Andre, "but I imagine it was similarly painted, for the *gendarme* reported it as luminous."

"You told us that part of a helmet and some shattered goggles were found," D'Orcy put in tartly. "Unless your agents are as stupid as some of their seniors, they should

be able to tell whether the fragments are from French or German equipment."

Strange spoke before Andre could answer the gibe.

"This skeleton had a pair of goggles hung around its neck, but they were shot away in the fight. However, that wouldn't help us solve the problem of where they came from."

D'Orcy's scarred face twitched into a sneer. "They came from Germany; it takes no super-mind to guess that."

"For which you should be thankful," smirked Andre.

The duelist's heavy eyelids narrowed. But he kept his temper this time.

"The problem," he said to Strange, "is not where they came from, but how they materialized over Paris. It is evident to me that the Boche butchers are using the skeletons some way to guide their bombers. Perhaps it is only a scheme to frighten our people, dropping skeletons of Frenchmen into the city."

Strange shook his head. "After four years of war, Parisians do not frighten that easily. No, *commandant*, there is something deeper. I have a vague feeling that when we examine all the evidence—" he broke off, looked at Andre. "You must have had some other purpose in sending for me, since the first skeleton was dropped after your message to Chaumont. Does it shed any light on this affair?"

**T**HE little major thoughtfully twirled his mustaches. "I asked your help because of a grave leak in information—that was just before I learned that Marshal Foch had sent word to Colonel Jordan. But yes, there could be a connection."

D'Orcy scowled.

"I understood the matter was to be kept strictly confidential until the conference at the Allied Intelligence Pool tonight."

Andre made an impatient gesture. "Colonel Jordan was ill; he sent word that Strange was to represent him and G-2." He looked back at the American agent. "*Mon ami*, I can see but one possible link. Whoever has guided the Gothas to those important targets—whether by skeletons or other means—must have had direct help from Paris. In a word, it also is what you call a leak, *n'est-ce pas*?"

"I think I can help you there," said Strange. He described the Maltese Cross which had appeared down in the darkness.

"*Parbleu!*" exclaimed Andre. "And you think you could locate the place where you saw it?"

"Within a block or so," Strange replied, "but you'd have to arrange for the searchlights north of Vincennes to be turned on. I took bearings on the center one."

"That will be simple. We will take off at once."

"But what of the banned zone? The cross was somewhere in that area, over on the Left Bank."

"I will have Jacques telephone the defense control-officer and explain," said Andre. "He can also have mobile guards and police ready to surround the area we indicate. *Oui*, and we can in addition save time we would lose driving into the city by obtaining permission to land in Paris."

"In Paris?" Strange said in surprise.

"Ah, I forgot you did not know. To help combat these accursed Gothas, we have established two special city defense-flight units, roping off some of the broader streets for take-off and landing purposes. On the Left Bank, the Boulevard Raspail has been blocked from St. Germain almost to the Rue de Sevres and also a section of the Rue de Varennes for use in case the wind is from east or west. Six Nieuports and three Breguets are kept there—you saw some of them attack the Boche tonight."

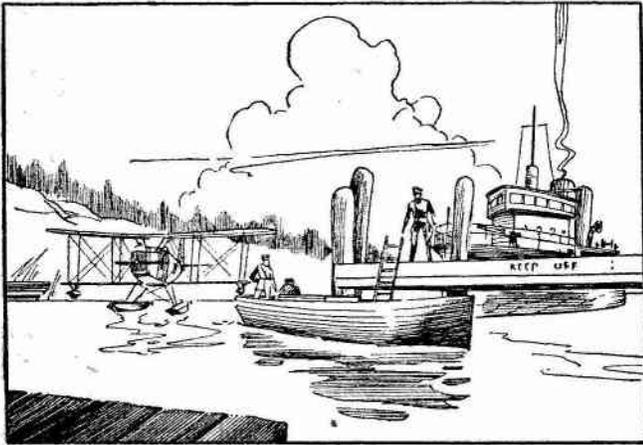
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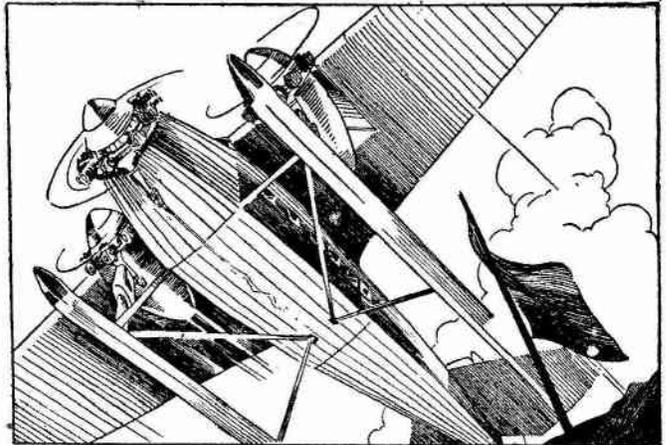
# They Had What It Takes

## XI—RICHARD E. BYRD—CONQUEROR OF THE POLES

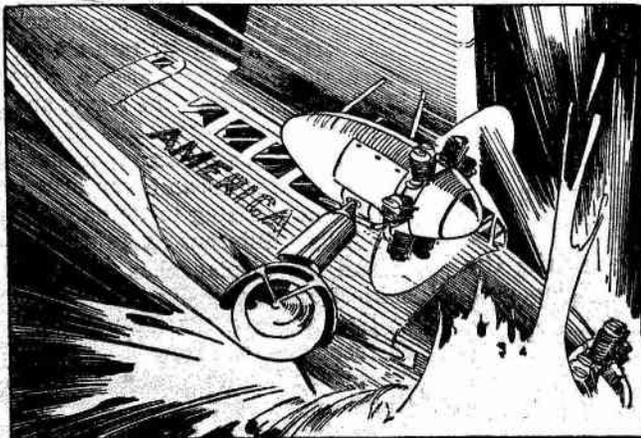
By ALDEN McWILLIAMS



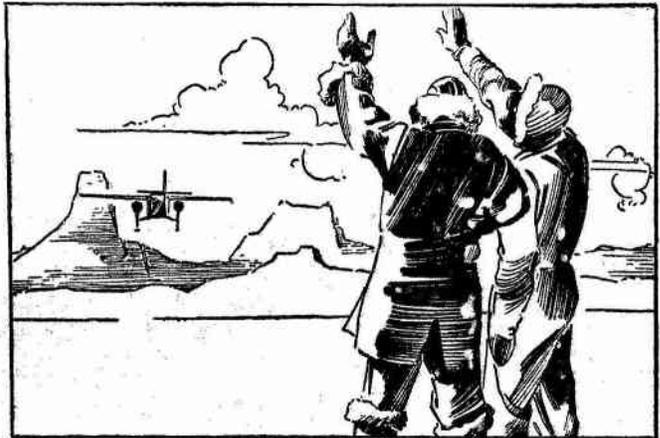
1—Born in Winchester, Va., Oct. 25, 1888, Richard Evelyn Byrd was initially educated at Virginia Military Institute and the University of Virginia. In 1912 he was graduated from the U.S. Naval Academy, and by 1916 he had attained the rank of Lieutenant-Commander. Then from 1917 until the Armistice he commanded the U.S. Air Forces training in Canada.



2—Gaining fame as a leader and attracted by polar work, Byrd headed the MacMillan Polar Expedition air unit in 1925. Then on May 9, 1926, with Floyd Bennett as pilot, he roared his tri-motored Fokker over the North Pole, dropping a flag in token of the achievement. Kings Bay, Spitzbergen, was the base from which this sensational 15-hour, 1360-mile flight was made.



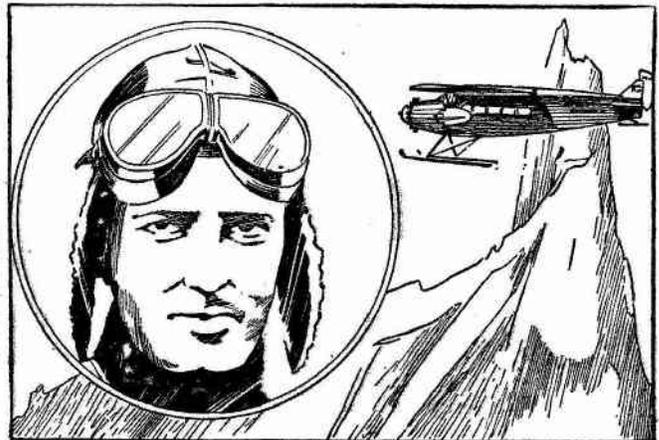
3—That memorable year 1927 saw the Virginian again poised for a stirring flight. With three companions, he nosed the Fokker *America* eastward from New York, crossed the sea handily. But fog enveloped them on the other side; and after circling blindly, they landed unhurt in the water off Ver sur Mer, France. The *America* had covered 4,200 miles (June 29—July 1).



4—Now Antarctica called, and soon Byrd was dashing southward from Little America in a Ford plane bent on attaining the South Pole. A 15,000-foot mountain range reared up, and Bernt Balchen, his pilot, only cleared it after tossing out weighty supplies. With this barrier hurtled, however, the explorer pressed on, crossed the pole on November 29, 1929.



5—In 1933, Byrd returned to Little America for two more years of Antarctic research. To conduct a special study, he voluntarily shut himself off at an advanced base and lived alone for six months. Nearly asphyxiated by a faulty stove, he chose to die rather than endanger his men in a rigorous rescue expedition. But they came for him anyway—reached him just in time.



6—Cited twenty-two times by the Navy, Richard E. Byrd is now a Rear-Admiral. He has been awarded the Hubbard Gold Medal, the Congressional Medal of Honor, the Distinguished Service Medal, and the Flying Cross. Moreover, the Republic of France has named him to the Legion of Honor. This great leader is now promoting International Peace.

# Can China's Air Power Stop Japan?

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By David Martin

Author of "Why Call 'Em 'Secret List Ships'?"  
"Now Comes the Suicide Squadron," etc.  
With a Map By Arch Whitehouse

**B**ECAUSE of its widespread use of the airplane as a military weapon, the present Sino-Japanese war threatens even more than the civil war in Spain to hurl the whole world into a universal conflict. True, the Spanish rebellion may be closer to the European powder-keg, but so far it has been far more of a battle between two great political ideas than an aggressive war.

A few months ago it did seem that France, Great Britain, Italy, and Germany would be drawn into a bloody scrap by way of the Iberian imbroglio, but none of these countries is yet in the real mood to fight. They remember the Great War too well.

Diplomats who would toss their governments into another world holocaust realize that the time is not yet ripe. There are too many crippled and blind men walking the streets. There are too many men still blessed with their sight and limbs who, remembering what they escaped, do not desire to offer themselves as targets again. Another generation must come up before the blare of military bands and the waving of flags will once more produce that emotional eruption that makes citizens see red and take up rifles.

France is practically on the verge of national bankruptcy. Germany is years away from the point where she can finance a war of any duration. Great Britain is biding her time—quietly building up her navy and air force to make sure that Rome may not block her from Egypt and the East.

For years Great Britain had basked in peace. Her navy was cut to the bone as the result of the Washington Treaty. Her line regiments became slack, and there was a return to the pomp and circumstance of the Victorian era. The truth was that they wanted no more war, and Mussolini missed his great chance—if it

was true he was looking for one—eighteen months ago when the strength of the British Navy and Air Force was at its lowest ebb. Today, forty new sky squadrons have been added by Britain almost overnight. What's more, a new Staff has taken over the Navy, and Britain is again Mistress of the Seas, at least as far as any menace in the Mediterranean is concerned.

But the uprising in China has a decidedly different significance. Where the airplane has been the subject of only small news feature in the cables of the Spanish war correspondents, aircraft have so far played the leading role in the China-Japan conflict.

An insignificant item in the newspapers a few days ago announced that in the month of July, China had purchased \$300,000 worth of war materials—mostly aircraft and spare parts—from American firms. During the same period, Japan spent nearly \$200,000 in this country for the same purpose.

In fact figures disclose that Nippon bought \$22,000,000 worth of war supplies from the U. S. in the first six months of 1937! Later we were told that a number of Northrop fighters had been purchased by China, and still later the Bellanca firm announced that Chinese authorities had purchased twenty low-wing high speed fighters. The

China has a goodly number of Curtiss Hawks of this type in her air force. In these ships, her determined airmen have already given impressive accounts of themselves in battling Japan's invaders over Shanghai.

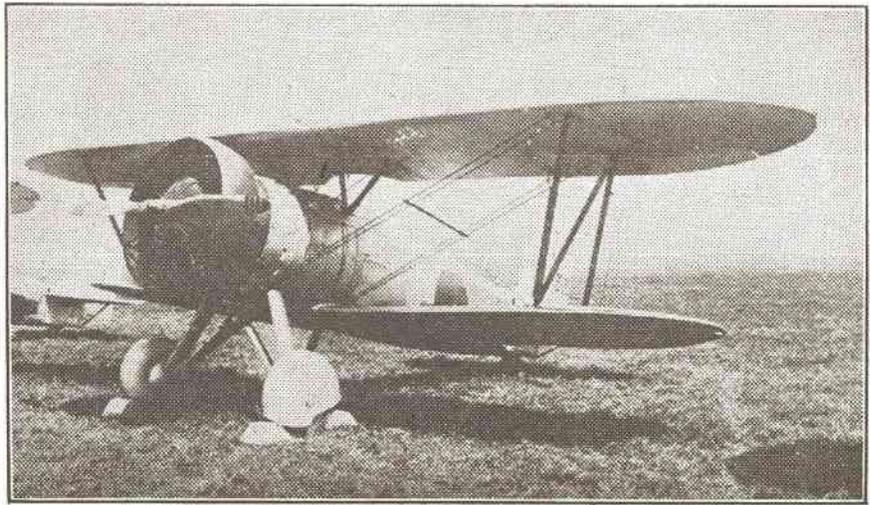
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**Fighting planes are playing a leading role in the bloody Sino-Japanese war. And as Chiang Kai-shek hurls his battle craft against the Nipponese invaders, military observers hesitate to predict the outcome. China, they grant, has a chance—if her petty War Lords will only band together. But meanwhile the whole world may be embroiled by this flaming Maelstrom in the Orient.**

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One of Japan's modern ship-board fighters—a Nakajima 90. This sleek craft is powered with a 450-h.p. Hotobuki (Nippon-made Bristol "Jupiter").



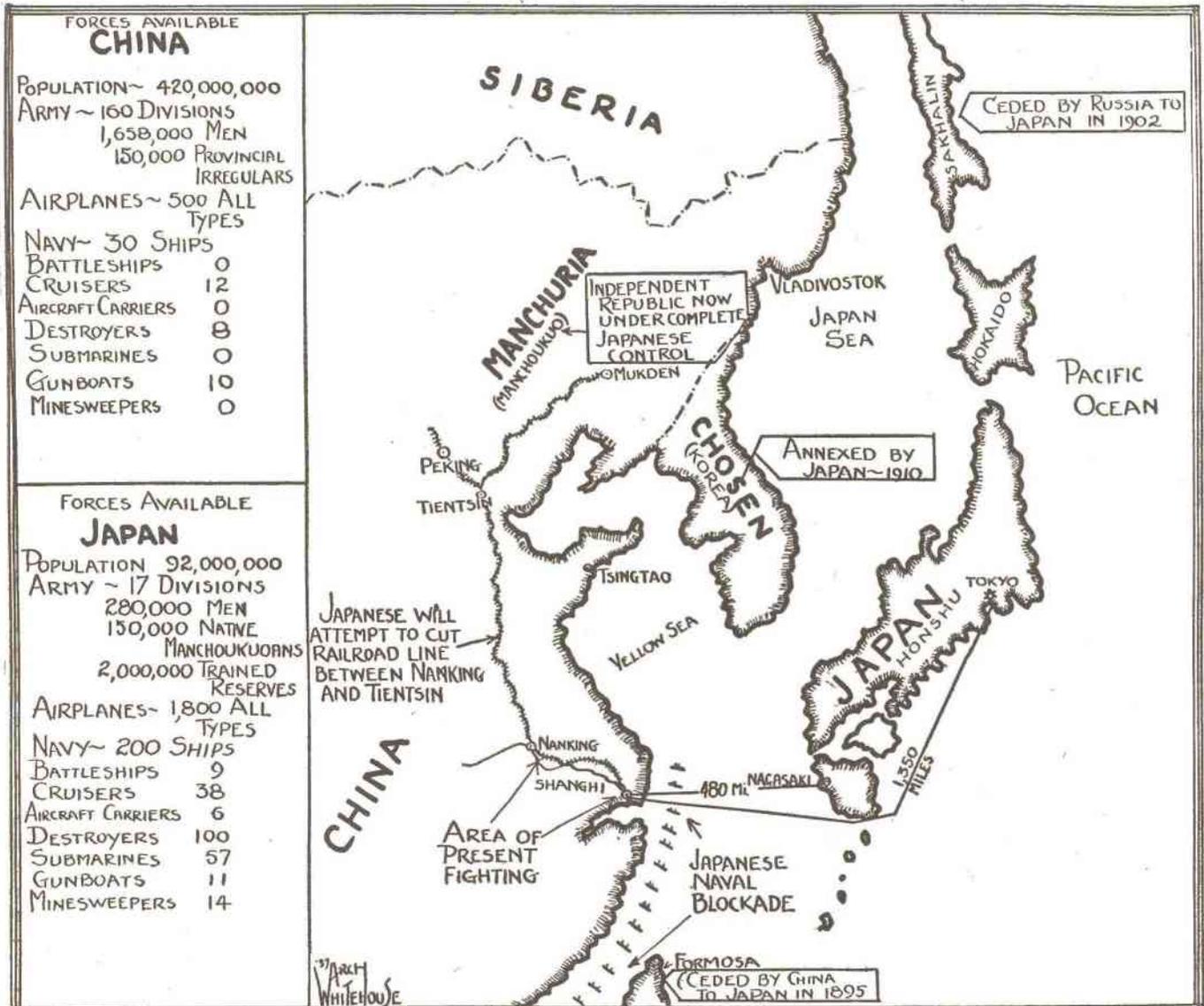
planes in question were built along on the lines of the Bellanca "Swoop" which Jimmy Mollison flew across the Atlantic. They were originally constructed for Air France as high speed mail planes. But they could be shipped into China unless President Roosevelt puts a curb on such exports.

This Bellanca, capable of about 280 m.p.h., can carry a pay load of 2,400 lbs. or well over a ton. It would become a new type of high-speed single-seat fighter-bomber, a type that has been considered in Europe for some time. As far as we know, no Japanese plane could compare with it in speed or range.

As I write this, my morning paper announces in glaring headlines that the Japanese Navy has placed a blockade around the Shanghai area and along the Cathay coast to stop steamships from entering any Chinese port if they are carrying any materials of war.

And there's the perfect set-up for war in the Pacific! Let us suppose that an American freighter or passenger ship carrying planes to China, attempts to enter this blockaded area. Japanese ships would stop it, board it, and take it into custody. Should the skipper attempt to run the blockade or ignore the signal to stop, the Japanese no doubt would fire upon it.

Washington, which has recognized no state of war—



Tables on the left above offer a comparison between the forces available to the fighting nations, while the map affords a graphic view of the theater of war.

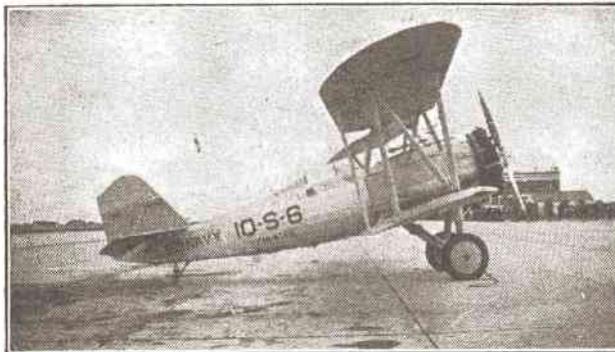
for actually none has been declared—would in all rights demand restitution and an apology. Then, before we knew what was happening, diplomatic relations might be severed. Japan might even go as far as to seize certain islands in the Pacific and light the fuse that would set off an international bomb-shell.

There are dozens of intricate tie-ups, mostly on a commercial basis, in Shanghai and Hong Kong. Both the Japanese and the Chinese would play their cards to draw one power or another into the mêlée, by a nod one way or a belligerent grimace the other.

Great Britain, which has many Empire points in the Pacific to consider, particularly with relationship to Australia, New Zealand, and Canada, would no doubt side with the United States to keep Japan from gaining overwhelming power in the Pacific. Russia, waiting on the sidelines and hoping for revenge for the defeat at the hands of the Japanese in 1905, would leap at the chance to nip Nippon in her darkest moment. Of course, the Manchoukuo business would flare up again, and the United States and Great Britain would be accused of playing into the hands of the Soviets and accepting the doctrines of Red Russia.

Here we see all the "makin's" for a terrible international conflagration, with mighty powers with massive armies, navies, and air forces, pitted against one another. No wonder the Spanish civil war was shoved off the front pages when war flared in the air over Shanghai!

But how much does all this war in the air mean?



Chiang Kai-shek's air arm also includes Vought Corsairs of the type shown above. A four-gun standard service fighter, it'll do 190 m.p.h.

The actual distance by water from Tokyo to Shanghai is about 1,200 miles. China has none of these problems, for she will be fighting a defensive war, and attackers, such as Japan, must always figure to lose men on a ratio of three to one, even though they are victorious in their attacks.

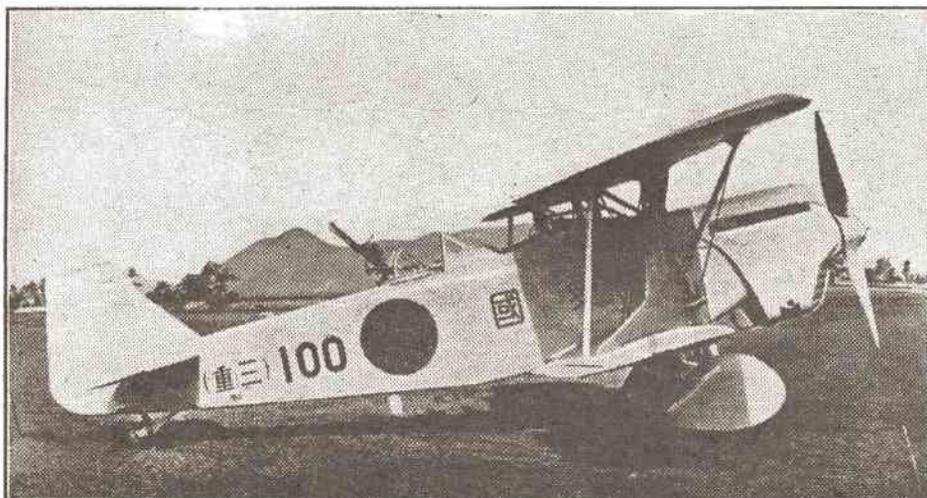
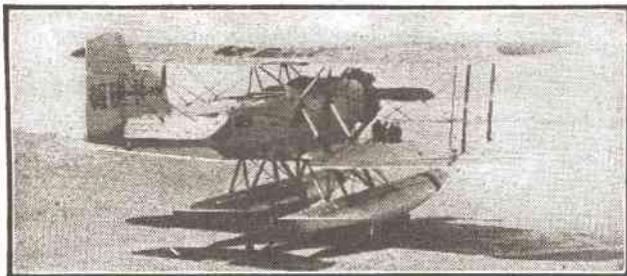
The Japanese Army may be better trained and equipped—at least it is better staffed because of the fact that it is under one nominal government. China, on the other hand, has millions of men available; but owing to the war lord system that has prevailed since the formation of the Republic, there is no central authority. Heretofore, each province seemed to have its own peculiar problem, along with a General who somehow managed to raise an army and attack other provinces on various pretexts. But if the invasion of Japan causes a new central government to be moulded, welding the Chinese nation into a solid group, Japan very likely will be defeated—and badly—within six months.

Being on the defensive in a unified area, China has only had to develop a land air force, whereas Japan has had to split its air power up into two divisions, one for co-operation with its Fleet and the other to work with its Army. And now that the war has been carried farther inland toward Nanking—about 180 miles north-west from Shanghai—the Japanese Naval air squadrons will have to re-adjust their tactics for land operations, or else stand by and let the Army flying men bear the whole brunt of the inland sky action.

China, according to most authoritative reports, had a total of 330 military planes at the beginning of 1937.

Japan was reported to have 2,000 military planes of various types, but none particularly efficient or fast from a 1937 point of view. Since that report, however, China has purchased hundreds of planes from the United States and European powers. Her modern craft include American Curtiss Hawks, Northrop fighters, Douglas O-33's, Vought Corsairs, and some mysterious Douglas types designated as O.2.Mc.4's. China also has several of the Italian Breda 25's and 27's, the former light single-seat type trainers, the latter high speed single-place fighters with Alfa-Romeo "Mercury VI" engines and capable of 248 m.p.h.

They also have a number



Top picture: Another naval sky-battler of the Land of the Rising Sun is this Kawanishi 90 reconnaissance seaplane. It likewise mounts the Hotobuki "Jupiter," and two Vickers and a Lewis comprise the armament. Bottom picture: Here's one of Nippon's latest cloud scrappers, the Kawasaki 93 light bomber. This is a two-place job employing the 700-h.p. Japanese B.M.W. engine.

of Fiat C.R.32's and BR.3's. The C.R.32 is a high-speed biplane fighter that does 242 and carries several fixed Vickers guns. For big large bombers, China uses the Italian Savoia-Marchetti S-72 with three Bristol "Pegasus" engines which has a top speed of 261 and carries 12,100 pounds of bombs and a large crew. The defenders also employ the Caproni Type III, which is a long-distance reconnaissance monoplane with a top speed of 180 m.p.h.

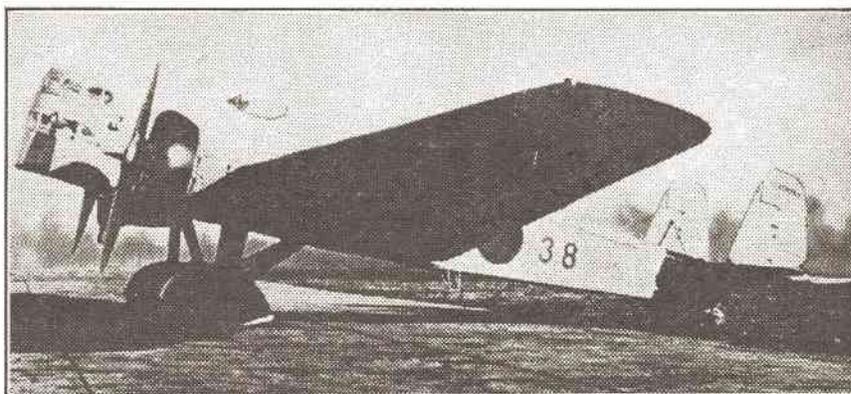
Until recently there were two foreign aircraft sales missions in China. One was American and headed by Colonel H. A. Jouett, the other was Italian. This no doubt accounts for the number of American and Italian planes in the Chinese Air Force. Recently, the American mission was withdrawn, but even so a number of the American aviation instructors were retained under new contracts. Today, the Italian mission, which is under General Silvio Scaroni, is in charge of all Chinese flight training at Nanchang. Another advanced field is—or was—at Hangchow. What naval work has been carried out has been done with light trainers. It has not progressed as far as the Army flying.

The Chinese, strange to relate, are naturally good pilots. They learn easily and copy the tricks of their tutors to perfection. No one can question their blind courage, even though we Occidentals may never quite understand the Oriental viewpoint on life and death. Chinese airmen are not as fanatically blind to danger and death as are the Japanese; and as a result they seem able to think more clearly in a pinch. They are equally as skilled but do not have the mathematical minds of the Japanese to maintain tight formations.

Anyhow, the Chinese sky fighters seem to be more than holding their own in the aerial battles. Already, several have become hero air aces through their courage, dash and daring. If China can provide her aces with the proper aero equipment, the flying men of General Chiang Kai-Shek will do more than their share in the drive to rid China of the Nipponese.

Japan's air power is vested in her Military Flying Corps headed by Lieutenant-General S. Hata. It is composed of nine aviation regiments, two balloon corps, and five national flying schools. A Japanese aviation regiment corresponds, in a general way, to our Group or to a British Wing. It may consist of as many as five different types of squadrons, anti-aircraft gunnery groups, and searchlight divisions. There were, up to a short time ago, several independent air squadrons stationed in various parts of Manchoukuo. There are approximately 1,000 first-line—or what the Japanese consider first-line—planes in this Army Air Corps.

At present, Nippon's Naval Air Service is composed of about 25 squadrons situated at Naval air stations



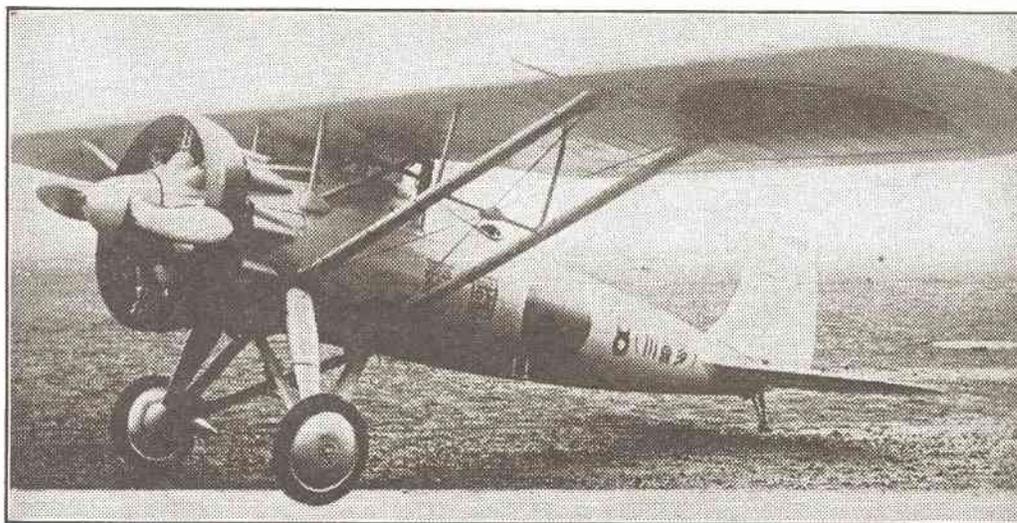
Another of the Mikado's modern ships is this Mitsubishi 93 bomber—the same striking raider as pictured on our cover this month. Two Hotobuki "Jupiters" drive her through the air. The rotating nose turret is only one of its many up-to-date features.

throughout the Empire. Ten more naval squadrons are being considered. There are five first-class aircraft carriers, and many of the first-line cruisers carry planes for catapult launching. How big a part all these Navy planes can play in the war against China, outside of defending their transports at sea, is hard to decide, particularly if the Chinese finally withdraw their key forces to positions deeper inland.

The Army planes available are Nakajima 91 and Kawasaki 92, single-seat fighters with top speeds in the neighborhood of 200 m.p.h. For reconnaissance they rely on Mitsubishi 93's, a form of the twin-engined, Junkers type plane which uses two Hotobuki Japanese-made Bristol "Jupiter" engines. Actually, it is more of a bomber-fighter, well-armed and well-designed for such work. The Mitsubishi 92 is also used for reconnaissance. This high-wing monoplane powered with the 420 h.p. Mitsubishi "Jaguar" engine cannot be considered first-line equipment today. Also used for bombing is the Kawasaki 93, fitted with the Kawasaki B.M.W. engines. This is another Junkers type revamped with modern nose and fuselage gun turrets and suitable for long distance work.

The Navy planes are the Kawanishi three-seat reconnaissance seaplanes, of doubtful performance; the Aichi AB-4 single-engined flying boat, which does about 109 top; a few well-made and up-to-date single-seaters of the Nakajima 90 type; and a few Nakajima 90-11's, which are two-seaters patterned after our Vought Cor-

(Continued on page 91)



This single-seat Nakajima 91 fighter has long been a favorite with Japanese army flyers. A French-type monoplane, it carries two Vickers and travels in the neighborhood of 200 m.p.h.

# Yankee Doodling

CHAUMONT CHICANERY — STARRING PHINEAS PINKHAM

\*\*\*

By Joe Archibald

Author of "Crash on Delivery,"  
"Scot Free-For-All," etc.

With Illustrations By the Author

**I**T is a matter of history that the Yankee doughboys made their debut in the Big Tiff by smacking the Heinies for a row of linden trees in the vicinity of Cantigny and Montdidier. But the scribes who reported the brawl made little mention of Lieutenant Phineas Pinkham who, in his own inimitable way, insured the success of the poke in the Kaiser's chops. In consequence you never read about it in the school books—so we will tell you the story ourselves.

In May of 1918 the Ninth Pursuit Squadron, situated near Bar-le-Duc with Major Rufus Garrity commanding, had their hands as full of trouble as a pink-eyed rabbit cornered in a dog kennel by quintuplet timber wolves. The Boche had been getting tougher by the minute. Indeed the members of one particular Circus had gone out of their way to show Phineas Pinkham and his cronies that they did not specialize in clowning. Yes, and Captain Howell's flight had more than once yelled "He-e-e-y, Rube!" which is a call for help in the vernacular used under the big top.

One day when Garrity's buzzards were jumped on by that circus while flying over the Meuse, Boche Spandaus threw enough slugs at Phineas Pinkham and his mates to fill up ten carloads of crackerjack boxes. Captain Howell slapped a hand to his empennage and almost jumped out of the Spad pit when a Krupp pill burned through the crate's mid-section. Then he wagged his wings as a signal for his buzzards that from then on it was every man for himself.

"Sometimes he acts almost bright," Phineas Pinkham yipped as he tore between two Fokkers and clawed for the highest shelf in the scraposphere. "Sixteen crates against five! The brass hats would call themselves sports if they sicked a wart hog on a blind mouse. Haw-w-w! Missed me, you Heidelberg beer guzzler! Haw-w-w-w—

er—I meant the first time. I—er—what's in this crate's tank anyways—glue? An ox could climb upstairs faster."

Mr. Pinkham kept climbing. The air in his lungs became as thin as the ham in a railroad station sandwich, but he finally got over the lines with the Spad's Hisso steaming and singing like a calliope, its gullet clogged by Heinie steel phlegm. Even so, Boonetown, Iowa's, contribution to the world scrap managed to bring his bus down on the tarmac of the Ninth and walk away with all his legs and arms whole. Howell was already on the ground organizing a strike.

"I'm not goin' up any more," the Flight Leader declared, "until the Frogs and the Limeys break down and get some crates to the Front. It would be nice for my folks to get ten thousand bucks insurance on me—nice for them! They could buy a Pierce-Arrow. But would I be ridin' in it? Listen, Major, there were so many Boche crates upstairs today that they shut out the sun an'—an'—well, you heard me. I want a transfer. Look at that Spad of mine! Look at Bump Gillis' crate! When I get my pants off, I will show you how close I came to takin' lessons on a harp. Look—"

**A**T this point Phineas horned in. "Yeah, I bet I'm an albino when I get my helmet off. Look at my Spad while you are doin' any lookin'. If we had clams an' some corn, we could have a clam bake on that wreck, if we had some seaweed. It's suicide an' no Pinkham ever bumped himself off. I want a transfer, too. So does Bump—"

"Will you fatheads shut your traps?" the Old Man bellowed. "Mutiny, huh? I've a good mind to put you all in irons!"

"That is better than gettin' put in topsoil," the scion of the Pinkhams countered. "Haw-w-w-w! Let's all git arrested!"

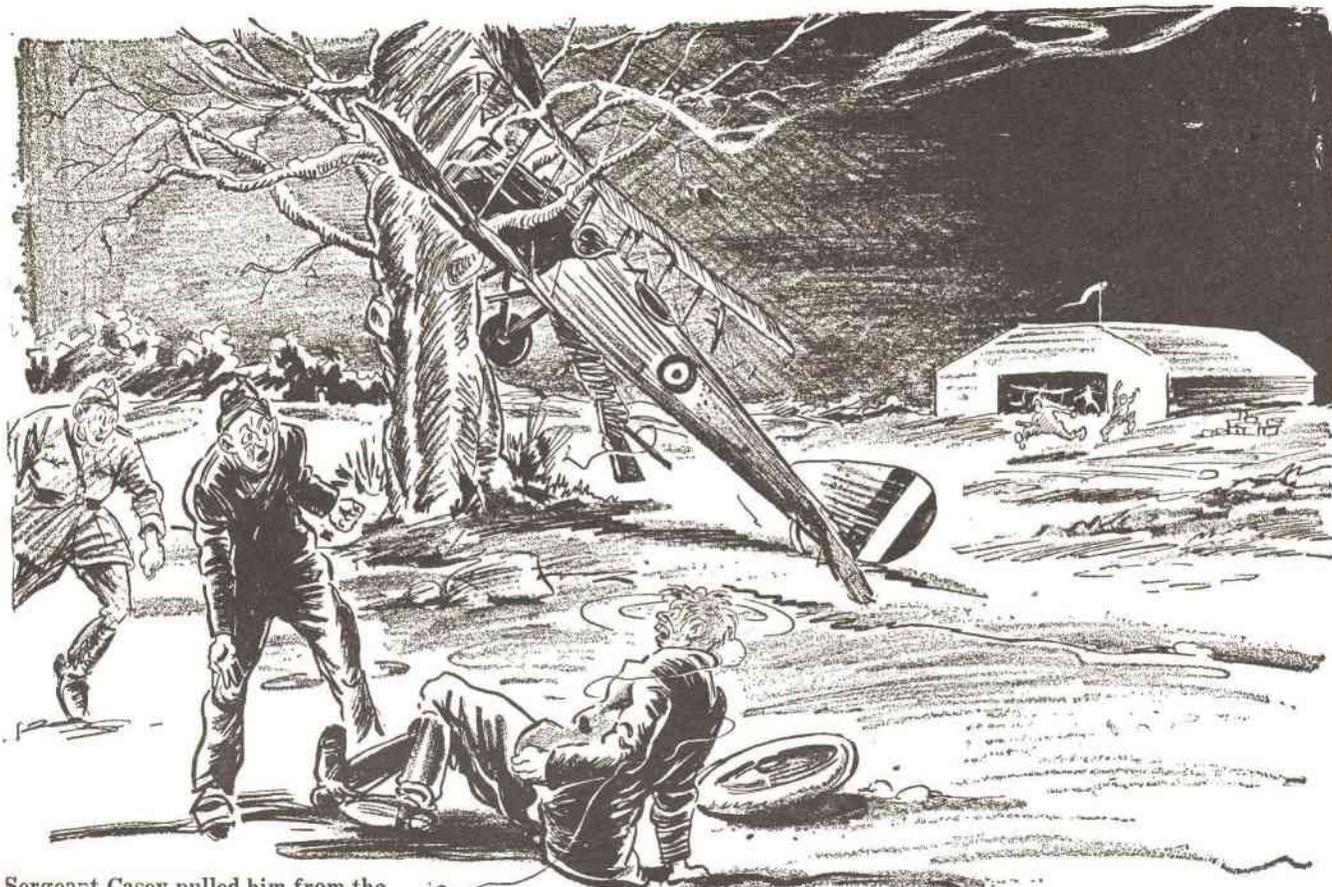
Major Garrity put on some verbal pyrotechnics that would have made a mule skinner's tirade sound like a petulant wail from Little Lord Fauntleroy. Captain Howell finally limped to the Operations Shack to make his report, and Phineas and Bump backed toward their hut with the C. O.'s chin not three inches from their noses.

"I'll show you who runs this outfit!" Garrity trumpeted. "Mutiny, is it? Make one more crack, Pinkham—just open that chasm of a mouth once more — and I will drive my fist right down your throat 'til my signet ring leaves the Masonic emblem on the lining of your stomach. Now get into that hut and stay there!"

"I dare ya to take off your tunic," the Iowa loud speaker cracked back indignantly. "A



There came an ear-rending BO-ON-NG! as the brass hat yanked off the cover.



Sergeant Casey pulled him from the wreck. "Go away," groaned Phineas. "Let me die!"

Pinkham don't take that from no man. Hidin' behind your rank, huh? Well—"

"Oh, yeah?" bellowed Garrity. Then he began to rip off his tunic.

He had one fist yanked out of his coat sleeve when a big car rolled across the tarmac on its way to the outfit's headquarters. Observing the scene, a brigadier in the back seat emitted a yowl like a hungry coyote's. The car was braked to a sudden stop, and out tumbled the brass hat, his "bright work" shining like the accessories on a new yacht.

"Going to stage a fight, eh, Major?" he intoned pompously. "Is this the way for an officer to conduct himself?"

"Huh—er—me—fightin'?" Garrity gulped. "Why you are mistaken, sir. Somethin' bit me an' I think it was a red ant. I was taking off my coat to—"

"Adoo," Phineas Pinkham chirped and vanished inside his hut. He was there just ten minutes when an orderly came after him.

"I will own up," the miracle man from Iowa decided. "I will say he was goin' to attack me. I've got a right to self-defense and will get a lawyer." He trudged over to the Operations Office where Major Garrity and three very important looking brass hats were in heavy conclave. The brigadier looked up as Phineas saluted.

"Ah—cr—" he stuttered, "Pinkham, eh? Not much to look at."

"You can't expect a Follies Bejeer dame here, sir," the lieutenant retorted with a toothsome grin. But he was inwardly nettled. "I — er — the Pinkhams

may not be Don Junes, but they ain't—"

"Lieutenant!" erupted Garrity. "Shut that mouth! Go and pack a bag. You are going to Chaumont."

"Wha-a—?" Phineas sizzled. "What for? I haven't done anythin'. It wasn't me that picked the fi—"

"Why-y," the Old Man cut in fast, "it is not to get busted, Pinkham. Intelligence needs your—cr—assistance. They have heard that you are quite adept at—er—well figuring out things. They seem to be stumped over a paper found on a Frog whom they suspect of being a pigeon man. Now—er—a big push is being proposed in the Cantigny sector—in fact, it is scheduled for—er—around the twentieth of June. That right, Brigadier Coffey? Yes. But if a Kraut spy got a message through to the Boche, tippin' 'em off—well, they will tell you the rest at Chaumont."

Phineas Pinkham allowed his face to fall into the convolutions of a grin. "That's different," he enthused.

"I'd like to see any Heinie kid me. I'll go an' pack my nightshirt an' alarm clock. Haw-w-w-w! Say goodbye to all the bums for me, as I don't think they'll be alive when I get back. And am I glad to get rid of that Kraut circus!"

**Herr Kohme, top-hand snooper of the Kaiser, had been permanently tagged by a firing squad back in '16—if you believed the official records. But rumors were now rampant that the crafty Kraut was really just as much alive as a monkey with fleas. That's why G.H.Q. frantically set the Yank tacticians tacticianing overtime in G-1, G-2, G-3, and G-4. And that prince of doodlers, P. Pinkham? Well, he chimed in with a G-Haw-w-w-w!**

**CHAUMONT** was the brain center of the A.E.F. in France. It is listed in the geographies as the capital of the Haute-Marne Department and is reeking with Frog history. In that hamlet, before the War, kid gloves were made and iron was dug out of the ground. A railroad junction, it lay 163 miles from Paris — and still does, if you care to go out in that section and measure it.

Anyhow, the big A.E.F. boiler bearing Phineas Pinkham and three brass hats was soon rolling in between the two square brick structures marking the entrance to the Yankee Headquarters. It buzzed across a big rectangle that was flanked on every side by big buildings.

"Must be Notre Dame," Phineas observed. "Where's the football players?"

Brigadier Coffey sniffed, glared at the flyer, and remained disdainfully silent, while the Colonel ground his teeth down to the nerves and informed Mr. Pinkham that he was about as funny as a case of gangrene. So the Boonetown pilot, realizing that here was the last place to expect a sense of humor, thereupon pulled in his neck and looked straight ahead.

Never before had he seen so many brass hats in one place. Out in front of one of the large buildings a man as straight as a ramrod was walking between two lines of spick and span doughs.

"He's a swell-lookin' bum—er—soldier," the irrepressible Yank finally said. "I bet he'll get to be a shavetail in no time."

"That is General Pershing," the brigadier bit out. "Ever hear of him, Lieutenant? He's only the C-in-C."

Phineas gulped. "Huh—er—yeah! Haw-w-w! Seems like I recall some one mentioning him once or twice."

He got out on the heels of the brass hats, followed them into one of the structures. Officers and non-coms, looking as if they had been kept in mothballs, were stalking all over the place.

"Now this is the place I'd like to fight a *guerre*," Phineas exclaimed. "I bet you have to know a Congressman to—"

"Shut up!" the brigadier clipped. "It's come to a pretty pass when they have to call on a nitwit like you to help out the Intelligence, Pinkham. Keep your lip buttoned up. Here's G-2."

"Huh?"

"Everything's initialed here for brevity's sake," one of the other officers snapped. "Now over at that end of

the building is G-1. Out that window you can see Barracks B of G.H.Q."

"I catch on," Phineas said solemnly. "So spies won't know what they meant, huh? I will say I am P. P. from B.L. Duck, Nine P. S., Rufe G. Prop.!"

The brigadier looked as if he were on the point of tossing Phineas through a window. But he restrained himself and finally ushered the exponent of magic, legerdemain, prestidigitation, and all the other dubious arts under the heading of skullduggery, into the inner chambers of the A.E.F. Detective Bureau. Closeted with a dozen brass hats of all ranks and sizes, Lieutenant Pinkham was handed a sheet of paper that had been taken from the person of a suspected Heinie agent.

"It doesn't fit any code book we have," a high officer stated. "Doesn't make sense, Lieutenant. Now as a last resort we have called upon you to see what you can do with it. We have—er—heard of your various—er—exploits in the Air Corps and understand you have dabbled a little in the—er—"

"A Pinkham does not dabble," Phineas corrected him, "nor does he dilly dally. Haw-w-w!"

A colonel reached out and plucked something from the flyer's lapel. "A horsefly," he mumbled. "Can't be too careful, Lieutenant. Might carry typhus germs an'—er—wha-a-a-a?" He had tossed the fly toward the waste paper basket—but it had snapped right back against the Pinkham tunic and stayed put.

"Haw-w-w-w!" Phineas guffawed. "That fools 'most everybody. You can't fool a horsefly, though. I bet a hundred guys have tried to pick that rubber fly off me an'—er—"

**A** GRIM silence gripped the room. The brigadier pawed at his face and made funny noises, but a lieutenant-colonel exploded first. He thundered at Phineas that there was a nice bastille in Chaumont into which he would be thrown if he did not get down to business. The brass hat then took a fountain pen from his pocket and began scratching on a lot of papers on a table in front of him. He had been doing that for three days in the effort to decipher the cryptic message that had plunged Chaumont into such a dither. The pen suddenly went dry and the high officer swore.

"Here's mine," Phineas said, proffering his pen.

The brass hat accepted it, yanked off its cover. BO-ONG!!

He went over backward and Phineas felt his heart leap up and sit on his tongue. He had brought the wrong fountain pen. This one had an explosive cap where the pen point should have been.

"Aw gee," he stuttered, "that's the one I was goin' to give the Old Man for his birthday. It's an accident, sir. I will swear sittin' on a Bible that it was! I—"

Twenty minutes later four burly M. P.'s tossed Phineas into a bastille. The brass hats looked in later and assured the culprit that the C-in-C would hear about everything that had occurred.

"Lieutenant," one of them rumbled, "this will get you at least twenty years in Leavensworth."

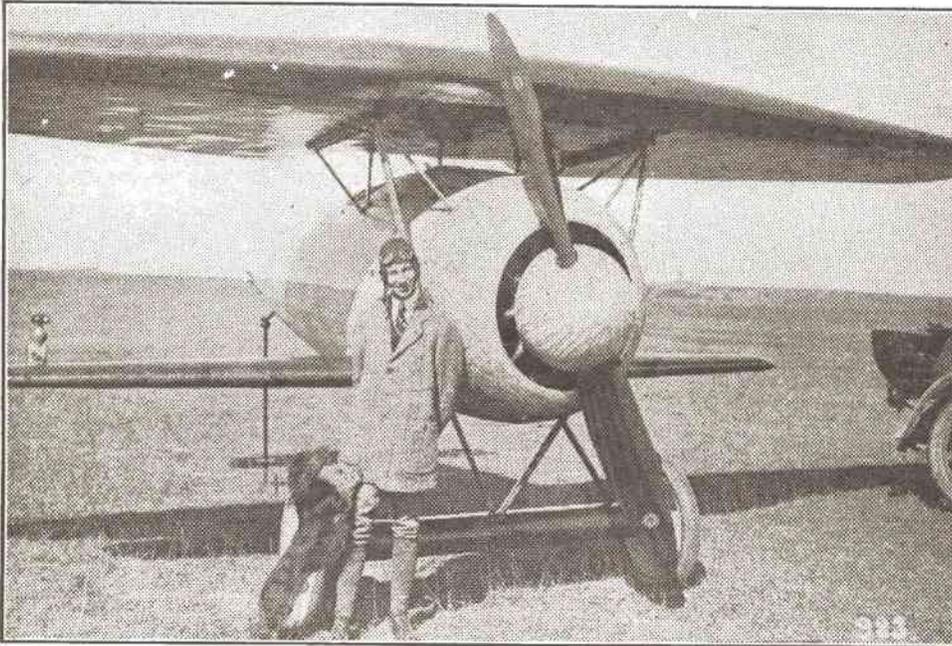
"Awright," said Phineas, "an' then who'll save the Allies? Why that code message was awful simple. I should think even the Intelligence Corps could have figured it out. That's the way Boche bums work. It was so easy you tried to make it hard. Haw-w-w-w! It's like when they put Houdini in a cell back in the

(Continued on page 84)



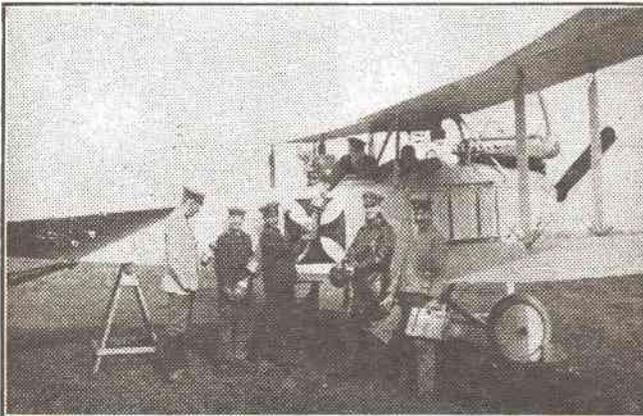
Phineas quickly recognized his visitor. "Y-yes sir. N-no sir. Yes sir," he stammered. "I just tried to do my duty an'—"

# Snapshots of the War

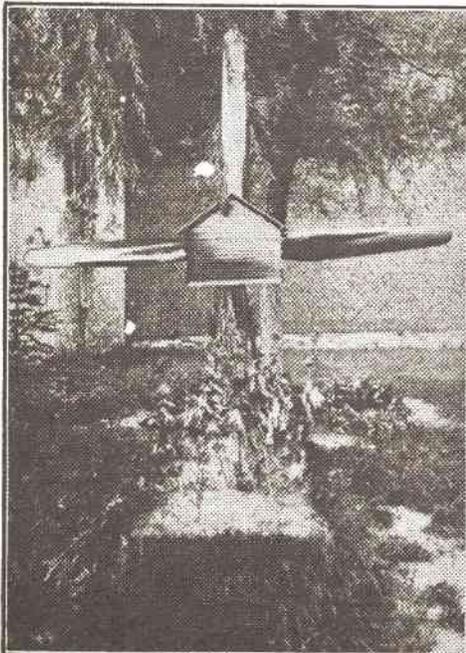


Left: From the Nioto Collection comes this fine photo showing Tony Fokker at the height of his war-time designing career before his first cantilever winged plane, the V-1. Note the stub section, airplane airfoil and the unusual aerometer fitted near its right tip. On this job, Fokker used the Oberursel rotary engine, a copy of France's famed LeRhone. But though her trimness is undoubted, we have been unable to find any record indicating that this plane was ever used by the Boches in actual war service. The Germans, it seems, were afraid of the cantilever wing idea until it was later proved feasible beyond doubt in Fokker's renowned D-8 model. A mighty speedy cooling bus, though, this V-1!

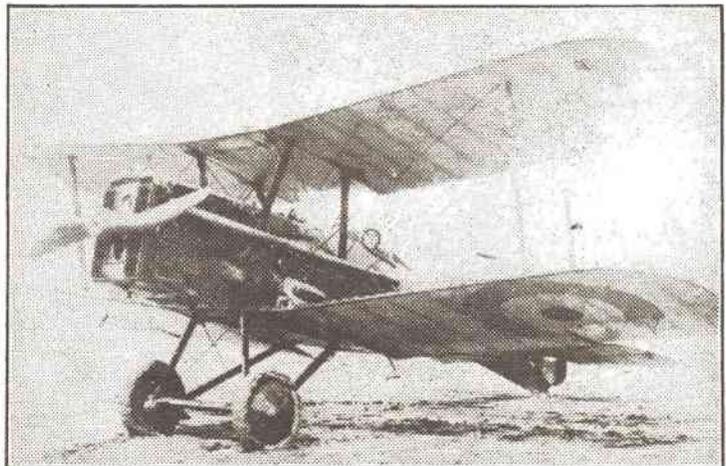
Below: Here we see German mechanics grouped about the nose of a Gotha bomber just before the giant ship took off for a raid on London. Observe the arrangement of the two 50-pounder bombs, and note the movable bomb-sight peep-hole protruding through the floor of the front cockpit. We wonder how many of these fellows staring into the camera are still alive.



Loading a two-place Aviatik with 25-pounders for a "visit" over the Allied lines. The man at the right holds a map board and an oblique-angle camera. They'll be used to determine the effect of the hits.



Left: A German airman's last landing ground—the grave of Lieutenant Bordfeld, marked with a plaque and four-bladed propeller. This photo and the two in the row above were loaned to us by the son of Captain Oscar Pfundheller, one-time member of von Richthofen's Staffel 11. Captain Pfundheller died in 1928 from the effects of wounds received during the War.



Though this photo has begun to fade, we print it anyhow because so many fans have been begging for a shot of the British SE.5. This picture is interesting because it shows the wing dynamo (near lower wing root) which provided electrical current to heat the Sidcot flying suits used during the latter part of the Big Scrap. A small wooden prop turned the dynamo.

## Highlights of the

# National Air Races

• • •

**R**UDY KLING'S smashing victories in America's premier closed-course racing dashes—the Greve and the Thompson—promptly expelled the fear initially expressed on all sides that either this year's foreign ships or our own newly-groomed "super-supers" would force the veteran pilots who have kept our air racing going these many years to bow out of the picture. Unlike our foreign contemporaries, we Yanks do not expend a hundred thousand dollars on the engineering, building, and testing of new speed jobs. This leaves our race-plane building to struggling pilots who must produce their ships during spare time when not hopping passengers, giving instruction, or managing their home town's airport. That's why they call these craft "back-yard blue streaks."

Kling's ship is a new mount to take the place of his *Suzy*, which he washed out last year after striking a guy wire in landing. His earnings this year have far exceeded the \$8,000 necessary for the construction of this craft, which is another trim creation of Clayton Folkerts, who produced a very similar and successful racer last year. It is officially designated as the Folkerts Speedking, but Rudy has christened it *The Jupiter—Pride of Lemont*. Lemont? Well, that's the small town in Illinois where Kling is a garage operator when not flying.

Basically the same as the Folkerts Special which was completed last year and piloted by Harold Neuman, the Speedking is a full-cantilever mid-wing job with the airfoil tapered in both plan and thickness. Plywood is the covering. Trailing edge flaps extend from the ailerons all the way to the fuselage and a small arm continues into the cockpit for their manual operation. The long tapering fuselage is fabric covered to the rear of the fully-enclosed cockpit, and the ingenious and distinctive Folkerts retractable landing gear folds completely into the belly of the fuselage just under the pilot's feet.

The wing span is a mere 16' 4", which is only about

By Burton Kemp

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Here is the story of the 1937 National Air Races written in the good old shop-talk style that real air fans appreciate. Burton Kemp went to the Cleveland classic with the prime purpose of getting just the "dope" you F.A. readers wanted—details of the ships, races, speeds, and purses, together with some colorful info on the pilots, and topped off with a pile of good pictures. Yep, you'll find all that here—and more!

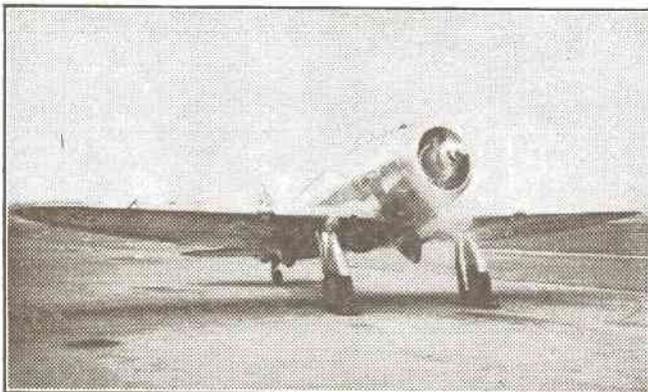
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two feet more than that of the original Folkerts. This added wing area was found necessary to take care of the larger and more powerful engine, which is a 6-cylinder Menasco Super Buccaneer C6S-4 with a standard commercial rating of 250 h.p. But because all of the racing pilots usually operate these engines at more than the normal r.p.m., the standard rated h.p. of the engine is not the greatest they can get out of these power plants. This has led to the grouping of the different ships in classes determined by the cubic inch displacement of the engines, which is much simpler and more accurate than trying to figure out how many "horses" an engine is turning up at high r.p.m.'s. Then, too, a racing pilot knows, in this way, that his standard engine will be in the same class no matter how much supercharging and other doctoring he may give it when preparing for a speed event.

It was easy to see that Cleveland meant it when it set about getting the Races "back home" this year. Enormous crowds turned out, even in the bad weather that was experienced on one day. Now boasting 1,040 acres, the municipal field is claimed to be the largest in the world and is certainly adequate for even a competition of such great attraction as this. There was parking space aplenty both for planes and automobiles, and the number of persons traveling by the former was really gratifying. The visiting ships ranged from old OX-5's

to the modern two-place lightplanes and more luxurious four and five-place cabin ships. September 3-6 were the dates of the classic.

The two race courses—a ten mile quadrangular run for the Thompson and a five mile quadrangular for the other events—were laid out to the rear of the stands, with only the start, finish, and one-fourth of the actual racing taking place in front of the field spectators. This seemed to be about the only part of the entire layout that could possibly be improved on. However, our Bureau of Air Commerce does not exactly turn handsprings

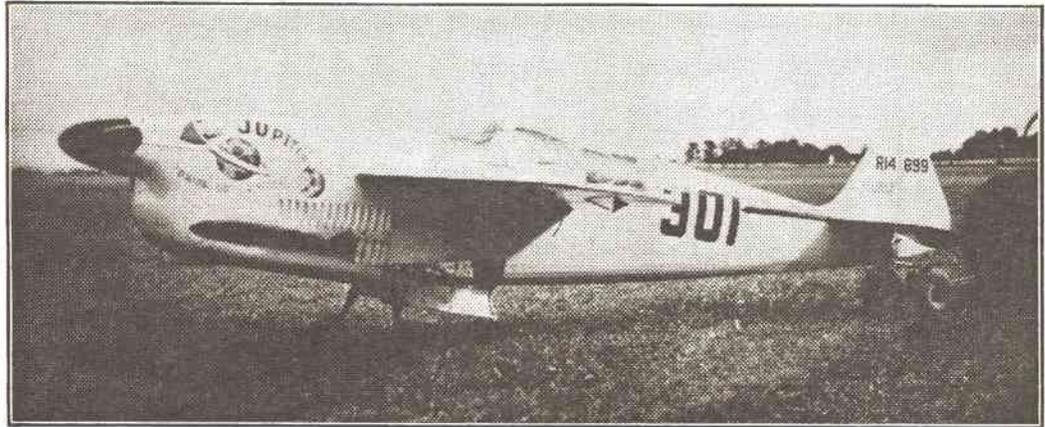


Frank Fuller's Twin-Wasp Seversky warming up on the line. Frank copped the Bendix transcontinental race in this job, and his pal, Ray Moore, later placed sixth in the Thompson event in it. The ship is exactly like the Air Corps P-35's.



The boys were on hand to dish out plenty of spine-tingling acrobatics this year. One of the best shows of all was staged by Captain Papana, of Roumania, in this German-built Bucker Jungmeister. Its tail still bears the rings of the Olympic Races.

The cream of the Cleveland crop! Yep, this stub-winged sky bullet is the job in which Rudy Kling polished the pylons to win both the Thompson Trophy and Greve Trophy events—the most coveted classics of the Races. A Folkerts Speedking, this speedster is a mid-wing craft powered with a Menasco motor. Rudy calls her "The Jupiter—Pride of Lemont." And "Pride" she is!



when air races are mentioned, and as they certainly would not approve of moving the course to the other side of the field where the

transports land, it appears that this arrangement was as good as possible under the circumstances.

A total of eighteen ships competed in the various closed-course events and the cross-country Bendix dash. Of these, nearly all were specially-built racing craft, except for two which were practically stock commercial models—the Beechcraft of Jacqueline Cochran and Milo Burcham's Lockheed. Both of the latter had extra fuel tanks installed. Formerly noted for aerobatics in his Boeing 100 Special, Milo now is solely a speed pilot and the Bendix was his first racing effort.

The two Severskys were exactly like the Army's P-35's. One, in fact, was the original test plane that won the Army pursuit competition. Sundorph's Special is a ship still in the "X" stage, but it's one that he thinks has possibilities in the commercial field, much as Howard produced his present line of cabin ships from his racing *Mr. Mulligan*. The Sundorph job has a metal monocoque fuselage and a fabric covered wing. He came in just one notch too low in the Bendix to win any prize money. I might add that as he passed the grandstand fear was felt for his safety, since a decided flutter was present in the left portion of the wing. After circling the field once, he set the ship down without mishap—fortunately.

OUR accompanying table presents basic points on the complete number of planes that participated in the various events. More ships were expected. A few others did show up but failed to race. The Lambert-powered Loose Special was to have

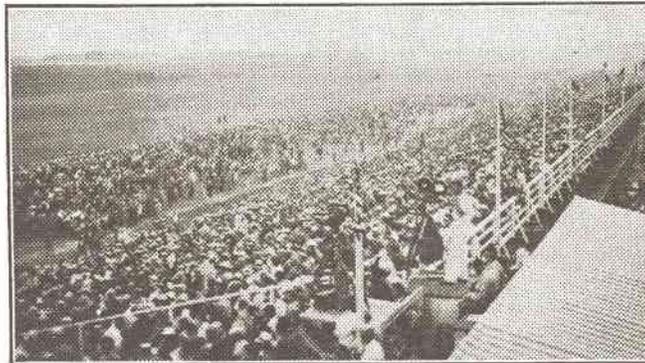
been flown by George Dixon, but trouble with the ailerons—they carried some patches about 12" long—kept it grounded.

Smallest of the ships present was a 12' Pobjoy-engined job built by employes of Consolidated Aircraft. It crashed during a landing, but pilot Tony Le Vier was uninjured. The black and white Wedell-Williams "92," formerly flown with much success by Jimmy Haizlip, nosed over at Cleveland while on its way to California for the Bendix dash. And that prevented pilot Art Davis from pocketing any of this year's prize money.

Added to the above misfortunes was a serious one which cost the life of one of aviation's finest speed pilots. On the day before the official start of the races, 37-year-old Lee Miles careened to earth, having lost a wing while doing a lap at over 200 m.p.h. in a qualifying speed trial. This accident was later traced to a defective wing fitting. His ship was the Miles-Atwood Special built by Miles and Leon Atwood together with Lawrence Brown in 1933 in just 35 days. It became potential Nationals winner the day after at the 1936 Races in Los Angeles and was at or near the top ever since. Having

a Menasco engine of 363 cu. in. displacement, it belonged in the 397 cu. in. class. Indeed, it set a world record in this category shortly after it was completed in 1933.

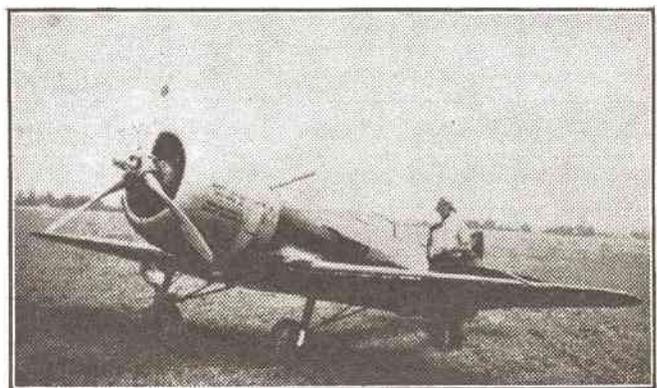
These air racing pilots are about the finest bunch of sportsmen you'll ever run into in any kind of competition. They're always willing to lend assistance to fellow pilots, though sometimes giving such aid might mean a lesser share of prize



Huge crowds such as this attended on every day of the Races. Note the newsreel men in action on the platforms in the middle foreground.



Colonel Roscoe Turner was on hand with this trim Twin-Wasp Brown "Meteor"—and he could have hurtled it to top honors in the Thompson race but for a sorry miscalculation due to the blinding sun and a spray of oil. Too bad, Roscoe!



Here's Earl Ortman about to hop into the pit of his revamped Keith-Rider. This ship is now known as the Marcoux-Bromberg, being named for the two Douglas aero engineers who whipped 'er into shape. Nosed out by Kling, Earl took second in the Thompson.

## THESE WERE THE RACERS

Name of Ship	Engine	Cu. In.	D. C. No.	Pilot	Color
Whittenbeck Spec. <i>Matilda</i>	Amer. Cirrus	302	R500W	C. W. Whittenbeck	Red
Chester Spec. <i>The Jeep</i>	Menasco	363	R12930	Art Chester	Cream, Green Trim
Folkerts Spec. <i>Miss Detroit</i>	Menasco	363	R283Y	Roger Don Rae	Red, Black Trim
Wittman <i>Chief</i>	Menasco	363	R14855	Steve Wittman	Red, Alum. Cowl
Brown B-2 <i>Miss Los Angeles</i>	Menasco	544	R255Y	Marion McKeen	Red
Delgado <i>Flash</i>	Menasco	544	R68Y	Clarence McArthur	Black
Folkerts Speedking <i>Jupiter</i>	Menasco	544	R14889	Rudy Kling	Cream, Red Trim
Haines Spec. H-3	Menasco	544	R91Y	Frank Haines	Bronze
Schoenfeldt-Rider <i>Firecracker</i>	Menasco	544	R261Y	Gus Gotch	Yellow, Red Trim
Beechcraft	P&W Wasp Jr.	Unlimited class	R18562	Jacqueline Cochran	Green, Orange Trim
Brown <i>Meteor</i>	P&W Twin Wasp		R263Y	Col. Roscoe Turner	Silver Grey
Lockheed 12-A	2 P&W Wasp Jrs.		R18130	Milo Burcham	White, Purple Trim
Marcoux-Bromberg	P&W Twin Wasp		R14215	Earl Ortman	Black
Seversky	P&W Twin Wasp		R18Y	Frank Sinclair	Blue Fuse, Yellow Wing
Seversky	P&W Twin Wasp		R70Y	Frank Fuller (Bendix)	Natural Alum.
Sundorph Spec.	Jacobs L-5		X2599	Ray Moore (Thompson)	Natural Alum.
Wedell-Williams	P&W Hornet		R61Y	Lt. Joe Mackey	Gold
Wittman <i>Super Chief</i>	Curtiss D-12		R13688	Steve Wittman	Red, Alum. Cowl

money for themselves. Here's an example of this: On the day before his fatal crash, Lee Miles flew to South Bend for a carburetor which was needed in Roger Don Rae's *Miss Detroit*—a ship he would have to beat out for top honors.

Some of the races were cut down in distance and prize money because of the scarcity of ships in that class. Of the lower powered racers, Steve Wittman's *Chief* was way out in front, and in the feature race for this type of plane he set a new air race record. If anyone saw the Wittman job alongside practically any of the other racing planes, he would not be greatly impressed by it. The wing is stubby and has almost square tips; furthermore, it is wire braced. A piece of spring steel forms the cantilever fixed landing gear and the small axle is faired into the leg with ordinary automobile hub caps. The fleetness of this plane is no doubt due to the fine lines of the fuselage and the "form-fit"

of the cockpit and its enclosure. It's a very fine example of what can be done to produce a speedy entrant without expending too many thousands of dollars.

Wittman's *Super Chief* is the plane which was built in 1934 and which took second-place Thompson money the following year. On the way to last year's races at Los Angeles it burned while on the ground at Cheyenne. Rebuilt this year, it qualified at 275 m.p.h. That broke all qualifying speeds for the Thompson race and won Wittman a special \$1,000 award. It is merely another Wittman *Chief*, but on a larger scale and powered with a Curtiss D-12 water-cooled engine. Covering the propeller is a very large spinner with a hole in the center. Fins on the inside of the spinner divert the air through a radiator which encircles the crankshaft. This eliminates the usual protruding, speed-repelling radiator.

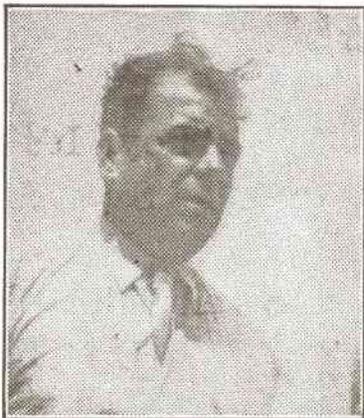
Marion McKeen's *Miss Los Angeles* was never a serious contender, and it appears that this ship is be-

## AND THESE WERE THE RACES

Name of Event	Cu. In. Limit	Miles	Pilot	Plane	Speed	Purse
Bendix Trans-Continental Dash	None	Los Angeles to Cleveland	Frank Fuller	Seversky	7:54.26	\$9,000 (plus \$4,000 added)
			Earl Ortman	Marcoux-Bromberg	9:49.21	5,000
			Jacqueline Cochran	Beechcraft	10:29.08	3,000 (plus 2,500 added)
			Frank Sinclair	Seversky	11:02.33	2,000
			Milo Burcham	Lockheed L12-A	11:03.58	1,000
James J. Davis Trophy Race	397	50	Steve Wittman	Wittman	237.156	675
			Roger Don Rae	Folkerts	235.208	375
			Art Chester	Chester	230.746	225
Greve Qualifying Race Group I	549	50	Rudy Kling	Folkerts	223.104	900
			Roger Don Rae	Folkerts	222.357	500
			Marion McKeen	Brown B-2	192.014	300
			Frank Haines	Haines H-3	186.586	200
Greve Qualifying Race Group II	549	50	Steve Wittman	Wittman	224.685	400
			Art Chester	Chester	217.833	500
			C. McArthur	Delgado	180.818	300
			Gus Gotch	Schoenfeldt-Rider	167.162	200
Feature Race	397	50	Steve Wittman	Wittman	*245.325	2,700
			Roger Don Rae	Folkerts	242.676	1,500
Thompson Qualifying Race Group I	None	50	Art Chester	Chester	231.580	800
			Frank Sinclair	Seversky	242.082	900
			Roger Don Rae	Folkerts	174.473	500
Thompson Qualifying Race Group II	None	50	Marion McKeen	Brown B-2	164.381	300
			Earl Ortman	Marcoux-Bromberg	247.975	900
			Joe Mackey	Wedell-Williams	247.029	500
Louis W. Greve Trophy Race	549	100	Gus Gotch	Schoenfeldt-Rider	223.480	300
			Rudy Kling	Folkerts	232.272	4,500
			Steve Wittman	Wittman	231.990	2,500
Consolation Race (for planes not in the Thompson Race)	None	50	Gus Gotch	Schoenfeldt-Rider	225.593	1,500
			Roger Don Rae	Folkerts	224.197	1,000
			Art Chester	Brown B-2	223.644	500
Thompson Trophy Race	None	200	Art Chester	Chester	234.988	900
			Roger Don Rae	Wittman	214.436	500
			C. W. Whittenbeck	Whittenbeck	163.815	300
			Rudy Kling	Folkerts	256.910	9,000
			Earl Ortman	Marcoux-Bromberg	256.858	5,000
Roscoe Turner	Brown, <i>Meteor</i>	253.802	3,000			
Frank Sinclair	Seversky	252.360	2,000			
Steve Wittman	Wittman <i>Super Chief</i>	250.198	1,000			
Ray Moore	Seversky	238.411	300			
Gus Gotch	Schoenfeldt-Rider	217.810	250			

\*New Record.

Right: That past-master sky veteran, Tez Rankin! Flying a stock Ryan ST-A, he carried off the International Aerobatic Championship. His show featured twenty-one slick stunt maneuvers, and now the U.S.S.R. has made a formal request that he stage it over again in Russia. So Tez will soon be hopping a boat.



Left: Meet Steve Wittman. Steve, seen here taking it easy while the boys take the field for the next race, won the James J. Davis Trophy Race, took second in the Greve event, placed fifth in the Thompson, and broke the record for the 50-mile Feature Race. His "Chief" ship is shown in the lower left hand corner of this page.

coming outmoded by the new models. Another plane in which McKeen has a partial interest is the Haines H-3 flown by Frank Haines, who is also the designer. It did not give a very good account of itself for the power it carried, but because it was just completed, this may be remedied in the future. Maybe they haven't got her tuned up yet. The lines greatly suggest a Keith-Rider creation.

The Whittenbeck Special is quite old and has appeared under many other names. It was badly outclassed. Chester's Jeep is still plugging along quite successfully, and Roger Don Rae gave a good account of himself with the Folkerts Special. The Delgado Flash is almost identical to the former Delgado Maid, which was higher powered. Clarence McArthur could not do much with it, though the design seems very clean. Unfortunately, Gus Gotch never got out of the Schoenfeldt-Rider what that ship has proved it is capable of in previous races this year. The main reason for this was the difficulty of getting and keeping the landing gear in its retracted position.

Turner's Wedell-Williams was completely rebuilt and presented a nice appearance. But the pace was too much for it in the Thompson race, which it rated after finish-

ing a close second in one of the qualifying dashes. Lieutenant Joe Mackey piloted it. Turner flew his other ship himself in its first taste of competition. A Brown-designed craft, it had a complete going over by Mattie Laird, who also rebuilt the Wedell-Williams. Motor trouble on the way to Los Angeles kept the dapper Turner from being a Bendix participant, and on the return trip it almost prevented him from getting to Cleveland. A special qualifying race was held a few hours before the Thompson, and in it, along with Turner, were Steve Wittman, Rudy Kling, and Ray Moore. Kling and Wittman were grounded by motor trouble in Sunday's qualifier, but Wittman won this heat with Kling second and Turner third. There were no awards for the victors in this special run.

THE major portion of the Thompson race ran true to form. Wittman held a comfortable lead for seventeen laps. Then suddenly he pulled up high and continued slowly. Motor trouble proved the reason for this. Meanwhile, Turner passed Ortman, who was in second place, and took the lead. Kling was flying his usual high and wide race, but nevertheless he was slowly moving up.

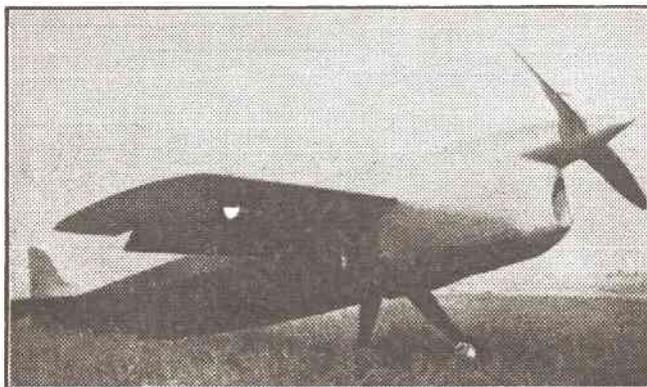
(Continued on page 84)



Gas fumes so dazed Roger Don Rae in the Greve sky grind that he landed with the wheels of his "Miss Detroit" still partly retracted. Skidding in on the bottom of her fuselage, she sustained minor damage.



A glance at the Air Races parking area on Labor Day was enough to make you swear that all the autos in the country were there! Wonder if we'll ever live to see that many planes all in one spot!

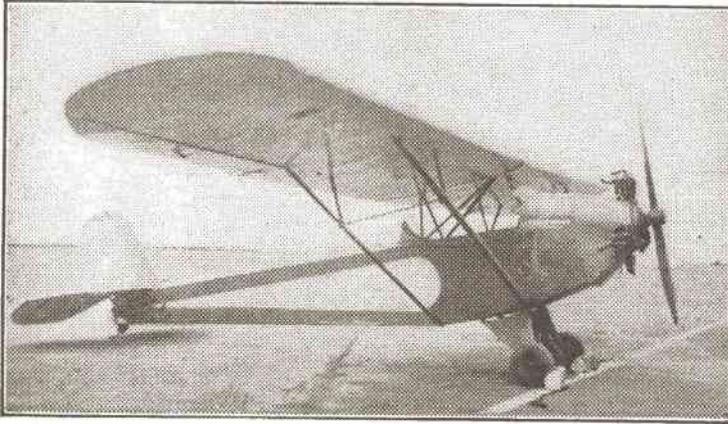


Here's Steve Wittman's striking "Chief." Considering its gargoyle-like appearance, we wouldn't want to come face-to-face with it on a dark night. But boy how she can travel! An inverted Menasco engine speeds her through the air.



This Gwinn Aircar, which was on view at the Races, is the ship which made Frank Hawks forget his "Time Flies." Featuring a tricycle landing gear, it's designed for family use. Hawks will be busy demonstrating it for quite a while.

We don't know whether this model American Eaglet is still in production, but if you are all set to pick up a light plane, you might cast your eye around and see if you can find yourself one of these firm babies. She mounts the efficient 30-h.p. Szevely radial.



\* \* \*

**“Boy, It’s Worth It!”  
Says Alt Fraser**

**Swell Ships—But How Much  
Do They Cost?**

\* \* \*

# On the Light Plane Tarmac

\* \* \*

“BOY IT’S WORTH IT!” SAYS ALT FRASER

**F**IRST off, this month, we want you to read the letter we received from Alton Fraser, of New York City. Alt wrote us before he learned the details of our sport flyer letter writing plan announced in our November issue. But his letter is right down our runway, so take it away, Alt—

Light Plane Editor:

I'd like to tell your readers of the joys I get in buzzing around in a sport plane. To begin with, just plain flying gives me all the fun in the world. It's all I ask. I have no desire to become an internationally famed war ace, and the sight of a racing plane leaves me cold. What's more, I wouldn't give a rap for the captain's seat in a transcontinental plane. You can have 'em—just give me my sport job.

I do not consider myself a person with an artistic temperament, but I'm here to say that the beauty of flight is the most marvelous thing I've ever enjoyed. It's clean and it's clear—demands all the best in me. It has taught me more about myself than a dozen college courses in psychology. Flight is what I put into it. I can't rely on somebody else once I'm in the air. If I make a mistake, I'm the one to suffer. I've made several, too; but thanks to my fine training, I have full command of my ship—and full command of myself.

It only took one flight to “sell” me. I am an ordinary young man of the white collar class, and my income is comparatively small. But after I first paid a visit to the clouds and saw the world stretched out below, my whole outlook on life changed. I wanted wings of my own—and I went out and got them.

And boy, it was worth it! A plane costs money, yes; a training course costs money, yes. But if you're able to pass the Department of Commerce physical examination, you are strong enough to work for money to get your plane. You even could take up a pick and shovel to earn the price—and I know one man who did.

Today, my flying makes me feel free as a bird. I am even getting to the point where I can take care of myself in bad weather, too—

a decided boost to my ego. I can now spin off a 300-mile cross-country jaunt, whereas it wasn't long ago when the prospects of a 100-mile motor car journey had me sitting up nights figuring how to do it and avoid traffic. I get a kick out of the fact that I've conquered the air—I'm an airplane pilot!

It's not as hard as it might sound, this business of getting into the air on your own ticket. Come on, you Tarmac readers! Take a “shot” at it!

ALTON FRASER  
New York City

There you are, fellows. And now how about the rest of you light planers? What have been your sport flying experiences? Write and tell us, keeping your story to 300 words or less. The best letter each month rates a check for \$2.00.

SWELL SHIPS—BUT HOW MUCH DO THEY COST?

**M**AYBE we shouldn't be so ready to rant about how the sport plane makers run their business—but this time we think we have a legitimate kick. It all started when we began to get heaps of letters from prospective young flyers airing a complaint that heretofore we'd never considered. That brought us to look into the matter—and after looking we decided some criticism was in order.

*(Continued top next page)*



*For the sport flyer who wants an open cockpit job, we highly recommend the Monosport, the open-cockpit version of the reliable Monocoupe. This ship, powered by the 125-h.p. Warner radial engine, is one of the best bets for its weight in the country.*

You see, letter after letter has been coming in asking us how much such-and-such a plane costs. And now, finally, some of the fellows have pointed out why they *have* to ask. It's because they can't find the prices in the company's advertisements.

Yes, that's the story. Few plane advertisers ever mention the actual cost of their craft. They go into every other detail—and then leave you flat just when you are all "sold" on the idea of considering their ship. Out of about a dozen advertisements we looked up, only two took the trouble to add the amount of money they wanted you to shell out for their job.

This practice is followed in a lot of businesses, but personally we can't quite fathom it. When an article in a shop-window attracts us, but carries no price on it in plain figures, we begin to feel that something is being put over on us—that the store-keeper only puts the article in his window to lure us inside his shop where he will be able to give us the well-known "works."

There is no reason why any light plane manufacturer should not put a price tag on his product. First of all, we know that if the craft has been awarded a government license it is surely airworthy. Automobile dealers, even though they have to tackle the unsatisfactory business of the F.O.B. price, usually add the prices of their cars in their national advertising.

Let us presume that you have decided to get into sport flying and are ready to select your plane. First, you very likely will decide to look over the advertisement in aviation magazines. There you get most of the information you want. They show you a picture of the job, they describe it—tell you which instruments you can have and which are optional. They tell you the top speed and the cruising speed, say it's a top-notch two-seater, and go into the glorious joys you'll get in flying it—but there it all ends.

"Sure," you say. "But how much does it cost?" Ten to one, you won't find that out anywhere in the advertisement.

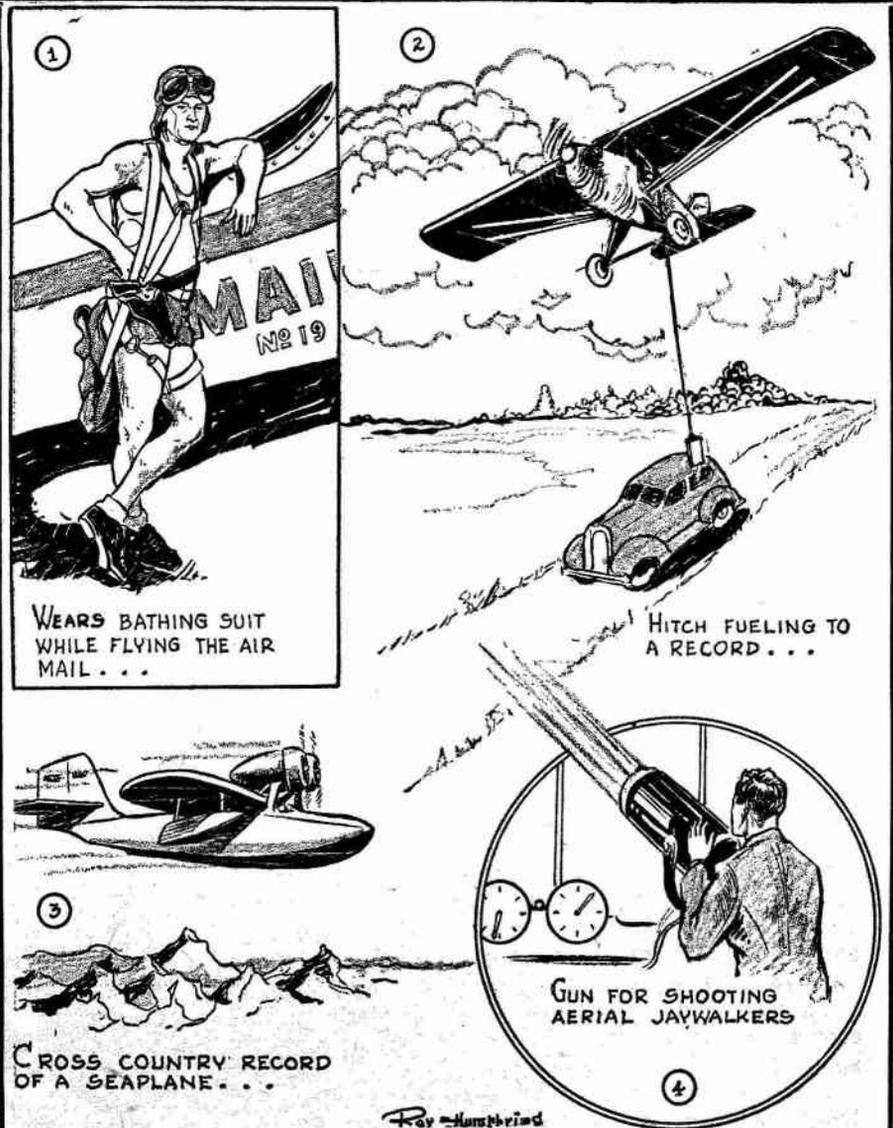
**T**HE manufacturers probably figure that if you are *really* interested, you'll write to them and ask. Then they'll have your name and address on their mailing lists, and for months you'll be bombarded with literature and salesmen until you're about driven out of your mind.

That's what the sport plane maker thinks—but we'd say he's wrong. When a man wants to get into the flying game, boy! he wants to get in! He likes to see all the cards laid on

(Continued on page 92)

# PILOTOPICS

By ROY HUMPHRIES



WEARS BATHING SUIT WHILE FLYING THE AIR MAIL . . .

HITCH FUELING TO A RECORD . . .

CROSS COUNTRY RECORD OF A SEAPLANE . . .

GUN FOR SHOOTING AERIAL JAYWALKERS

## Stories Back of the Above Pictures

1—FLYING is a serious business—especially flying the U.S. Air Mail. Even so, the veteran "it-must-go-through" boys have been known to have their moments of levity. That famous Atlantic round-tripper, Dick Merrill, once buzzed off his sky postal chore attired in a bathing suit.

*That's one fashion note the Polar flyers won't copy.*

2—WHEN Norman B. Doerr reeled off a record light-plane endurance flight recently over Chicago's Sky Harbor Airport, he introduced a novel form of refueling. Norm kept his Taylor Cub scooting aloft by roping cans of gas from a speeding auto below.

*As a pilot, he proved himself a swell fisherman.*

3—SINCE land planes often fly the sea, why shouldn't sea planes fly the land? "Yeah, why not?" said Richard Archbold recently—whereupon he hurtled a 27,000-lb. flying boat non-stop across the continent! His striking hop, made with two co-pilots, followed a route over Arizona, New Mexico, Texas, Oklahoma, Missouri, Illinois, Indiana, Ohio, and Pennsylvania.

*What's more, it only took 18 hours—and that's traveling!*

4—THOSE Newark Airport air traffic cops, Bill Conrad and Mike Murphy, pack a deadly-looking gun—but it's one that hurls beams instead of bullets! With this novel weapon, incoming pilots are "shot in the eye" with flashes of light in order to keep them in their places and avoid landing accidents. A red flash means, "Keep circling"; a green one, "Okay, come in."

*It's Jersey's answer to jayflyers.*

# Shanghai Snare

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By Arch Whitehouse

Author of "Scourge of the Spy Brood,"  
"Vultures' Vortex," etc.

Illustrated by Alden McWilliams

**T**UG HARDWICK peered out of the third floor window of the Yusen Kaisha building on Shanghai's Woosung Road. He saw seven Chinese Northrop fighters speed out across the Whangpoo and head for Pootung. A single blade of light slashed across the twilight sky and a three-incher barked from somewhere just the other side of the Astor House.

"They must have pop guns in the Japanese Consulate's rose gardens now," he said, taking a sheaf of unsigned mail from the tubby individual on the other side of the table. "But say, have you got a complete list of the dead in the French Concession yet, Bish?"

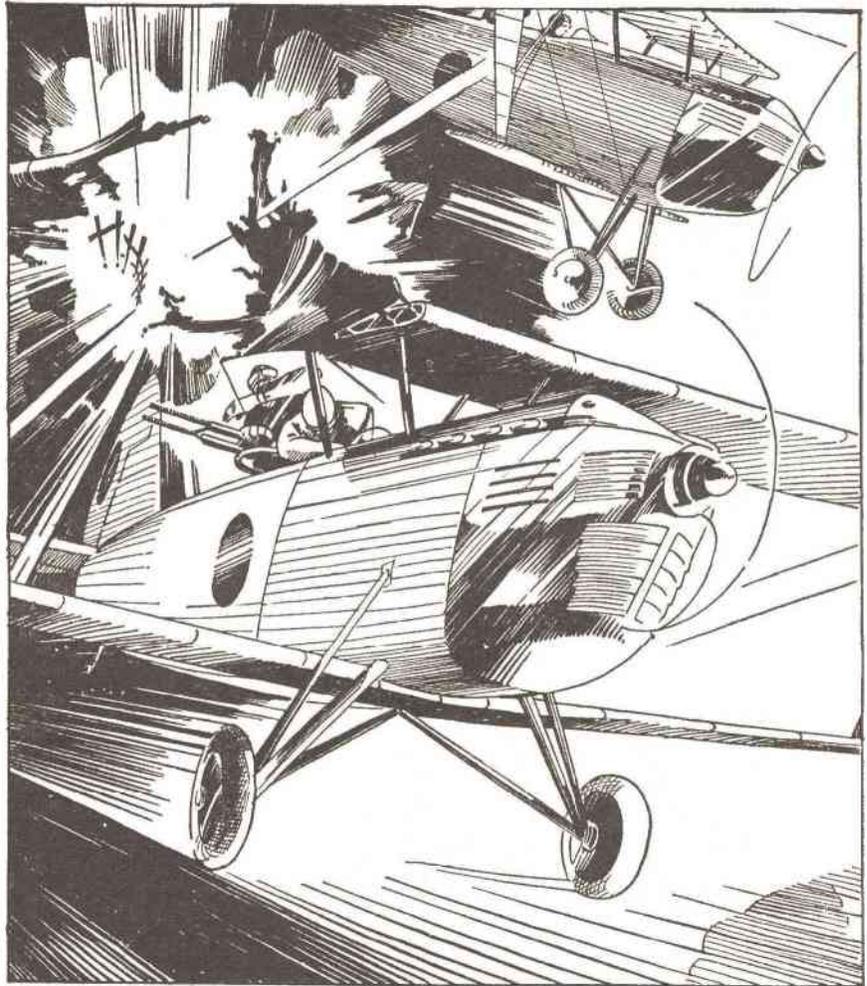
"Call me Beansie," the chubby lad replied. That was a request he always made, but so far no one had taken him seriously. "I got 57 names on my 'dead and injured,'" he went on. "No Americans though. Can we file the story in time to make the deadline at 'Frisco?"

Hardwick didn't answer. Along with the "Beansie" business, that was another of Bishop's regular cracks. Hardwick packed his pipe, watched from the window as a fighting plane dribbled down out of the Pootung sky with a steamer of flame at its rotating tail. Then he returned to his desk and signed the sheaf of outgoing mail.

Hardwick was tall and of athletic build. His hair was crinkled—the kind that defied combing and brushing. He wore a light-tan linen suit which somehow always seemed to retain its press. He walked with a sure stride and had the precise reflexes of a bull-fighter. What the devil he was doing in Shanghai with the Amalgamated News Service, he had no idea. The job was offered him one day when he was up in Nanking—and he took it. Bishop, who spent most of his life trying to get some one to call him Beansie, had been taken over with the rest of the office equipment.

"That jane here again today?" Hardwick suddenly asked.

"She's here every day," an-



swered Bishop. "And always comes when you're out."

"What's she look like?"

"Well, I hope you never meet her. You'd probably marry her and ask her what her name is afterwards."

"How old do you figure she is?" Hardwick went on, again turning to watching the mad air battle that was going on over Pootung.

"I don't know—I didn't look at her teeth. She just comes in and sits there at your desk. Finally she gets impatient and hurries out again."

"She's after something—but I don't see how it can be me," Hardwick said. Then he grabbed his hat. "I'm going down to the Astor House. You hold down the fort—I'm depending upon you to get that story straight on General Kiang Chek Tsu, you know."

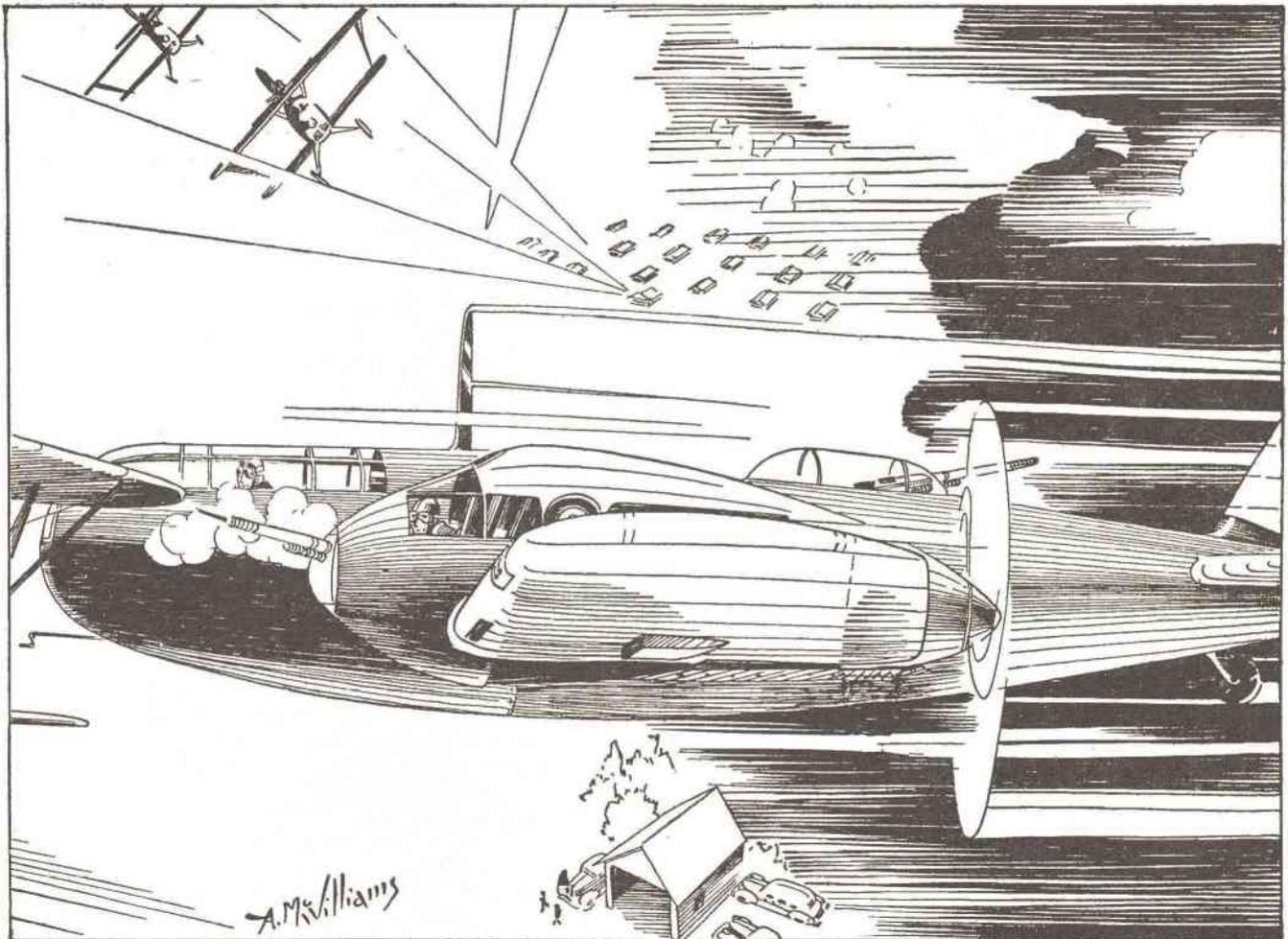
"Call me Be—" Bishop began. Then he cracked, "What if the skirt comes in again?"

"Just tell her to keep her fingers out of my desk," Hardwick said yanking the door open suddenly. His suspicion was unfounded. There was no one kneeling at the keyhole.

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**Just why had he got mixed up in that maddening war-correspondent game in bloody, shell-racked Shanghai? Tug Hardwick pondered over that question. But before he had time to answer it, Fate sent that hardy young newsman to cover an amazing story which wasn't listed in his assignment book. The stage was set for that story when Tug dropped into the Astor House—and the bang-up action began when a bomb dropped in after him!**

**H**ARDWICK strode out, his somewhat battered straw hat cocked on the side of his head. It threw certain shadows along his nose that accentuated his trim features. He went down the dusty stairway two steps at a time and hurried into the street. Overhead a flight of Chinese bombers sped by in the gathering gloom, and Japanese A-A guns somewhere beyond the Bund



Hardly had their sleek twin-engined fighter roared into the air when a flight of knife-like Kawasaki 93's hurtled out of the black pall above. Bish frantically swung his light cannon, loosed a savage burst that blasted the top wing of the leading attacker.

were hurling high explosive at them as they fingered through the smoke to strike at the Nipponese warships lying in the river. A slow metallic rain of shrapnel tinkled on the cobblestones as Hardwick finally ducked under the marquee in front of the Astor House.

He stood there a moment looking into the sky, then he stared suddenly at a sleek high-bonneted roadster that stood at the curb nearby. Its top was down and it gleamed with bright nickel and black enamel. The radiator grille bore the gleaming nameplate of a noted European manufacturer.

In this strange street of Death, the gaudy roadster seemed like a gilded chariot in the runway to an abattoir. Hardwick walked slowly up to it, inspected it with a critical eye. It carried International plates and had several pasters attached indicating that it had been used in wide-range travel.

Flipping the ash from his pipe the American news correspondent then turned away and entered the lobby of the hotel. Inside there were but a few guests with any display of repose. Uniforms of all colors prevailed. The civilians wore arm bands with national markings while a number of International Settlement police stood about with side-arms. Sections of the walls were damaged and much of the furniture had been removed, but the life of the hotel was charged with that particular brand of electricity that abounds during times of warfare and strife.

Hardwick strode through the lobby, sought familiar

faces. He elbowed his way through a narrow corridor that was lit by two large oil lamps. Then he turned to his right, entered the American Bar, and sat down in a corner to survey the crowd.

"Boy! A whiskey tansan!" he called to an olive-faced waiter.

"Yes, Mr. Hardwick," the Chinese said with charming diction.

From somewhere, Hardwick caught a strange perfume. It was not the sandalwood of the Orient. It had a tinge of musk and—yes, English primrose.

Hardwick didn't look around at once. He opened his leather tobacco pouch, flipped the cover back. The small circular disk inside was not a tobacco humidor device but really a mirror. He packed his pipe carefully and tilted the mirror so that he could see the person who sat at the table just behind him.

One look was not enough. He nodded to the waiter, signed the chit for the drink, then waited for the expected. It came just as he raised his glass.

"Ah, Mr. Hardwick," a smooth well-modulated voice broke in.

"I know . . . I know," Hardwick said replacing his glass on the table. "You have been trying to meet me for days. You have waited for hours at my desk. I recognized that perfume; it's all over our office. Not offensive, mind you. You're British, eh?" he continued. "Perhaps Russian?"

The girl did not answer his question. "I have paid my

## SMASHING SKY NOVELET FEATURING TUG HARDWICK

chit. May I come and sit with you?" she said simply.

"Let's get it over. I can't get you an American passport, I know no one in Manchukuo, and I have no friends in the American Express Company. What else can you want?"

Hardwick was bored in tone, but the beauty of the girl really left him somewhat stunned. Something had tightened up inside him.

She came and sat down. There was grace in her movement and her eyes gleamed with radiant health. She had straw-colored hair which gleamed like the brightwork of a destroyer. Her eyes were gray in some angles of the light but blue when she bent her head forward. She had an ivory skin that seemed almost unreal.

"Let's have it," Hardwick said. Then he beckoned to the waiter. "What do you drink?"

"Apolinaris . . . and brandy," she said, adjusting her silk scarf.

**T**HE waiter brought her drink. She sipped the liquor and charged water before she went on. Hardwick studied her carefully, knew she was after something. Pretty women travelling alone in the Orient always are.

She dabbed at her lips with her handkerchief. "Would you like to learn a secret? I can show you—"

"I've seen everything. Tell me something new," the American newspaperman interrupted.

"Have you seen the new Japanese destroyer plane?" she said quietly.

"What's that?" he queried.

"This is a new type ship built in secret by an American firm at a base on Quelpert Island. Would you be interested?"

"Why should I be?"

"Well, you are a newspaperman. It should be of interest to your State Department—an American firm building planes for the Japanese on Japanese soil."

"What plane?" he asked, puffing on his pipe.

She mentioned the name of a noted striking new American aircraft firm in a whisper.

"That's crazy. They have all the orders they can get now from the U.S. government. As a matter of fact they are behind."

The girl only smiled. Hardwick's blood was thumping through his veins, and the girl did not miss the evidence of his interest. She glanced at a small platinum watch under the froth of lace at her wrists.

"Where is this plane?" cracked Hardwick.

"I will take you to it—at once," she said with a smile of triumph.

"How much is this going to cost me?" Hardwick broke in.

"Nothing—only a little of your time."

"But who are you?" he asked suddenly. "This sounds like a gag to me."

"Call me Miss Velox," she said with a twinkle in her eye.

"Yeah, a glossy surface all right—but what's your real name?"

"That will do for the present. After all, what does it matter. I'm showing you a 'story', as you reporters say. And that's all there is to it."

A small wizened-faced Japanese in a tweed Norfolk jacket, and a pair of white ducks suddenly approached their table and bowed.

"Hello, Arita," greeted Hardwick. "What's your gum-

shoe squad up to now? What can I do for you?"

"For your benefit, Mr. Hardwick," the Japanese secret service man said with an oily smile, "I would advise you not to be seen with this young lady. She drives, shall we say, too expensive a car . . . yes?"

Hardwick thought quickly, then turned to the girl, who was calmly sipping her drink.

"That your car outside?" he said.

"One of mine," she said provocatively.

"How about taking me for a spin?" he said. "I need the air."

"I warn you, Mr. Hardwick. Countess—"

But the little man got no further. There was a sudden crash, a loud jumble of sounds, then an ear-splitting explosion outside. Arita gasped, fell across their table with a scream.

Almost at the same instant the lights in the American Bar went out. Hardwick reached over, grabbed the arm of the girl, pulled her clear of the table. Together they raced down the corridor through the wild scramble of humans. Two more crashes sounded somewhere outside the hotel.

Hardwick yanked a telephone booth door open, shoved the girl inside. Then he reached up, drew down a telephone set, and called a number. As he waited, covering the mouthpiece with his hand, he said: "You were lucky to get away with that. You shot that guy. What for?"

But the girl was still getting her breath when Bishop's voice barked back through the wire.

"Bish?" Hardwick bawled. "Hardwick talking."

"Call me Beansie," came Bishop's reply. "What the hell happened over there?"

"Two bombs fell outside the Astor House."

"Don't I know it? Two more dropped over here in our back yard. More fun, eh?"

"Sure. Now get this—and get it right. Remember Arita?"

"The sleek-haired boy of the Jap secret police? Yeah."

"Arita was killed by a hunk of shrapnel. Dead as a door hinge. Give it about 150 words . . . understand? And listen, Bish—"

"Call me Beansie," Bish gurgled back.

"Turn off that 'Beansie' business and listen. I'm going out on a story with that jane—the gal that's been trying to get hold of me. Something about the christening of another plane given to the Japanese air force by the Daughters of Jinrickshaw Drivers, Local No. 717, or something. Get it?"

"Sure! Call me Bean—Did you say No. 717?"

"I said 717," answered Hardwick, hanging up.

**"L**ET'S go, Countess," said Hardwick, shoving the girl out of the big booth. "This is beginning to get interesting."

They milled through the crowd in the lobby again, stood aside while a Japanese stretcher party clumped through with the body of Arita, partially covered with a table-cloth. The girl looked down on the body with calm indifference. Then she took Hardwick's arm.

"How'd you do it—under the table?" asked Hardwick out of the corner of his mouth.

"I had to. He was betraying me," the girl said.

"Well, the plot is getting hotter. You certainly timed it with those bombs—or are you just lucky?"

"I have been so far."

They made their way through the throng on the sidewalk, moved toward the big roadster. The bombs had fallen at the other end of the street and except for a long shrapnel gash across a rear fender the car seemed unharmed.

The girl slid behind the big wheel, drew a white cloak about her shoulders, and pressed the starter. Hardwick



snuggled back with his pipe re-lit, let her take charge. The car moved quietly along the street, turned right into Woosung Road, and headed north. Hardwick sensed she was heading for Hongkew Park. There were a number of Japanese Army barracks out there.

Just before she came to the army rifle range, the girl turned sharply again, sped the car over a narrow side road for about twenty minutes.

Hardwick laughed aloud once and the girl stared at him.

"What's funny?" she said. "You seem amused."

"Everything in this mess is funny. A guy starts to mention your name and you calmly plug him with a gun. Now what happens to me if I get inquisitive?"

"I'll answer any question you wish to ask, except—"

"Except tell me who you are."

"This is China . . . and these are war days," the girl said. "We both have our place in the scheme of things. You have your job—and I have mine."

"But you can't tell me that you are taking all these chances just to get me a story," argued Hardwick. "That wouldn't make sense."

"You're quite right," the girl smiled, as she slowed the speed of the motor car down. "You see, I want your personal opinion on this plane, too."

Hardwick sat up with a jerk, yanked his pipe out of his mouth. "What does *my* opinion have to do with it?"

"Oh, don't be alarmed! You see, Mr. Hardwick, I happen to know that you are—or were—the famous Tug Hardwick, once of the American Army Air Corps, once a great figure in various National Air Races, and an even more intriguing character as a test pilot."

Hardwick sat back, attempted to be nonchalant as he again lit his pipe.

The girl went on: "I also happen to know that you got out of aviation about a year ago and swore never to fly again. I believe there was an unfortunate accident in which your brother lost his life in a plane you yourself had tested."

"So now I'm out here seemingly as a news correspondent, but really as a Secret Service man for the United States government," smirked Hardwick. "That's the old gag about news correspondents—but you've picked a dud this time, Countess."

"Oh, no, I didn't say that. According to my information you were offered a post of that sort but turned it down. Yes, you're a newspaperman, Mr. Hardwick. But you *can* fly." She hesitated. "Well, can't you?"

"Don't know. I've not tried in months—so get that out of that golden noodle of yours."

"That's all that really interested me," the girl said, turning the car off the road and swinging into a two-track lane that ran across a somewhat marshy section of ground. Ahead, Hardwick could see the low outline of a small building. In a few minutes the car reached it, whereupon the girl flipped off the lights and eased into the shadows of the building.

"This way," she said, after they alighted. "I'll lead you."

**H**ARDWICK stuffed his hands into his trousers pockets and studied the layout. Before him was a metal-made barn-like shed that looked suspiciously like a portable airplane hangar. There were wide doors at one end facing a swath of turf that ran off into the smoky horizon.

The girl escorted him to the side of the structure. She opened up a small side door, took a small flashlight from her coat pocket, and flipped a small beam inside. She whistled a light trill and Hardwick followed her in. He could see the gleaming dural of a strange low-winged fighter fitted with two long motors beautifully faired into the wings and set as pushers. In the front of the

engine nacelles were gun pits well shielded with splinter-proof glass tops under which gleamed stubby air cannons of a make he did not recognize.

Hardwick let out a low whistle. "This was built at Quelport Island, you say?"

The girl nodded: "Recognize it?" she queried.

"Who wouldn't!"

"Come on. I want you to meet some one," said the girl, taking his arm.

She led the way back to another door, pushed it open, and let Hardwick go in first. Meanwhile she fumbled with something in her coat pocket. Hardwick entered—then felt something hard rammed into his back.

"Go on in, Mr. Hardwick." The girl's voice was now hard. "We're going to need your assistance for a few hours and you'd better obey orders. This," she said, indicating a man who now stood before them, "is General Ling Kai Ching."



Tug Hardwick remained cool. He simply waiked across the room and dropped into a rattan chair. The Chinese, he noted, was also armed, carrying a massive black Luger in a holster at his waist. He was now watching the American, more in admiration than in triumph.

"You have changed very little, Mr. Hardwick," he intoned.

"Thanks," replied Tug. "You seem to have changed

a lot. You were 'assassinated' by a group of Nationalist students a few months ago, weren't you—up in Shantung?"

"So you do remember me?"

"I'll never forget you. Met you at Cleveland, two years ago."

"Yes," said the General, smiling. "I was introduced to you after the Thompson Trophy race."

"You pulled one of the finest snappy comebacks I ever heard," Tug laughed. "Remember when old Brigadier-General Michael pointed out those three Boeings doing fight formation stunts, then asked you if you didn't consider it a wonderful show? And remember what you replied?"

"Many months have passed and many things have happened since those happy days," the General answered.

"Well," said Tug, "I'll never forget it. You looked at the Boeings, then at old Michael, and said: 'Wonderful? Isn't that what they are supposed to do?' Old Michael was never the same after that. I think he put in for a transfer to Panama where he could sit on top of the Gatun locks and pose like Rodin's 'Thinker.'"

The General allowed a slow smile to crease his tired face. He sat down opposite Tug, rested his elbows on his knees, and stared at a low oil-stove. They sat thus for several moments without talking. The girl simply watched them, her gleaming gun still covering Tug.

"Sit down, Countess," Tug said. "You certainly handed me a couple of yarns today. We'll have the cable hot for three hours tonight."

The girl walked over toward them. "We're wasting time, General," she said, drawing the belt of her coat tighter.

"He knows your name? He called you Countess," the old Chinaman said.

"Mr. Ushio Arita, the secret service man, was about to introduce us," Tug smiled, "but the Countess tagged him with a slug from under the table . . . just as two bombs burst in the street outside, thus making it look as though he was killed by a chunk of shrapnel."

"They will think that until they get him somewhere and find out that it was a bullet from a Webley pistol—then they'll remember that he was leaning over the table talking to you, Mr. Hardwick," the girl explained with a faint smile. "You will not be very welcome in Shanghai after tonight."

TUG sucked on his pipe, reflected that there was much in what she had said. More than ever, he hoped Bishop would use his head during the next hour or so.

But the plane in there! And General Ling Kai Ching still alive—Ling Kai Ching, the Puma of Peiping, who once held the secret of the Great Yatu Plan that threatened the Japanese rule in Korea and opened the way for a mass attack on Japan! Tug Hardwick knew he was sitting in on two of the greatest stories Amalgated had ever stumbled over. And some one had stolen the plans of a new American high-speed fighter and was planning to build these ships for the Chinese government on an island only a few hundred miles from Shanghai.

Yes, he hoped Bishop would use his head.

"What are your plans, General?" Tug asked suddenly.

"I must get away from here—must join my forces north of Nanking. Our hour has come, this is the time to strike!"

"You don't expect to get through in the Countess Mercedes, do you?" Tug asked, mainly to stall for time. "You'll be picked up in no time if you try to take the Szechuan Road."

The General contemplated his baggy uniform coat which carried no rank insignia or decorations. Then he stared at Hardwick with a puzzled expression.

"But I thought you understood, Mr. Hardwick? You are going to fly me up there in this plane."

Tug tensed. What could he answer? The girl was now doing something off in a dark corner, and after a glance Tug turned his head away. She was changing into some other clothing more suitable for what was to come.

"I'm afraid you have me wrong, General. This is no war of mine. We still remember Bob Short, you know. You're not going to get me mixed up in any mess."

"Nevertheless, you can't go back to Shanghai," the girl interjected as she came forward buttoning a sleek chamois leather jacket up to her ivory throat. "You can't get either of these stories out of Shanghai—and you know it, Mr. Hardwick. And if you don't fly the General, there never will be a story."

"But the area between here and Soochow is thick with Japanese aircraft. We'll never get through."

"We've got to get through," the old General snarled. "Yes, we must get through tonight. We have delayed long enough."

"But where's the guy who brought this crate in?" Tug asked. "Let him do it."

"Unfortunately, he has vanished. He went into Shanghai two days ago—and has not returned. We have every reason to believe that he has been 'picked up,' I believe you would call it. That's why we had to select you."

"Wait a minute!" argued Tug. "If they have grabbed off your man, they'll put the screws on him and he'll squeal to high heaven. You're in a tough spot, General."

"So are you—if they come here before we take off," added the Countess knowingly.

Tug Hardwick swore—but he knew she was right.

TUG arose, and the girl eyed him carefully, keeping her gun leveled. The General did not move.

"Let's go and look at this ship," Tug said. "I'm not particularly desirous of being picked up by a pack of Japanese marines."

The General took a heavy camel-hair coat from a nail, struggled into it. Then he dragged a woolen cap down over his ears. Tug made his way to the plane, walked around it. He recognized the engines at once. They were excellent copies of a new American V-type chemically cooled plant that turned out about 1,120 h.p.

"The devils!" he said under his breath.

He climbed up through a small cabin door, entered the trim cabin. There was a folding table on one side with a two-way radio set mounted above it. Aft was a complete gun turret with two deadly weapons mounted on speed mountings. One was set at an angle through a slot in the Plexiglas covered turret, the other was fitted to fire through a slot under the tail which was now covered with a triangular panel.

"They certainly did a swell job of swiping, didn't they?" he said aloud.

The General had followed Tug in. "As you Americans would colorfully state, they 'rang the bell,'" he said with a grin. Then he calmly raised his gun and fired two shots into the center of the radio set.

"You must have been listening to a lot of lousy radio comedians while you were in hiding," cracked Tug. "Say, where the devil have you been all this time anyway?"

"That I will tell you—once we are in Nanking," the General muttered. "Can we start now?"

"I'd like to study this barge a bit more first."

For ten minutes Hardwick inspected the plane, covering it from nose to tail. He recognized the type of variable-pitch propellers that were fitted to the motors. He checked the fuel tanks and was certain there was more than enough for the 140 mile run to Nanking. He went over the controls from stem to stern, checking the movement of the trailing edge flaps.

Finally he started the motors, let them run for a few minutes, then got down and went across the floor to inspect the shed's doors.

Outside, he could hear the sound of a motor and the creak of outraged springs. The girl let out a gasp, rammed her gun into Hardwick's back.

"Quick!" she cried. "Get the doors open. We'll have to climb in and make a run for it."

Hardwick struggled with one door, then saw the lights of a small car which was bouncing over the ruts.

"Shut up. It's all right. I think it's Bish."

"Your man in Shanghai? But how did he get here? How did he know?"

The car rolled up, hissing steam from its uncapped radiator. Out jumped the portly Bishop.

"Bish!" Hardwick bawled. "Hurry up!"

"They're looking for you, Tug," Bish yelled. "I got your 717 business. What's the dope?"

Hardwick yanked him inside, told him to pull the other door open. "And don't ask questions now."

Bish, one eye on the plane and the other on the girl in jodphurs, struggled with the old door, finally got it open. Then he came up to Hardwick under the nose of the strange fighter.

"I got your 717 signal and buzzed down to the Astor. There I saw a Skibo patrol and I could hear them asking about you. Another patrol came up in a Mitsubishi-Bentley car. They had a guy in the back seat smothered in bandages."

"A blonde youth in a yellow uniform jacket and white trousers?" asked the girl.

"Yeah? How did you know?"

(Continued on page 76)



# Battle Over the Bund

GRIPPING STORY BEHIND OUR COVER PAINTING

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**B**EFORE we consider the sky clash pictured on our cover, let us delve a little into the background of the present Sino-Japanese "undeclared war."

When this bloody Oriental fight first hit the headlines back in July, little did the world know the predicament into which Japan had fallen. When aggressive Nipponese planes first figured in those air battles over the famous Bund, few people realized that Japan was striking a quick blow in an attempt to consolidate her own safety on the Asiatic mainland. Aggressive though they are, the forces of the Island Empire might figuratively be said to be fighting with their backs to the wall.

True, this is a startling statement—but nevertheless it is the opinion of several of the world's most keen military minds. Regardless of the right or wrong of the various "incidents" which featured the present outbreak, Japan had simply come to realize that unless she struck quickly and scored a lightning-like victory, she might lose her hold on the mainland.

You see, since the Manchukuo affair, Japan has been under a terrific economic drain trying to keep sufficient forces in Manchuria, Korea, and in the Yellow Sea water around China. According to Nippon's program, the gains made since 1932 must be consolidated and in many cases greatly strengthened. All this takes time and money and Japan is just beginning to discover that Manchukuo has not paid a return commensurate with the cost of the initial campaign. She must have more in order to hold what she has; otherwise, she may lose all. But in the meantime in China, the sum total of anti-Japanese feeling was finally serving to weld the two chief governments of China into a power to threaten the Japanese conquest of the Asiatic mainland. New armies were now quietly drawn from the roving plainsmen tribes and efficiently equipped to fight the type of warfare for which the Chinese plainsman is most adapted. Most important, an air force was quietly but quickly formed and the finest sky fighting equipment purchased from foreign countries. Hundreds of young men flocked to the colors of the Aviation Regiments and gradually a new Chinese net was woven for an attempt to trap the Japanese invaders.

This was the background laid for the initial attack on Shanghai. Japan soon realized that unless she struck immediately, the new claws of the Chinese Dragon might prove too sharp. So the Japanese government hurriedly voted a sum of 2,542,000,000 yen (that's close to a billion dollars in our money) to carry out her plans. Economic experts are of the opinion that Japan can never raise such a sum again—unless success crowns her campaign to cut off Nanking and Shanghai from Peiping and the north.

Peace reigned in early July. Then squabbles at bor-

der outposts—and the torch of war was thrown again! Seemingly out of nowhere came a squadron of Japanese Mitsubishi 93 long-distance bombers.

Powered with two British Bristol "Jupiter" engines, this ship is said to have a top speed of 159 m.p.h. carrying more than two tons of bombs. Actually it is a Japanese adaptation of the German Junkers, built under license. The plane has seen many stages of improvement since the 1932 days when it was little more than a revamped transport. Today it carries an automatic nose gun-turret, a very complete bomb-officer's compartment, and a rear-gun turret offering a wide arc of fire over and under the tail. The bombs, carried in internal racks, are released electrically by the bomb-officer who lies prone on a platform under the pilot's cockpit. He has a very elaborate set of instruments affording a most accurate system of taking sights.

The base, or bases, from which the Japanese bombers came is still something of a mystery. They could have flown from the Japanese mainland, for it is only 480 miles from Nagasaki, at the southern tip of Japan, to Shanghai. They might have taken off from one of the Japanese aircraft carriers, though this is unlikely. Or they may have come from army flying fields situated along the coast south of Tsingtao. No one seems to know for certain. But what resulted on that first insane day is now general knowledge, for many graphic pictures on our news-reel screens, in our rotogravure sections, and in the news columns, have brought it home to us.

Oblivious of the odds, Chinese airmen have bravely roared into the sky at Shanghai to fight the Nipponese invaders to the death. And history may record their courageous deeds as the turning point in Cathay's determined stand against Japanese aggression.



**J**APAN made that assault because she feared that the new China was forming a secret alliance with Soviet Russia. She was in a tough spot. A combined Russo-Chinese attack out of Pei-

ping and from Soviet Vladivostok, on the eastern end of the trans-Siberian railroad, would catch the Japanese forces in Manchukuo between a terrible pair of pincers. The Nipponese might be driven back into Korea. In fact, a combined Russian and Chinese military machine might strike at Nippon's home island of Honshu itself.

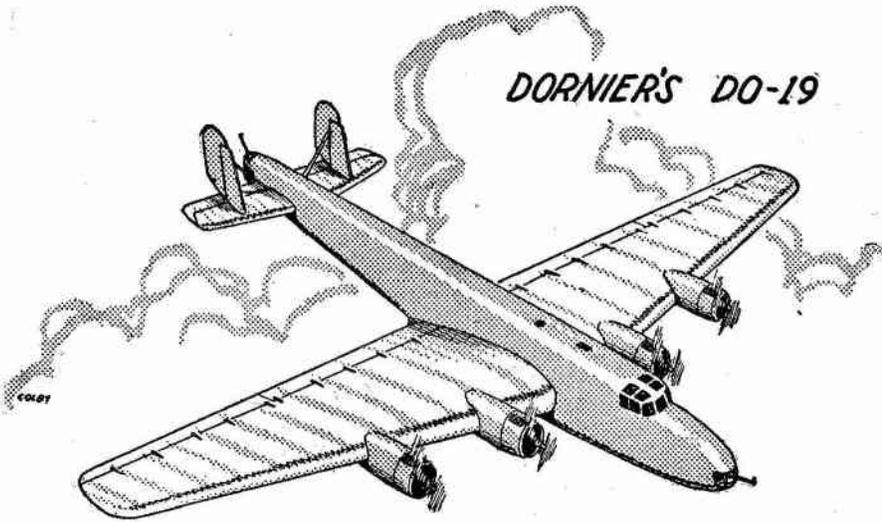
Once the first blow had been struck, China came back with her new fleets of Curtiss Hawk fighters. These American planes, representing the single-seat school of thought, were handled by excited young Chinese pilots who were getting their first real taste of modern aerial warfare. They were green—but game. They were brave—but at times foolish. Yet they shot down a number of the raiding Japanese and opened a path for some of their own bombers who were sent aloft to retaliate on Japanese concessions in Shanghai and on Japanese warships in the harbor.

These men were keen for action—too keen. They were like hundreds of others before them who had been sent into the air to carry out a mission. They were air-

(Continued on page 92)

# Modern Planes Album

DORNIER'S DO-19



DORNIER'S DO-19

**G**ERMANY does not seem to be wasting much time with single-seat pursuits, now that she has really come out in the open and is flaunting her new air force to the world. One of the Nazis' newest models is a high speed bomber out of the great Dornier works in Friedrichshafen—the Dornier DO-19. (They also have another, the DO-17, which is said to out-perform the great Bristol

Blenheim, Britain's fast medium-type bomber. But this job has never been shown to the public.) The DO-19, recently displayed in a European air show, created something of a sensation.

It is a four-engined, mid-wing, all metal ship powered with the 750-1,000 h.p. Bramo radial engines. It has a monoplane tail with twin fins and rudders set half way between the fuselage and the ends of the tail-

plane tips. The fuselage is what might be called "rounded oblong" in shape.

There is a forward gunner's turret set in the nose with firing ports facing front and downward. Just aft is the master control cockpit for the pilot and aviation officer. The latter also acts as co-pilot. Borrowing the British Whitley idea, a tail-gun-turret is also incorporated. And the bomber's compartment, a glassed-in streamlined affair, is set beneath the fuselage proper. Two air cannons are carried. One is in the tail, and we presume the other is carried in the forward gun pit. Both movable, they are set to afford the best angles of fire.

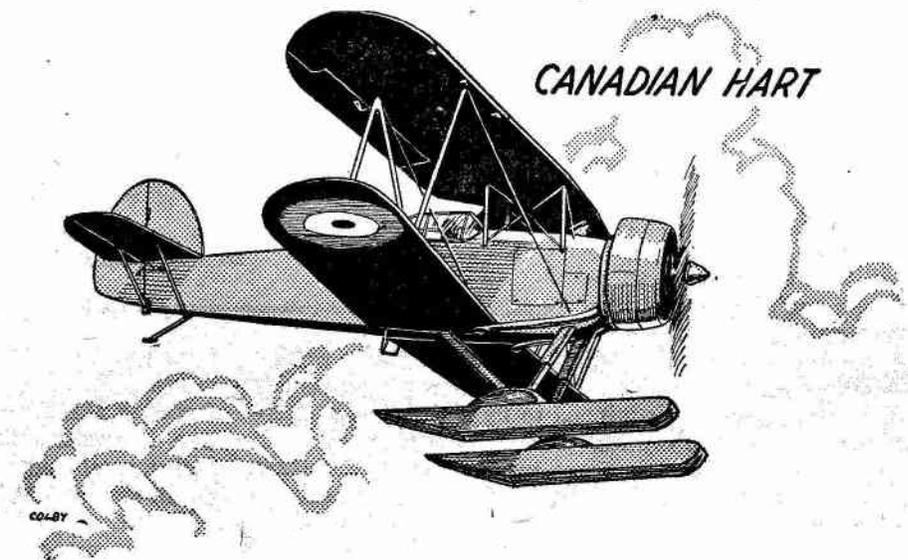
The engines of this craft, arranged in the normal way, have cowling rings which carry concentric slots in the upper portions to smooth out the airflow. Just what the features of the Bramo engine are, we have no idea; for no such engine is listed in our records. This is the first large plane Germany has produced using other than Junkers Diesels or B.M.W. water-cooled in-line engines. Thus a new trend is indicated.

CANADIAN HART

**W**E have been a little lax in bringing forward some of Canada's fighting equipment; but as most of their air service craft come from Great Britain, we are already familiar with their types. This new Hart, however, is particularly interesting because it uses the new Perseus sleeve-valve engine and also is equipped with a new type of ski landing gear which we understand is suitable for use on all types of ice and snow. This pontoon-ski—originally a Russian idea, we believe—is so unusual we felt that our readers would like a few words on it.

The original Hart, a Hawker product, was a two-seat day bomber fitted with the efficient Rolls-Royce Kestrel engine. It had a top speed of 184 m.p.h. Many Hawker types have been evolved from it, particularly the Hind, the Audax, and the Hector which employs the Napier "Dagger" engine, a 24-cylinder H-type power plant which has proved its worth.

Several Hart types have been sold to European powers, and it is noteworthy that the Bristol Perseus sleeve-valve engine was many times specified. Something of a sensation among radials, it is very suitable for



use in cold climates and requires little servicing. Thus it is easy to understand why Canadian squadrons called for ships with this plant.

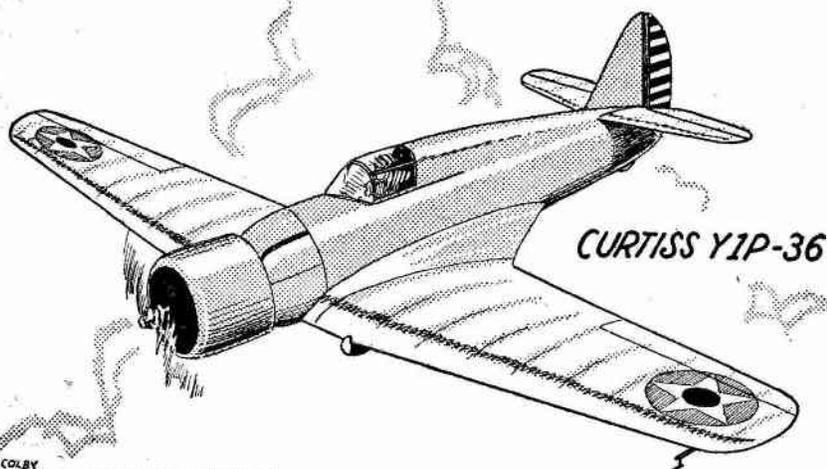
This Canadian Hart shows very little change in general construction. It is an unequal-span, single-bay biplane with N-Type interplane struts and with the center-section borne on splayed-out struts. The fuselage is all-metal and rectangular in structure. Cockpits are covered over with

some form of Plexiglas, thus both the pilot and observer are sheltered from the weather. The pontoon-skis on this Hart appear to incorporate a slot in the center carrying notches and bolt fittings. In this way the ski-gear may be removed or attached quickly over the normal land gear.

The pilot has two fixed Vickers guns and the observer has a flexible mounting which will accommodate either one or two Lewis guns.

## FOUR NEW STRIKING SKY BATTLERS

With wars raging in Spain and China and with more frightful conflicts threatened, the Powers continue to arm in the air. Thus we are getting a wide selection of new ships these days. And most gratifying is the fact that Uncle Sam is back on his toes producing stalwart super-speedsters of the sky.



CURTISS Y1P-36

**S**EVERSKY is not having things all its own way in the matter of providing pursuit planes for the U.S. Army Air Corps, for the good old Curtiss firm is still turning out smart single-seat fighters. While the trend is turning to two-seat pursuit ships and multi-seat fighters, there are still a few expert designers who believe that there is a place for the one-place battle plane.

A great number—about 210—of

these new Curtiss Y1P-36 fighters have been ordered and will soon be distributed as regular squadron equipment. The plane is the usual low-wing monoplane carrying a completely covered cockpit, retractable landing gear, and a high-domed body.

The interesting feature of the structure of this plane is the high mounting of the empennage surfaces atop the tail of the fuselage. The main wing is beautifully filleted into

the body. Indeed, the whole ship has emphatic lines of strength and speed.

Curtiss won this 210-plane contract, one of the largest that has ever been awarded for ships of this type, after exhaustive tests at Wright Field, Dayton, Ohio. The P-36, as it will be known by the time this is read, is powered with the 1,000 h.p. Pratt and Whitney Twin-Wasp engine; and though no official performance figures have been given out, it has been reliably stated that it will do better than 300 m.p.h. The contract price for the 210 planes was \$4,113,550.

You might compare this Y1P-36 with the Y1P-16 (Hawk 75) presented in our model section.

The fuselage and wings of the Y1P-36 are designed to facilitate quick removal and replacement of damaged parts, the tail wheel retracts with the landing gear, and one of the unusual features is the fact that this ship carries flotation gear for emergency water landings, giving rise to the assumption that the Army expects that its pursuit pilots might go far out to sea in search of the enemy. That's something that has not been considered before.

CURTISS Y1A-18

**A**LONG with the order for the P-36's, Curtiss also grabbed another nice chunk of prestige with a contract for a number of their new Y1A-18 attack ships. This job appears to be another of these twin-engined fighters the Air Corps is suddenly going so wild about.

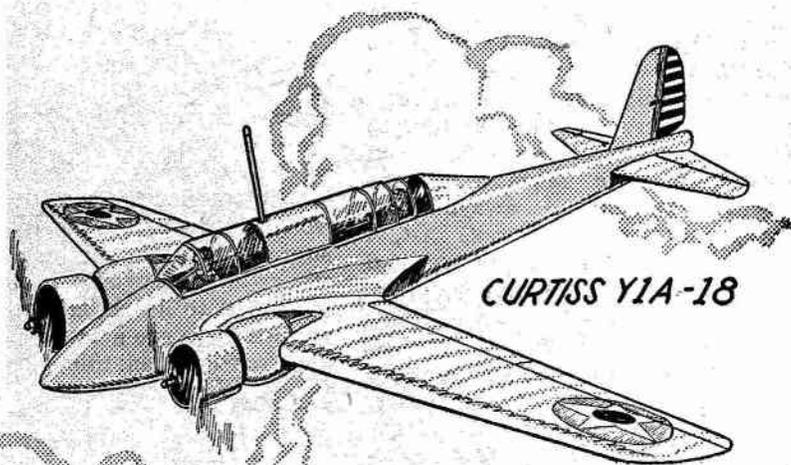
Performance figures on this plane are secret—but it is modestly admitted that the plane is the fastest twin-engined aircraft of its type in the world. We must remember, however, that the attack-type plane is peculiar to American aviation, hence they really mean that the Y1A-18 is *our* fastest twin-engined attack ship.

Like the P-36, this plane is all-metal. It is mid-wing in design and carries a monocoque fuselage. The landing gear and tail wheel retract, and the cockpit is covered with non-shatterable glass.

From a close study of photographs of the cockpit, it appears to carry a crew of three. The pilot sits well forward virtually in line with the leading edge of the wing. Behind him is a curved metal panel covering the cockpit which may be bullet-proof. The radio-avigator sits under this

panel. Aft of the panel sits the gunner-observer.

The radio man probably does the bombing, with the gunner free to "double" with the air camera. No details of this plane's armament have been given out, but we presume the pilot has two fixed Browning guns and the observer-gunner two of the movable type.



Announcements indicate that the 1,000 h.p. Wright Cyclone engines are used, and with ample tankage arrangements the plane has a particularly long range. It is said to feature a high performance at low altitude. Of course, in attack work it must be able to strike hard and fast, and it must handle well under the heat of heavy ground-strafting action.

# All Questions Answered

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

\* \* \*

**Alex Mutch, New York City:**—Thanks for the information on the material known as "cellon" suitable for use in making a plane invisible. I have never heard of it, although, as I once said, I faked up something like that in a story I once wrote. I shall have to go further into this invisible plane matter. It's too bad that "cellon" stuff was too heavy to fly.

**Donald Pichl, Churchdan, Iowa:**—Thanks for your information on the "Devil's Squadron" ships. No one, seemingly, has known for sure what they were, and many explanations have been mystifying. Of course, the Gamma could be rebuilt into a two-seater. I understand that the new Supermarine "Spitfire," now regular equipment in the R.A.F., is the fastest single-seater in the world. But whether that's true for certain, I don't know.

**Chester Milock, Chicago:**—I do not know whether we will ever publish *Sky Birds* magazine again; but if the demand is great enough, we might try it. The artist you mention has no air war record. I believe he was in a research department connected with light arms. Don't worry, any plane that came down in France was soon salvaged. The pictures you have seen were taken when the crowd was shoved away. Most crashes were taken apart so fast, it was hard to tell where they had originally landed when they fell.

**Harry E. Sprensler, Cedarville, N. J.:**—I would advise you to write to the Department of Commerce, Bureau of Air Commerce, Washington, D. C., for their pamphlet on aircraft licensing laws. It will answer all your questions pertaining to this feature of the Bureau.

**David F. Graham, New York City:**—Thanks for your long and interesting letter. About the two-seater Fokker argument, which still brews, you seem to forget the original statement. I have always claimed that no two seater Fokker was ever used as a service ship on the *Western Front*, a point which even Fokker himself admits. That there was such a ship as the C-1, I have no doubt;

but I have never seen an actual photograph of it, only drawings taken from blueprints. I should think, judging by your letter, that you could turn out a fiction story. But I advise you that the air fiction field is now particularly specialized. It's tough to crack.

**John W. Suverkrup, San Diego, Calif.:**—I have no details available on model wind tunnels. Perhaps some of our readers have such a set of plans. Anyone wishing to cooperate with Suverkrup may reach him at 3212 Homer Avenue, San Diego, California.

**Talbot Bissell, Jr., Long Lake, New York:**—The vertical fin on the Halberstadt had a special pressure rip set in the central portion which ran from the top of the fin all the way through and down to the lower portion of the fuselage. It had no outside bracing wires. I do not know much about the Siemens-Schuckert model you mention.

**A. Rabinowitz, Pawtucket, R. I.:**—Your arguments concerning poison gases were read with interest; but we, too, consulted recognized sources on the subject, particularly the work *Chemical and Bacteriological Warfare* by Dr. Gertrud Woker, of Switzerland, considered the world's greatest authority on this subject. I think you are right in stating that Lewisite is now well-known as to its actual formula, although there are a few experts who disagree even on this point. When

you attempt to correct us on the point concerning the test in which a red liquid was used to determine the scattering range of poison gas as used from a plane, you are far off your track. You see, men in the field do not live in their gas masks, and the World War showed us that it is particularly discouraging to get men to put their masks on at the right time. In the case of an attack from the air, how would the commanders on the ground know whether they were to be machine gunned, bombed, or gassed? What means would they have of knowing, and what justification would a commander have of ordering his men to put on their masks? You see, the human element is too great to expect a thousand men to suddenly take their gas masks out and put them on in time to protect themselves from a lightning-like aerial attack. I know, for I have been in several forms of gas attacks; and of all forms of warfare, chemical warfare does more in the way of paralyzing normal reactions than close machine gun fire.

**Melvin Michael, Davis, Calif.:**—Bullets fired from a plane have the added impetus of the speed of the plane, so that for all practical arguments, the plane can never catch up to the bullet. This is a very involved argument, and I do not have the space to go into it fully. But don't worry. None of our fighters will ever catch up to their own bullets.

**Joe McElvain, 7516 Essex Avenue, Chicago:**—Sorry, but we do not know the address or whereabouts of the Captain Alfred Grant you mention. But maybe some of his friends will see this and advise him that your father, Major C. A. McElvain, wishes to get in touch with him.

**Verlyn Bornzin, Chicago:**—According to sound experts, the average prop makes more noise during flight than the aircraft engine.

**William Brisbois, Cambridge, Mass.:**—Sorry, but I can't identify the plane you have sketched, so I can't tell you what it is. Thanks for your letter.

—ARCH WHITEHOUSE

## And Now We'll Ask You a Few

- 1—What is a "flight analyzer"?
- 2—Who are the Airhoppers?
- 3—What is Howard Hughes' non-stop transcontinental record time?
- 4—What is "over-weather" flying?
- 5—What is the Mitchell Trophy?
- 6—What new type plane was recently announced by the Lockheed company?
- 7—What is meant by two-way radio?
- 8—What does R.O.G. mean in model plane parlance?
- 9—What is a gull wing?
- 10—What is Colonel Lindbergh doing now?

(Answers on page 95)

# The Airmail Pals

\*\*\*

**U**P HERE on the 20th floor of the Rafel Building in New York City, where the R.H.P.D.'s "junior unofficial international post office" is located, it isn't hard to tell that the cold seasons are on their way. For always with the onset of winter and the accompanying indoor activities, the calls for pen pals all over the world begin to pile in heavier than ever.

And from old England this month comes a mighty friendly letter by Herb Boswell, of New Malden. Herb's an aerofan from 'way back, and he sports a stack of English aeronautical mags 'most as high as the Washington Monument (well—maybe not *quite* that high, but you get the idea.) Anyway, Herb asked us to couple him with American chaps who'd like to get those mags in exchange for American magazines on aviation.

So get ready, Herb. We're giving your address to the first three swappers who write in for it.

But getting back to the U.S. Mail pouches, we now unearth a letter from Laura "Gay" Shriner of the Keystone State of Pennsylvania. Laura wants to write to a fellow who knows how to ride both airplanes and horses, so we're going to try to find her a saddle and cockpit chap.

Speaking of Gay and her horses reminds us of the quite equine-ish letter from Bill Welch, of New Haven, Conn. Bill's epistle came in on a sheet of intriguing stationery bearing a swell wood-block reproduction of a jockey and his mount taking the hurdles. Bill is 14, husky, plans to be an aeronautical engineer, and "knows horses well enough to talk about them."

## THE PHINEAS CONTEST

**B**UGLER, blow your horn! For we're about to announce the winner of the first Phineas contest. This event, you'll remember, was started a couple of months ago when we asked you to write in about experiences you have had with pen pals gained through the R.H.P.D. The leading letter of each month is to win for its writer one of Joe Archibald's original autographed Phineas Pinkham drawings.

Well, the Pinkham sketch for the first month goes to young Bob Morton, of Pittsburgh, Pa. Bob says:

"A couple of years ago, R.H.P.D., you paired me up with Jack Oldney, of New York City. Well, Jack and I wrote regularly to each other and got well acquainted—but we hardly ever thought we'd have a chance to meet.

"This summer, though, when my Dad was called to New York on business, he decided to make it a vacation trip for all of us. And about the first thing I did when I got to your city was get in touch with Jack. He came down to the hotel right away—and boy! Did we have a swell time after that? Even went out to Roosevelt Field for a hop together!"

Yep, Bob. We've already mailed the autographed Phineas drawing to you. And the rest of you fellows had better get out your scribbling tackle and tell us *your* experiences in the pen pal line. Send your letter direct to the Phineas Contest, FLYING ACES, 67 West 44th St., New York, N.Y.

—THE RIGHT HONORABLE PAL DISTRIBUTOR

## HOW TO GET AN AIRMAIL PAL

**F**IRST, write a letter just as if you were writing to your new pal—the kind of letter which tells your age, particular interests in aviation, your hobbies, et cetera. (If you wish, you may include a separate sheet of paper telling us, in a general way, what kind of a pal you seek.) Next, send this letter to Airmail Pals, care FLYING ACES, 67 West 44th St., New York City. And be sure to enclose a stamped, self-addressed envelope.

Now, when your letter arrives, we select a Pal for you from our batch of letters—the sort of Airmail Pal your letter indicates you want—and we mail *his* letter to you in the stamped envelope you send us, and we mail *your* letter to him. Then you're all set! Of course, if you want additional Pals, just write us again.

## REGARDING FOREIGN PEN PALS

**I**N case you do not reside in the United States, write a pen pal letter as above—but do not enclose a stamped, self-addressed envelope or send any money for stamps. Your pal letter will be forwarded to an American correspondent, following which you need only wait for his reply.

If you are an American who wants a foreign pal do not write a pen pal letter. Instead send us a short note telling in a general way what kind of a chap you are, and what kind of a foreign pal you seek. Enclose a self-addressed, stamped envelope. A foreign writer's letter will be sent to you, then you may begin writing him direct from your own home. Foreign airmail pals are cared for in this fashion because foreign stamps sent in from other countries cannot be used in the United States to forward letters to Canada or across the seas.

Those of you who seek foreign pals will be given American correspondents whenever the supply is exhausted. Please note also that we cannot supply you with foreign pals in non-English speaking countries where FLYING ACES is not distributed.

## New Book for Model Builders

\*\*\*

**M**ODELERS, here's a book that will interest all of you, even though it was particularly written for novices in the art of airplane making. It covers just about every phase of our hobby all the way from tools and equipment through the construction of a simple glider, flying, and solid models to gas motors and a 72" wing-span gas-powered monoplane.

The new book is called *The New Model Airplanes*. Written by Elmer L. Allen and recommended by the Boy Scouts of America, it is a revised edition of a former work published some years ago by the same writer, entitled *Model Airplanes—How to Build and Fly Them*.

In the present book more than fifty

per cent of the material is new and includes instructions for building such ships as the Curtiss Goshawk and the Stinson Reliant.

## BUILDING KINKS FEATURED

The instructions are carefully written and may easily be followed by the amateur. One thing about them that we like—and it's a thing we've found scarce in other books of the kind—is the assortment of time-and-labor saving kinks that pop up throughout the text. Many of these short-cuts, of course, may already have been discovered by experienced modelers, but they'll be gladly welcomed by the younger fans in our fraternity.

Besides the actual construction

data, each model article is accompanied by a detailed bill of materials which gives all quantities and dimensions.

Photographs are confined to the chapter on gasoline motors. All other sections of the book are illustrated by line cuts—diagrams and sketches that show many building details in full size. A special plan supplement is also available to purchasers of the book for 75c additional. This latter includes full-sized working plans and drawings of the larger models.

A chapter on choosing tools, equipment and apparatus for model airplane making, and other special chapters on prop carving and gas motors are likewise included.

This revised work is available direct from the publishers, Frederick A. Stokes and Co., New York, N. Y., or you may get it through your local bookseller. The price is \$3.00.

# HAPPY LANDINGS

BY ARCH WHITEHOUSE



## Aero Pot-Pourri

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### PILOTING ISN'T THE WHOLE STORY

**U**NFORTUNATELY, too many young fellows we meet who are taking mechanic and tradesman courses in aviation only want to work in an aircraft factory because they hope to use this connection in order to learn to fly.

Well, we grant that this is an understandable desire. But considering the fact that the industry actually offers a great variety of other jobs in which one may make good, we feel that more of the youngsters looking for a career in the game should stress the other departments. There are still plenty of things to be done in traffic, maintenance, designing, sales, and such branches of the industry.

No, we can't all be pilots, romantic and interesting as that kind of work may be. But if you are in one of the other departments of aviation, you can always buy yourself a good sport plane and get your flying in on the side. In fact, that would be a mighty wise thing to do, since such air experience would undoubtedly be of value to you as supplementary training.

As for the factory and tradesman end of the business, we trust that you fellows will not become discouraged about the recent labor spats in the industry. True enough, Donald W. Douglas, president of the Douglas Aviation Corporation, has been quoted in the press as saying that the Northrop Aviation Corporation, a division of the Douglas firm, probably would never again make planes. This was an expression of disgust over some labor troubles out there early in September. Moreover, the Seversky plant out on Long Island also has pancaked into one of those employer vs. employee mixups, with the result that work was closed down.

But aviation is bigger than these things. Such matters, you can bet your bottom dollar, will all be straightened out and our great industry will go on to new triumphs. Meanwhile, thousands of young men all over the country are eagerly taking up aero courses in hopes of obtaining jobs with the firms that are turning out fast airliners, flying boats, military craft, sport jobs, and various kinds of equipment.

We wish them well. They'll build the foundation for our sky industry of tomorrow. They'll press forward with the banner of aviation.

### RUDY WORKED HIS WAY UP

**A**ND who says that in this day and age you can't start at the bottom and work up? At the National Air Races at Cleveland this year, Rudy Kling proceeded to knock that idea out of the lot by winning America's most prized title in closed-course racing—the famed Thompson Trophy event.

Rudy began as a grease-monkey, but he always kept his goal in view—never deviated. When the big day came, plenty of the top-notchers were lined up against him. But nevertheless Rudy was in there fighting in good old Horatio Alger style. Buzzing along in his back-yard racer, he nosed 'em out at the finish like a Glenn Cunningham. He took the Greve race, too.

There's your answer, boys. If one man can do it—so can another.

### WHERE WAS "AMAZING MIKE"?

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**This and that from here and there in the air is what Arch brings you this trip—a bright selection of sky items dealing with what's gone on and what's going on. Here are the heads: "Piloting Isn't the Whole Story," "Rudy Worked His Way Up," "Where Was 'Amazing Mike'?", "Chicago Schedules a Big Show," and "Aviation History at a Glance."**

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**S**PEAKING about the National Air Races, we, along with thousands of others, have a formal complaint to place before the National Air Races committee. Spectators went out to Cleveland believing that they were going to see Michel Detroyat defend his Thompson Trophy against the best America could offer, and we were told that the dapper Frenchman had arrived in the country. But not until the very last minute was it admitted that Detroyat would not be able to enter. Even then, few people got the drift of it, hence thousands sat in the stands wondering why the French Caudron did not appear.

Then a "one-stick" news item finally said that Detroyat was unable to get his ship ready in time, and so he came over simply as an observer.

But our kick is that the committee in charge of the Races left too many Cleveland-goers holding the bag, since they turned out reams of publicity saying that the "Amazing Mike" would be on hand. Of course, if they'd admitted he wouldn't be there as loudly as they first said he would be, the attendance might have suffered. But now they're going to have one sweet time getting people to believe their publicity next year.

By way of comparison, we might mention that Detroyat took the Thompson event last year with a 267.6 speed—more than 10 m.p.h. better than this year's winning time.

(Continued on page 91)

# JOIN THE FLYING ACES CLUB

## Honorary Members

President and Mrs. Franklin D. Roosevelt  
Vice Pres. John Nance Garner

Casey Jones	Rear-Admiral Byrd
Wallace Beery	Capt. Edward Rickenbacker
Al Williams	Colonel W. A. Bishop
Col. Seaton	Major G. A. Vaughn, Jr.
Major von Schleich	Willy Coppins
Lieut.-Col. Pinsard	General Balbo
G. M. Bellanca	Amelia Earheart Putnam
Capt. B. Serglovsky	Frankie Thomas
John K. Northrop	Dwane L. Wallace
Colonel Roscoe Turner	Josef Veltjens
Charles W. A. Scott	Frank Hawks
Richard C. DuPont	Donald W. Douglas
Maj. A. W. Stevens	Capt. Edwin C. Musiek
Capt. O. A. Anderson	Clarence D. Chamberlin
Major Fred Lord	Mrs. Charles S. Baylies
	Lieut.-Col. Theodore Roosevelt

## Official Charters

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

## WIN YOUR WINGS

Save This Whole Coupon for  
**CADET OR PILOT**  
insignia of the F.A.C.



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



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

### Send the Whole Coupon

regardless of which kind of wings you wish. Separate sets of coupons are needed for each insignia. The coupon begins where it says "Win Your Wings." Canadians send International Reply Coupon for 15c. British and other overseas readers send coin or coupon for one shilling. Only one pair of either kind of wings to a member. If yours are lost, send 25c for new ones (one shilling overseas). [127]

## Do Your Full Share to Advance Aviation

### No Dues—No Red Tape

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

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

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

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

## The Highest Awards

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

## Correspondence

In all correspondence with GHQ where a reply is desired, enclose a stamped, self-addressed, return envelope with your letter. GHQ receives thousands of letters weekly, and cannot undertake to answer all of them unless this is done.

## Special NEW Service!

This Aviator's Positive Identification Bracelet



Registration and Bracelet Only 25c!

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

## Flying Aces Escadrille

Any member who has reached the rank of Ace is eligible for membership in the **FLYING ACES ESCADRILLE**, an advanced organization which supplants the former G-2 unit and opens the way for participation in a definite program contributing to the forward movement of aviation. The popular and attractive **FLYING ACES** awards may be won by Escadrille members who qualify. To enroll, an Ace must apply direct to Escadrille Headquarters, care of **FLYING ACES CLUB**, giving his name, age, address, rank, and highest award already won in the Club, and enclosing a self-addressed, stamped return envelope. If his record checks with our files and he is approved for membership in the Escadrille, his assignments will be mailed.

## Keepers of the Log

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

## Stationery and Pennants

Due to popular request, we have ordered a new supply of F.A.C. stationery and official F.A.C. (paper) pennants. The stationery is of high quality with the Flying Aces Club letterhead attractively hand-lettered, and the price is amazingly low—100 sheets, postpaid for 25c. The attractive pennants (with glue on the back) sell at 6 for 10c or 20 for 25c.



The  
Beautiful  
F. A. C.  
Ring

The official F.A.C. club ring is a beauty and should be worn by all members. It is self-adjustable, to insure a perfect fit. It is finished in antique silver. Sent postpaid anywhere in the U. S. and possessions for only 50c. It will be sent postpaid to foreign countries for three shillings. A similar Sterling Silver ring can be had for \$1.00, or 5/- overseas.

## December Membership Coupon

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 ..... [127]

Street .....

City ..... State .....

Mail this application, enclosing a self-addressed, stamped envelope. Canadians send International Reply Coupon worth 5c. Overseas readers send a similar coupon worth sixpence.

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

Clubsters, if you could peep through that second window from the rear in this United Air Lines' "Mainliner," you'd stand a chance of glimpsing your National Adjutant's physog. For this shot was snapped from another plane while Clint Randall was on a hop to Chicago recently. The ship, you know, is the Douglas DC-3, powered with a pair of P & W twin-row 14 cylinder Wasps developing 1,150 h.p. each.



# Flying Aces Club News

"Extry! Extry! All about the Army's Air Show over N'Yawk City! Read all about it. Extry! Clint Randall makes a flight—and doesn't touch the stick. Here y'are! Extry! Medal of Honor Valor bar awarded to F.A.C. member. Read—" And that's not all either, fellows, for this month's Club News is crammed plumb full with peppy patter about planes and personable people. It'll interest each and every one of you. Read right on from here—

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**By Clint Randall**

*National Adjutant, Flying Aces Club*

**F**OR ONCE in my lifetime, skysters, your National Adjutant must admit that he's just about licked! For writing this month's Club News copy is just about the toughest assignment I've tackled since I first pitched my parachute pack and goggles into the locker and settled down to F.A.C. work here in the operations shack.

You see, when a feller has once flown or marched with troops and has learned how to snap out a perfect salute to Old Glory, it's pretty hard to settle down to routine work—especially when there's Army action occurring all around him. And that's what the trouble is with me right now!

Just a few minutes ago our whole GHQ staff crowded out onto our balcony off the home tarmac here and watched one of the swellest military air parades ever staged. Yes, and the whole flock of fighting craft passed directly over our "office in the skies."

And what a show it was, fellows. Just about every service ship you've ever read or heard about took part. There were more than a hundred army ships in this sky parade. And many of the jobs were new types we'd always wanted to see.

There were squadrons of neat Northrop fighters—attack ships

with a speed of around 250 m.p.h.—and there were also a slew of the well-known Boeing P-26A pursuits. Then on the heels of the Boeings, several flights of twin-motored Martin B-10 bombers passed in perfect formation.

Then, too, there was one lone sample of the striking Army plane we featured on our F.A. cover back in May 1936—the Douglas DB-1 bomber that looks somewhat like a flying whale. And there were plenty more sky craft, including camera-carrying ships which were after pix of the splendid formations.

But to top off the whole serving there came a perfect "dessert" in the way of a whole half-dozen of Uncle Sam's biggest and best—the huge four-motored Boeing bombers known as the "flying fortresses." Man! Are they mammoth! And handsome!

We'd been able to feel the vibration of the air parade as the other ships had passed, but when these Boeing babies brought up the rear, all spaced out in single file as they followed the rest over broad Fifth Avenue, our whole building shook to the combined 16,800 h.p. of their 24 mighty Pratt & Whitney power plants.

You've probably guessed by now that I've been talking about the big Army airplane display that was staged in connection with the American Legion convention here in N.Y.C. You see, we go to press quite far in advance, so I'm having to write this



Introducing Air Stewardess and honorary Club member Betty Anzuena, R.N., who posed especially for this shot for our Club News pages. It's a swell uniform these flying nurses wear, don't you think? Guess what company Betty works for!

right while the convention is going on.

And New York has never seen anything like this before! No wonder ex-Army Clint is having such a hard time settling down to work. Today is the day of the big parade up Fifth Avenue, and all day there has been the sound of military music from down below, with the steady reverberation of marching feet. The parade started at nine *this* morning and promises to continue until at least three o'clock *tomorrow* morning! And everybody's having a swell time.

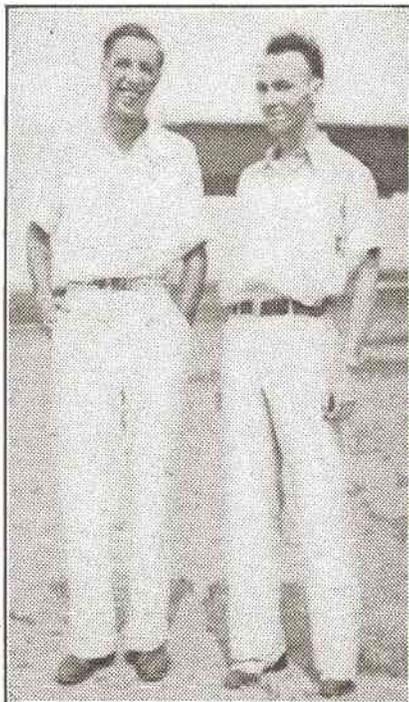
**B**UT on the way back from lunch this noon, I saw one ex-Army flyer who was evidently a better man in the air than he is on the ground. What attracted me first was a big crowd on the corner of 42nd Street and Broadway. Everybody was laughing at something.

Pushing my way through, I saw a Legionnaire, with a pair of pilot's wings and a stack of medals on his chest. He was comfortably seated in a chair on the sidewalk, smoking a big cigar, and leisurely reading a newspaper, apparently oblivious of everyone around him. But the funniest thing of all was that his trousers were rolled up to the knees and both his feet were plunged into a pail of cold water! Evidently *foot* parades are too much for our World War pilots who used wings instead of feet.

In connection with the convention we had the honor of awarding an F.A.C. Distinguished Service Medal to Legionnaire Hobart McKinley Reese, of Washington, D.C. Mr. Reese held a responsible Army rating during the World War, and in recent years has rendered valuable service to the Flying Aces Club. So a formal presentation ceremony was held right here at GHQ the day before the parade, and your National Adjutant had the pleasure of pinning our Club's coveted decoration on the war veteran's chest, right between two other famous medals that he had earned while wearing Uncle Sam's O.D.'s. (Olive drabs to you.)

Another medal ceremony was held here recently when Jimmy Hunter, of Raleigh, N.C., came to New York and was presented with the Valor Bar for his Medal of Honor, in recognition of his courage in saving the life, last year, of Ray Allen from drowning at the risk of his own. You'll remember that Doug Allen wrote of Jimmy's bravery in last December's issue of **FLYING ACES**.

**A**ND incidentally, you members of the Club should promptly notify us, you know, when other members perform feats such as this, for we want to properly recognize all F.A.C.'s who distinguish themselves in the saving of life. Be sure to drop me a line briefly describing the facts as you know them. And you may be sure that a full investigation will be made and the



award granted whenever it is merited.

Say, skysters, how do you like the swell shot of the big Douglas "Mainliner" at the head of the opposite page? Isn't it one of the best flight shots you ever saw? The ship is one of the United Air Lines' 14-passenger "Sky lounges," the DC-3, that took me "non-stop" from New York to Chicago a short time ago in just three hours and forty-five minutes. The distance is 722 miles by air.

It was a perfect flight in a perfect ship. And for once I was glad to let the other feller do the worrying about getting us there!

For the pilots flying United now have far more hours to their credit than old Clint Randall could ever hope to have. Sometimes, you know, a chap feels somewhat hesitant about letting some one else do the driving if he is able to drive himself,

whether the vehicle is an automobile or an airplane. But in that luxurious ship with a million-mile, five-thousand hour pilot at the stick and a co-pilot with almost as much experience, I didn't have a worry in the world. As a matter of fact I slept most of the way! You know a chap *can* sleep easily enough in those comfy, deep-cushioned swivel chairs on the "Mainliners"—especially after the swell meal the line serves to passengers free of charge.

Supper in the skies! And I often think that a starry summer sky must be the Chief Sky-Man's Own supper table, for it's just about the most beautiful thing in the universe. You just seem to be hanging there, with the

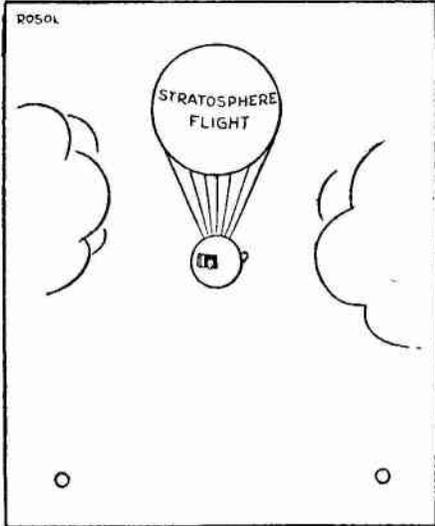
(Continued on page 76)



From Wings Squadron No. 1, F.A.C., of the Floyd Bennett Aviation Post No. 333, American Legion, San Francisco, comes this picture of Commander John F. Gouldner (left) pinning the official F.A.C. Pilot's wings on the lapel of Municipal Judge Thomas H. Foley, who had just been appointed F.A.C. Judge Advocate of California. The Wings Squadron is mainly composed of American Legion members who were active flyers in the World War.

# 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. Contributions cannot be returned. Address all letters to WISECRACK-UPS.



"I appreciate all that, Frisby—but which one is the earth?"

### CALAMITY

*Stewardess* (addressing passengers): We're going to take off now, so see that your belts are fastened tightly.  
*Timid gentleman*: Oh my, what shall I do? I'm wearing suspenders.

### PINKHAM AGAIN

*Major Garrity* (after forced landing): Confound it, I thought I told you to notice when our main gas tank went dry!  
*Phineas*: But I did, sir. It was just fifteen minutes ago.

### BUT WASN'T IT HAIR-RAISING?

*Bill*: My father was attacked by eighteen Fokkers—and they didn't harm a hair on his head!  
*Jim*: Gee, he must have been brave!  
*Bill*: Naw, just bald!

### CAN'T BEAT CARBUNCLE!

*Bump* (meeting Phineas at Legion Convention): I just read that an Italian has a ship that'll do 440 m.p.h. Wow, what speed!  
*Phineas*: Why that's nothing! I gotta plane that's so fast I have to keep diving it all the time to follow the curvature of th' earth! Haw!

### MISUNDERSTANDING

*Pilot*: Have you any half-inch diameter copper tubing?  
*Storekeeper*: Yes sir, and how long do you want it?  
*Pilot*: Listen, wise guy, I want to buy it, not rent it!

### VERY SIMPLE

A student flyer approached a famous pilot at Floyd Bennett Airport the other day and finally caught his attention. "I'd like to know," the novice began, "the correct procedure in case of an emergency. What would you do if your plane crashed?"  
 The noted airman eyed him a moment. "I'd get a new plane," he finally confided. "You see I have insurance on mine."

### UP-TO-DATE

They're certainly mighty modern up in Heaven," said Dumb Dora to her mother as she eyed the halo on a statue of Gabriel. "Why this angel even has a radio compass!"

### WOULDN'T LET HIM

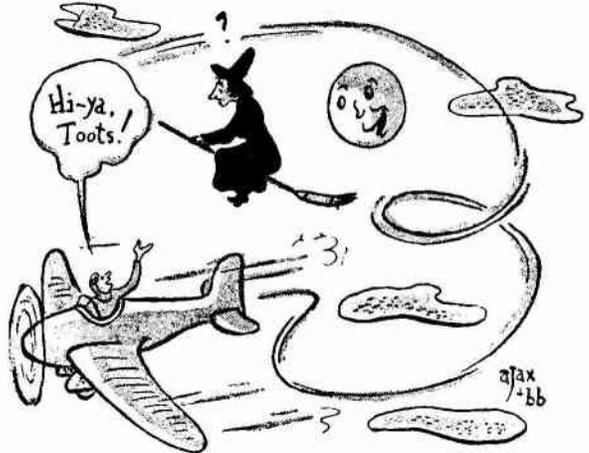
Noticing that the drunk hitch-hiker he'd picked up was obviously well-to-do, as indicated by the hundred dollar bills protruding from his pocket, the auto driver was quite perturbed.  
 "My good man," he said. "Why don't you take a Boeing transport home?"  
 "Ish no use," cracked back the drunk. "My wife wouldn't let me keep it in the housh."

### WHAM!

*Pilot*: Say, Pete, where's the absent-minded professor?  
*Greaseball*: The "meat-wagon" carted him off. You see, just as he was getting flying speed, he forgot he wasn't in a car. He grabbed the stick and tried to shift into second gear.



"You mean this ISN'T the Navy's all-metal dirigible?"



Flying Aces takes pleasure in announcing that October 31 is Halloween.

### WORRIED

*Hypnotist*: And now, ladies and gentlemen, I'm going to make this young man forget everything that has happened during the last five days.  
*Voice from audience*: Hey, please make it four days! That guy borrowed my airplane five days ago.

### SOME DIFFERENCE

*Dumb student*: You say I should figure on 60 miles to Chicago—and yet I always understood it was 35 miles as the crow flies.  
*Disgusted instructor*: Yeah, but you fail to take into account the fact that the crow has a brain.

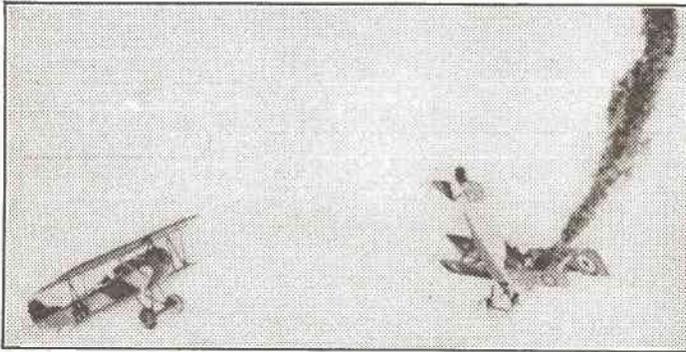
### MORE ECONOMICAL

*Steward*: Yes, madame, all our transport planes are going to be equipped for blind flying.  
*Scotch lady*: But why go to all that expense? Can't the pilot just shut his eyes?

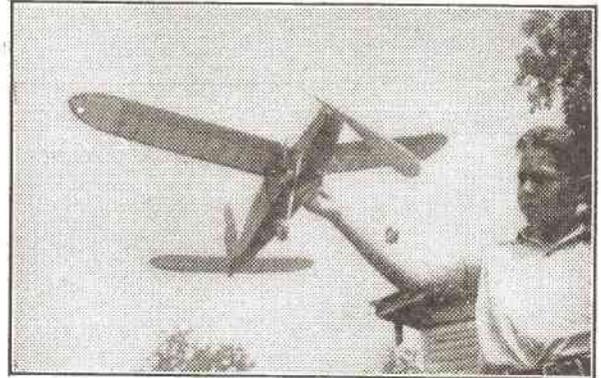
### NO MORE DANGER

Frightened by a Gotha raid, a new cadet had legged it away from the flying field as fast as he could go.  
 "Stop!" a voice finally boomed.  
 "I can't," gasped the scared tyro, running even faster.  
 "But," came the roaring reply, "I'm a general!"  
 "Oh, all right," said the cadet slowing up. "If I'm that far back, I'm safe."

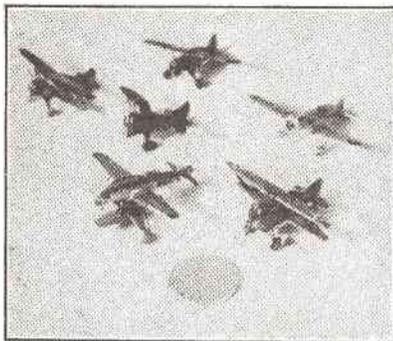
# With the Model Builders



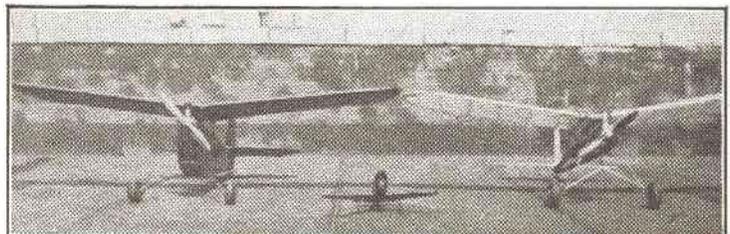
Lookout, fellows! Here's a famer! That Fokker D-7 (left) sure tripped the triggers at the wrong time for the poor Nieuport, we'd say. But lucky the ships in this realistic battle scene are only models made by Fred and Merrill Dutche, of Des Moines. Fred built the scout ship and Merrill the D-7. And both brothers conspired in shooting the fight photo.



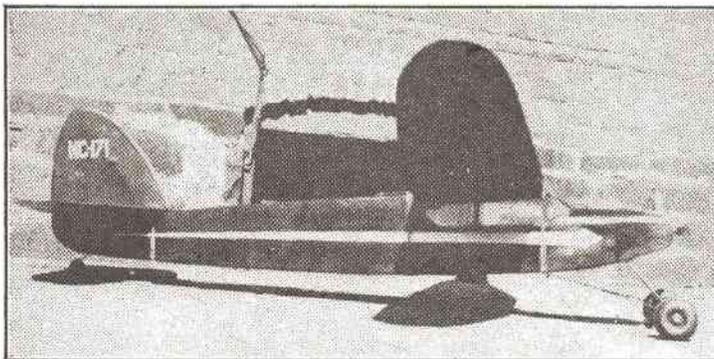
Here's C. D. Featherstone, of Macon, Miss., holding an endurance model built by his pal Jack Hardin, who writes that the ship is a swell flyer, and doesn't need his sidekick to hold it when the 24 strands of rubber are ready to rev the prop.



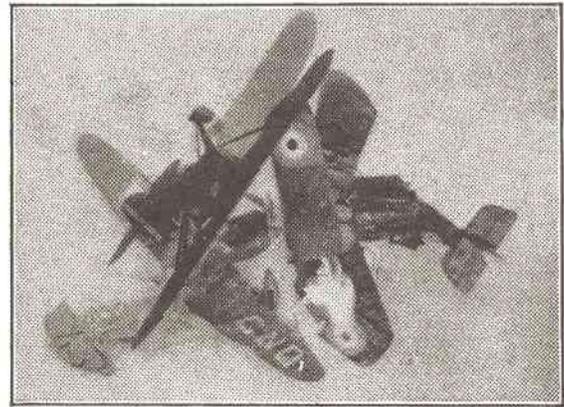
Miniature modelers may cast mighty envious eyes at the ships shown in this picture, made by young Doug Powell, of Winnipeg. For comparison, left photographed 'em with a disc the size of a ten-cent piece. Looks like all six could be hidden behind a quarter! Can you identify the ships? There's a Waco and a Stinson, for a starter.



Bob Hayes, of New York City, built the two gas jobs shown here from plans by Bill Efinger and Thracy Petrides. The one at the right uses a Mighty Midget motor and the one at the left a Brown Junior. In the middle, dwarfed by the six-footers, is a low-wing racer.



This red-and-silver job built by Fred Page, of Williamsport, Pa., is called the "Red Zephyr" (without the "r"). It's a six-foot span model powered with a Mighty Midget motor. Fred uses a flight-timing device on this ship, and she's made ninety trips so far without a single crack-up.



"Be nonchalant when you step on model airplanes," says F. Sykes, of London, "and light a bonfire." That's what he did here, after accidentally big-footing a couple of ships. He added a third model to the mess and made a five-minute camera exposure under a 120-watt light. The ships are a Mew Gull, a Camel, and an Italian Vale trainer.



Left to right in this shot are a Monocoupe, a Fokker D-7, and a Heath Parasol. Although the original picture was much smaller than this one, it was so good that we decided to "blow it up" to this size and feature it. Arthur Frazer, of New York City, made the models, and we think he did a mighty fine job on them. Note particularly how many details he included in the three ships.

# Build the Hawk 75

Surpassing all previous productions in the famous Curtiss Hawk pursuit class, the new Hawk 75 is one of the most formidable military ships of its type ever to take the air. A well-armed, all-metal low-wing monoplane, this fast fighter can hurtle through the skies at a speed close to 300 m.p.h. And direct from the official plans of this deadly craft, Jesse Davidson has developed for you a realistic model that is easily made. First read below about the real ship, then turn the pages for his plans for the model.

\*\*\*

By Jesse Davidson

**T**HE NAME Curtiss is synonymous with United States military aviation, for during the past twenty years this organization has maintained an enviable position as one of the most important sources of aircraft for the air services of our Army and Navy alike. And for years the Curtiss Hawk enjoyed the distinction of being the standard pursuit ship of the U. S. Army Air Corps.

Since 1924 when the original Hawk was designed and built, the ship has undergone constant change resulting in the still greater speeds and the still more exacting performances demanded by our Army air force.

Several months ago the design of the old Curtiss Hawk underwent an absolute transition, and from the biplane type it developed into an all-metal low-wing monoplane, modern in every detail and phase of construction.

Now known as the Curtiss Y1P-16 in the Army Air Corps, and listed as the Curtiss Hawk 75, the new ship has been described as one of the deadliest and most formidable flying weapons ever to take the air. In short, it is a new and swifter Hawk with sharper talons—a menacing antagonist in *any* form of combat.

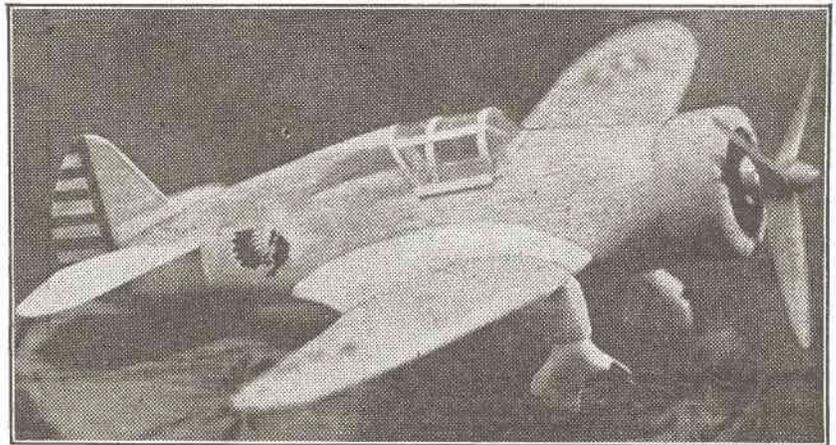
In keeping with the Army's rigid specifications for pursuit planes, the new Hawk is also adapted to attack assignments by virtue of its optional armament equipment. As a pursuit plane, it is equipped with one .30 and one .50 caliber Colt machine gun, concealed beneath the engine cowl and synchronized to fire through the propeller. With an additional machine gun mounted inside within each wing, the Hawk becomes a four-gun pur-

suit or attack ship of tremendous power.

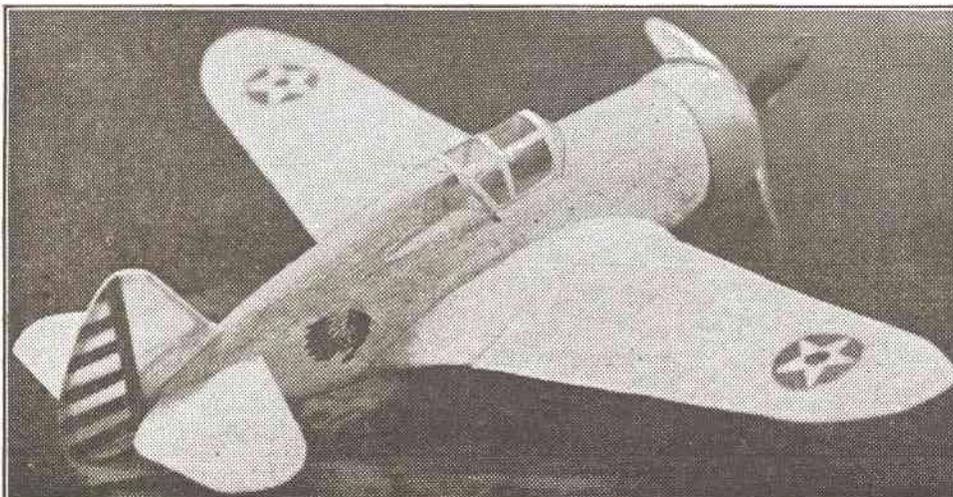
Bomb racks mounted flush with the lower surface of both wings are designed to carry any of the following bomb loads: Ten 25-lb. chemical bombs, ten 30-lb. fragmentation bombs, or six 50-lb. demolition bombs. Additional racks may be attached for demolition bombs of 100 to 500-lb. size.

The new Hawk is powered with a Wright Cyclone G-3 engine of 1,000 h.p. output. She has a maximum speed of close to 300 m.p.h. at 10,700 ft. Cruising speed is 240 m.p.h. Rate of climb is 2,500 feet per minute, and service ceiling 31,800 feet.

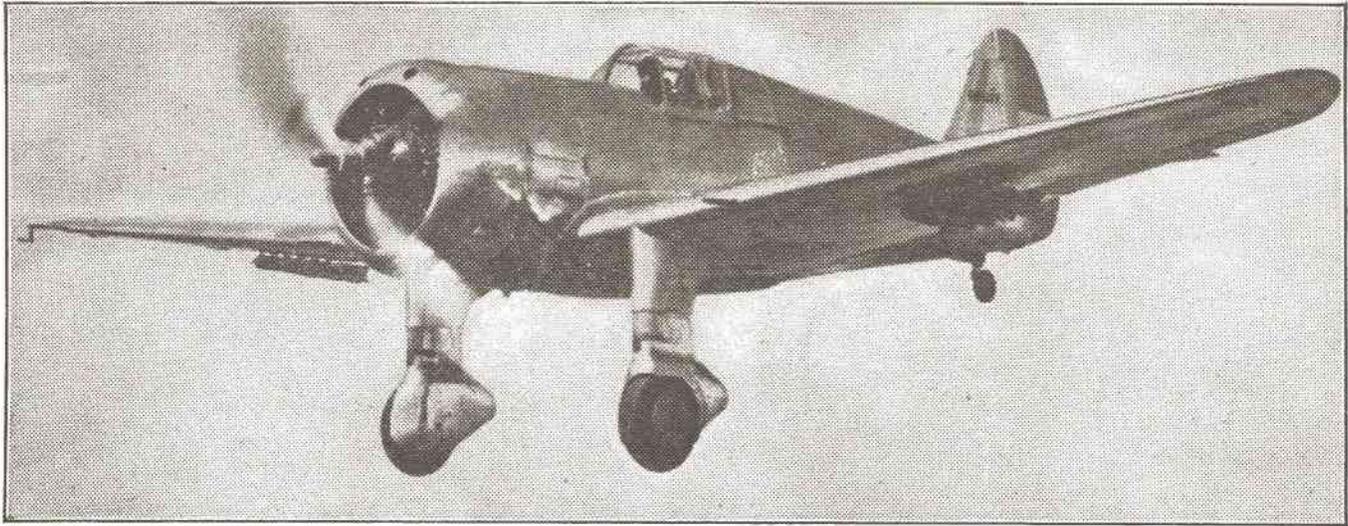
**A**BRIEF description of the Curtiss Hawk 75 follows: the fuselage is of semi-monocoque design covered with Alclad stressed skin. The windshield is made in one piece, non-shatterable Plexiglass, which gives unobstructed visibility. Directly behind the windshield there is a sliding Plexiglass hood over the cockpit which when



Above, we print an excellent profile shot of Davidson's model of the Curtiss Hawk 75—the Curtiss Y1P-16, as it is designated in the Army Air Corps. The reproduction of the constant speed three-bladed prop is shown clearly, and also the Plexiglass cockpit enclosure. Yes sir, it's a top-notch model and no mistake!



Left: From the rear we catch an idea of the "double taper" of the wings—taper both in plan form and from root to tip. The empennage surfaces are also shown here in detail, together with the official rudder and wing markings for U. S. Army ships. The Indian-head insignia—added by Mr. Davidson for "color"—is that of the Army's famed 94th Pursuit Squadron.



"Over the top!" Up here above the clouds—but still far from its 31,800 foot service ceiling—is the original Curtiss Hawk 75, as approved and accepted by Uncle Sam's Army air experts. Not only is this "the perfect pursuit ship" but it can also be adapted to attack work merely by placing a gun in each wing in addition to the pair of prop-synchronized weapons concealed in the cowling. Keep this picture handy for reference while you are building your Hawk 75 model.

closed helps form a complete cabin. The landing gear is of cantilever construction, which aerodynamically is the most efficient type of fixed gear that can be used. Its long stroke oleo strut and streamlined tires adequately absorb the shocks imposed in landing and taxiing.

The tail surfaces, constructed with aluminum alloy beams and ribs, are fabric covered. The rudder trim tab, controlled by the pilot, is used to counteract the changing engine torque in climbing, level flight and diving maneuvers.

A Curtiss constant speed three-bladed prop is the normal airscrew equipment of the Hawk 75. And now that you know all about the *big* ship, let's see about our little model of it.

#### FUSELAGE

**T**HE hollowed-out type of fuselage (Plate 1 and 2) used in our Hawk model has been chosen simply to simulate the metal skin used on the actual ship. The fuselage is made in halves and thereby necessitates the use of stiff paper templates of top and side views. The fuselage blocks should be of soft balsa, free of knots.

Your first step is to cement both fuselage blocks together very lightly, since they must later be separated. Trace the side-views of the fuselage on both sides of the block, then with a sharp knife remove all excess wood. Use sandpaper to smooth out the shaved surfaces and then trace the top view of the fuselage onto your block. Again remove the excess wood.

Reverting to the fuselage plans for a moment, notice the section starting at the front of the windshield (Plate 1) and which extends as far back as the black strip, above which is the letter B. This portion is to be removed. Simply make a complete tracing of this part and outline it on both sides of the body. Then with a

sharp knife remove the wood carefully.

Just aft of this section running onto Plate 2, a shaded area is shown. Sand this carefully in a concave manner. See fuselage section BB for depth and side view of fuselage for length.

The next step is to separate the block with a thin bladed knife. Do not try to force the halves apart too suddenly. And now another inside view template must be traced and cut to shape by following along the series of dotted lines which indicates the wall thickness throughout the fuselage.

This template is then traced onto the inner side of each fuselage half, to indicate the portion to be scooped out. You'll find that the walls are about 1/16" thick all around with the exception of the nose, tail and upper cockpit portion. Use extreme care and take your time.

When nearing the bottom of each shell use coarse sandpaper to clean out with and finish with smooth sanding. Both shells are given three outside coats of dope, with a smooth sanding between each coat.

A swinging door is cut out from one side of the fuselage only. The same piece of wood cannot be used for the door, so shape another piece to fit snugly. Use small pins for the hinges. A pin head may be used for a door knob.

The next step is to apply cement generously along the inner edges of both shells and then press the halves firmly together. Use a few thick rubber bands tightly wound around the body to help keep them together while drying.

#### COWLING AND COCKPIT COVER

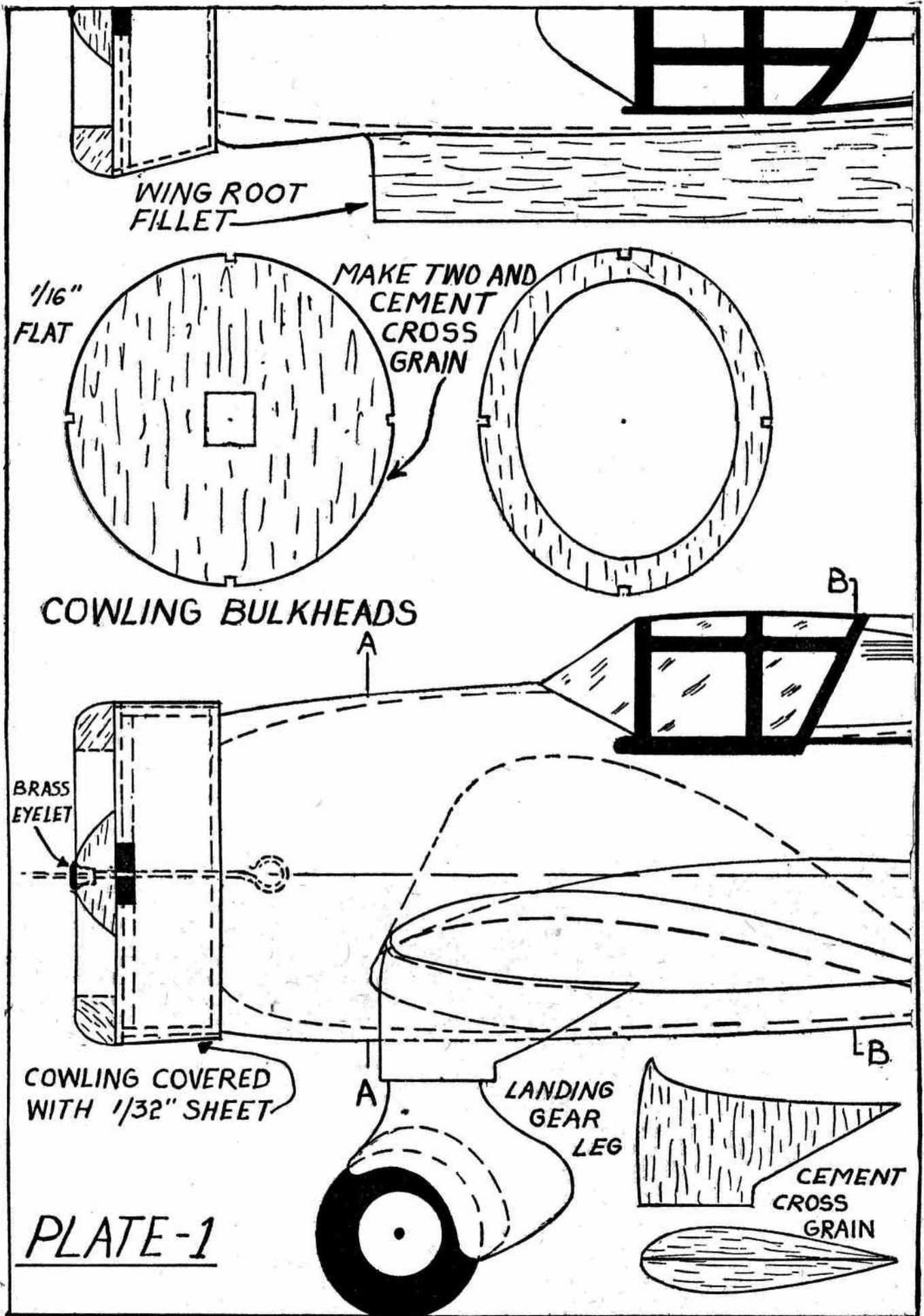
**T**HE cowling is made in three parts. The two bulkheads shown on Plate 1 are carefully shaped from hard balsa, then joined together by inserting four 1/16"

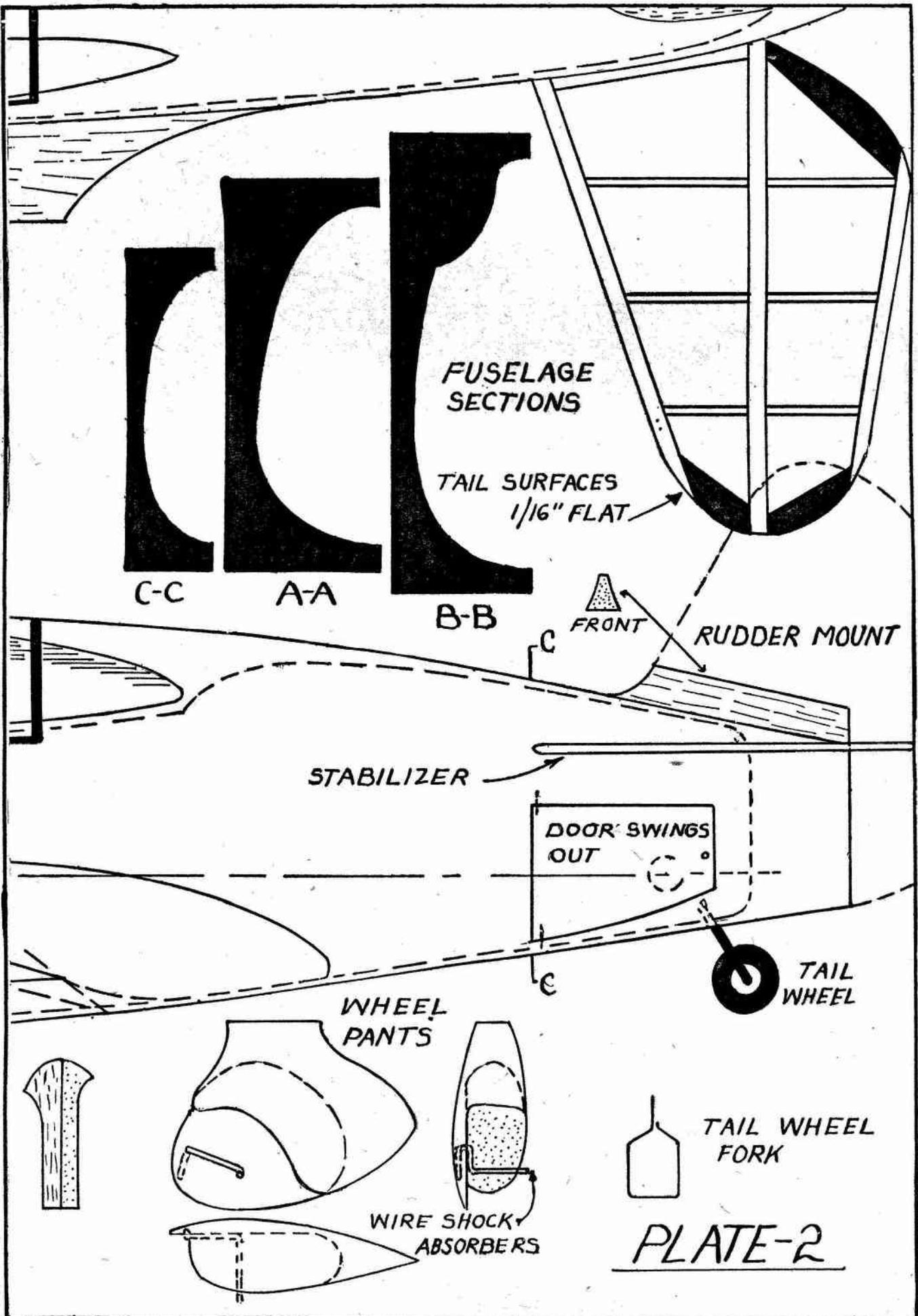
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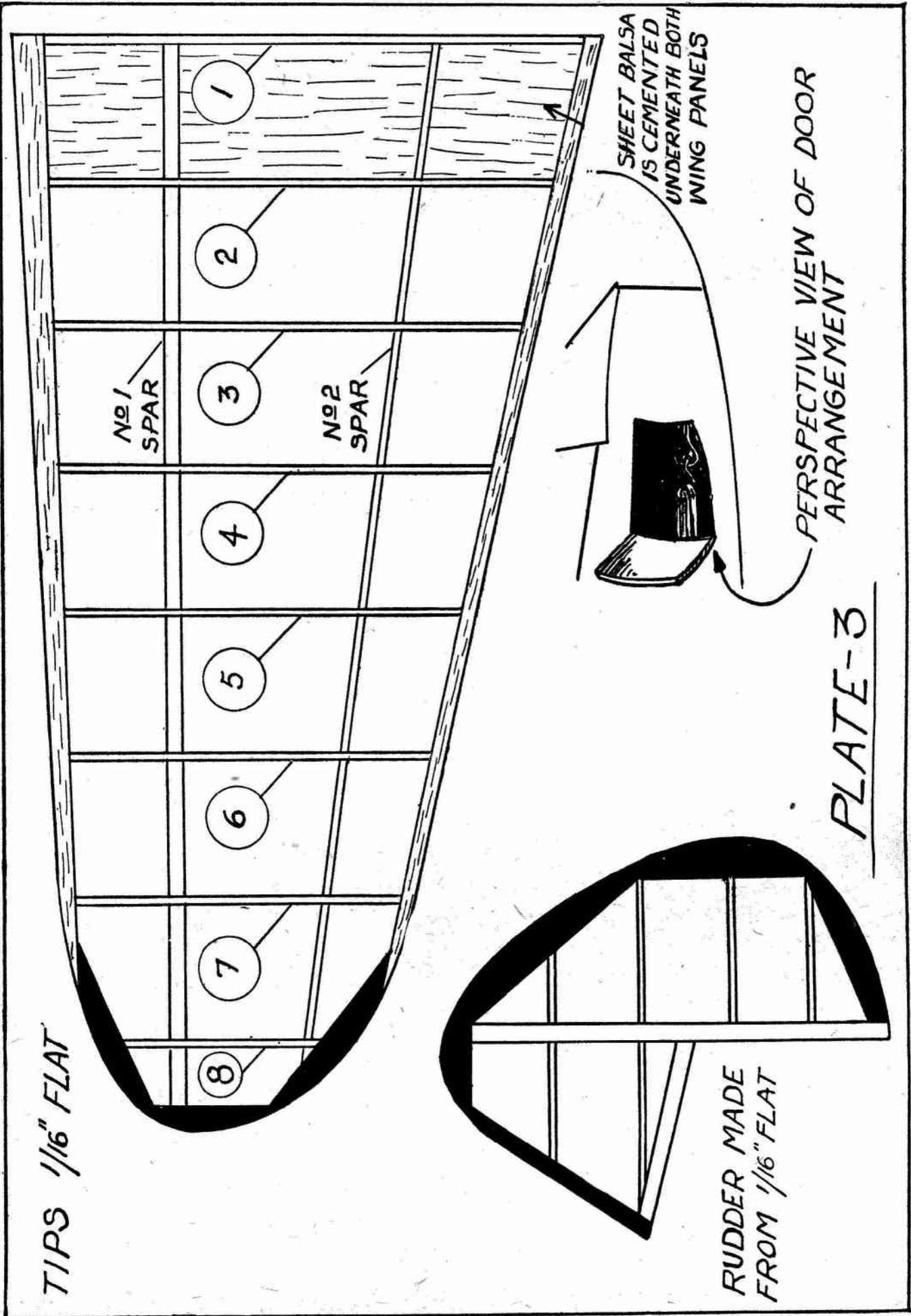
### Bill of Materials

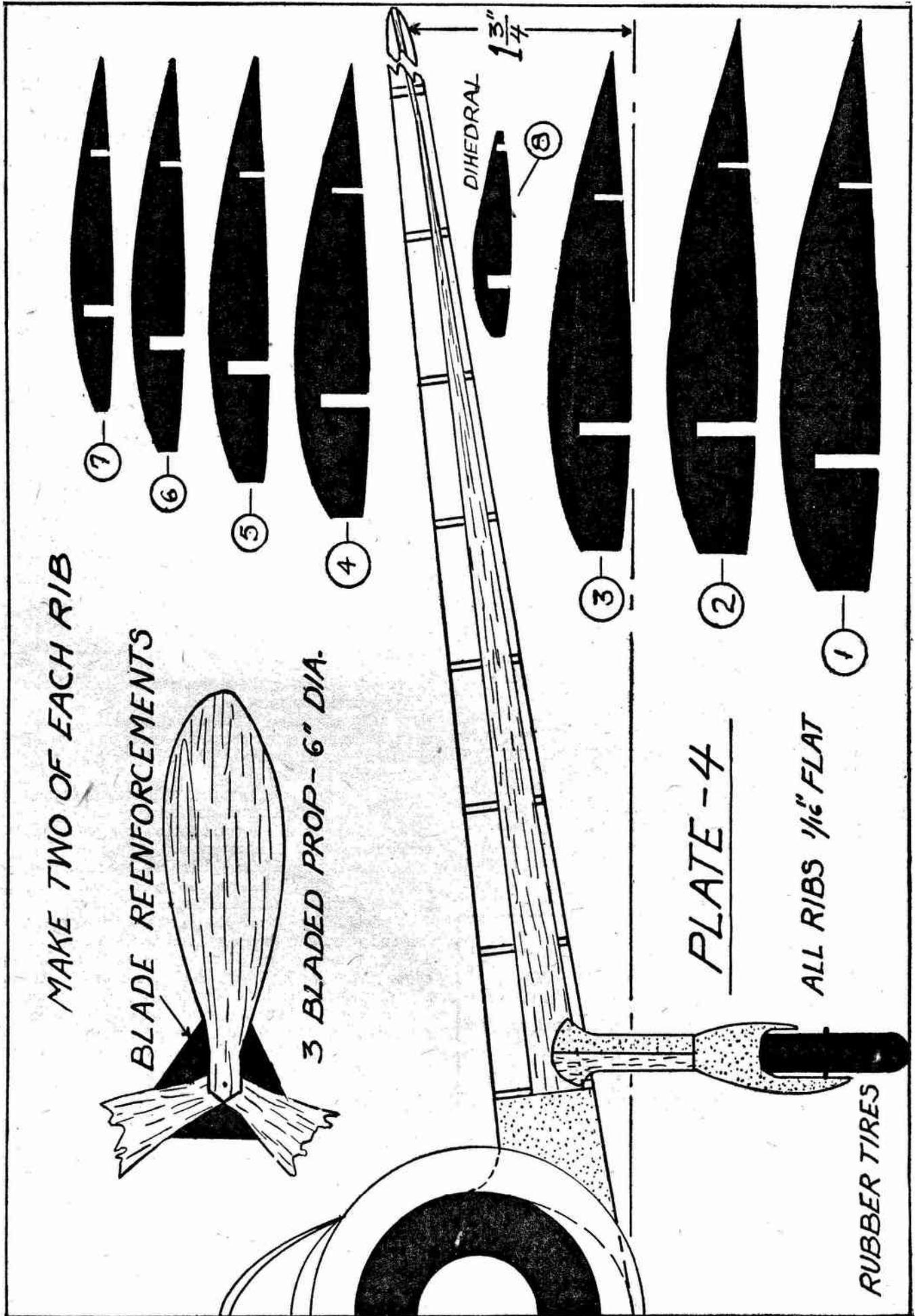
Two blocks soft balsa, 1" by 3 1/4" by 12" for fuselage;  
 Two strips balsa, 1/8" by 1/2" by 8 1/4" for No. 1 spar;  
 Two strips balsa, 1/16" by 1/4" by 8" for No. 2 spar;  
 Two strips balsa, 1/4" by 3/8" by 7 1/4" for leading edge;  
 Two strips balsa, 1/16" by 1/8" by 7 1/2" for trailing edge;  
 One piece sheet balsa, 1/16" by 3" by 36" for ribs, tail surfaces, bulkheads, etc.;  
 Two pieces balsa, 1 1/4" by 1 3/4" by 6 3/4" for fillet pieces;  
 One piece balsa, 5/16" by 3 1/8" by 3 1/8" for cowling front;

One piece balsa, 1/2" by 1" by 1" for nose plug;  
 Four pieces balsa, 1/8" by 1 1/4" by 2 1/8" for landing gear leg;  
 Four pieces balsa, 5/16" by 1 1/2" by 2" for wheel pants;  
 Three pieces balsa, 3/8" by 1" by 3" for propeller blades;  
 Cement, dope, jap tissue;  
 Small pins, wire fittings;  
 Eyelet bearing, rubber wheels;  
 Five-and-a-half feet of 1/8" flat rubber;  
 Celluloid.









# Gas Job Gossip

"Gab, gadgets, and grief," according to Phil Zecchitella's own analysis of his copy, are the main features of this month's gas gossip column. And the gamut from gab to grief is complete, we find, since Phil starts out with the latest official dope on the gas model licensing situation and ends with a pathetic report of a fight between Prop and Pinky. Yep! Pinky lost!

\*\*\*

## THE DRIVE to outlaw gas models and to attempt to make gas model flying a federal offense is still going on. So to get the latest lowdown for our gossip column, we submitted a list of questions to Bill Enyart, of the National Aeronautics Association. And here are the questions, with his answers which we have just received.

## With Phil Zecchitella

This arrangement, we feel, is the greatest possible contribution toward

the solution of the gas model problem. Inasmuch as we gas modelers collectively wish to retain our flying privileges, there nevertheless remains the possibility of an individual performing in such manner as to bring the bunch of us to task. But with the coming regulation, this possibility is greatly reduced.

WE DECIDED recently that we should like to give you something each month that might be of material assistance and possibly to ease our conscience (Editor, please note, since you didn't think I had one). (Editor has noted. We still don't think so.)

Question: Will the N.A.A., as was suggested in Detroit during a gas model hearing, assume the licensing of gas modelers and their planes? Ans: Yes.

Question: Will the gas models be required to display some form of identification? Ans.: Yes.

Question: If a modeler violates the rules for safe and sane operation of a gas model as required by the N.A.A., what assurance is there that the mere revocation of his license will be sufficient penalty? Ans.: If a modeler violates the safety rules and his license is revoked, it will mean that during the period for which his license is revoked he will not be allowed to enter any contest sanctioned by the N.A.A. or try for any official records.

Question: Will there be any fee as the result of this added regulation? Ans.: The only requirement will be N.A.A. membership which is 50c for the first year and 25c for annual renewal thereafter.

Question: Will the Bureau of Air Commerce pass any legislation, thus putting gas models under federal regulation? Ans.: That will be entirely up to the Department of Commerce.

And there you have it—the latest possible info for this issue. And at any rate, we now know that the N.A.A. will license model flyers and will require a definite identification on the gas models. If any violations of rules are reported to the N.A.A., the offender's license will be revoked.

So we herewith announce our "discovery-of-the-month," an item from the September issue of the *Aero Modeller*, a wide-awake model aeronautics publication from England. With the kind permission of L. H. Barron, publisher, we present the details of this useful gadget.

With the increased tendency toward tapered wings in gas model building this accessory should be a real Godsend. You will quite agree if you have ever built an original taper wing, that the most laborious detail has been that of making the separate ribs. Heretofore, the only possible way to scale them in order was to chart them with numerical stations and such. Now here is what is known as a "rib enlarger"—does that sound good or does it? (And would Eve have been a bigger girl if Adam had read this item?)

The rib enlarger is composed of a box approximately 11" by 7" by 4". The front and bottom panels are eliminated, as shown in the cut. At the top (inside) of the box, a flashlight bulb is mounted.

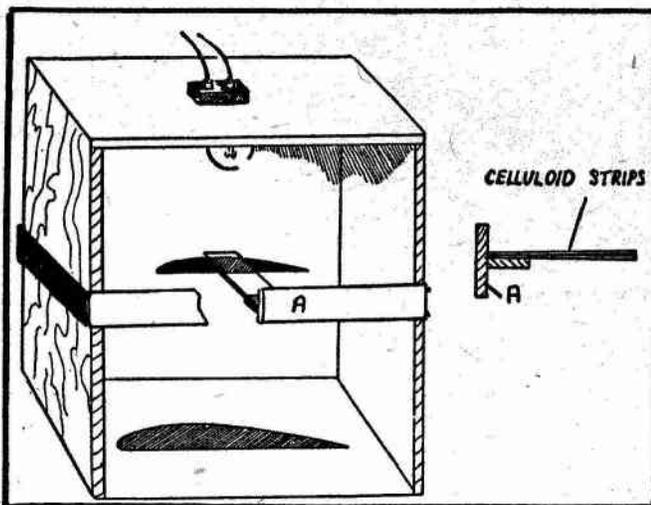
A piece of wood 1" by 1/2" is then cut so that it fits across the width of the box; to this is affixed a piece of plywood 1" wide, to form the T-spar, A. Two small strips of celluloid 3" by 1/2" are glued on top of one another at one end only, and then cemented to the center of the T-Spar. (The ply face of the spar should overlap the edges of the box by 1/16". Push two pins into end of spar. See sketch for heads projecting at right of A.)

A large elastic band is now placed over the pins and carried around the box, just tight enough to permit the spar to be moved up and down. Now take the rib that is to be scaled and slip it between the celluloid strips. Then mark the desired chord on drawing paper at the bottom of the box.

Switched on, the lamp casts a shadow of the rib on the paper. Focus the shadow into the desired size by moving the spar either up or down and presto, you have the rib!

Now don't forget this—when selecting an airfoil for your taper-wing, draw it for the *smallest* size, since the rib enlarger will only enlarge and will *not* reduce. If you think as much of this gadget as we do, you practically have it built already. It makes a taper wing job just nothing at all—just a mere nothing. (Oh yeah!)

(Continued on page 93)



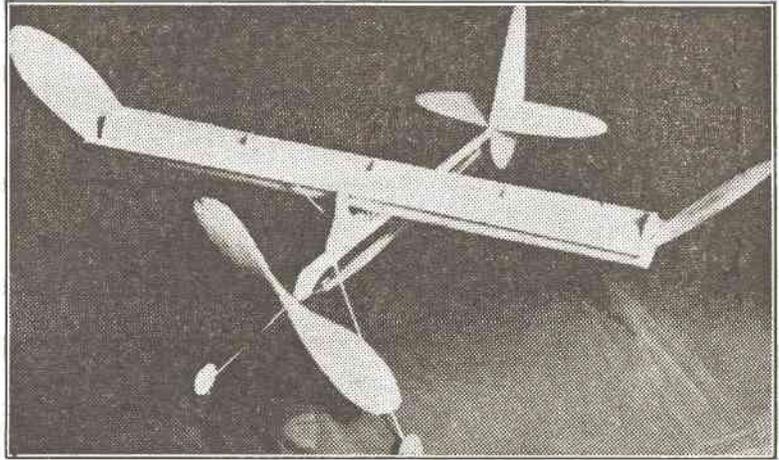
Pictured above is a "rib enlarger," an apparatus designed to simplify rib-making for taper-wing model airplanes. The cross-piece "A" slides up or down, so with a rib of the desired airfoil clipped between the celluloid strips as shown, and the light at the top switched on, proportional shadows of the required chord can be projected down onto the drawing paper at the bottom of the box. (Drawing by courtesy of Aero Modellers.)

\*\*\*

"My! What strange wings you have, grandma!" That's what Little Red Riding Hood would have chirped had she come into contact with our rambunctious Rotorplane, shown below. But the reply would have been, "They're not wings at all, my dear—they're 'rotors.'" And these rotors, as Author Jim explains, rotate backward during flight to supply the lift usually furnished by the wings.

## INDOOR FLYING CIRCUS!

Fellows, in flying this freak performer around your parlor you'll find even more fun than watching an air-minded monkey loose at the airport. For the Rollicking Rotorplane is a whole circus in itself! But besides offering enjoyment for you and your friends, the ship also serves as an experimental model for a unique type of flight, since instead of using wings for lift it utilizes "rotors." So go to it, novelty fans. You'll find it quite a simple job to build—



# A Rollicking Rotorplane

\*\*\*

**H**ERE you are, boys—something new and really novel in the world of model airplanes. It's a plane which uses rotors instead of wings for lift. True enough, real rotorplanes have not as yet been made practical, but this model "R.P." will prove thoroughly satisfactory as an unusual ship for your collection.

To go into full details about how the rotors work would take up too much space, but the general idea is that when rotating backwards they create lift the same as a regular wing.

I have been experimenting with rotorplanes for some time and have developed this little all-balsa model, which can be built even by beginners in the modeling field. Careful attention should be paid to the plans and instructions while working in order that you may complete a successful "R.P." with which to amaze your friends.

The rotor is made from two separate semi-circular halves. Cut two blanks 1-3/16" by 12" as shown on the plates. Sandpaper them smooth and soak them in water. Lay them lengthwise along a 3/4" round template, such as a small broom handle, and bend to form two semi-circles each 12" long. Wrap with bandage or tissue paper and put aside in a warm place to dry.

Adjust your compass to size of rotor formers (Plate 2), and draw five circles on 1/32" sheet balsa and cut them out. Divide into halves and you have ten bulkheads for the two rotor halves. Lay these aside and cut out the two rotor end-plates to the size shown on Plate 2. Do not cut these in two by mistake.

After the rotor blanks have thoroughly dried, unwrap them carefully and prepare to insert the five bulkheads that go into each. Put one at each end and the rest three inches apart, on each rotor. Glue carefully.

You now have two semi-circular rotors. After the glue has dried on them it is time to attach them to the end-plates which hold them together. At this point

By Jim McPheat, Jr.

it is well to take another look at the plans because the rotors have to be

put on exactly as specified. Take one end-plate and draw a line through the middle. Put some glue on the end of one of the rotor shells; holding the shell vertically, place it on the end-plate so that the straight edge of the bulkhead in that end of the rotor is next to the line that was drawn across the end-plate. The top of the rotor will also be just flush with the peak of circle as shown on the end-plate view. *Check this carefully to make sure you have it right.*

The same procedure is followed with the other rotor shell except that it is attached at the other side of the line and flush with the bottom. If you prefer, just turn the end plate around with the first rotor glued on, and then you can do the same as before. When the glue is dry attach the other end-plate in the same manner. When dry put a bushing with a washer through the middle of each end-plate. Now set the completed rotor aside and start on the rotor mount.

### Construction Plans

for this swell novelty model of our Rotorplane will be found on the following pages. You'll find 'em very easy to follow in making your model.

#### ROTOR AND WING MOUNTS

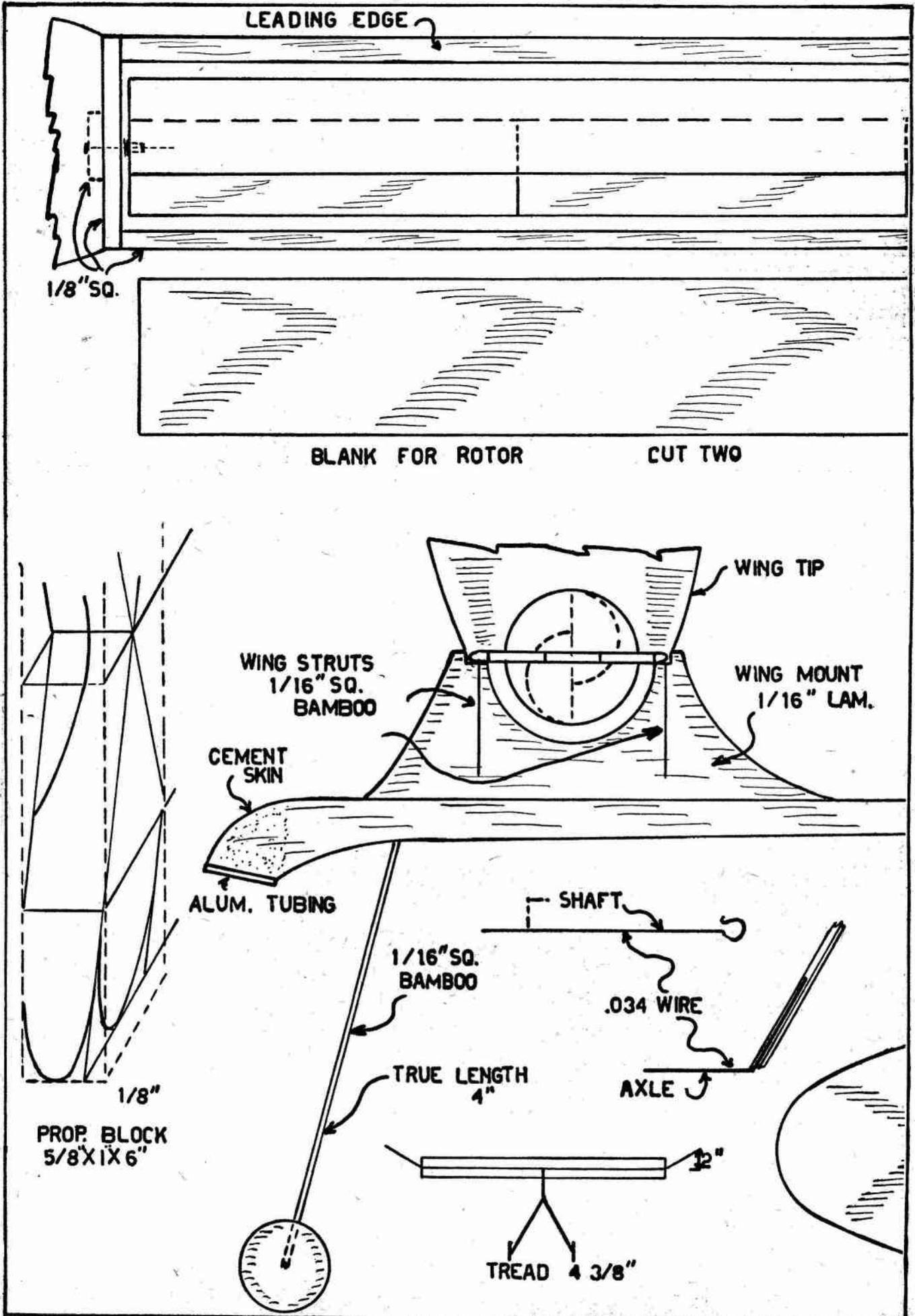
**C**UT the leading edge from a length of 1/8" by 3/16" balsa. Sand it smooth and round off the edges. The trailing edge is 1/8" square, as are the two end pieces which are to be cemented to the leading and trailing edges to form a rectangle.

Determine the center of the ends and glue on the small pieces of 1/8" square balsa which are shown in dotted lines on the plans. These are to reinforce the ends where the pins go through later.

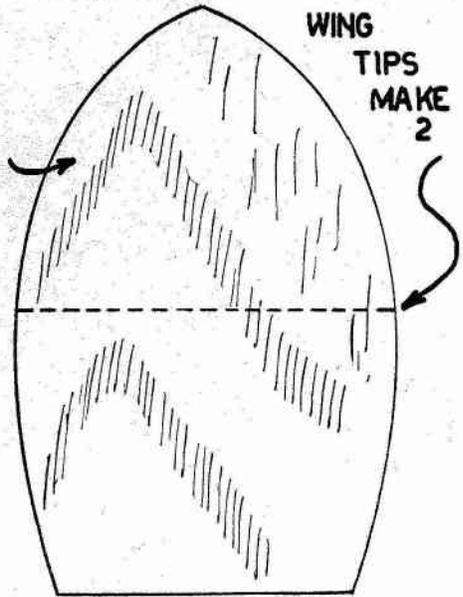
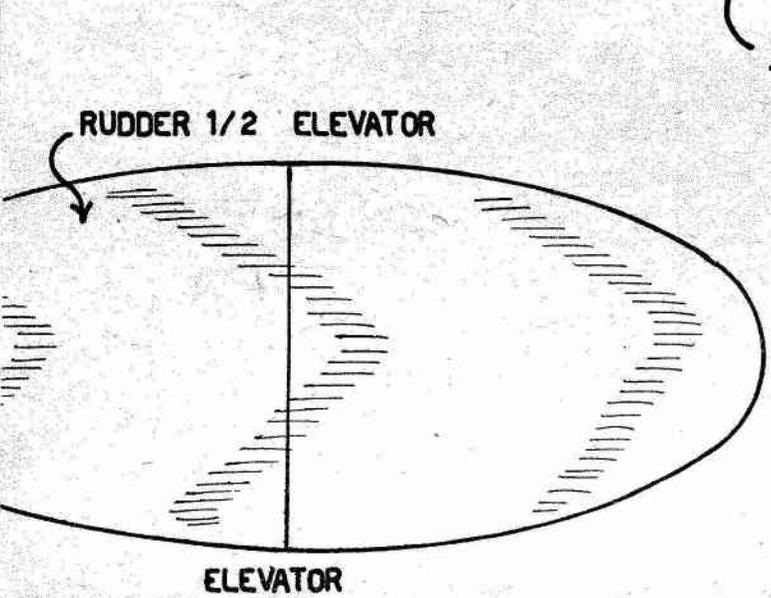
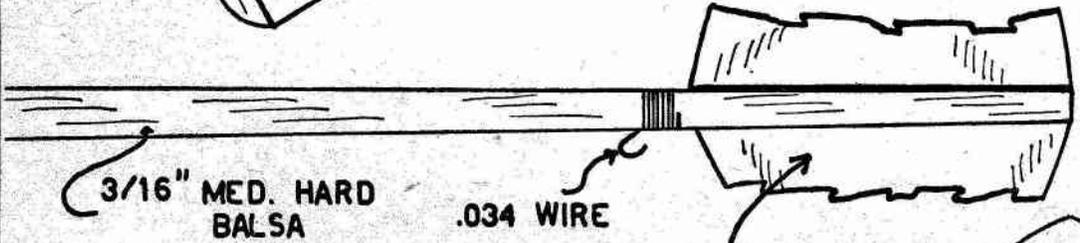
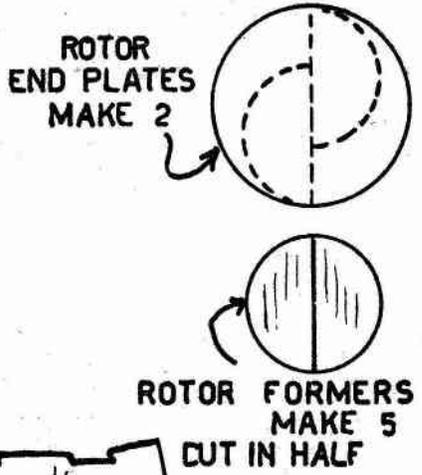
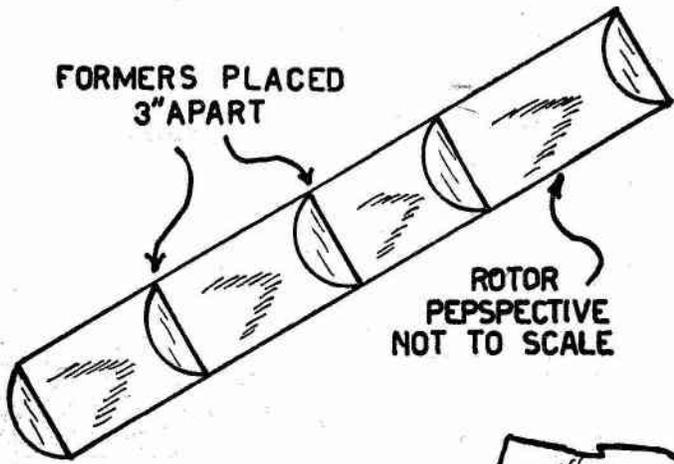
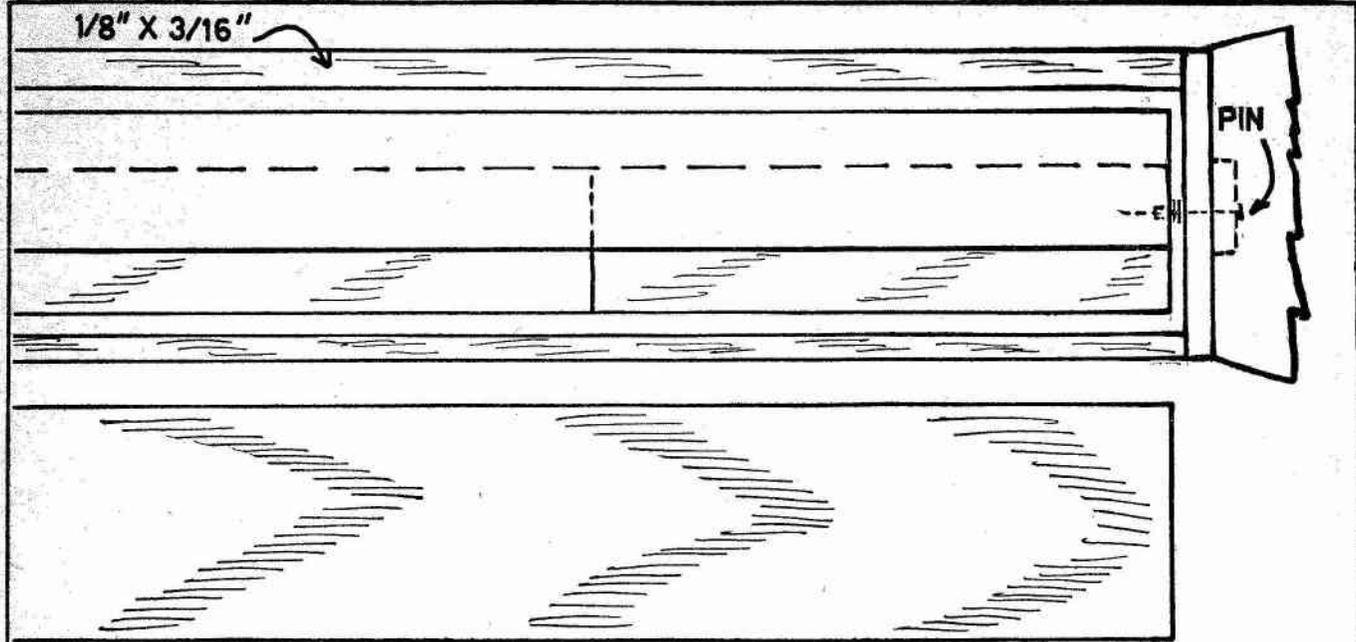
For the wing mount glue two pieces of 1/16" balsa together. When dry cut them out to receive rotor mount as shown on Plate 1. In the meantime, put some glue on the pins and push them through the ends of the rotor mount, through the bushings and into the rotors.

Make sure you have a washer between the rotor end-  
(Continued on page 94)

A ROLLICKING ROTORPLANE—Plate 1

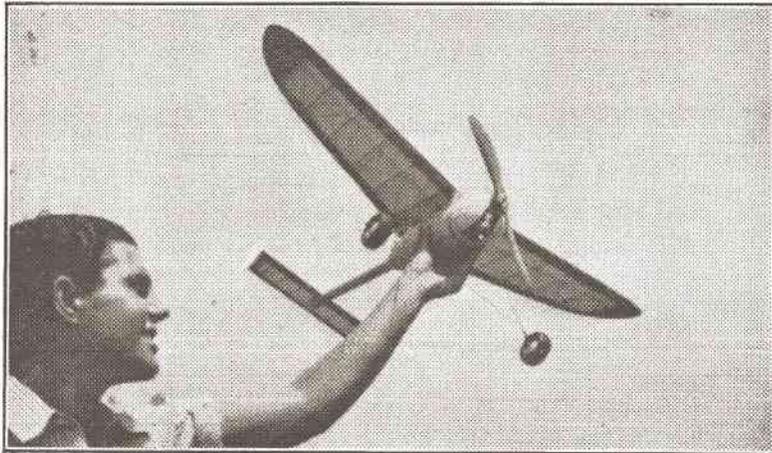


A ROLLICKING ROTORPLANE—Plate 2



JAMES MC PHEAT JR.

"And in this corner, gentlemen—the *Flying Aces Gas Flea!*" Introducing this little three-foot fuel flyer for your inspection and approval is *Matty Matera*, who gave valuable assistance to *Paul Plecan* in test-hopping and adjusting the model. The *Gas Flea's* a neat-looking little lady, think you not?



## A Three Foot "Sky Knife"

Here we present the smallest gas model design yet to appear in the pages of our mag—the *F.A. Gas Flea*. But in spite of its scant size, this yard-wide miniature possesses all the basic characteristics of the larger models—together with the advantage of low-cost construction. You'll find its construction simple, based as it is upon a novel, monocoque tail boom of great strength. Go to it, fellows, and build—

# The F. A. Gas Flea

\*\*\*

**C**OMPARE the scant wing-span of our little gas-driven *Flying Aces Flea* with the broad spread of some of the bigger fuel jobs you've seen, and you'll realize that this three-foot cutie is really a Lilliputian in the gas motor field. But our tiny terror has many advantages over the big ships, the main one being its low cost of construction.

Believe it or not, the original model from which this article was written was built at a total cost (exclusive of the engine) of just \$1.83! It's true that if I'd had to buy each and every piece used in the ship, the cost might have been somewhat higher. But I'm no different than the rest of the modeling tribe in having a fair supply of usable odds-and-ends of material left over from previous jobs. So when you build your *Flying Aces Flea* it shouldn't cost any more than a couple of bucks at the most—again exclusive, of course, of the engine.

Another advantage besides the price is ease of transportation. You don't have to hire a truck or pester a friend for his car when you want to take the little fellow out to the flying field. For with the simple type of monocoque construction used here you'll find our ship extremely strong, yet light in weight and sufficiently

By **Paul Plecan** compact for convenient carrying.

The *Flea* is inherently stable. Since we completed construction many months ago I have flown her nearly every day—and she hasn't gotten into a spin yet! And in spite of constant rough landings on the field where I fly her, she's still in "excellent physical condition," since the landing gear and tough fuselage have brought her through every time.

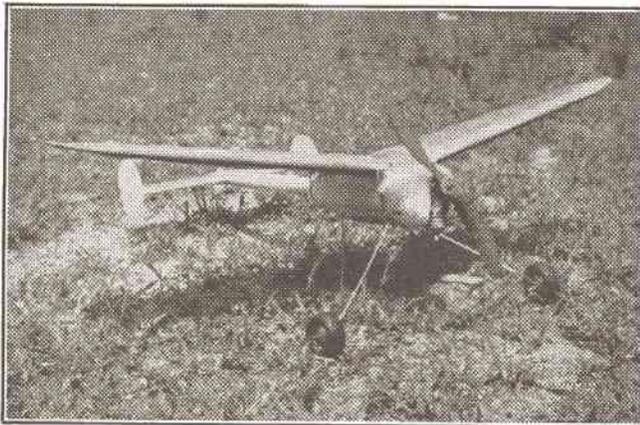
Yes, gas fans! The *Flying Aces Flea* isn't the *biggest* gas job in the game, but she comes mighty close to being the *toughest*. And I know you'll agree with me after you've built and flown yours. So let's get going!

### GENERAL CONSTRUCTION

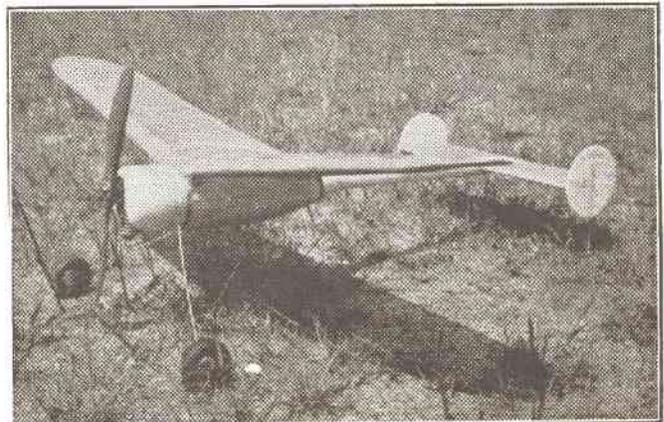
**L**OOK over the plans and instructions and make sure you fully understand the proposition before you start. Then you're ready for the first step, that of building the tail boom.

After obtaining sheet balsa of the required dimensions (see Plate 1), soak it in hot water and then bend it around a  $\frac{7}{8}$ " diameter rod. Wrap evenly with cloth or rubber strands to keep it in shape while it is drying. Then cut out the bulkheads for the fuselage following the plans on Plate 3. Next cut the ribs (Plate 2) to shape.

When the tail-boom has dried and the seam along its side has been cemented, mark off the spacings for the bulkheads. Slide the proper bulkheads into place and



Above, we have a fine front-quarter view of our *F.A. Gas Flea*. Because of the ship's "miniaturity," perhaps *Paul Plecan* should have christened her *Tom Thumb* instead. And speaking of *Tom* reminds us of the famous theatrical troupe of *Singer's Midgets*, which gives us another simile, since you'll surely sing when you see her fly. The picture at the right gives us a chance to get a better glimpse of her wing and tail surfaces. By the way, you'd better color your *F.A. Gas Flea* red—'cuz she's awful apt to get lost in the short grass.



## YOU'LL FIND FULL PLANS ON THE FOLLOWING PAGES

cement with a good grade of model cement.

At this point, the landing gear (Plate 1) should be bent to shape and cemented securely to Bulkheads 1 and 4. Do not spare the cement on the landing gear, since this part of the model takes most of the abuse both when taking off and on landing.

Cement the motor mount (Plate 1) into place, first making sure that it is being fitted parallel to the center line of the fuselage.

The monocoque fuselage construction is really simple, and modelers should experience little difficulty in producing a perfect covering. The planking strips of 1/16" by 1/4" balsa are best applied in the following manner: one strip is carefully cemented along the center of each side of the fuselage, and then one along the bottom. After the cement has dried, additional strips are attached between those already on, and left to dry.

Keep on adding more strips until you have filled all the spaces. The fuselage should be set aside to dry thoroughly and then should be sanded with rough sandpaper until the covering is comparatively smooth. Finish off with finer sandpaper, then apply two coats of dope.

### THE TAIL

**T**HE rudders are very simple, being made of 1/8" sheet balsa. The stabilizer is two pieces of 1/4" by 1" by 13 1/2" with 1/16" by 1/4" by 2 1/4" ribs cemented in place. A 1/4" slot should be cut in the tail boom and the stabilizer cemented in place securely.

The rudders and tail-skid are cemented in place next. Small fillets are carved from soft balsa to fillet the rear of the tail boom into the stabilizer.

The cowling is carved according to the engine used, so no more need be said about it here. However, slots should be cut in the proper places in the cowl to afford easy access to the timer, gas adjustment valve, etc.

### WING AND ENGINE

**W**HEN constructing the wing, take care not to let it warp. After cutting the spars to the size shown on the plans (Plate 3) slide the ribs into place and cement them well.

The 1/8" square leading edge former is next, and then the 1/64" by 1" trailing edge. (If you cannot obtain 1/64" sheet, incidentally, 1/32" sheet will do.) The leading edge covering of 1/64" sheet should be soaked in water until flexible enough to conform with the leading edges of the ribs.

Cover the wing tips with 1/64" sheet, and then cover the entire wing with Jap tissue. Red or orange are preferred because of better visibility in flight. Dope the entire model with two coats of dope.

Any engine with a bore and stroke of 1/2" or 5/8" can be used, but the weight of the complete engine, with coil, condenser, and batteries should not be more than nine ounces, or you will have a very fast model which will require a large, open, and smooth field because of the high speed and long take-off run required.

Remove your motor from the original skids and resolder the ignition system so that the parts will fit in

the proper places in the fuselage (see Plate 3). If you're "not so hot" with a soldering iron, you'd better let a more expert buddy do the work for you.

Cement the spark coil and condenser into the fuselage, and cut an opening in the tail boom between Bulkheads 2 and 5 so that you can slip the battery holder in and slide it back and forth for adjustments. A good battery case can be made by wrapping paper around the two penlite cells that are used, and cementing the seam, forming a paper tube. Slots are cut in the ends for the wire fittings, and your battery case is complete.

Assemble the model and take it to a field where tall grass is growing. Glide it a few times without power and make any adjustments that are necessary. When the *F. A. Gas Flea* makes a long, flat glide from launching at shoulder height, she's ready for powered flight.

But be mighty careful about powered flights until you are thoroughly familiar with your ship and its capabilities. For there's many a model has gone A.W.O.L. just because a few too many drops of fuel were allowed on an early flight. An engine run of no more than ten seconds is ideal for the *F. A. Gas Flea* during the testing period.

After that, when you have the kinks ironed out and your method of control well in mind, you might be a little more liberal with motor running time.

When you build this husky youngster you might send us a picture of it. For I'm pretty sure that the Model Editor of *FLYING ACES* will want to reproduce it on his

"With the Model Builders" page if it will "come up" at all well. Am I right, Mr. Editor? (*You are right, Mr. Plecan!—Editor*).

And perhaps it wouldn't be a bad idea to insert a word or two here about how to get those pictures. Although I'll admit that mine didn't work out a hundred percent satisfactory for this article. I can excuse that, though, by repeating the old saw about "Do as I say, not as I do."

Anyway, the editor tells me that the greatest faults

in the pictures sent to him for publication lie usually in the backgrounds against which the ships are taken or in the focus of the cameras used. It seems that a light-colored model is almost always snapped against a similar-shaded background, or a dark ship is shot in front of dark shrubbery. And in either of these cases, of course, it makes it almost impossible for one to distinguish the finer details of the model.

But when a good rear scene is used, against which the ship ordinarily would stand out perfectly, the focus is frequently wrong!

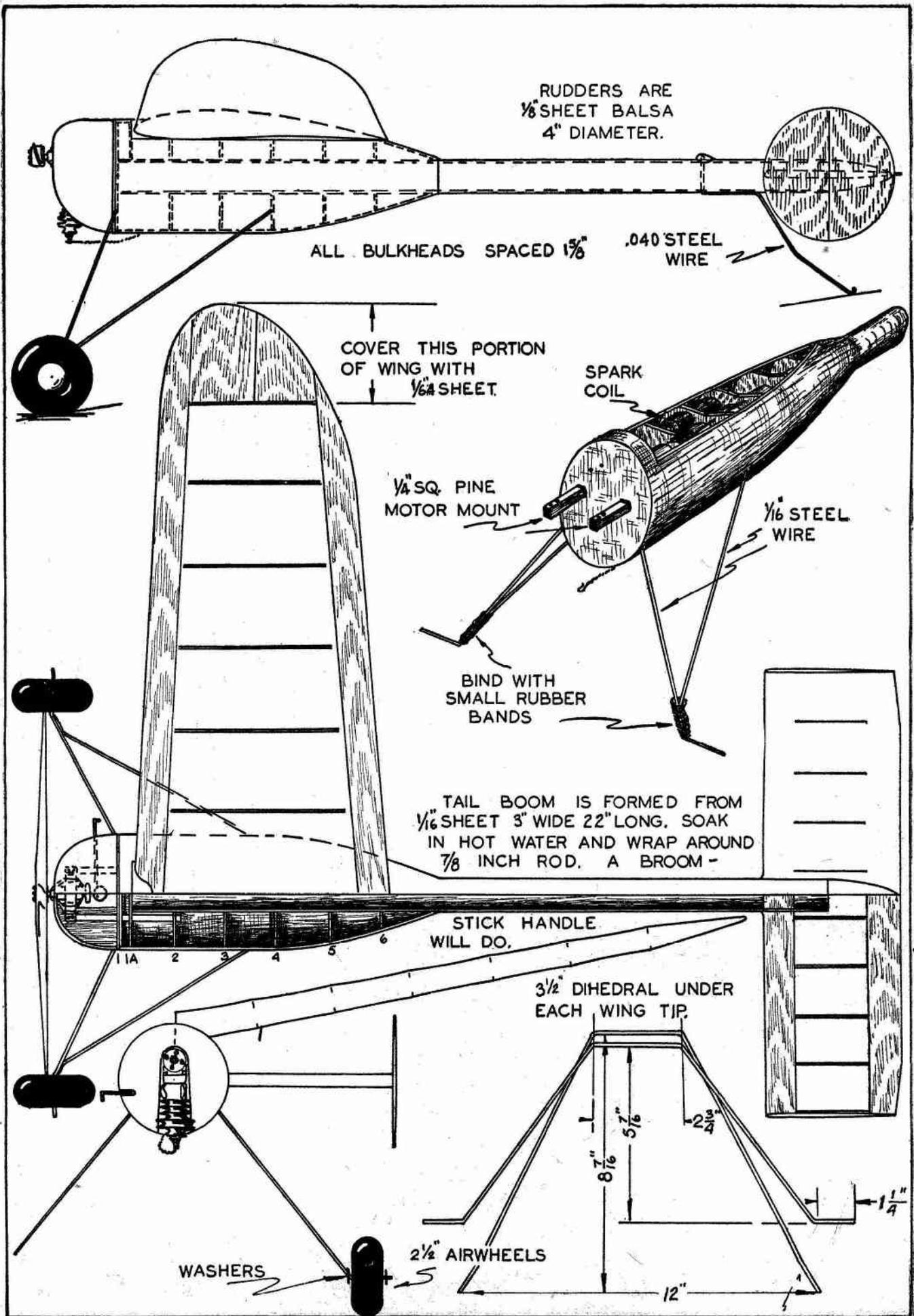
So you can easily see that the way to "make" the model builders' page with your snapshots is first to make sure of an "opposite" background for the picture and then carefully to measure the distance from the model to the lens and set the focus pointer at that figure.

Of course, the larger the picture the better it will be for reproduction, so your best bet is to have your camera as near the model as your focusing scale will allow. Lots of fellows use portrait attachments for close-up shots. These extra lenses aren't hard to use, but measure your distance right to the inch.

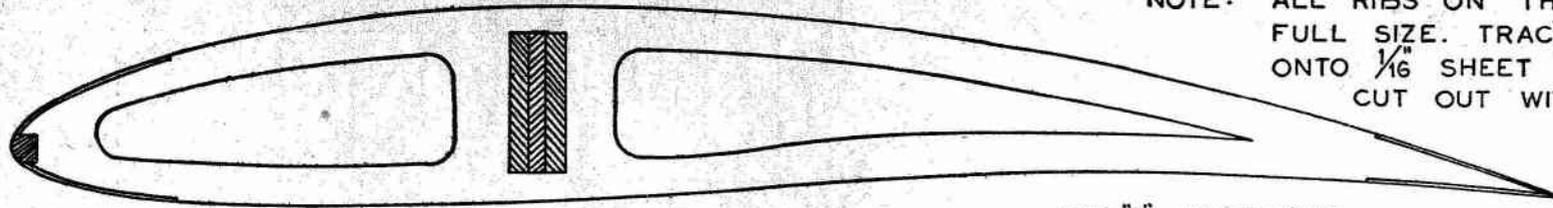


*Strong and resilient, the monocoque tail boom of our trim F.A. Gas Flea, shown to such good advantage in this swell rear-quarter shot, is made merely by shaping sheet balsa around a solid stick. If you carefully follow the accompanying plans and instructions while building your model, you'll be more than pleased with the result.*

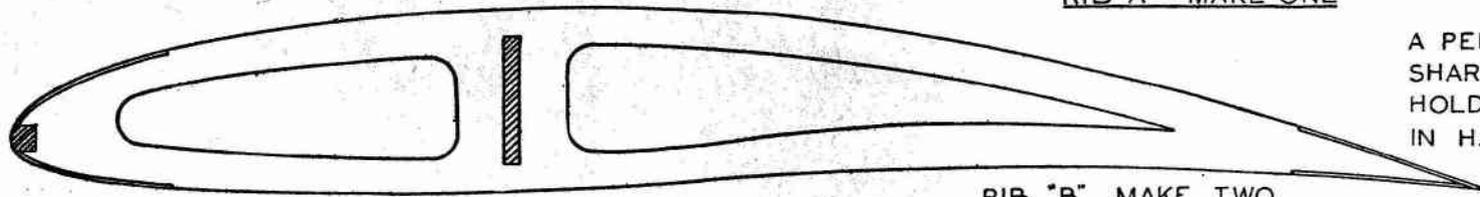
THE F.A. GAS FLEA—Plate 1



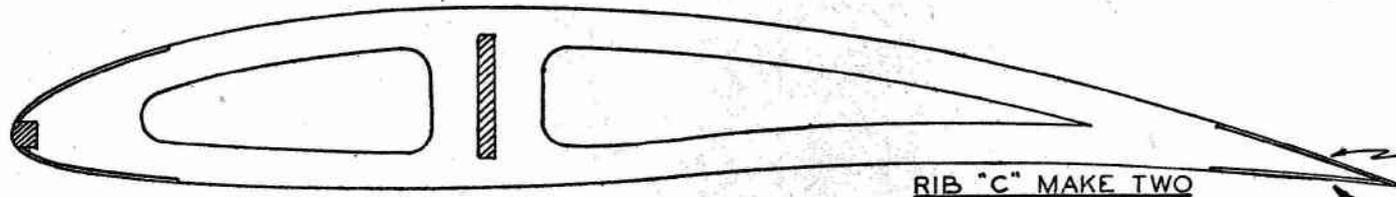
NOTE: ALL RIBS ON THIS PAGE ARE FULL SIZE. TRACE DIRECTLY ONTO  $\frac{1}{16}$  SHEET Balsa AND CUT OUT WITH RAZOR



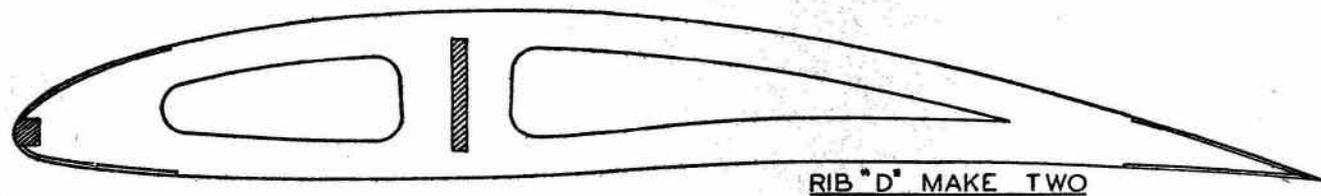
RIB "A" - MAKE ONE



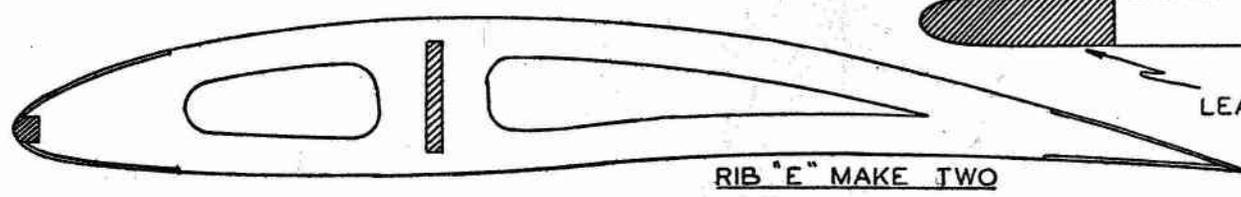
RIB "B" MAKE TWO



RIB "C" MAKE TWO



RIB "D" MAKE TWO



RIB "E" MAKE TWO



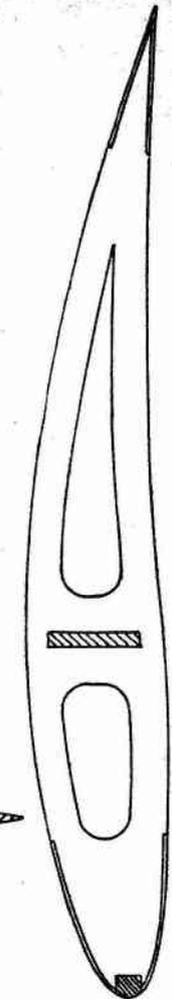
RIB "F" MAKE TWO

A PENCIL WITH A SHARPENED ERASER HOLDER WILL COME IN HANDY WHEN HOLLOWING OUT RIBS, FORMERS, ETC

SHEET Balsa TRAILING EDGE

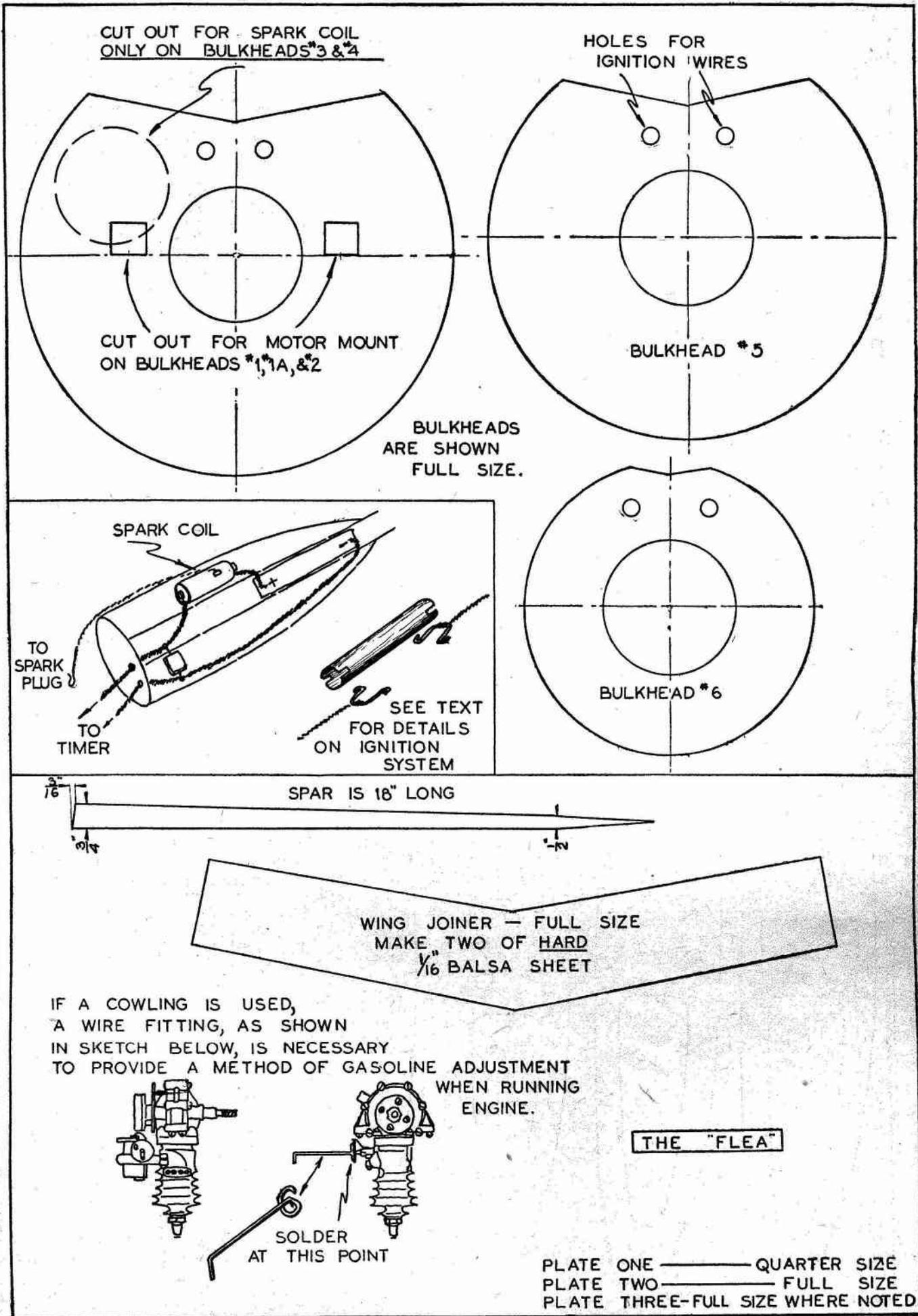
FULL SIZE STABILIZER CROSS SECTION

SOFT Balsa LEADING AND TRAILING EDGES



RIB "G" MAKE TWO

THE F.A. GAS FLEA—Plate 3

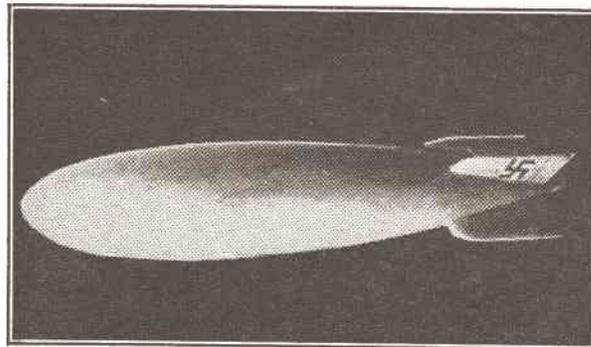


## A "Solid of the Great Zep!"

"The *Hindenburg* has exploded!" Mingled horror and unbelief on the part of every listener greeted this startling statement of excited broadcasters over the nation's stations during the supper hour programs of May 6, 1937. But as the whole world quickly learned, the tragic fact was true. Since that fateful evening we have received many requests for plans and instructions for building a display model of the great German sky vessel. And here they are—complete, concise, and extremely easy to follow.

One of our finest models!

Here's a top-side view of our striking model of the *Hindenburg*. Note how neatly the tail fins fit into the body. Two balsa blocks cemented together and carved to shape form the hull of the ship. After trimming, the blocks are separated and the insides scooped out.



# Here's the "Hindenburg"

\*\*\*

**D**ESIGNED and constructed as the LZ-129, the great Zeppelin *Hindenburg* contributed to the pages of aeronautical history a chapter that will never be forgotten. For the story of this huge German dirigible is a story of ambition, endeavor, and success.

But then came the evening of May 6, 1937, when the quietness of America's supper hour was shattered by the voices of horrified radio announcers:

"The *Hindenburg* has exploded!" And thus ended the life of a great dirigible, but the story of its performance will ever remain inscribed on the pages of aviation history.

**P**OWERED with four Mercedes-Benz Diesel engines developing 1,100 h.p. each, the Zeppelin had a cruising range of nearly 9,000 miles. The gas containers within the great hull had a combined capacity of 7,063,000 cubic feet. The total weight of the vessel was 220 tons; in length it was 811 feet. Its maximum speed was about 85 m.p.h., somewhat faster than either the *Graf Zeppelin*, the *Akron* or the *Macon*.

On its numerous trips the *Hindenburg* carried passengers varying in number from 21 to 72. The one-way fare was \$400 and the round trip \$720. At \$1 per pound

By Nick Limber

the ship carried all types of cargo, including even a complete automobile on one occasion and an airplane on another.

Such a ship as the *Hindenburg* will ever be famous, so for this reason we offer you modelers a solid display replica of this record-smashing sky-liner.

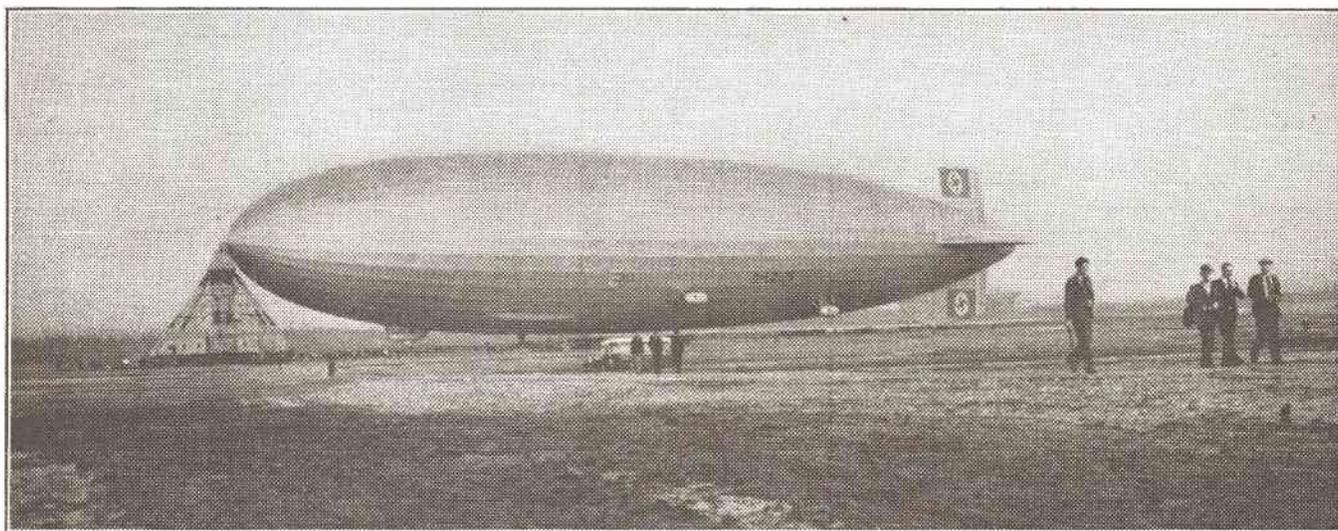
### CONSTRUCTION OF HULL

**T**HE first step in the construction of the *Hindenburg* model is making the hull, which is built in two parts of soft balsa. If the builder wishes to install a lighting system it must be hollowed out to receive the battery and bulb.

Note that the drawings are full-size. Cement lightly together two pieces of soft balsa, 20½" by 2" by 4" and then trace on the 4" side the side-view of the hull. Cut away the wood outside of the traced lines and finish the rough shaping with sandpaper.

The top view is the same as the side, so we trace the outline again, then carve and sand to shape as before. When the approximate shape has been obtained we begin to pay attention to the cross-sections as shown on the drawings. Here again, all that is necessary in the way of tools is a sharp knife and a supply of medium rough

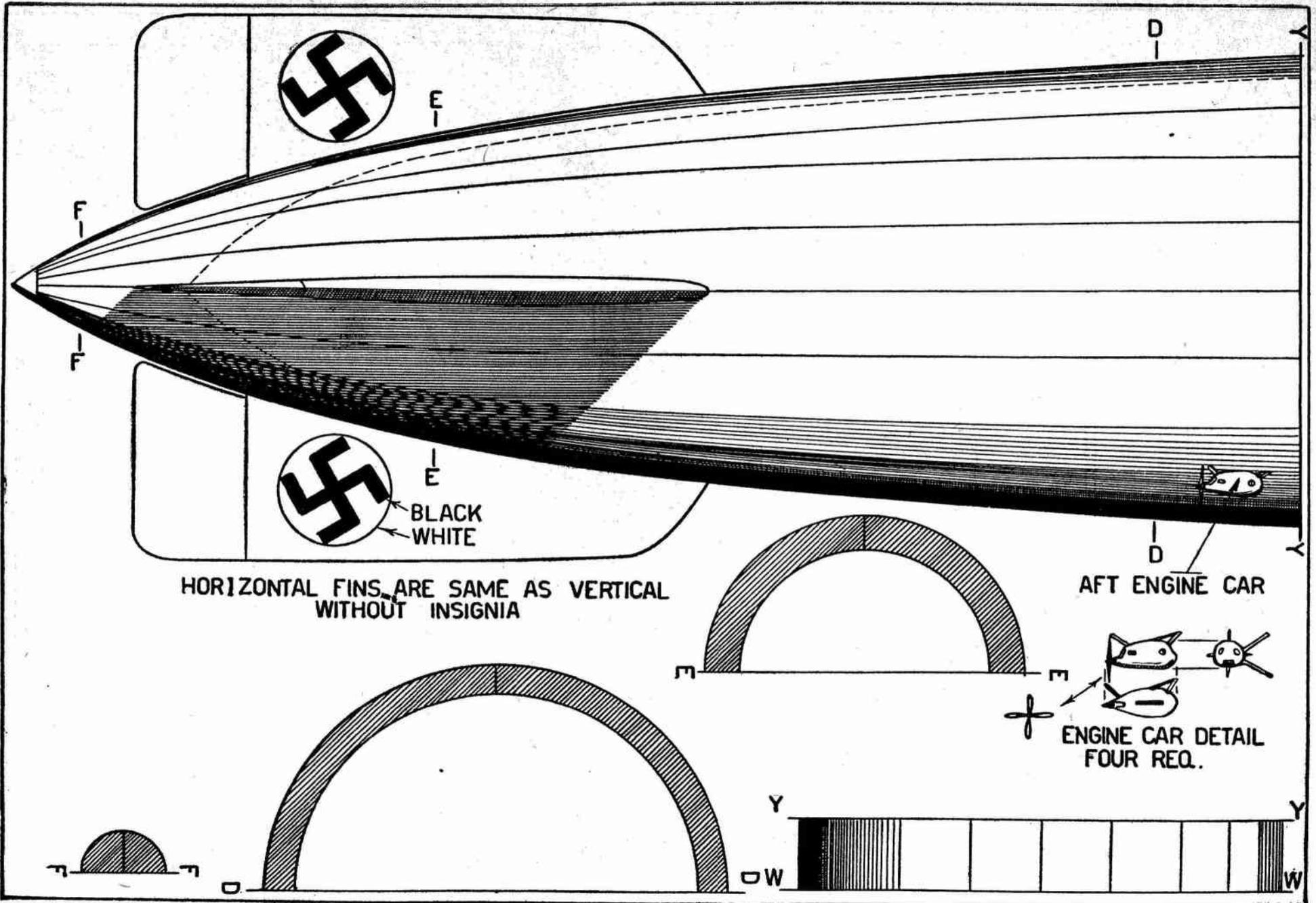
(Continued on page 74)



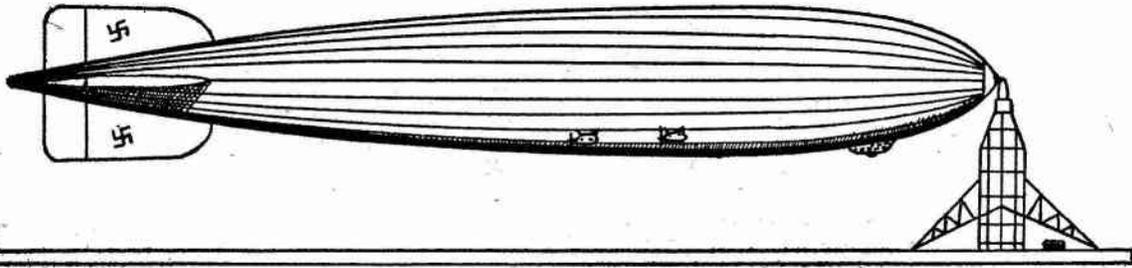
Moved to the portable mast at Lakehurst, the great Zeppelin from which Nick Limber patterned his model "posed" for this peaceful picture on her season's-end visit to America in October 1936. It was on the vessel's next trip to America in May, 1937, that the disaster occurred which spelled the doom of the graceful monarch of the skies. In this picture, the respective positions of the control and engine cars are clearly shown, thus the shot will prove of value to you in the final assembly of your model. (Photo by courtesy of M. A. Kuster).



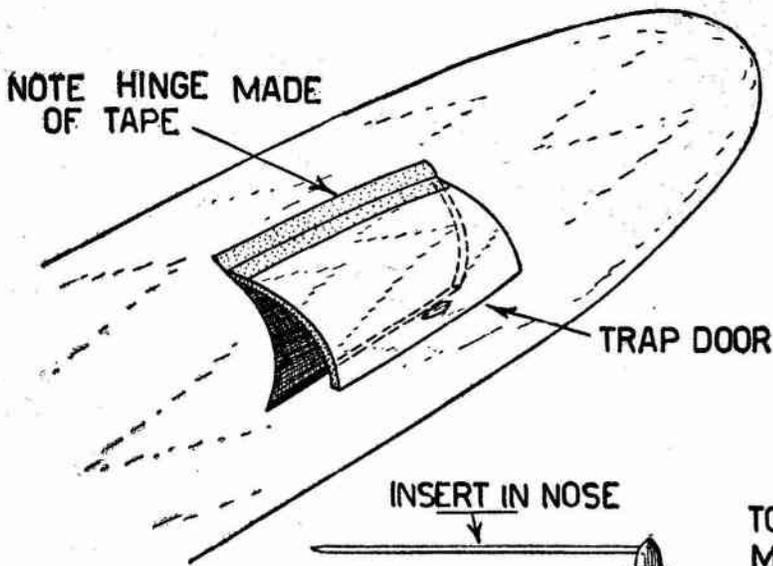
[ 57 ]



HERE'S THE "HINDENBURG"—Plate 3

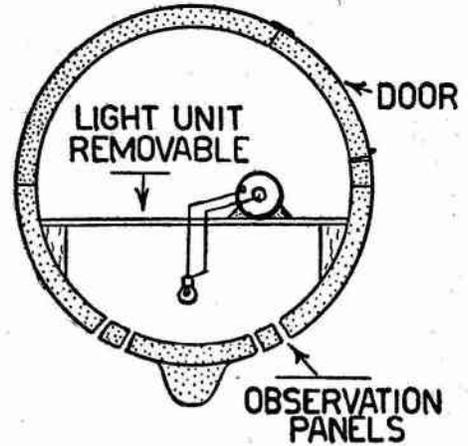


BASE MADE OF PINE



NOTE HINGE MADE OF TAPE

TRAP DOOR



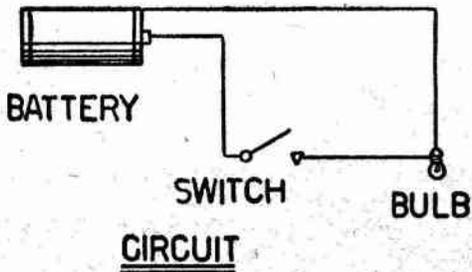
LIGHT UNIT REMOVABLE

DOOR

OBSERVATION PANELS

INSERT IN NOSE

TOP VIEW OF MOORING MAST



CIRCUIT

BAMBOO

WIRE

SHACK MADE OF Balsa

## Modelers' News

### MIDWEST GAS MEET

PRIZES of an approximate total cash value of \$500.00 were awarded the winners in the recent Midwestern States Gas Model Meet, in a special Victory Banquet held following the big contest at the Sherry Hotel in Chicago. A total of 129 contestants was registered in the various events. They came from Illinois, Indiana, Ohio, Missouri, Wisconsin, Michigan and Ohio. The contest was held at Harlem Airport, Chicago, and was sponsored by the Gas Model Aeronaut Club of the Chicago Park District.

A United Air Lines Trophy and an Aero Champ motor were awarded to Michael Roll, of Dearborn, Mich., who took first place in the duration event with a time of 36 min. 16.9 sec. Second and third prizes in this event went to Richard Kliefuth of St. Louis and Carson Carol of Indianapolis, for their respective times of 31 min. 15 sec. and 18 min. 15.2 sec.

In the consistency event, Dr. G. C. Covington of Chicago was awarded first prize—a gold trophy presented by the Chicago Park District. Edward Konefes took second place in this event and received both the Whitfield Paper Company's trophy and a model airplane engine.

Carson Carol, of Indianapolis, also won the Gas Model Aeronaut Club's Gold Achievement Trophy, presented by the club "to a non-member whose model contributes the most toward the advancement of gas model aviation." Other special awards went to Frank Nekimken, Kliefuth, and John Erker. In addition, every winner received a special Burgess lightweight battery and every contestant was presented with a souvenir white silk ribbon.

## What Do You Say?

### GAS FIGHT A GAIN

Editor, FLYING ACES:

I haven't written to you direct before, but now that this gas model ban business has come up, I'm coming up, too!

In my opinion, these birds who are against gas models are either too dumb to learn how to build gas jobs and are jealous of the smarter fellows, or they are just a gang of killjoys and grouches who always want to slap a damper on everything good.

But my uncle is a State Senator and he's got the model builder's interest at heart. I think he'll do his bit.

I hope you'll print this letter, Mr. Editor, so some of the killjoys will

see it; for I'm appealing here to their sense of sportsmanship. Did you anti-gas fellows ever have a hobby or interest that you really loved? Then how would *you* feel if some one ruined it for you? Come on—be *regular!*

Gas models, whether built for contest or for sport, take up spare time that might otherwise be wasted, in a constructive, educational way. And as for the danger, lots of people die just sitting at home in chairs!

MERRILL KELSEY, F.A.C.,  
Montpelier, Idaho

Editor, FLYING ACES:

I would like to cast my vote against the Shaw-Hearst campaign opposing gas models. It seems to me that the Junior Birdmen members are partly to blame for allowing Mr. Shaw to claim their support. If they ousted him for misrepresentation he would then become merely a "one-man campaigner" instead of the supposed spokesman for several millions.

I have read the dispatch that says Massachusetts gas models must be flown only by licensed pilots. So while other countries give free training and also develop new model building techniques, states in our own country deliberately discourage this fine base of aviation training.

EDWARD NELSON, Erie, Pa.

*(Reports received at press time indicate that the Junior Birdmen's gas model fight has been dropped.—Editor).*

## Workbench Tips

### MOTOR CARE

WHEN getting ready to store your gas motor away for the Winter (or are you one of those year-round model pilots?) be sure that it is first thoroughly cleaned up. Wipe all dust from the outside and be sure that the combustion chamber is absolutely free of moisture or dirt.

Then completely coat all surfaces, both inside and outside, with a good grade of lubricating oil. Finally wrap the whole thing in an oiled cloth, protecting this in turn with heavy waxed paper and an outer covering of wrapping paper or cloth. In the Spring, all you need do is wipe off the excess oil, pour in a little fuel, and the motor will be all set to perk.

—TED BURZYNSKI

### COCKPIT PADDING

ON scale models where cockpit rim padding proves necessary, a very simple but realistic padding can be made from jap tissue. Crumple a 2" wide strip between the palms of the hands, then unroll and twist it lengthwise into a ropelike strand.

Let the coil even itself out by letting it uncoil as much as it will without your help, then pull on it gently and twist it again into a rope. Cement this carefully around the cockpit edge. Be generous with the cement, let it dry, then give a coating of dull black dope.

—PINK WALKER.

## Watch for the NEXT GREAT FLYING ACES

**FACT**—Another smashing Martin article revealing startling aspects of the deadly Sino-Japanese sky struggle.

"Germany Re-Arms in the Air"—a photo-packed feature describing the Nazis' new bid for power.

**FICTION**—"Aces of Death"—Don Keyhoe's latest striking story featuring Richard Knight in Cathay skies.

"Flight Team Flight!" Football season on the Western Front—with Phineas carrying the ball!

Plus another knock-out novelet by Arch Whitehouse: Kerry Keen and the mystery of the bullet-proof plane.

**MODEL BUILDING**—How to build Paul Gustafson's amazing streamlined blue streak—the Sphinx Moth.

Malcolm Abzug's "Ol' Reliable," the perfect utility ship.

A top-notch for our gas fans—Ben Shershaw's natty seven-foot power job. And a slew of other swell model features.

IN THE  
January FLYING ACES

ON SALE  
November 24th

## Skeleton From the Sky

(Continued from page 8)

Strange nodded. Then Andre turned, looked coldly at D'Orcy.

"If you care to fly into Paris, I will take you in the Breguet—as a matter of duty. We can follow Captain Strange."

The other man's scarred mouth twisted. "I have had enough of your company for one evening. And my chauffeur can have me through the Porte de Bercy before you are off the ground."

He stalked away, and in a moment a long Mercedes-Benz swept past headed for the Bercy-Paris road. Strange looked inquiringly at Andre.

"I supposed he came with you."

"Not if I could avoid it," retorted Andre. "He brought an agent from the Intelligence Pool for one of Jacques' pilots to carry across the lines. The plane had just taken off when I arrived. Monsieur D'Orcy and I were exchanging polite insults when we heard the Gothas and their escorts. In the heat of excitement, I unwisely permitted him to act as my rear-guard in an attack on the Boche."

"And then knocked him out when you needed him most," said Strange. "I haven't really thanked you for that, Andre—he was bent on finishing me after he saw the skeleton."

"I need no thanks, *mon ami*. It was quite a pleasure. Indeed, I am only sorry I did not remove a few of his teeth. Now that I think of it, I am in your debt for picking that Albatros from my tail while D'Orcy was sleeping. So the honors are even."

Andre gave orders to the waiting mechanics, and when he returned from the office a few minutes later the Breguet's Liberty motor was again rumbling.

"I have given word that your Spad and the skeleton are not to be disturbed," he told Strange. "My section will, of course, wish to photograph everything."

Strange tapped the capacious pocket of his leather coat.

"I hope you won't mind. I'm taking that forearm with me—I'd like to examine the bones with the gilt removed."

"You have some inkling about this matter?" Andre said eagerly.

"Just a vague idea that it all isn't what it seems. It might also be a good idea to look at the skeleton which fell into the Rue Grenelle."

"There will be no trouble there. Lieutenant Bayard, of my own office, has been sent to head the investigation. But we had better hurry if we are to locate that signalling point in time to do any good."

ALL the defense ships of the escadrille had landed by this time, and as the Breguet roared up into the night the flares were quickly extinguished. At Andre's suggestion, Strange had taken the front cockpit, so that he could fly the ship and check the bearings. He climbed to fifteen hundred feet, the altitude at which he had first seen the cross, and then carefully set about flying the approximate course he had followed. In a few moments the searchlights north of Vincennes were switched on, shifting to point steadily into the sky.

Watching the compass and the lights alternately, he waited for the instant when the bearing would be the same as that he had noted before. He realized almost at once that he had been flying closer to the banned zone than he had suspected previously.

"Tell me when we are over the spot," Andre's voice came through the speaking-tube to his helmet. "I have a white-star rocket ready to fire so the police will know where to close in."

"It will be in about a minute," Strange answered. "I'm going to spiral down over the place where I think the cross was."

The two-seater roared ahead until, sighting carefully on the Vincennes lights, he estimated they were in the right position. Closing the throttle, he sent the Breguet down in a fast, tight spiral to offset possible drift. He had barely completed one turn when from half a mile distant a searchlight beam pierced the blackness and fastened upon the ship.

Too swiftly to be counted, other searchlights blazed up and swung toward the Breguet. Strange had ruderded out of the first beam, but the dazzling radiance of a dozen more at once engulfed the two-seater.

"Name of a pig!" Andre was howling through the tube. "I told them—"

Crash! A blob of red flame appeared just off the Breguet's right wing, and an exploding archie shell rocked the ship. Strange rammed the stick forward, trying to dive out of the lights. More A-A guns were blazing from the tops of five or six buildings, and a storm of shrapnel suddenly filled the air.

"*Sacre bleu!*" bawled the little major. "It is a trap! We have been betrayed!"

Strange plunged the Breguet away from two light-beams which flashed down after them, then kicked around in a furious skid. The speed of his dive offset the maneuver, and for a

moment they were out of the blinding glare.

"Quick!" shouted Andre. "Land in the Boulevard Raspail before those fools scatter us in little pieces!"

Strange shot a look over the side. The Seine and the Ile de la Cite were directly beneath, and the square towers of Notre Dame seemed to be leaping out at the ship. He whipped to the left of the old cathedral, disregarding a blast of machine-gun fire from the roof of the nearby Prefecture de Police. Straight ahead, two rows of tiny lights, red and green, abruptly outlined the upper half of the Boulevard Raspail. The next second, a lane of white appeared between the parallel lights, and down this lane three Nieuports came streaking into the air.

The defense patrol had been loosed against them!

### CHAPTER III

#### DEATH ON THE RUE GRENELLE

THE leading Nieuport zoomed dizzily, its pilot warming his guns in three quick bursts. Strange reversed, pitched through a searchlight beam, saw the glimmer of the Seine again below him. A dark shape charged across the river, grew into the menacing bulk of a coal-black Breguet from the defense station on the Right Bank. With its exhaust stacks perfectly masked, and only the white faces of the pilot and gunner to reflect the light, it was almost on them before Strange saw it. He nosed down, hurled the Breguet under its black sister-ship. Suddenly he heard the rear-pit guns clatter.

"Stop firing!" he shouted at Andre. "That's one of your own planes!"

"I am only keeping them off!" Andre yelled back. "*Nom d'un nom*, get us down before I lose my temper and shoot that pig of a pilot!"

Strange threw the Breguet into a vertical bank and sent it thundering back across the Seine. Frightened crowds fled from the quays and the bridges as gunners atop the nearest buildings flung a murderous fire after the ship. The black two-seater slid down on one wing, rear-pit guns flaming. Tracers left smoking holes in Strange's cowl, scorched on into the wings. The G-2 Ace booted his rudder, escaped a second blast, and pitched the Breguet down into the narrow Rue de Bellechasse.

Soldiers and civilians around the Quai d'Orsay railway station broke in a panic as the ship roared past, hardly fifty feet from the ground.

The black Breguet zoomed, was joined by the three Nieuports, and the four ships raced overhead, waiting for their quarry to climb. With a desperate skill, Strange threw the two-seater onto its left wing-tips as they reached the Boulevard St. Germain. The ship grazed a street-car, straightened out in a semi-gloom which was quickly broken by the lights of the blocked-off avenue ahead.

Fuzzy tracer-lines stabbed down across the plane's nose as Strange jerked the throttle. Cowl-guns blazing, the black Breguet dived into the boulevard, one of the Nieuports following for an attack if the other pilot missed. A muffled howl of fury came through the tube to Strange's helmet, and Andre flung a burst at the black ship's prop. The defense Breguet stood on its tail, forcing the Nieuport to a hasty zoom over the rooftops, and with a vast relief Strange cleared the obstructions at the head of the Boulevard Raspail and let the riddled ship settle to the pavement.

It stopped about two hundred feet from the intersection with the Rue de Varennes along the sidewalk of which fuel drums, small tents, and a communication booth had been placed for use of the defense patrol. Mechanics and officers dashed out with drawn guns, and the Breguet was speedily surrounded by an angry group.

"Bring out *les Boches!*" belted a stentorian voice, and a lantern-jawed first lieutenant thrust his way through the crowd. Andre hopped up on the rear seat before anyone could seize him.

"Imbecile!" he shrieked at the lieutenant. "If you are the one who did this, I will have you in the Bastille!"

The other man's mouth opened in amazement.

"Commandant Andre!" he gasped, and the suddenly quieted mob stared at the little major. "But why did you send such an order?"

"Order? What order?" raged Andre.

"Why, to have your plane brought down," faltered the lieutenant. He cringed under Andre's glare. "I had no part in this, *commandant*—I just arrived, thinking an Intelligence officer might be needed—"

"Stop whining and tell me about this order," snapped the little Frenchman.

"It was supposed to have been from you, telephoned from the Fifth Defense Escadrille," said the other man, unhappily. "You—the message said that two German spies had stolen a Breguet loaded with bombs and were flying here to destroy the planes kept on the boulevard. The order was for the anti-aircraft gun crews to wait until the Breguet was

over the Seine before they fired so it would not fall in a crowded street."

"Who told you of this order?" demanded Andre.

"It was relayed to me, at the wrecked house in the Rue Grenelle, so I could take my men and go to the river and help capture the spies if they escaped death in the *descendu*. You can confirm all this by asking any of these officers."

"*Oui*, major, it is the truth," hurriedly assented a flying-corps lieutenant. "I received the word myself, from the defense control-officer."

"The control-officer is a numbskull," Andre said fiercely. "I sent him a message, yes. But no one with human intelligence could have so construed it."

**H**E climbed from the ship, and Strange and the first lieutenant followed him into the communication booth.

"This," said Andre, pointing to the lantern-jawed officer, "is Lieutenant Bayard, as you probably have guessed. There is no danger in letting him know that you are Captain Strange. He is not quite so dumb as he appears."

Bayard reddened, awkwardly shook hands with the G-2 Ace.

"I have heard much about your exploits, *mon capitaine*. Major Andre says you are the greatest agent the war has produced."

"Excepting myself, of course," Andre chuckled, with a sudden return to good humor. "Now, if you will excuse me—" he picked up a phone, and for the next minute or two the air crackled with Gallic expletives. After another rapid conversation, he turned to Strange and Bayard.

"It was no mistake by the control officer. The order was not the one I outlined at the Fifth Escadrille. Either Jacques made a mistake or the line was tapped somewhere and a false order substituted for the one I gave. We will know in an hour or two; I have left word for the information to be telephoned to me at the Intelligence Pool."

"My car is just around the corner," said Bayard. "I can take you to the Pool."

"*Tres bien*," said Andre. "But wait." He turned to the G-2 Ace. "Strange, do you still wish to see that other skeleton?"

"More than ever," replied the G-2 Ace. "Judging from that attempt to get rid of us, we must be on the right track."

"You spoke of another skeleton?" said Bayard, when they had reached his car.

Strange waited until the car was started, then withdrew the bony forearm from his flying-coat pocket. The hand, which he had doubled back, had lost several finger bones during his violent maneuvering of the Breguet, but the identification tag was intact. He briefly explained to the astonished Bayard how he had encountered the skeleton, then asked:

"Did you find a tag on the first skeleton?"

"No," said the homely Frenchman, "but not all of the bones were recovered. Also, some of the bones might have been carried away as souvenirs before the police arrived. There are always such morbid ones around."

"Were the bones you found gilded like this?" queried Strange. "Freshly painted, I mean?"

"They did not glow so brightly," replied Bayard, taking the bony arm in one hand and steering the car with the other. "And I do not think it was fresh paint. It did not come off on my fingers like this."

Strange nodded, took back the skeleton arm and regarded it silently. Bayard spoke over his shoulder to Andre. "I suppose after all this, *commandant*, you will put Sergeant Douville on the case again."

"Again?" said Andre sharply. "He has never been taken off the case. Hasn't he reported to you as usual?"

"I have not seen him in five days," Bayard replied with a note of alarm. "I thought you had given up hope about Lemoir and the others, and hence had detailed him elsewhere."

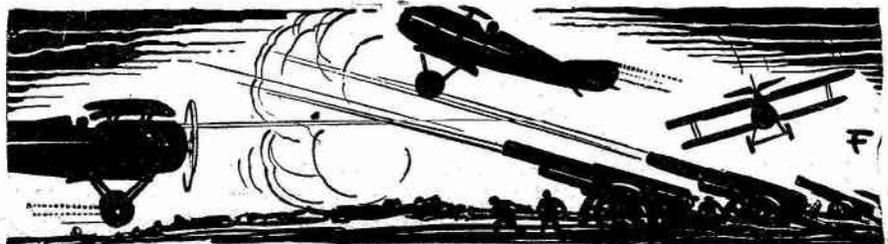
"*Nom de Dieu!*" groaned Andre. "My best 'blood-hound' disappears and no one tells me for five days."

"Perhaps he stumbled on a clue," said Bayard hopefully.

"What was the last word from him, if you don't mind my asking?" Strange interposed.

"He was going out to question Captain Jacques' pilots again," said Bayard. "After that, I do not know."

"Find out if he told Jacques where he was going from there," ordered Andre, "and put some one on his trail."



"I will telephone tonight—but here we are at our destination."

THE wrecked house had been an imposing three-story structure, fit even to be on the same street with the Russian Embassy half a block away, though time had faded its glazed red brick. The explosion had wrecked the front of the building and part of the right-hand wall, so that the upper floors and the roof had crumbled and sagged with a consequent spilling of broken furniture, jagged pieces of flooring, and other debris. Most of this filled the space between the sidewalk and the undamaged part of the house, though some of the wreckage lay out in the street. All of the windows were broken, and a grilled iron door hung drunkenly by one hinge on the right side of the structure.

The entire house and half of the street in front of it had been roped off, and workmen were erecting a high wooden barrier to protect the place from looters. Several policemen kept spectators well beyond the ropes, their dark-green war lanterns bobbing back and forth.

As Strange and the others stepped from the car, a burly *sous-officer* started to bar the way, then saluted as he recognized Andre and Bayard.

"Were the spies caught?" he said to the lieutenant.

"The spies," Andre cut in dryly, "have been taken care of. We have come to inspect—" He suddenly broke off. "Ah! What have we here?"

An ill-clad, skinny old man with a week's stubble on his chin was being led away protestingly.

"We caught him trying to steal from the ruins," exclaimed the *sous-officer*. "He crawled under the ropes while we were watching the air battle."

"I was only after what was—mine," cried the old man. "I am no thief. I am an honest man who—" He quailed suddenly under Andre's keen gaze.

"I have seen you before," snapped the little major. "Who are you?"

"You are mistaken, *m'sieu*," mumbled the prisoner. "I do not know you. I never saw—"

"He says his name is Joseph Daru," interrupted the *sous-officer*, "but I think he is lying."

"Was he by any chance trying to steal the bones of that skeleton?" asked Strange.

"I could not say, *monsieur*," shrugged the non-com. "It is possible; he acts a little mad."

The old man burst into a cackling laugh. "The bones! Why should I steal the bones when I know—" he sprang back as Strange and Andre jumped toward him.

"When you know what?" Andre said harshly.

The old man cowered back against the wooden barrier, and by the faint green glow of the war-lanterns Strange saw a fearful look come into his eyes.

"Nothing, *m'sieu le commandant*," he quavered. "I was but going to say that I know bones have no value. Who would buy old bones?"

"Don't lie to me!" thundered Andre. "You know something about this affair, and I'll get it out of you if I have to wring your scrawny neck!"

"Give him to me for a little while," said Bayard. "A few minutes down in the *Surete's* 'Black Room' will open his lips."

"No, no—in the name of Heaven, *messieurs!*" The old man cried wildly.

"So you know the Black Room?" said Andre. "I thought I had seen that face before. Now, will you tell the truth—or shall I send you to the *Surete*?"

"I will tell you," moaned the prisoner. "Only do not arrest me, *m'sieu*. My crime is long forgotten—I did no real harm."

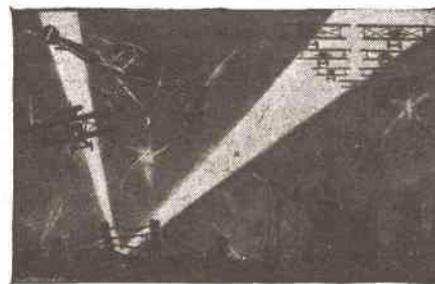
"Speak up!" rasped Andre. "Do you know anything about the skeleton that fell here tonight?"

The old man cringed back at Andre's furious tone.

"Yes, *m'sieu*," he said hoarsely, "I know all about the skeleton. It came from—" With a blood-curdling shriek, the old man abruptly stiffened against the wooden barrier.

"Santos!" he screamed, his dilated eyes almost popping from his suddenly dead-white face.

STRANGE spun around to see what had terrified him, but there was nothing in sight. When he jerked



back, the old man's eyes were glassy. His knees buckled and he slowly slid to the ground.

"*Mon Dieu!*" shouted Bayard. "He has been stabbed!"

A dagger had been driven with terrific force through the wooden plank and into the old man's back. Dripping with blood, the dark blade shone a ghastly hue in the green light.

Strange and Bayard simultaneously dashed for the opening in the

almost finished barrier. As they reached the other side, Bayard produced a flashlight and aimed it along the wooden wall. The beam quickly disclosed the hilt of the knife, but there was now no sign of the assassin. Andre and several police appeared, and the little major sent the men scurrying around the house and into the wreckage to search for the killer.

"It is probably useless in this darkness," he said gloomily to Strange. "If only we had realized at once that murder had been done—but I thought the old fellow was simply frightened at something he saw in the street."

"I'm not certain that he didn't see something," said Strange. "You heard him call out 'Santos'?"

"*Qui*, but it is a common name—it does not help us." Andre turned and surveyed the hilt of the dagger as Bayard spotted it with his torch. "A typical Apache knife. Leave it to be photographed, Bayard. There may be fingerprints, though I doubt it."

They went around the barrier to where a *gendarme* was guarding the corpse. A careful search disclosed only a package of cheroots and a few francs. Andre absently rolled the tips of his waxed mustaches.

"If I had your memory, I would place this poor wretch's face at once," he said to Strange. "But I suppose I shall have to wait until the Rogue's Gallery is searched. I am positive he has a police record."

Strange looked down at the dead man.

"It's maddening to come this close to the secret — only to lose it. We should have known, after that trap was set for us, that an attempt would be made to silence anyone who knew the truth."

"Yes, I should have had him taken in under guard," muttered Andre. "But my foresight is ever poor."

They both turned as Bayard and a policeman hurried toward them. "Has our murderer been caught?" exclaimed Andre.

"No," said Bayard, "but I found this near the spot where he stood."

He held out a metal tag. Andre snatched it from his fingers, stared at the name etched into the surface.

"Lieutenant Charonne Benet!" he cried. "The second man to disappear from Captain Jacques' squadron!"

## CHAPTER IV

### MURDER IN THE DARK

"ARE you positive," said Strange, "that this was not there before the barrier was put up?"

"I would not swear to it," replied

Bayard, "but I think it unlikely."

The G-2 ace wheeled to Andre. "Can we search your Rogues' Gallery tonight?"

"Yes, but we won't have time until after the conference—we shall have to hurry even now. Why not let Bayard do it and telephone the results?"

"All right," Strange answered. "But there is one other thing. I'd like to know everything available about this house—who owns it, who was living in it, its entire history."

Bayard looked puzzled.

"But we already know all that is necessary. It belongs to a rental syndicate and was leased to a Madame d'Aubreil as far back as ten years ago. When she died, a step-son took over the lease. This I learned when I called the syndicate agent about the explosion."

"And this step-son?" queried Strange.

"Is at Verdun, and the syndicate agent said he would get in touch with him immediately. The house has been empty since the step-son was called to the colors."

"What is his name?" demanded Andre.

Bayard shrugged apologetically. "I did not ask, *commandant*. There was no reason; I was merely reporting the disaster so that the property could be guarded by the owners."

"Find out," snapped Andre. "Then check our photographs and identify this self-styled Joseph Daru. Put a dozen men at the task—and also see what Captain Jacques has to say about that message tonight. Telephone or bring the information to me at the Pool."

Bayard saluted and hurriedly set about having the corpse removed. Andre enlisted the services of a police chauffeur, and in a minute he and Strange were en route in a borrowed *Surete* machine.

"A most puzzling series of incidents," said the little major, "but we had better try to put them out of mind until this conference is over. I should warn you that your old enemy, Colonel Beeding, is the senior American in the Supreme Intelligence Council. Hence, you are probably in for some unpleasantness."

Strange lit a cigarette. "Colonel Jordan foresaw that. I have written authority to act independently, also orders to be handed to Beeding commanding him to return to Chaumont at once."

Andre whistled.

"I can visualize fireworks. You have been informed, then, as to the main problem?"

"Only that there has been a bad information leak endangering the Argonne offensive."

"It is far worse than that," said Andre. He lowered his voice so that the driver could not hear. "Strange, there is a traitor in the Council itself, where every vital secret of the Allied forces has been discussed!"

"I thought all of the men detailed to the Pool had been investigated thoroughly," said Strange.

"It is so. Such checks have been made from the moment of birth to the present—even to their grandparents—to be sure of their background. In confidence, I can also tell you that each member is watched by agents of our Ministry. And doubtless the British watch the other members—perhaps even their own. Moreover, I suspect your G-2 is not asleep, nor the Italian secret service."

"I have seen routine reports on the subject," admitted Strange, "though I have had no time to read them carefully."

"At least you know the purpose of the Intelligence Pool. It was organized to tie up loose ends, so that each Allied general staff could have access to information from every other Allied source—French, British, American, and so on. Every report of interest is sent or brought there and catalogued by experts. Information is released only after a triple-check to be sure it does not fall into wrong hands. Many details of Allied offensives are decided there, with Marshal Foch and others of the High Command sitting with the Council. The most valuable information is kept in a big safe, and there must be at least three of the Council members present when it is opened and during all checking of these records and plans. Also these witnessing members must be of different nationality—a French officer, an Italian, and a British, or a Frenchman, a British, and an American, and so on. Two guards watch the door to the safe-room day and night. All this is necessary, you will agree, when you realize that in the safe are such things as plans of intended offensives and books containing the names and locations of every Allied resident-spy in Germany—also the secret list of agents such as yourself."

"How many officers are there in the Council?" Strange asked quickly.

"Eight, including myself. The others are Colonel Beeding and your Major Brandiston, Major Smythe and a Captain Leeds, for the British, an Italian lieutenant-colonel named Ferrari, a Portuguese named Torres, and that pleasant gentleman you met tonight, Major D'Orcy."

PHILIP STRANGE looked at the French major sharply, but Andre shook his head. "I would sooner suspect myself than D'Orcy, much as I

dislike him. His hatred of Germany is almost a mania—his first duel was with a German, over a woman, and he later picked quarrels with a dozen more of them. He has distinguished himself in three major engagements, displaying particular ferocity against the Boche. And his family has always been fiercely anti-German. No, D'Orcy is not our traitor. But the difficult part is that neither can anyone of the others be the traitor—unless it be the Devil himself."

"What do you mean?" said Strange.

"After the first disastrous leak—on a matter of action decided by the Council and known only to the eight members—Marshal Foch instructed me to double the men watching the Allied members. Of course, D'Orcy and I have been watched, also—I saw one of Foch's personal agents there at the Fifth Escadrille tonight and we are undoubtedly being followed now. Yet since that first leak there have been two others—of the same nature—but not one of the eight members made a call which has not been checked, or sent a message not intercepted, or met anyone who has not been carefully investigated. In short, only eight men knew the facts on which Germany promptly acted—but it was impossible for any of the eight to have transmitted that information."

"You're sure no one else in the Pool could have overheard the Council's discussion?" Strange asked.

"Quite impossible," responded Andre. "The Council chamber is next to the safe-room, and both are sound-proof. Also, it is necessary to pass through a small wardrobe-room to enter the chamber, and the door to the wardrobe is kept locked at such times. So you see, *mon ami*, why I need your help. Like the rest, I am under suspicion. Thus I should feel happier to have it cleared up. But the worst part concerns the offensive. There is enough information at the Pool to wreck the whole Allied drive—if it should fall into German hands."

THE police chauffeur, forced to detour widely because of the blocked avenues, finally slowed before a darkened house just off the Rue de Babylone. Two sentries stood before huge iron gates. Andre motioned Strange to follow him, and an officer inside the gates, after recognizing the diminutive major, ordered the two men admitted.

"This is the only entrance to the Pool," said Andre as he led Strange across a circular court to the front door of the building.

"What about the door in the wall

along the alley?" Strange said before he thought.

"It is guarded and chained shut. But *pardieu!* How did you know about that door? I thought you had never been here."

"I know this neighborhood," Strange said in a careless tone. "I happen to remember that all these houses have exits to the alley."

Andre peered at him through the gloom.

"I never thought of you as one to be prowling through alley-ways. What was your reason?"

"They always fascinate me—especially Parisian alleys," Strange evaded him.

"Oh, very well," Andre said crossly, "if you wish to be mysterious."

They halted for another identification, entered, then went down spiral stairs until they came to another door about sixty feet below the ground level.

"Unless you know about this also," Andre said with sarcasm, "I might inform you that it is a gas-lock entrance, and that we have just come down through fifty feet of steel and concrete fortification. A protection against bombing, of course."

"So these are the magic portals," Strange said with mock awe.

Andre snorted, pressed a button, and presently the outer door of the gas-lock swung open. They entered, the door closed, and the inner door promptly slid into a niche. An alert young officer stepped forward, with two *poilus* behind him.

"The Council is waiting for you and Major D'Orcy, sir," he said to Andre, with a questioning glance at Strange.

"Present your credentials, *mon capitaine*," Andre told Strange formally. The G-2 ace brought out his papers, hiding a grin at the annoyance still discernible in the little major's voice. The guard officer scanned them carefully, gazed with interest at Strange.

"Marshal Foch sent word you would represent Chaumont," he said. "Will you sign the register, please?"

Strange scribbled his name, looked around him as he followed Andre. The Intelligence Pool had been constructed with ten offices ranging around the wall in the shape of a U, with the gas-lock entrance at the open part of the U. Three long rows of filing-cases were ranged between the offices. This glorified basement was brightly lighted, but some of the rooms had frosted-glass doors so that he could not see inside. Three or four men were seated at nearby tables, copying data from the files. Others were transferring information to large maps by means of varicolored pins. The place was almost as

quiet as a tomb.

A brass rail separated two of the offices from the rest, creating a narrow passage. In this space stood the two guards Andre had mentioned, one on front of the safe-room door, the other before the entry to the cubicle which served as a cloakroom for the Council. The process of identification again was gone through.

"I could get into the United States Treasury easier than this place," Strange said, as they entered the cloakroom.

"It is also just as hard as this to get out," growled Andre. He closed the cloakroom door, jabbed a button at the entrance to the Council chamber. In a moment the heavy door opened, and the sound of voices was audible. A scholarly-looking American major had unlocked the door. He nodded to Andre, gave a start as he saw Strange.

"How are you, Brandiston?" said the G-2 ace.

"Strange!" exclaimed the Yankee major. "What are you doing here?"

"Well, as long as I've come this far," Strange grinned, "I'd like to join your august assemblage."

"That's out of my hands," said Brandiston. "Er—you know Colonel Beeding, of course?"

Strange glanced in at the portly G-2 officer. Beeding's fat face was as red as the wattles of a rooster.

"Where's Colonel Jordan?" Beeding demanded.

"At Chaumont," said Strange. Then he gave Beeding his credentials, withholding the transfer orders until he could present them without embarrassment to the ranking officer. Beeding scowled at the document.

"So you've come to give us the benefit of your advice," he said nastily. "Well, don't forget that I'm senior here!"

**A**NDRE hurriedly created a diversion by introducing Strange to the rest of the Council. Ferrari, the Italian member, smiled with a flash of white teeth, and Torres bowed elaborately. Major Smythe, a languid-looking Englishman, replied perfunctorily, but Captain Leeds, whom Strange had met, jumped up and shook hands with a gladness that seemed to be genuine.

"Thank Heaven, you're here, old chap! Maybe you can straighten out this blasted mess."

"From what Andre has said, I'm afraid you need a wizard," said Strange. He took off his coat and helmet.

"You've been wounded!" exclaimed Leeds, as he saw the dried blood on the G-2 ace's forehead.

"Just a nick," said Strange.

"But what happened?" insisted the Englishman.

"You haven't had a report on anything unusual tonight?" Strange parried.

"No, we've been working like beavers." Leeds motioned toward three red-bound books and a litter of scratch-paper. "Trying to overhaul our spy network to discover where we're vulnerable. Reports come in, but the communications men don't interrupt us except in emergencies."

Strange smiled grimly. "Well, this seemed like an emergency a couple of times." He explained as briefly as possible.

"Poppycock!" jeered Colonel Beeding when Strange described how the skeleton had materialized apparently from nowhere. "Do you expect any sane man to believe that?"

Strange reached over and took the gilded forearm from his flying-coat.

"Andre will tell you that the skeleton was tangled in my wings when I landed, and here is part of it."

"*Oui*, and more than that," snapped Andre. In staccato voice he described the trap into which they had flown, and all the events on the Rue Grenelle from the partial destruction of the house to the murder of the old man.

"But, I say," protested Major Smythe, "none of this makes sense. And as for a skeleton that flies—why, it is utterly ridiculous."

"Of course it's ridiculous!" stormed Beeding. "This is some damn-fool joke. Captain Strange, you will report to Paris Headquarters and stay there until I've time to attend to you."

"I'm sorry, Colonel," Strange said calmly. "I didn't want to do this, but you give me no choice." Then he handed the elder man his signed orders.

Beeding turned purple, and for an instant he seemed about to have a spasm.

"You framed this whole thing!" he burst out hoarsely. "You've hated me from the beginning — and now you've worked it to disgrace me!"

His voice filled the chamber, almost drowning the buzzer which suddenly rang out. Brandiston opened the door, and Beeding's wheezing voice was abruptly lost in a furious snarl.

"So you thought you had killed me!"

The G-2 ace turned, stared in amazement. There in the doorway stood a bruised, disheveled figure in a torn and filthy remnant of a French officer's uniform. Strange had to look twice before he recognized the bandaged, bloody face as that of Major D'Orcy. Behind the man was one of the two guards stationed outside.

"Get back to your post!" rasped D'Orcy. "But be ready—you'll soon be needed!" He kicked the door of the cloakroom shut, advanced into the chamber.

"*Sacre Dieu!*" said Andre. "What is the matter?"

"Murdering traitor!" grated the other man. "You ask me that! And to think I never guessed!"

He staggered toward Beeding, gripped the edge of the table to keep from falling.

"And this prized agent of yours, Captain Strange! He's a spy, *oui!* A spy for Germany!"

A chorus of exclamations filled the room. Beeding's jaw sagged, worked up and down.

"Wh-what do you mean?" he stut-tered.

"These two, they tried to kill me!" D'Orcy's face distorted with fury as he pointed to Andre and Strange. "I can see they have been telling you some lying story—probably the same as they told Captain Jacques and me. I let them convince me. But they must have been afraid I'd tell what happened—that I'd realize I'd been hoodwinked."

"Wait!" Andre broke in. "There is some mistake."

"Yes—your mistake in not making sure I was dead!" D'Orcy's scarred mouth twisted with rage. "You knew I was driving in on the Porte de Bercy road—you two had it planned to drop that flare and attack me with the Breguet! Well, it didn't succeed! True, you killed my chauffeur. But when the car went into that canal I was thrown clear. You should have dived again, to make sure I was dead!"

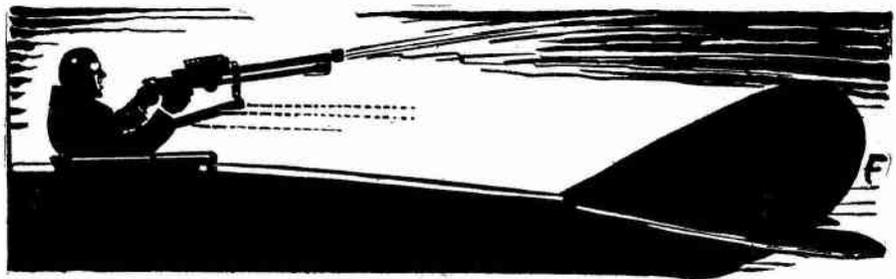
"If you were attacked, it was by another Breguet," snapped Andre. "And I warn you, retract the accusations you just made or—"

"Retract?" snarled the other man. "I have just begun. *Messieurs!*" he swept his blazing eyes over Beeding and the rest of the Council—"I can prove what I say. I know now how our information reached Germany. I know who killed Lemoir and—"

Without warning, the lights in the chamber abruptly went out and the room was plunged into pitch blackness. Some one hurtled against Strange and knocked him down. In the same instant, there was a faint flash and a muffled grunting sound. A voice cried out in a gasping agony and there came the unmistakable sound of a body thudding to the floor.

**P**ANDEMONIUM filled the dark-ened Council chamber. Strange got to his knees, slipped again as some one fell over him in the darkness.

"Lights!" bawled Colonel Beeding.



"Somebody strike a match!"

In answer a small yellow flame flickered up — and Strange jerked back as he saw the body crumpled up beside him.

"Good Lord!" shrieked Beeding. "You've killed him."

Strange stood up, shaken, as Leeds rummaged through a drawer and found a candle. When the brighter glow lit up the room, a bullet-hole was plainly visible in D'Orcy's head. It was just above a bruised spot on his temple where the bandage had slipped.

"You killed him!" Beeding cried again. "Grab the Captain, somebody!"

Torres, the Portuguese member, had already run to admit the guards. The two *poilus* now dashed into the chamber with guns drawn.

"Arrest these two!" shouted Beeding, jabbing a pudgy finger at Strange and Andre.

"Not so quickly, Colonel Beeding," interposed Major Smythe. "It looks bad, I must admit, but we must be sure—"

"Sure?" shrilled Beeding. "Didn't you see Strange down there by D'Orcy's body? It's plain as the nose on your face. D'Orcy had the dope on him—so he switched off the lights and shot him. There's the gun, right where he dropped it."

An automatic with a Maxim silencer lay close to the dead man's shoulder. Ferrarri bent over it excitedly.

"Take notice, *signores*. There is the golden paint on this weapon—the same as on the captain's hand."

Beeding looked triumphantly at the smear of gilt on the gun and at the damning marks on Strange's fingers.

"That settles it!" he barked conclusively, picking up the pistol and holding it by the middle of the barrel to avoid smudging the gilt marks. "This will be Exhibit One—and it will send you before a firing squad, Captain Strange!"

## CHAPTER V

### CATACOMBS CLUE

**P**HILIP STRANGE paled. But his answer was cool. "You won't find my fingerprints on that gun."

Beeding held the pistol closer to his eyes. "So that's what you were doing when Leeds lit the match—trying to smear your prints. Well, it won't work. I'm ready to swear I saw you doing it. And you're the only man in this room with gilt on his fingers."

"Do you see any gilt on the light-switch?" Strange asked quickly. But one of the guards spoke before Beeding could reply.

"All of the lights went out; they were not turned off in this room alone."

"You see?" cried Andre. "We had nothing to do with it."

"You had accomplices outside," fumed Beeding. "They saw D'Orcy arrive and knew the jig was up, so they allowed time for him to get down here and then cut the main power line so you could break for it."

"You are a fat-brained numbskull!" howled Andre. "These charges will make you the laughing-stock of France."

"They'll make me the Chief of G-2," Beeding flung back. "The whole thing's clear as day. You're the one who's been giving information to the Boche. You've been passing it on to Strange, and he's delivered it to Germany while pretending to be on some mission over the lines. You told him the places for the Gothas to bomb, and he's been guiding them with a Spad, which wouldn't be suspected so quickly by sound-rangers. And he used the luminous-skeleton idea so the Gotha pilots could see to follow him—probably had it tied with cords he could cut in a hurry if a searchlight was about to spot him. All he had to do was nose down and drop the skeleton—that's how the first one happened to fall into the Rue Grenelle."

"Then why," Strange said acidly, "didn't I drop the second one the same way?"

"Because it got tangled in your wing," Beeding retorted. "Andre saved you when D'Orcy caught you with it. The rest is obvious. As for the man stabbed at the wrecked house, he must have known something that would have endangered you; so you or this French runt pushed him against that wall so an accomplice could kill him."

Andre was almost dancing with rage.

"French runt!" Andre lunged at Beeding, and only the guards' hasty action saved the portly Staff officer from a lusty crack on the nose.

"Now are you convinced?" Beeding wheezed at Smythe and the rest. "I've always suspected these two. Strange has pulled the wool over Colonel Jordan's eyes, blaming Karl von Zenden—Germany's 'Spy of a Thousand Faces'—when twice I had him red-handed. Swore von Zenden made up like him—yet half the time Strange himself was probably impersonating Allied officers to get information for Germany. Once I caught him made up as the Chief of American Air Service. But he wriggled out of it, said it was with the permission of Colonel Jordan for a certain mission."

There was a pause, in which Strange could sense the conviction of his and Andre's guilt growing upon others in the room. He looked down at D'Orcey's body, and a puzzled light came into his eyes. Andre misinterpreted his expression.

"Dont worry, *mon ami!* There is a murderer here—but I know the culprit is not you."

Strange made a helpless gesture. "All we can do is explain everything before a court of inquiry," he said.

"You mean a court-martial!" snorted Beeding as he motioned to the guards. "March them upstairs. I'll go along and see that they're locked up at our M.P. headquarters. If I turned them over to the French," he added in an aside to Major Smythe and the others, "Andre would talk himself free in five minutes."

"I think we had all better go along," said Smythe, "or there may be unpleasant repercussions from the French War Ministry. Our testimony will be required also."

Strange and Andre were marched out. The Council members followed, and the outer door was locked. At Smythe's order, relief guards were stationed there with instructions to admit no one until the Council returned with police officials to remove the corpse.

As they passed through the outer room to the gas-lock, Strange gave Andre a sidewise glance. Their eyes met, and the G-2 ace could see that the little major was puzzled. But he knew that he was also on his guard, ready for whatever action was indicated.

Beeding strode ahead, importantly holding the silenced automatic. Strange watched him a moment, then his thoughts went swiftly back to the Council chamber as the group began to mount the spiral stairs. That bullet-hole . . . there was some-

thing wrong about it. He wished now he had been able to examine D'Orcey's body.

The lights were still out, and one of the guards illuminated the way with a flashlight. They came to the top of the stairs, and after a brief explanation to the astonished officer there started through the doorway to the courtyard.

Three men were approaching the entrance from the direction of the main gate, and just before Andre's guard switched off the flashlight Strange recognized one of the newcomers as Lieutenant Bayard. He gave Andre a swift nudge, and the little major burst out with a furious command.

"Bayard! Help me with these prisoners!"

**B**AYARD and his men sprang forward, and in the same instant Strange whirled and snatched the automatic Beeding so gingerly held. His guard leaped after him, but Strange ducked and the man caromed off him into the fat Staff officer. Bayard had seized Andre's guard, not recognizing his uniform in the darkness. Andre wrenched the flashlight from the *poilu's* grasp, switched it on and flicked the beam over the



group in the doorway, too fast for faces to be identified by Bayard's men.

"There they are!" he shouted. "Don't shoot—drive them back!"

"Wait! Listen!" Beeding croaked, trying to get his breath. "We're not the ones—"

Strange charged past the guard Bayard had collared and whirled Andre around toward the rear wall.

"Better put out that light!" he whispered tensely. "They'll be wise to us in a few seconds."

He caught Andre's arm and dashed for the wall, with the little major's feet hardly touching the ground. Behind them the tumult increased, as the guards at the gate and the men inside the door plunged into the fray.

"This way—not toward that wall-gate!" Strange muttered into Andre's ear. "Here, I'll give you a hand.

We've got to go over the wall."

The guards at the chained gate had evidently raced to investigate the excitement, for no one appeared as Strange boosted Andre onto the wall. Shoving the gun into his pocket, Strange now crouched and sprang upward. He clutched the top of the wall, was half-way over when lights stabbed frantically around the courtyard.

"There they go!" cried Smythe's voice.

A gun roared, and a piece of brick flew from the top of the wall. Strange let go, dropped down beside Andre.

"To the left!" he rapped. "Keep close to me."

They ran through the blackness of the alley for about two hundred feet, then Strange led the way into a narrower passage, which intersected the alley.

"Where are you going?" gasped Andre.

"Doorway—just ahead," Strange tossed over his shoulder. "Hurry! Somebody's already over that wall."

Lights were probing through the first alley as his fumbling hands found a small wooden door set snugly in the wall on the right. He thrust his shoulder against it and it squeaked open. Andre jumped in after him, and he shoved the door closed. They had emerged in another courtyard, smaller than the first and surrounded by gloomy buildings.

"Turn on your flash for a second," Strange whispered.

Andre obeyed, and the G-2 ace looked around hastily until he saw a rusty man-hole in the center of the court.

"All right, switch it off," he said.

"*Nom d'un nom!*" exclaimed Andre, as he followed Strange to the man-hole. "It is madness to go down in there—you might tumble into a sewer."

"No," said Strange. "I happen to know every inch of the way. Climb in—the bottom's only about five feet down."

He lifted the round iron cover, waited until the protesting Frenchman had dropped inside. Taking out his handkerchief, he wiped a trace of luminous gilt that had rubbed off on the cover, then jumped down beside Andre and lowered the cover over them.

"Hold your hand over the flashlight lens and switch on the light," he told the little major. Andre did so, and crawled along a few yards until the passage dipped steeply into blackness.

"Where does this lead?" he demanded.

"To an old hide-out of mine," said Strange. "We'll be safe there until we can get ready for the next move."

"*Morbleu!*" Andre said feelingly. "I would almost rather hide in a graveyard."

STRANGE laughed, a bit grimly. "If we don't work fast, we *will* be hidden in one—permanently."

"*Pouf!*" said the Frenchman. "No court-martial would ever believe that fat imbecile."

"Smythe and the rest believed him," replied Strange. "Many a man has been hanged—or shot—on less conclusive circumstantial evidence. The case is too strong, Andre. That's why I signaled you to be ready for a break."

"Well, did I not act swiftly? I was about to shout to Bayard even before you nudged me."

"I didn't intend that sudden action," grinned Strange. "I was hoping you'd maneuver it so that Bayard would take charge of us, as senior French officer with police powers. But anyway, we're free."

"And by this time branded as traitors with the alarm going out all over Paris," mourned Andre. "We can never clear ourselves now."

"We have a fifty-fifty chance," said Strange. "I may be mad, but I think I'm beginning to see a little daylight."

"And I think we will probably never see it again," retorted Andre, gazing down the gloomy tunnel. "What is this place?"

"An inspection passage, leading to one of the old sewers," Strange explained. "Here, give me the light. I'll show you the way."

He crawled ahead to where a number of iron rungs were visible. They afforded a hold in the steep descent. Thirty feet down, Strange paused.

"Be careful along here. Two of these rungs have loosened a trifle."

"Why, in the name of all that is holy, did you ever have to hide in such a place?" exclaimed Andre.

"Because it was the only one left," said Strange. "Do you remember a time when I was reported dead—in 1917?"

"*Oui*, most certainly! You were missing for more than two months—it was after the Kaiser had ordered the *Nachrichtendienst* to capture or kill you."

"I was only one of several he included," Strange said. "But Boche agents did make it too hot for me. I escaped by the skin of my teeth or three times. But when a number of G-2 agents were taken for me and suffered death in my place, Colonel Jordan agreed that I should disappear, letting the Germans think they had finished me. From a previous case, I knew the Apaches had hide-outs under Paris, and I found one of

my own, not far from the sewer at the bottom of this passage. Jordan arranged it so I received money, uniforms, and make-up supplies at an address in the Latin Quarter, where I posed as a crippled art student for a while. By night, I brought what I needed to this hiding-place, including a wireless receiver on which I caught special-code instructions from Jordan. From this base, I went on several missions and played various roles during that period—until our counter-espionage rounded up the assassins the *Nachrichtendienst* had planted in France."

As he explained, Strange had been carefully making his way downward, and now he stood at the bottom of the ladder on a ledge beside the old sewer. A dark and filthy current flowed slowly past, giving off an unpleasant stench.

"*Sacre nom*, what a smell!" ejaculated Andre. His voice boomed from the arched roof of the sewer, and Strange hurriedly cautioned him.

"You'll have to whisper. Sounds carry a long way in these sewers, and running into a bunch of Apaches wouldn't help us."

"No self-respecting Apache would ever come near this place," said Andre, holding his nose in disgust. "Which way do we go now?"

"Along this ledge for about two hundred yards. There is a branch sewer, and the entrance to my 'old home' is a little way back from the junction."

"And just what," queried Andre, as they started on, "do you expect to do after we get there?"

"Change our faces so we can move freely up in Paris. There is one man who will believe in us — Marshal Foch. We must reach him tonight."

"You mean you have a solution for that murder?"

"No. Frankly, I'm up against a blank wall," said Strange. "But neither of us killed D'Orcy. That means it had to be one of those five. Yet I can't fit any of them with it. Now if it were possible to believe that D'Orcy killed himself for some wild reason—"

"Not he," said Andre. "D'Orcy would be the last to commit suicide, even to avenge himself for a fancied wrong by sending some one to a firing squad."

"Well, we shall soon be where we can stop and think calmly." Strange pointed the flashlight ahead as the sewer curved. "We are almost to the branch, and then—" He paused. "By the way, be prepared to see a few bones and some skulls when we get there. This place of mine is part of the old catacombs—obviously one of the forgotten series of vaults since

no one seems ever to have come there."

"*Pardieu!*" Andre exclaimed, stopping short.

"What's the matter?" said Strange. "Not afraid of a few old skulls after tonight's business?"

"Name of an imbecile!" muttered the little major. "How could I have failed to remember? Strange, I know now where I saw that old one who was stabbed. His name was Lamotte. He was formerly a guide at the catacombs to which tourists are admitted. He was arrested for secretly selling souvenirs to the tourists. He was accused of meeting them after they left the Catacombs and selling them skulls—even whole skeletons if they could pay the price. But it was never proved that he stole them from the Catacombs. Thus the charges were dropped, though he was dismissed."

A GLEAM of excitement had come into Strange's eyes. "Good Lord, if we'd only known this before! It explains all the skeleton business!"

"Yes, I can see something very peculiar—but it is all too vague," said Andre.

"Look," said Strange, "this man Lamotte was getting his skeletons from somewhere—but not the known catacombs. What if he—or some one else—had discovered these vaults that everyone had forgotten? What more natural idea than to sell bones and skeletons to tourists—and to get hold of a catacombs' guide to tout them for him, assuming it wasn't Lamotte who discovered the source?"

"*Bon Dieu!*" cried Andre. "I begin to see now. This Lamotte was there at the wrecked house to collect something he said was his. The man who discovered the forgotten catacombs must have betrayed the old man—refused to divide the profits, and Lamotte hurried there when he heard of the explosion, hoping to steal money he thought perhaps to be hidden there."

"Exactly," said Strange. "Some one—either Madame d'Aubreil or her step-son, and probably the former—used the basement of that house as a place to store the bones taken from the old catacombs. Lamotte must have taken customers there, or at least gone there for the skeletons."

"Then there never was a skeleton dropped in the Rue Grenelle tonight!"

"No, it was one already in the house—they must have tricked up their goods with luminous paint to keep them from deteriorating and to make them appeal to buyers."

"To think that people would wish to buy the bones of the dead!" grimaced Andre.

## CHAPTER VI

## SPY DEN

"There are certain people to whom such gruesome things appeal," said Strange. "And they're the very type who glory in visits to catacombs. But that's not important. Do you see where all this leads us?"

"Yes—and no," replied Andre. "There must be something connected with that old house which some one wishes not to be known."

"That's it," said Strange. "There was an explosion—most likely from inside the house, since no one heard a bomb or a shell falling. It wrecked the place and blew part of an old skeleton out in plain view—undoubtedly one Madame d'Aubreil or somebody had wired up and painted years ago and hadn't sold. An explanation had to be forthcoming in a hurry, or the police would investigate—therefore, the falling skeleton story was invented, and parts of a helmet and goggles were tossed in for an air angle. And to clinch it arrangements were made actually to drop another skeleton into Paris as soon as possible. That was the one I ran into. It explains the paint not having dried."

"But not how your skeleton was racing along through the air with you—or where it came from," interjected Andre. "Also, was it really Lemoir's skeleton?"

"No, I think that was another false lead," said Strange. "If I'd have had time to examine that arm carefully, I think it would have proved to be from an old skeleton. It was painted hastily, and a pair of goggles was fastened onto it to fit in with the first business. Lemoir's tag was a good touch—tying it up with a missing man. But I'm afraid he has met with foul play, even if it wasn't his skeleton."

"But we still do not know how the skeleton was flying," persisted the little Frenchman.

"It must have been taken up in a plane—that's the only logical answer. If it were tossed over the side from a cockpit, it would have seemed to come from nowhere, providing the ship were above me."

"But you would have seen a plane," objected Andre.

"Not if the exhaust stacks were shielded. It was so dark that—" Strange snapped his fingers. "I have it! That black Breguet! It had masked stacks, and even with the searchlights on I didn't see it until the last second."

Andre started. "And there was a black Breguet just like that which took off from the Fifth Defense Escadrille. It was the ship in which D'Orcy sent his agent with one of Jacques' pilots. Jacques told me—*Nom de Dieu*, what if it was not an

agent, but a skeleton bundled up and put in that plane?"

"That would mean Jacques and D'Orcy were both in on it," muttered Strange. He had stopped at the junction of the sewers and was gazing unseeingly into the dark waters. "D'Orcy was killed—but he still could have been involved. I don't think Jacques is crooked. If there were a substitution of the skeleton for the passengers—or if the passenger carried the skeleton with him, which is more likely—it must have been done after the ship taxied away from the line. D'Orcy could have had some one waiting out there to hand over the skeleton in the dark, and it wouldn't have taken more than a few seconds."

"It is the solution!" exclaimed Andre. "I was wrong, and D'Orcy's hatred for the Boche must have been a pretense. He was only pretending to send an agent across—and as for the skeleton's flying, it could have been lowered by a looped rope, or perhaps D'Orcy's man was holding onto it while his pilot was trying to shake you off, and then in desperation he had to let it go before he wished, when the searchlights went on."

"I think you've hit it," said Strange. "And D'Orcy jumped into the other Breguet with you, hoping to cover up any slip. Later he must've been afraid we'd figure things out, so he staged that act at the Pool, pretending he'd been fired on—to get us under suspicion and locked up where we couldn't talk."

"Yes, but then why was he shot—and who did it?"

"There's something queer about that. It's been knocking at the back of my mind ever since I saw the bullet-hole. Something different about—"

The G-2 Ace broke off, triumph, then consternation, racing into his face. "Andre, I've been blind as a bat! Come on—we may be in time yet!"

"But what—where are we going?"

"To that old house. It must lead from there—we should be able to find it by following one of these branch sewers."

"What are you talking about?" insisted Andre. "What leads from—"

He stopped as Strange hurriedly turned off the light. The G-2 Ace gripped his arm.

"Listen! Some one's coming down the other branch of the sewer!"

A mumbling of voices became increasingly audible, interspersed with a steady-creak of oars. In another moment, a faint glow appeared from the blackness of the connecting sewer. Strange jumped in spite of himself. For the glow came from the luminous figure of a skeleton sprawled over the prow of a boat!

THEY flattened themselves against the curved side of the sewer, thirty feet from the junction. The boat slowed as it came into the main sewer.

"Back along the ledge!" Strange whispered in Andre's ear. "Don't make any noise."

A form now partly blotted out the skeleton. It was a man who was peering into the shadows.

"*Sehr gut*," the fellow said gruffly, "this is the one. We will be there in a minute or two."

"I hope so," growled another voice in German. "My back is almost broken. How about you, Hans?"

"*Ja*," said a third man, as the oars creaked again, "if we have to make that trip once more, I think I get one of those little motors to fasten on the stern."

"And go pop-popping along until some *gendarme* hears it through a street-drain and investigates," said the man in the bow irritably. "Keep to the left, or you will hit the side."

"Then use your light," said the one called Hans. "*Herr Bones* is fading."

"Half of the paint is rubbed off where it caught on the Spad's wires," replied the bow-man. He looked up and down the main sewer, switched on a small electric lantern hung on the prow. Strange held his breath, but the boat kept straight ahead and he and Andre remained in the gloom.

"Why does his *Excellenz* want that skeleton again?" asked the third German.

"To plant it as was first intended," grunted the bow-man. "It's so no one will suspect the truth about the old d'Aubreil house. It would have been all right had not that *verdammte* American come along and interfered. Now we will have to stage another act and pretend we saw it fall."

"Are you sure no one saw you and Friedrich around the Spad?" Hans said anxiously.

"Will you stop worrying about that?" returned the bow-man. "I told you three times they had put the plane in a hangar, and we had no trouble. You could not have hired a Frenchman to go near it after they heard it was that pilot's skeleton."

The voices were becoming inaudible, and Strange whispered for Andre to follow him along the ledge. When he stole around the turn into the branch sewer he heard Hans speak plaintively.

"It is all right for you to laugh, but somebody might follow us. What about the French police agent who came through this same sewer from

the *escadrille*? He found the passage to the d'Aubreil basement—"

"*Sacre bleu!*" Andre hissed into Strange's ear. "That must have been Sergeant Douville."

"The *schwein* won't bother us any more," said the bow-man with a dour chuckle, "I will never forget his face when I tossed his own grenade back at him."

"And I won't forget how your face looked when I came back from lying to that first policeman," Hans said maliciously. "Even in the dark I could see it—whiter than the skeleton's."

"Who wouldn't be white, caught under that wreckage and the police so close? At least you could run, and the *Oberst* was safe in the passage after sending you out."

"It is a bad business, all of it," grumbled the third spy. "If I had it to do again, I would not volunteer—even for double the bonus money."

"We won't have to wait much longer," said the bow-man. "Because of all this, his *Excellenz* said we would have to strike tonight. If it goes as planned, we shall be back in the Fatherland by dawn."

"*Himmel!*" exclaimed Hans. "Think of it—a month's furlough with all the money one could need. My back feels better already."

"And there's the niche," said the bow-man.

The boat swung in toward a spot where the old masonry had caved in, creating a miniature harbor about three times the size of the boat. Strange and Andre stretched themselves flat on the ledge, watched as the boat was secured. Hans and the third Boche lifted out the skeleton, and the bow-man made his way ahead on the ledge. He had almost reached a curve in the sewer when he halted and set down his lantern so that it shone on the wall. A rusty spike protruded from between two bricks at the height of his head. He counted down ten bricks, then ten to the right, and shoved with both hands.

**A** CURVED section the size of a narrow door gave at his touch, opening inward. At once, a guttural voice mumbled something from the blackness within.

"*Herr Rueller* and party," responded the spy who seemed in charge. He picked up his lantern, and Strange saw a thick-set man standing just inside, blinking in the light. Beyond was a passage which seemed to twist away to the left. The three spies entered, Hans and his oar-mate bearing the skeleton. Then the door closed with a click.

Andre instantly jumped to his feet. "*Vite!*" he said, spinning around in the direction from which they had

come. "We shall have to move swiftly."

"You're going the wrong way," said Strange.

"But no! I am going to summon help—so that we can raid that spy-den."

"You'd be arrested the minute you were recognized," Strange told him. "Unless you could reach Marshal



Foch. Probably no one would believe your story—or they would think you were merely double-crossing the spies to save your skin."

"But what are we going to do?" groaned Andre.

"Go in there after them and find enough evidence to clear ourselves and wreck the whole scheme."

"It is suicide," mourned Andre. "But at least we will die fighting. Hurry, before they get away from us."

"I want them to get ahead," whispered Strange. "If anyone hears that guard when we tackle him, we're licked at the start."

"Then you know the way? It is the hiding-place you used?"

"No, I never suspected there was another entry. This must be the one used by Malotte and Madame d'Aubreil, or whoever robbed the old catacombs. The entrance I knew is a little farther on and nothing elaborate like that one. It goes into the second level of the catacombs, and there's another exit—a pivoted stone that opens into the same kind of inspection passage which brought us down here. It leads to a manhole near the intersection of the Rue de Bac and the Boulevard Raspail. Maybe these Germans have stumbled onto that connection, too."

"If ever I get out of this muddle," Andre said in a low voice, "I shall investigate all the sewers in Paris. I knew the city was honeycombed with them, but I never thought I would need to know them like avenues."

"I thought I knew most of them," replied Strange, also in an undertone. He was still watching the dark wall where the door had closed. "But I never had cause to follow that branch very far. It obviously goes out to the southeast, under Bercy, and there must be an opening close to the *escadrille*."

"There is," muttered Andre. "At least there is a culvert over which one drives, and I suppose there is a sew-

er connection there. But I never dreamed of its being used by spies."

"It makes clear the disappearance of Lemoir and the others," said Strange. "They were probably seized in about the same way that the skeleton was put into the Breguet tonight, and either flown across the lines as prisoners—or taken into the sewer."

"And killed," grated Andre. "*Oui*, that is the most likely thing. They could strip the bodies and let them drift out into the Seine, or sink them with weights. It would explain how they had Lemoir's tag so handy—and that of Benet, which was dropped to mislead us at the d'Aubreil house."

Strange rose to his feet, with a cautioning whisper.

"I think they've gone far enough so we can risk it. Be ready to switch on your flashlight the instant the door opens, then jump to one side after you blind the man on guard."

**T**HEY tiptoed along the ledge. Strange took the silencer-fitted automatic from his pocket, counted the cartridges in the magazine. They crossed the niche, using the boat as a bridge. Andre flashed on the light as they came to the spike, and Strange quickly found the right brick. Stepping as far to one side as possible, he raised the gun, then shoved the brick with his other hand.

With a crunch, the brick moved into its recess, and the hidden door swung on well-oiled hinges. Andre's light was pointed straight into the opening, and with dismay Strange saw that there were now two guards, one evidently having just come to relieve the other.

"*Was ist?*" demanded the new man, his hand on the gun at his hip.

"It is *Herr*—" began Andre, then he jumped to the right as Strange leaped. The butt of the automatic thudded on the German's head and he fell without a sound. The thick-set man sprang back with a yell. Strange lunged, drove the spy against the side of the passage.

"*Hilfe!*" bawled the man, the word dying to a gurgle as Strange's free hand closed on his throat. Andre had charged in after the G-2 Ace, dropping his flashlight to seize the spy's gun-hand. With swift efficiency, the little major cracked the spy's own pistol against his temple, and Strange felt the German's strength flow out of him. He let the inert form slump to the ground, scooped up the flashlight and turned it off. For almost a minute, he and Andre stood listening tensely in the darkness, but there was no sound to indicate that the spy's alarm had been heard. Closing the door, which proved to be of wood painted on the outside to resemble the sewer wall, Strange cautiously

switched on the light, holding it under his unbuttoned uniform blouse so that only a faint glow shone.

"I think we're safe for the moment," he said to Andre. "But we'd better tie up these two before we go ahead."

In five minutes, the Germans were gagged, and bound with their own belts and the Sam Browne which Strange donated for the purpose. Keeping the light shielded, the G-2 ace led the way through the passage, which was supported at intervals by old half-rotted shoring.

"Poor Douville must have come this way," muttered Andre. "If he had only communicated his suspicions to me, he might be alive now."

"He probably discovered something he had to follow up at once," Strange replied in an undertone. He looked warily around a turn in the tunnel, went on. There was another turn at right angles, then a fork was visible.

"Now which way?" whispered Andre.

"Let's try the right passage," said Strange. "And we'll have to hurry—this battery is getting weak."

**T**HE right-hand passage went straight as an arrow for about a hundred and fifty feet, then turned left and inclined sharply upward. Strange had not gone ten feet when he saw a wide, irregular hole, partly blocked by an old trunk and a heavy beam which had fallen down at an angle. He went closer, saw that he was looking at the cellar of a house into which most of the upper floor had fallen. A box of yellowed skulls lay under a work-bench, near a larger box which had been broken, scattering bones of various sizes and shapes across the floor.

"*Pardieu!* It is the basement of the d'Aubreil house!" exclaimed Andre.

"Not so loud," whispered Strange. "The police will hear you."

Vague sounds could be heard from above the tangle of wreckage which filled the basement. Strange backed into the passage.

"We'll have to return to the fork. Try to figure out the angles and distances from here so we can keep track of where we are."

"*Tres bien,*" said Andre. He was silent a while as he followed the taller man. "I wonder if that building was the main headquarters for the spies. It was supposed to be empty, and it would have made a good place."

"Probably their living quarters," replied Strange, "but I've a hunch we'll find the business office down at the end of that other tunnel."

He increased his pace to a run as the light became dimmer and dimmer, and the little major panted in the

effort to keep up with him. When they came to the fork, Strange turned suddenly.

"I've changed my mind—we'd better divide forces. We've learned enough to act on, anyway."

"But how?" said Andre.

"I'll go into this passage. You go back and change clothes with one of those spies we knocked out—trousers and coat are all you need. Rub some dirt on your face and then hurry to the courtyard where we entered the manhole. You can find a cheap hotel with a telephone about two blocks south."

"I can locate a telephone, yes. But what then?"

"Call the War Ministry—disguise your voice and pretend you're Sergeant Douville. Tell some one who can get quick action that there's a nest of German spies under Paris, that one entrance to their base is in the basement of the d'Aubreil house and the other is in the cloakroom of the Council chamber at the Intelligence Pool."

Andre jumped as though he had been stung.

"*Mon Dieu!* Do you mean these devils have tunneled into the Intelligence Pool?"

"Positive. I should have guessed it before, but things happened too fast."

"One moment," Andre said tensely, "I must be sure you are right! For if this is true it means—"

"I know what it means. But it's the only solution that explains everything. Did you notice the bullet-hole in D'Orcey's head?"

"*Oui,* but what of it?"

"It was at a point where the bandage had been when we first saw—or thought we saw—D'Orcey come in. Of course, the bandage could have slipped before the shot. But there



was also a purple bruise near that bullet-hole—and it was not the same as the bruise I noticed before the lights went out."

"What are you talking about?" said Andre, bewildered.

"Simply this; The man who came raging into the council room was not the man we found dead on the floor."

"Not the man—then who . . . ?"

"Beeding accidentally gave us the key," Strange answered. "It should have instantly been apparent when he mentioned Karl von Zenden."

"Von Zenden?" said Andre amazed. "*Nom d'un cochon,* I see it! What a

fool I am! It was that fiend all the time—"

"A somewhat discourteous way to speak of your host, *monsieur,*" a mocking voice suddenly broke in. Strange whirled, then froze with his gun half-lifted. For a face like the face of Victor D'Orcey was smiling at him across a Luger.

## CHAPTER VII

### SPY OF A THOUSAND FACES

**F**OR a fraction of a second, Strange weighed the chances of striking out at the Luger and firing as he did. Then, in the shadows behind the man, he saw three other figures and caught the glint of metal.

"It seems that you win, von Zenden," he said coolly.

The German impersonator bowed without taking his eyes from Strange's face.

"A pleasure long denied me, my dear captain. But we are short on time. So if you and Major Andre will just drop your weapons and step back, we can be on our way."

Strange obeyed silently, Andre with a Gallic oath muttered under his breath. Two of von Zenden's men picked up the guns and stepped around behind the captives. The others divided, one going toward the house, the other toward the sewer.

"If you will follow me, I shall be happy to act as your guide," the Prussian said silkily, "though I assume from what I overheard that you have an idea of your destination."

"A cave near the Intelligence Pool, naturally," said Strange, avoiding mention of the forgotten catacombs. He went on calmly, hoping to keep the Prussian in the same sardonic mood. "It was fast thinking to stage that 'murder'-act in the dark and have your men substitute the corpse of the real D'Orcey."

"It will do you no good to flatter me *this* time," von Zenden returned. "I recall what happened at our last meeting. As for fast thinking, you seem to have gone into a decline. If you noticed the difference in faces, you should have known there was a substitution and instantly guessed the existence of our secret door to the cloakroom or the Council chamber."

"Stupid of me," admitted Strange, "but I was befuddled by the accusation of murder."

"It was indeed fortunate that we had had no time to dispose of D'Orcey's body," said the Prussian. "If it hadn't been for that meddling French sergeant who cornered three of us in the Rue Grenelle house and tried to blow us up with a grenade, D'Orcey would have been at the bot-

tom of a sewer—like Lemoir and the others when we needed their planes to send agents back to Germany.”

“So the sewer is to be our final resting-place,” Strange observed, trying to match von Zenden’s amiable cold-bloodedness.

The impersonator laughed softly.

“Oh, no, *mein Freund*, I have other plans for you and your estimable comrade. I admit I ordered your sudden death earlier this evening, after tapping the wire to Captain Jacques’ office, but I regretted the necessity very much. Now that you have so kindly placed yourselves in my hands I am glad you escaped from that trap and also from that overstuffed *dumkopf*, Beeding. It will make the final act in our little play nothing short of brilliant.”

Von Zenden now called a stop before a moldy-looking door which, when opened at his signal, proved to be backed with steel plate. A black-browed, fierce-looking man in Apache garb lowered the pistol he had snatched up.

“Did you find anything wrong, *Excellenz?*” the man began, then broke off as he saw the prisoners.

“Ja, Rueller,” said the Prussian, “we found why Greining did not return—and also we found our *very* dear friends, Captain Strange and Major Andre.”

“*Leiber Gott!*” Rueller burst out. “If the police were so close after them, as you said, then we will be trapped.”

“But I overheard part of their conversation,” responded the impersonator, “and it is quite evident they eluded the police. The Frenchman probably knows the sewers fairly well and thought of them as a natural place of concealment. They must have seen you and the others returning in the boat—then followed you after seeing you open the sewer-door.”

Strange hid his interest, but he was listening carefully. They had come into the lower level of the old catacombs. He had initially supposed that von Zenden had discovered his former hiding-place and its contents, but apparently it had not been found.

“Where are Friedrich and Hans?” asked Rueller, with the door half-closed.

“Friedrich has gone to see what happened to Greining, and Hans is going to make sure that none of the wreckage above that basement has shifted so that the passage can be seen. The police left a man inside the fence they erected, and he might be poking around with a torch to see if he could pick up a few trinkets here and there.”

Rueller closed and barred the door.

“I hope we will be out of here soon, *Excellenz,*” he said uneasily.

“Within two hours at the most,” replied von Zenden.

“What about *Herr* Bones?” inquired the black-browed German. “Do you still wish to have him planted up on one of the avenues?”

“No, the whole area is swarming with police hunting for our two guests. It would be dangerous—and as events have turned out, unnecessary.”

VON ZENDEN strode on, and the two captives were prodded ahead by the armed spies behind them. The tunnel in which the steel-backed door had been built abruptly widened, and steps cut in rock led down several feet to the floor of the catacombs. The niches along the wall, formerly filled with skeletons or heaped with bones as Strange recalled, were now packed with dirt brought from a round opening in the wall, seventy feet or so beyond. He knew at once that this must be the tunnel the spies had dug to reach the Intelligence Pool, and a hurried estimate of the amount of dirt indicated that it was only a short passage.

The scene before him was one of amazing contrasts. From the second and third tiers, yellowed bones and skulls shone in the flickering light of candles set at close intervals about the room. Through passageways to right and left, other catacombs’ rooms could dimly be seen, with their gruesome relics.

Seated at a large table in the first room, six men in the garb of Apaches were writing feverishly from three red books opened before them, each man striving to finish his side by the time the other man was ready to turn the page. At another table, another group of men was as busily making copies of notes on yellow scratch paper.

“*Sacre Dieu!*” groaned Andre. “They have stolen the key-books of the whole Allied Intelligence System!”

Two or three of the spies jumped up, and the others cast startled glances at the captives.

“Pay no attention to these two!” von Zenden snapped. “Keep writing! When you finish, you leave—for Germany!”

The spies resumed their work at furious speed. The Prussian smiled at Strange and Andre.

“Now, perhaps you understand why we were so desperate about covering up the secret of the d’Aubreil house. We could have burst into that sound-proof council-room through our secret door and have taken these books by force. We could have killed everyone in the room and escaped.

We could have reached the Fifth Defense Escadrille and seized planes there according to plan—but the theft of the books and other information would have been known within a few hours. This way, the books, the scratch paper, the new offensive map which we have also copied—all these will be back in the council-room before anyone misses them. We shall not only be able to seize every Allied spy now in Germany, but through the communication routes described we can send back false information for your General Staff to use in moving their armies around for this drive.”

For a moment Strange forgot his own peril in the horror which his mind had conjured at von Zenden’s words. Allied agents—many of them personal friends—would die by hundreds over in Germany, and that would be but the beginning. On the basis of false information, Allied armies, and especially the A.E.F., would be trapped in the great Argonne offensive. Every ammunition depot, gun emplacement, headquarters, and other strategic points, would be known to the German forces. France would run red with American blood.

Andre’s furious voice brought him back to the present.

“You’ll be caught like rats! Even now they may be in that council room. They’ll guess the truth when they find the books gone. They’ll tear down the walls and find the secret entrance to this place—”

“Quiet, you little fool!” snarled von Zenden. “It won’t help to yell—no one can hear you up there. And no one will visit that room for at least two hours. No one has the keys or the authority to enter, except the Council members—as you well know. And the Council is at the War Ministry, awaiting Marshal Foch’s arrival from Senlis.”

Andre fell grimly silent, and for an instant there was only the feverish scratching of the spies’ pencils. Then one of the two guards spoke to von Zenden.

“What shall we do with the prisoners, *Excellenz?*”

“Tie them up. No, not over there—” as the guards started to shove the captives toward a corner where rope and cords were coiled beside some boxes of hand grenades and candles. “I have had one bomb thrown at me tonight—that is enough.”

Strange looked sidewise at the box, but the Boche behind him jabbed him roughly with his pistol.

“Get over to that other doorway! *’Schnell!*”

Strange glumly obeyed, hands raised, and Andre followed, stood beside him only while one spy covered

them and the other went back for rope. Von Zenden stood watching, an ironic smile on his made-up face. Suddenly the smile altered, and he wheeled as a frantic voice sounded from the passage to the steel-backed door.

"Herr Oberst! Mein Gott, we are lost!"

IT was Rueller, his eyes protruding, his face ashen. Behind him panted another spy, with sweat running down his cheeks.

"Speak!" raged the Prussian. "What's happened?"

"The d'Aubreil house—they're digging into the wreckage! Police with lights and guns!" the man with Rueller cried hoarsely. "I heard them talking—the one named Bayard ordered it—he found out the name of Madame d'Aubreil's stepson was Santos and he's identified Lamotte."

"Zum Teufel!" snarled von Zenden. "I never dreamed that stupid-looking swine could figure out the truth."

"He knows about Lamotte's selling the skeletons, and he must have guessed the rest," moaned the other man. "But that isn't the worst. I heard him order some one to call the War Ministry and have the Council and Marshal Foch come to the Intelligence Pool. Foch flew from Senlis with Captain Raimond, his personal pilot, and landed in the Boulevard Raspail."

Von Zenden whirled to the frightened spies, who had now leaped to their feet and were listening open-mouthed.

"There's no time now to finish copying the books. Put them together—these papers with them and the offensive map. Tie them in one bundle and I'll get them to Germany!"

"But what of us?" cried Rueller.

"You'll escape as planned!" snapped the Prussian. He ran into the room on the right, reappeared with a make-up kit. Snatching at an alcohol-saturated cloth, he swiftly wiped the greaseless paints and shadows from his face. The features of D'Orcy vanished, and the coldly sardonic countenance of the real von Zenden emerged. "Put a time-grenade in the passage to the Pool—set it for five minutes. Bayard must suspect about the secret door, or he wouldn't have sent that word to the Ministry. I'll be out of here in three minutes made up as Captain Raimond. I'll go out to the sewer and up through the third manhole—the one that opens in the alley near the Rue Varennes. There are three Nieuports secured within a short distance. The mechanics guarding them will never question an order

they think is from Foch's aide. I'll take one of the Nieuports and make for Germany. There's no time to warn the men who painted the luminous crosses to guide the Gothas. They'll have to shift for themselves."

The impersonator had propped up his make-up kit on one of the tables and was now seated before it altering his features with fast-moving fingers. Snipping bits of black crepe hair into the proper lengths, he went on crisply:

"Take a grenade, each of you—the high-explosive, not gas. You'll have no time for gas-masks when you reach the escadrille. Rueller, you'll be in charge—wait till all three boats are at the culvert exit, then lead the men out silently. Use your grenades on the officers' quarters first, then the mechanics. A quick surprise, and the few who are left will flee. You'll have enough planes to carry all of you back to the Fatherland."

"We are short a pilot!" cried one of the spies.

"Then let one man ride a wing," snapped von Zenden. He swept a spirit-gum brush across his upper lip, deftly worked the bits of crepe hair into a close-cropped mustache. "Hans, take two men and set time-grenades in the tunnel to the basement of that house. Put the first as close as you can get and set it for three minutes; allow five minutes for the others. That will give us time to get to the sewer. We'll blow that passage, too, and it will be hours before they can dig through. Even then, they probably won't suspect the connection with the escadrille for a while, and we'll be in Germany long before."

Most of the spies began to crowd through the entrance to the sewer passage, but the captives' guards, though obviously frightened, stood their ground. Rueller shot a tense look at Andre and Strange.

"What of these prisoners, *Excel-lenz*?"

Von Zenden replied inaudibly, took a final look into his kit mirror and jumped up. Through his artistry of make-up, his face seemed to have broadened. His cheeks were plump from cleverly-fitted overlays, and under the clipped mustache his whitened teeth shone. His darkened brows were arched exactly as Strange remembered Captain Raimond's, and his expression showed the same suave poise as that of Marshal Foch's dapper air-aide.

"My other French tunic!" he said swiftly to Rueller. "I'll have to change the insignia on the way."

Rueller dashed into the room on the right, came back with blue uni-

form coat and a French officer's cap.

"Herr Oberst!" one of the guards said hoarsely. "It is only one minute until the first grenade will explode!"

Von Zenden jammed the cap on his head.

"Back to the exit!" he ordered. "Keep the prisoners covered."

"Strange!" screamed Andre. "This monster means to bury us alive!"

Von Zenden's eyes gleamed from his made-up face.

"Goodbye, my friends! I shall miss you."

He turned and ran up the steps to the steel-backed door, which Rueller was holding open. Andre tore himself free of Strange's restraining hand, charged after the Prussian. At von Zenden's shout, the guards sprang through the opening. The impersonator leaped after them—and the door closed with a dull metallic thud.

When Strange caught up with Andre, the little major was frenziedly hammering his fists against the steel plates. The G-2 ace hauled him back by main force.

"Come on, or you'll be killed!"

THE words were hardly out of his mouth when an explosion shook the ground, and a geyser of smoke and dust shot from the passage to the Intelligence Pool. Strange caught Andre's wrist, dragged him up the crude steps to the second tier of the catacombs. Another explosion made the ground quiver, and one section of the wall fell, carrying a row of crypts with it. Some of the gas grenades went off and Strange fought on through the acrid fumes and blinding smoke, feeling his way until his groping hand touched the curved stone of an arched doorway.

"We must go back!" Andre cried. "There may be air along the floor—it's our only chance!"

"We're not dead yet!" Strange said hoarsely. He pulled Andre along, fumbling, counting the stones from the arch. This was the one! But it had been almost a year . . . . The stone might have wedged. . . .

The wall seemed to fall away at his desperate push, as the pivoted stone slowly rotated.

"Andre, I've found the old exit!" he shouted. "We're saved!"

A draft of cool air blew back the smoke. He sucked a breath deep into his lungs, helped Andre through the wall and into the inspection passage.

"Thank the good God!" Andre gasped. "I thought we were finished."

Strange shoved the stone back into place. "We've got to stop von

Zenden! Hang onto my sleeve and keep your head down."

Panting, bumping into turns in the passage, now and then falling over protruding bricks, they kept on until at last Strange stopped at the foot of a vertical iron ladder above which a spot of light showed.

"Where are we?" Andre asked breathlessly.

"At the intersection of the Rue de Bac and the Boulevard Raspail. That spot is the center of the manhole I told you about. There must be a light nearby."

"But von Zenden went the other way—to the planes in the Rue Grenelle!"

"This was the quickest way to cut him off," panted Strange. "I'm going to try to grab one of the defense ships and bring him down. Keep the *poilus* from shooting at me, if you can."

He climbed the ladder, cautiously lifted the manhole cover an inch. Several flares and a floodlight had been lit. To his dismay, two long official cars stood within a hundred feet of the manhole, with officers and armed *poilus* standing around. His gaze swept the scene quickly, then he lowered the cover.

"Beeding and the rest of the Council are up there," he whispered. "They evidently came to meet Marshal Foch's ship, and their cars are inside the ropes."

"Papa Foch will surely listen to me," said Andre.

"Do your best to explain in a hurry. I'm going to duck back of the cars—if we lose another minute, von Zenden may be gone. There's a blue Breguet closer than the Nieuports—"

"That is the Marshal's ship!" exclaimed Andre.

"I thought so. Its engine ought to be hot enough to kick over. Here I go!"

The iron cover clattered to one side and Strange leaped up into the boulevard. Amazement held *poilus* and officers paralyzed for a second, but as he whirled to dash behind the cars, Beeding's voice rose shrilly.

"Seize that man! He's the murderer of Major D'Orcy!"

STRANGE sprinted around the wing of the blue Breguet. A gun blasted as he vaulted onto the step, and a bullet clipped the rear windscreen.

"Stop, you fool!" Strange saw Andre wrench a pistol from one of the officers, then run toward Marshal Foch.

"Kill him!" screeched Beeding. "He's trying to murder the Field-Marshal!"

A *poilus* fired wildly. Andre sprang around one of the cars, just as Strange flung himself into the front cockpit and snapped on the ignition switch. Another gun barked, and the little major despairingly dropped his pistol and dashed for the plane. Strange had seized the spark-advance knob, was jerking it back and forth. The Liberty coughed, then began to rev up.

Andre caught the side of the ship, pulled himself up into the rear pit. Behind him came a dozen pursuers, with Beeding and Smythe in the lead. Strange gunned the Liberty wide open. Hit by the air blast, the portly Staff Colonel went backward three steps, sat down with a jolt, and Smythe fell over him headlong. A flurry of dust from the street covered the two men as the Breguet lunged forward, but red flashes showed where pistols were blazing at the fugitives.

Strange saw a French pilot leap into a Nieuport pit and a mechanic run to the prop, as the two-seater thundered past. Across the boulevard, a Hotchkiss gun spurted flame, and tracers left a smoldering mark across the cowl. A searchlight went on, swung to follow the Breguet. Another machine-gun clattered fiercely as the ship roared past the intersection of the Rue Grenelle. Strange bent over the stick, shot a look at the air-speed meter. Suddenly Andre thumped him on the back.

"Von Zenden! The Nieuport!" he howled.

Its wheels off the pavement, a dun-colored Nieuport was darting out from the Rue Varennes, almost in the two-seater's path!

Strange clamped his Vickers trips. The Nieuport zoomed wildly, and von Zenden threw a startled look over his shoulder. Strange pulled up in a grinding chandelle, his tracers barely missing the Prussian's tail. Another searchlight flashed from the top of a building, caught the two-seater broadside.

A look of stupefaction crossed von Zenden's made-up face as he recognized Strange and Andre. With incredible speed, he hurled the Nieuport into a vertical bank. Strange tried to follow through, but the heavier ship overshot. Andre spun the tourelle, drove a burst from his twin-guns into the Nieuport's right wing.

Von Zenden madly reversed his bank to save his weakened wing. Strange swiftly crossed his controls, brought the stick back. The Prussian's ship was almost in his sights when another Nieuport plunged into the battle. It was the defense ship

which had been started as the Breguet was taking off.

A stream of smoking bullets shot in diagonally, crashing Strange's cowl and tearing on through the tilted wings. Andre pounded out a furious answer, aiming dangerously close in the attempt to drive off his countryman. Von Zenden, abruptly freed from attack, zoomed to escape.

Though the defense pilot's guns were tearing the Breguet to pieces, Strange grimly hauled his stick back. For a split-second, the fleeing Nieuport was aligned with his guns. A split-second—but it was enough. His hand clenched the Bowden grips, and the bullet-scarred guns thrashed fiercely upon his cowl.

Something flew through a shifting searchlight beam, as hurtling fragments of von Zenden's propeller sailed across the sky. The Prussian pitched the crippled Nieuport into a dive, slipped back toward the now lighted boulevard beneath. Strange side-slipped after him, with the defense ship's guns burning the air above the screaming Breguet.

Displaying the skill of a master, von Zenden brought the fighter down and to a stop at one side of the boulevard near the other defense planes. As Strange followed in, cut his switch, and leveled off, the spy leaped from his cockpit, lifted out a bundle, and ran toward another Nieuport which had just been started. Strange pushed on his rudder, and the two-seater swung straight for the idling plane. Von Zenden jumped back, and with a tight ground-loop Strange brought the Breguet to a halt, blocking the Nieuport.

A DOZEN *poilus* were running toward the spot. And as Strange and Andre jumped down from the bullet-torn Breguet, von Zenden whirled to the nearest soldiers.

"Arrest these traitors! Sergeant, have that plane moved out of the way at once—I am on an emergency flight for Marshal Foch!"

Four or five *poilus* surrounded the fugitives, ignoring Andre's frantic yells. The others hurriedly began to shove the Breguet aside, but before it was quite clear a Staff limousine came speeding onto the scene. It stopped with a squeal of tires, and Marshal Foch stepped out, followed by Beeding, Smythe, and two French staff officers.

"Thank Heavens! They've caught 'em!" sputtered Beeding. "See, they—"

"Look out!" shrieked Andre. "That *diable* is escaping!"

Von Zenden, seeing the Nieuport almost clear, had ducked under its

wing while attention was centered on Marshal Foch. At Andre's shout, he threw his bundle into the cockpit and crouched to spring after it. Strange jerked back, drove a terrific left hook to the jaw of the *poilus* before him, and dashed to the side of the Nieuport. Von Zenden lashed out with one foot, lost his balance, and clawed to catch himself. He hit the switch and the engine abruptly died. Strange brought him to the ground with a quick tackle.

"*Mon Dieu!*" gasped a French staff officer, as Strange hauled the spy to his feet. "It is Captain Raimond! But I just saw him—"

There was a sudden dead silence as the assembled men stared from the made-up Prussian to the real Raimond, who had appeared from a car behind that of Marshal Foch. For a moment, von Zenden seemed about to make one last desperate attempt to escape, then he smiled with bitter irony.

"There appears to be one too many Captain Raimonds present."

"A difficulty easily disposed of," snapped Andre. "Lieutenant Bayard, your prisoner—*Oberst* Karl von Zenden, of the German Military Intelligence! Hold him for the murder of Major D'Orey and for espionage."

Marshal Foch, after a start of amazement, looked gravely at Andre. "I had confidence that these charges were wrong, Major Andre. But there are several things I do not understand."

Andre clicked his heels as smartly as he could considering that three *poilus* were still hanging onto him.

"If you will permit me, my General, I can show you the main reason for everything."

The Field Marshal nodded to the *poilus* holding the captives, and the men stepped back, Andre went to the Nieuport, and returned with the bundle von Zenden had secreted in it. Marshal Foch paled as the red books and the key-map were revealed, and the surrounding Staff officers stared at them in consternation. The hush was broken by a thud. Strange looked around quickly.

Colonel Beeding had fainted.

"**E**VERYTHING has been attended to, *monsieur le Marshal*," said Lieutenant Bayard. He stood stiffly before Marshal Foch's huge desk at the War Ministry. "We found the secret door to the cloakroom. It had been blown open by the explosion of the grenades. Captain Strange guided us to the pivoted stone, and we found the spy-den as he and Major Andre described. My men, using gas-masks,

recovered evidence substantiating their story. Also, we have caught all but two of the spies who attempted to escape by using the Fifth Escadrille planes. They were trapped by machine-gun platoons as they emerged from the culvert. The two who ran back into the sewer will be found soon."

"Very good work, lieutenant," said Marshal Foch in a kindly voice. He stood up, turned and held out his hand to Andre and then to Strange. "I never doubted either of you. France is deeply in your debt, and I, too. You will be decorated, of course. And if there is any request I might grant, name it."

"General," said Strange, with a twinkle in his eyes, "a hot bath, a glass of champagne, and a rare steak would loom larger in my estimation at this time than all the decorations France could bestow—if you will

forgive me."

Marshal Foch laughed, and they went out. As they passed through the adjoining room they saw von Zenden being grilled by several Intelligence officers. The Prussian, devoid of make-up, glanced at them with a baffled expression.

"Perhaps now, you will explain how you escaped from that place?" he said to Strange.

The G-2 ace shook his head.

"A magician should never explain his tricks."

"I asked," von Zenden said mockingly, "because I may have need of such magic."

"It would do you no good," Andre said with a grim smile.

"What do you mean?" demanded the Prussian.

"You buried us alive," said Andre. "When we finally bury you, you will be very, very dead."

## Here's the "Hindenburg"

(Continued from page 55)

sandpaper.

The next step depends upon whether or not the modeler plans to install the interior lights. If he doesn't, he merely leaves the hull solid and smooths it down to detail-shape. But if he wants the decorative effect of the lights he proceeds as instructed here.

Carefully separate the two blocks of balsa. Then hollow out the inside of each with a chisel or gouge, finishing off the shells with sandpaper to the approximate thickness suggested by the dotted lines in the side view on Plates 1 and 2. Now the lower half of each shell is slit to represent the observation deck windows. There are two of these narrow slits on each side, as shown in the side and sectional views on Plate 1.

Cover these window openings on the inside with celluloid, on which the partitions or window frames are shown in India ink.

### LIGHTING DETAILS

**D**ETAILS for the lighting system are shown on Plate 3. A sheet of  $\frac{1}{8}$ " balsa is used as a platform for the installation and is supported with strip balsa glued to the inside of the shells above the observation ports, as indicated. The platform is not glued to the supports.

If you have an old flashlight case handy your lighting problem will be simplified. The socket for the bulb can easily be cemented to the underside of the movable platform and wires passed through the wood and soldered to the socket, the whole thing making a sort of extension to the battery case. The case may be

cemented or attached to the platform with rubber bands, or slipped into a simple balsa "slide."

To afford access to the light a trap-door is cut into the upper half of one of the shells. The size of the opening is determined by the size of the batteries used, and by the platform which must of course be removeable for changing bulbs when necessary. Ordinary adhesive tape will be used as a hinge, but this is not added until you are ready for the first coat of paint.

A small, round-headed tack or nail may be used as a knob for the door. Also a balsa stop (not indicated on the plans) should be cemented in place to keep the door from dropping inward.

The two shells are re-cemented—this time permanently—and smooth sandpaper is used until a clean finish is obtained.

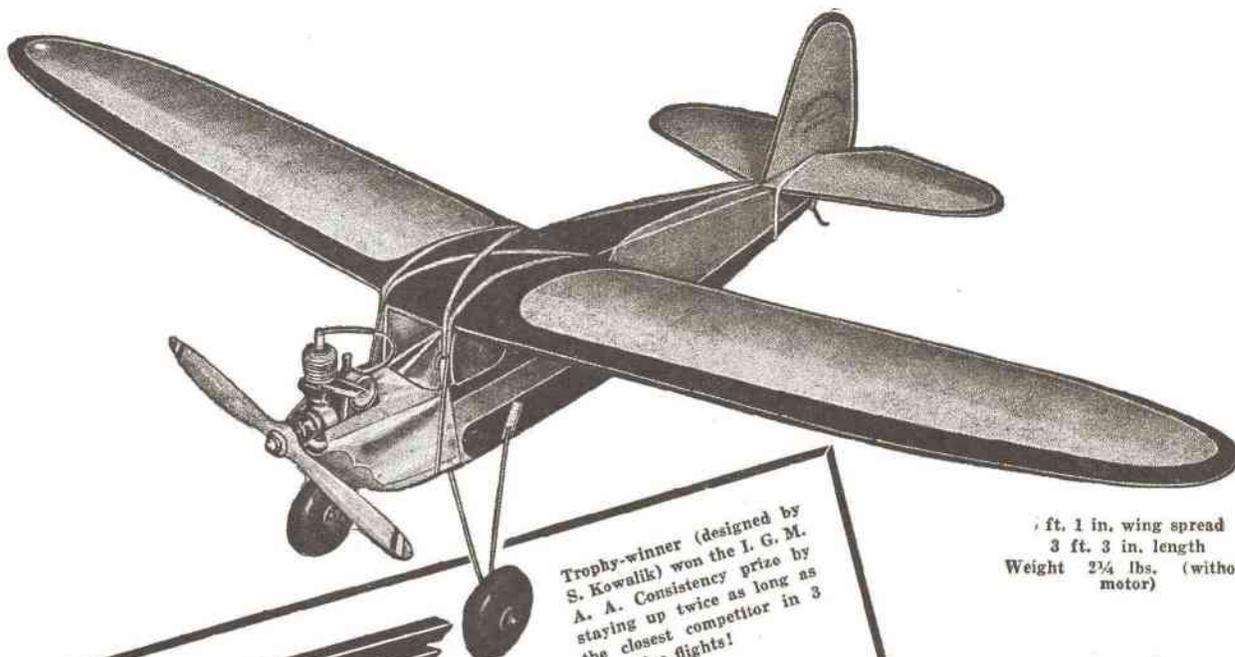
The effect of the girder ridges showing through the fabric along the sides of the hull is gained by penciling in the lines and sanding carefully between them until they are slightly raised above the remaining surface. This is really the most ticklish part of the job, so great care should be taken with it. Be sure to sand the ridges on the outside of the door.

### CABIN AND MOTORS

**B**ECAUSE of the comparative smallness of the model, I recommend that the control cabin be made solid, as indicated on Plate 1. If you have the time and the patience, however, it will be well worth your while to build it up piece-by-piece,

(Continued on page 76)

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then partially insert and glue it into the hull through the shell into the light chamber, to allow the light to shine through the cabin windows.

Four engines, each with a four-bladed prop, powered the original *Hindenburg*. So we make four engine cars and four props as shown on Plate 2 and attach them to the hull with bamboo struts. The props may be cut from cardboard.

And now for the tail fins, which form the rear control surfaces of the dirigible. Cut them from  $\frac{1}{4}$ " sheet balsa as shown on Plate 2 and draw or transfer the Nazi Swastika emblem on each side of two of them. The marked fins are the vertical ones as shown, the blank ones being attached horizontally. Cement them securely in place.

#### MOORING MAST

**O**UR MODEL of the *Hindenburg* itself is now complete, but there are yet the mooring mast and base to be done. Details of the mast appear on Plate 3.

Strip balsa,  $\frac{1}{16}$ " square, is used mostly, but the solid black lines on the drawing show when bamboo strips are added.

Follow the drawing exactly and use great care in the placing and gluing of the various parts. The top of the mast is made of solid balsa. A  $\frac{1}{16}$ " diameter aluminum wire is run down through the top into the base. The wire forms the support for the Zeppelin.

The base of the mast may be made from almost any wood although white pine will perhaps be most suitable. A slab about 25" by 5" will be a good proportional size. Square the sides with a plane and bevel the edges, then sand it smooth for staining. Drill a  $\frac{1}{16}$ " hole to take the end of the mooring wire.

Now paint or lacquer the mast black, and stain or otherwise finish the base a dark brown. When both are completely dry drop a little cement into the hole in the base, and cement the mast in position with the wire in the hole. The wire, incidental-

ly, should not be painted, but left "natural."

When the cement is thoroughly dry and the whole base structure tested and found solid, insert the upper end of the aluminum wire into the nose of the model as shown on Plate 3. When the hole is made in the hull, remove the model for painting.

#### PAINTING THE MODEL

**P**AINT the hull either silver or aluminum, giving it as many coats as may be needed for a complete, shimmery surface. Sandpaper very lightly between each coat.

Then add the name of the vessel in black paint or India ink. Glue the model onto the wire at the top of the mast. All that now remains for you to do is to touch up any spots on the hull that you may have left un-silvered for ease in handling, allow them to dry, and apply a final coat of thin, clear lacquer over the whole ship. A sheet or so of newspaper should protect the mast and base during this operation.

## Flying Aces Club News

(Continued from page 37)

riding lights and the lights from the ship's cabin adding a few extra bits of bright jewelry to the display—while you eat your fill of fried chicken, hot rolls, and whatever else seems to appeal to your palate at the time.

These meals are served, you know, by the ship's stewardess, who with the pilot and co-pilot makes up the personnel of the plane. The stewardess is a sort of conductor, cook, waitress, guide, information clerk, flight companion, and registered nurse all rolled into one.

Miss Elizabeth Anzuena was stewardess on this particular ship. She's a swell girl—made all the riders feel as if they were personal guests of the airline instead of just paying passengers. All the stewardesses are swell, in fact; for United Air Lines, which first introduced stewardesses to air travel eight years ago, is mighty particular about the girls chosen for the job.

Incidentally, Miss Anzuena is now an honorary member of our Club, since I personally invited her into our circle to represent this important feminine field in aviation.

Perhaps you lady clubsters—and you fellows with air-minded sisters, too—would like to know something about the requirements for a job of this kind with United. The same requirements in general, of course, apply also to the other airlines.

Well, according to Miss Anzuena—or we'll call her Betty since she's now

one of the crowd—an applicant must be a registered nurse, not over 25 years old weighing no more than 120 lbs. and not over 5' 4" in height. She must have "a certain amount of good looks" and a pleasing personality, must be a good conversationalist, and be well-informed on general topics of the day. And she must play bridge!

It makes no difference whether she's blonde or brunette, although in actual practice it seems as though Western passengers prefer blondes and Eastern passengers brunettes. Maybe that's just because there are more blondes on the Western runs and more brunettes in the East.

Why must stewardesses be registered nurses—to take care of sick people? Well strangely enough, that's the *least* reason; for on the airways there's only a very minute percentage of sickness or other emergencies that requires regular hospital experience. The actual answer is that in nurses' training schools and on general ward

duty a girl is taught to anticipate the needs of other people and to interpret their moods! So a nurse-stewardess is pretty well able to tell whether a passenger on an air transport wants to play games, desires to talk or read the latest magazines, or would prefer to be just left alone.

I wasn't able to complete my plans for contacting F.A.C.'s in Chicago and other cities where I stopped. I made attempts to reach a few of you by phone—but the gods were against me. I drew a blank every time.

And where are *you*, Edith "Wings" Davis of Cleveland? We were grounded in your city on the return trip because of bad weather through the Alleghenies, and since I wanted to talk with you about your last letter I tried to contact you there. No luck, so I wrote you when I got back to New York—and the letter came back to me marked "moved." Let GHQ hear from you! And so long, pals.

—CLINT RANDALL

## Shanghai Snare

(Continued from page 28)

"Go on Bish. What then?" snapped Hardwick.

"Well, they started out the North Szechuan Road all of a lather, and I figured they were looking for you. So I got in my boiler and followed."

"Where did they go?"

"On through past the rifle-range. Hopi, the waiter, had already told me you had gone away with a girl in

a Mercedes. I'd seen the car before, so I was able to pick up the tracks of her tires."

"Good old Bish!"

"Call me Beansie . . . Anyway, I had to stop to figure out which way they went at the road out here, and I spotted the criss-crossed bars of those Mercedes tires. So I took a chance and came on here, keeping my eyes

open for a hang-out of some kind where you might be."

"Come on. Get into this ship," Hardwick ordered. "We're going to Nanking. By the way, can you shoot? Anyhow, there's some Swedish quick-firers of some sort in this barge. See what you can do with them. I think you're going to get a chance to bean some one."

"Wow! yeah, I can shoot a little!" replied Bishop. "But say—"

"Say' what?"

"I forgot to pound out that story on Arita."

"Never mind. When we get to Nanking you can pound out five million on old General Ling Kai Ching. We're taking him back to his soldier boys. The old devil is still alive!"

Bish had no answer for that, he just puffed like a porpoise and bounded toward the plane. A second look at it, and he let out a turkey cackle. "How the heck did *this* get here?" he barked.

"One of those Chinese pelicans dropped it out of his mouth," answered Tug. "But for heaven's sake get in—here they come!"

**T**WO lance-like beams slashed up and down from a point somewhere across the marsh. A powerful car was rumbling over the uneven road, lurching and slapping its twin pencils of light at the parched grass tops. There was no need for the girl to keep Hardwick covered now. They were all trapped.

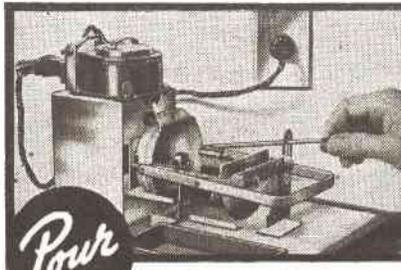
Once the four were inside the plane, Bish disappeared through a tunnel that led into the wing root. And before the plane had rumbled out of the door, he'd bobbed up again like a grinning Billikin inside the port gun nacelle. He was fumbling with the weapon when the plane began wheeling out into the clear, and he fired a short burst in the general direction of the onrushing car before the plane was actually in the air.

Hardwick hoiked the ship clear, set the props for the climb. The twin-engined fighter responded with a vim that jerked Bish back from his gun-mounting. Hardwick curled the craft over, peered down to see the car roll up close to the black shed and finger inside with its silver headlight prongs.

Tug turned, and for the first time in hours he grinned. He saw the General staring toward the ground with eyes that were deep pools of mystery. Behind him the girl was leaning anxiously over the General's shoulder; but there was no mystery in her eyes. There was stark terror. Her eyes were fixed on the black car. There was a figure in a yellow jacket and white trousers reclining in a

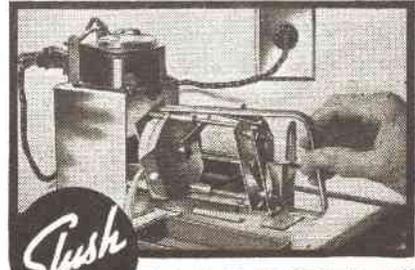
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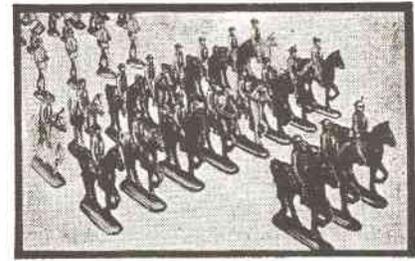
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painful and grotesque position in the open tonneau. Tug looked at her again as he brought the ship around. The look of terror had subsided to a mask of hopelessness.

He leveled off, then suddenly circled again. "Wait a minute," he cried over his shoulder. "Who is that guy they've got in the back seat down there?"

The General simply raised his eyebrows a trifle, then turned to the girl.

But she had sat down at the radio table and under the dim light, Tug could see that she was dabbing at her eyes with a small handkerchief.

"Who is that fellow, General?" Tug demanded again.

The General raised his hands in a helpless gesture, displayed his long talon-like fingers. "It is her brother, Serge," he confessed. "He was help-

ing her, and he was captured."

Tug did not hesitate. He sent the twin-engined fighter into a wrenching side-slip, then bellowed to Bish through the phone mouthpiece fitted into the wall near his head: "Get those Japs, fellow. But look out for the kid in the back seat of that car. We're going to get him out. Act fast!"

Bish swung his gun, took a careful aim as Hardwick circled low over the shed. There was a tremendous rattle and a salvo of 20 m.m. explosive bullets fanged through the air toward the nose of the car. A few went through the open door of the shed and set up a mad fireworks display.

Before the General realized what was happening, the fighter was back on the ground and rolling up to the

open spot in front of the hangar.

"Cover me, Bish!" Tug bawled into the wall phone. "I'm going to get that kid out."

Leaving the two motors running, Hardwick struggled past the wildly gesticulating General. The girl stood near the door, uncertain, her hands clasped together nervously. Tug gave her a look, then yanked the latch down and shoved the cabin door open. He paused just long enough to pull a pocket knife from his trousers and snatch the girl's small but effective automatic.

"Hang on, sister . . . er, Countess. I'll soon get your kid brother," he grinned.

**T**HE next few minutes saw mad insane action. It was like a run-away sound film intensified to ear-splitting pandemonium. Hardwick darted out into the night, began a broken-field dash toward the black car. To cover him, Bish slammed single-shot blasts at moving figures near the shed and he drew flicked pencil-like streaks of yellow flame in return. Hardwick finally crouched in the shadows at one side, then dashed in and hurled himself high into the air and across the top of the touring car's back seat. He landed with a thud on a crouching Japanese who had been firing at the plane over the folded top.

There was a quick scuffle, a low scream, and the Nipponese fell back as Hardwick brought the butt of his automatic down on his head. Tug rammed him away with his foot and with another quick move slashed the heavy cords which bound the legs of the slight man in the yellow jacket.

"Come on, Serge!" he yelled. "Get moving, kid."

Hardwick kicked a door open, started lugging the youth out. But he was dead weight and rolled through the door in a heap. Hardwick saw that his man was "out." The captors had done a thorough job on their prisoner.

With a low growl, Tug quickly swung the youth up in a fireman's lift and started running. Realizing what had occurred, two of the outwitted Orientals ran from the shed, firing as they came. But Bish was ready and steel answered copper-jacketed lead. The tubby newsman now sent a short burst into the gas tank of the car, and it exploded with a roar, throwing burning fuel in all directions.

Meanwhile, Tug staggered on through the shadows with his load, and finally he again reached the ship. He was able to hurl Serge through the cabin door at the feet of the girl. Then he, too, clambered in and slammed the door shut.

A smirk on his face, the General stood like a wrinkled statue, staring across the field, while out in the turret Bish was still staging a Roman holiday with his 20 m.m. gun.

"Let's go," yelled Hardwick, scrambling past the General. He set the brakes on one wheel, opened the opposite motor high, and shoved the stick forward to ease the tail up. The fighter whipped around sharply, rolled away for another take-off.

Into the blackness the plane was hurtling again, and Tug held her tightly to make certain all controls were intact. Then he skimmed up for height and headed north toward Nanking. He finally turned to look at Bish and was startled to see a strained expression on his assistant's face. Bish had reloaded the gun shell-pool and was peering anxiously along the sights. Tug followed his gaze, almost slipped out of his cockpit seat at what he saw.

Ahead and slightly higher gleamed the knife-like wings of six Japanese Kawasaki 93's! Hardwick was sufficiently familiar with most military types to recognize them at once, and he knew they were staunch two-seaters, well-armed both fore and aft. They had a speed of about 170 with a complete military load.

"Whew!" he gasped. "Now we're in for it!"

Bishop waited for an excuse to fire—and he soon got it. The six two-seaters plunged down on them like a ton of brick. Tug set the props for speed, nosed down. They smashed through a curtain-fire from the Japanese ships. But Bish stuck to his gun, pounded at them over open sights.

Somehow they got through and Bish quickly darted in from the nacelle and went to work with the rear guns. Tug now opened her up full, slammed over the rifle range, and headed out past the long line of barracks in Hongkew Park. The two-seaters had turned for the chase, and now a blanket fire of anti-aircraft raged up from the cantonments below. Savage shells crashed all about them, spewed yellow and scarlet flame against the sky. Sharp bludgeons of shrapnel and metal screamed from the explosion centers, wailed their war cries against the sable sky.

Through it all, Tug Hardwick jockeyed the twin-engined fighter, slinging her speedily from side to side so that the trim Kawasakis had little chance to hurl a death blow.

But finally a wild Kawasaki slammed in as though from nowhere and hammered a hail of metal through the top of the cabin just aft of the radio panel. The girl, who was kneeling over her brother, screamed and flattened herself across

him. The youth stirred at the impact and for the first time showed signs of life. The girl raised herself, turned a pair of appealing eyes at the General.

The General ignored her, remained steadying himself in the gangway. Tug caught the girl's appeal as he turned to watch Bish.

"Give her a hand with that guy!" he yelled at the stubby reporter. "He's had a terrific beating."

The General glowered, tapped his big leather holster. "You will hurry to Nanking," he said gruffly.

"Don't worry, I'll hurry there," Tug growled over his shoulder.

Now back in the port nacelle, Bish was putting up a rare fight. As the leading Kawasaki plunged back in, he frantically swung his light cannon, loosed a savage burst that blasted the attacker's top wing. The disabled 93 fell off in a roll, gradually nosed over, then plunged earthward convulsed in its death throes.

Bish banged a second five-round burst at another 93 that was poised for a dive. A direct hit was scored, and the red-ball marked craft jerked up, then slithered away and disappeared into the darkness.

A few more desultory dives and the Kawasakis sheered off, with Bish still hammering pot shots after them. Eventually they were in the clear and the stocky fellow returned to the cabin to give the girl a hand with her brother.

The youth's face was bloated and purple with bruises. One eye was closed and he fought for his breath. His wrists were raw flesh where cruel thongs had been bound and twisted. At intervals he fought spasmodic jerks that tortured his body.

"Boy, they certainly gave you a beating," Bish said with a motherly gesture. "But never mind. Leave it to Beansie, he'll have you ticking again in no time."

From a kneeling position, he peered about the chamber, then spotted a black-enameled box on the wall. He ripped it out of its prongs, tore open the top. Inside was a complete first-aid kit. He snatched at the bottles and boxes, read the labels quickly. Then he and the girl went to work on the lad.

In five minutes Serge was sitting up and staring about. It was plain he was putting up a good fight to recover. He tried to talk, but his lips were too puffed to form audible words. Tears ran down his eyes, and he stared up at the General, trying to plead with him.

"Now take it easy. Beansie and Tug will have you out of this and between the loveliest sheets you ever parked your rump on. Take it easy, kid. It's a joy ride from now on."

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BISH went forward, brushing past the stoic General Ling Kai Ching, who still maintained his cramped position in the gangway.

"Whatever you do, General," Bish smirked, "don't you raise a mitt to give a hand. I'll bet you ten bucks you never fired a gun in your life. No wonder generals die in bed. But wait until we get you into Nanking. Tug and Beansie will put you on the pan, you old dodger!"

The General's face never changed, and Bish went on up and leaned over Tug's shoulder. Ahead lay the gleaming rails of the Shanghai-Nanking Railway and to one side the bleak sparse area south of Soochow. A new moon that looked like an apple paring appeared out of the haze, cast silver over the rice fields below.

"Nice work, kid," Tug said. "How is Serge?"

"Call me Beansie. You're pretty hot stuff yourself. But we gotter get that story out, somehow. It's a beaut!"

"A scoop—if we ever get it, Bish," Hardwick said quietly.

"Call me Be—"

"Forget that tripe and get back there and start pumping that jane. Find out as much as you can about this General guy. I have a hunch he'll jump us the minute we plant this boiler down."

"That guy will be lucky if we get him there at all."

"Don't worry about that. Get back to that skirt and get that story."

Beansie wandered back, ignoring General Ling Kai Ching. He squatted alongside the youth and the girl.

"What the devil did you send him into Shanghai for?" demanded Bish.

"To find out what was happening

in Nanking. We had to get the General to some safe spot, and we didn't know whether Nanking was open or whether we would have to go through to Tientsin."

"Where'd you find the old buzzard, anyway?" asked Bish, leaning back against a metal rack. "He was supposed to have been assassinated."

"That's a long story," the girl said.

"Well, we got lots of time. Let's have it."

"He was kidnaped," the girl explained after a few seconds of thought. "He was picked up outside Hangchow about a year ago, placed aboard a Japanese river gunboat, and taken to Quelport Island."

"How did you know?"

"I was looking for him—I had a plan and I knew he was the only Chinese general who could help me. I am a White Russian. And anything that General Ling Kai Ching could do toward furthering the famous Yatu Plan would help us defeat the Communist movement in China, for it would throw the weight of the Soviets against Nippon and ease the pressure on China."

"It's an idea, anyway," agreed Bish.

"General Ling Kai Ching was the only man who could unite the anti-Communist forces—the only man who could harness the Nationalist Government in Canton with the Republican Government in Peiping for an organized war. I was appointed by the White Brigade to find him. None of us believed the reported story that he had been killed. Finally, after months of search, my brother and I learned the story of the abduction and traced him to Quelport."

"Swell, but how did you get there?"

"We disguised ourselves as the survivors of an American yachting party, which had been wrecked off Fukouka."

"That's on the west coast of Kyushu, isn't it?" asked Bish.

"Correct. We towed a raft out from Tsingtao behind a motor boat. And at night, a mile or so off the island, we sank the motor boat, climbed aboard the raft, rigged a jury sail, and just about made it. Needless to say we dressed for the part and brought along some damp, but well-forged papers to clinch our identification. We got on the island, and stayed there while we sent touching appeals to our 'friends' in San Francisco for money and further credentials."

"Go on," said Bish, taking a few notes.

"Well, we had a lot of time on our hands and we were allowed to move around more or less freely. One day we decided to climb Mt. Auckland, which is on the island, and there we ran into a number of workmen—mechanics. We shared our lunch with them and managed to ferret out the aircraft story in a sketchy way. We learned that there was a factory hidden away in the hills and that they were just completing the first plane from their set of stolen blueprints.

"Figuring this information would be useful, we continued our hunt for the General. We finally located him—he was being held captive at a house on the outskirts of Che-ju. Well, we broke in by outwitting the guard, got him into the hills, and eventually stole this plane—the only one completed—together with the blueprints. Then we flew to Shanghai, but arrived only to run into this mess.

There we were, minus our pilot and dangerously close to the Japanese barracks."

"Wow!" gasped Bish, "that's enough. We'll get the rest of the details later. But maybe the General is playing us for suckers now, huh?"

"I am not certain. He does act strange, now that he seems to be in the clear. We must watch him," the girl whispered.

"I have a hunch we're in for some monkey business, but we might as well go through with it now," Bish said. Then he continued: "But I wonder if General Ching has figured on Kiang Chek Tsu. Kiang may not like Ching returning at this stage of the game."

"That was one thing we never figured on," the girl explained. "If things haven't worked out right when we get to Nanking, we'll have to take things into our own hands."

Bish nodded. "Leave it to Tug and Beansie," he said with more confidence than he really had. Then he arose and turned to Ching. "Where do we go from here, General?" he asked.

Ching was staring over Tug's shoulder toward the fringe of lights that marked the once great wall around Nanking. He now turned around, somewhat startled. "Oh yes, you mean where are we to land?" he queried, stepping back with Bishop.

"Sure, we don't know this area very well. Have you anything in mind?"

"I have. There are the grounds of the old Hung Wu palace ruins near the north-east corner of the city. It is well shielded and Mr. Hardwick will be able to get in there with plenty of room to spare. If you can pick out one of the old gates and continue due north-east, it will be easy to find."

**T**HEY were very near to the city now, and Bish started to explain the situation to Hardwick. Tug nodded, stared at an automobile road map he had stretched on a frame in front of him. "I don't like that crack he made about the place being 'well-shielded,' do you, Bish?" he started to say. But just then there was a scuffle somewhere behind and Bish disappeared. A few seconds later, there was an answer to it all.

The gun in the starboard turret suddenly flamed out. Bish had dived down the wing tunnel and was now swinging the starboard nacelle gun wildly. Tug stared ahead and above.

"I get it," he muttered. "Now we've got to run a Chinese gauntlet—all to be expected, since we carry no insignia."

From above came a startling blast of gunfire. Three Chinese fighters, unmistakably imported Italian single-

seaters, came down on them like a clap of thunder. As they dived in, the sky was illuminated with slashing blades of searchlight.

Vickers lead now spanged from the attackers, and Bish slammed 20 m.m. stuff back at them, beat the first formation off.

Hardwick nosed down, skated into a silken mist that hung over the old city, eluded the fire of anti-aircraft guns that suddenly blasted three-inch stuff up at them. The plane danced on a sea of concussion, but Hardwick dodged through and finally cleared as Bish sprayed new bursts at the Chinese fighters. The Orientals were not quite certain what to do against this new aerial devil that spat so venomously.

For ten minutes they slammed back and forth and finally Tug gave them the slip by abruptly shooting east and disappearing in a bank of velvet clouds. The General moved up, tapped him on the shoulder, and smiled.

"Very good, Mr. Hardwick. Now you can select our field. I think you will find it with ease. We are quite near."

"Does anyone expect you?" Tug asked.

"I believe so," Ching replied with a dull oily grin.

"How soon can I get into the city and rap out that story?"

"That remains to be seen. There are several matters to be cleared up first."

Tug bit his lip, peered at his instruments a moment. Finally he turned back and said: "What will General Kiang Chek Tsu have to say about all this, General?"

"That," replied Ching as imperturbable as a sphinx, "remains to be seen."

**A** CONFUSING chain of thoughts raced through Hardwick's mind as he tried to figure out a plan of action. First there were two stories to get out and file with the cable office. They would have to be sent in code—to make certain they would go through. That would be Bish's job. Then there was the mysterious business about the girl and her brother. What was it all about, and how safe were they all with the knowledge they had? What did the General have in his mind? No matter how he figured the situation, Tug realized that they were in a tough spot. However, there was no time for speculation.

Now the General was patting him on the shoulder and pointing down toward a blackened splotch that seemed to lie a short distance outside the remains of the old city wall.

"Approach from the north side and keep the right-hand edge well in the

clear," the Chinese intoned. "There is plenty of room. That field was once the wide parade ground where Hung Wu trained his soldier-tribesmen. After landing, run the ship up to the low building you will notice on your left."

Tug nodded, pulled the lever that lowered the landing wheels. He curled the plane around, gave the landing flap wheel two turns, and she seemed to hang in the sky. Outside, Bish was still scanning the sky through the shatterproof glass. He was taking no chances on a thrust from any nocturnal Chinese fighter.

The twin-engined plane eased in and Tug planted her down on a lush turf field. He eased back on the throttles, turned to say something to the General—and found himself staring into the grim black muzzle of an automatic!

It was the General. And there was a merciless expression on his face. "You will run the plane up there to that low building, just as I told you, Mr. Hardwick," he ordered.

There was nothing else to do. But Tug wished the Countess were as handy now with her gun as she had been at that cocktail table in the Astor Hotel. Then he remembered with a start that he had taken her gun, and somehow had lost it while carrying her brother back. Nothing was breaking right now.

He ran the military machine up to the low hanging shed, and quickly several men in strange costumes came out and surrounded the machine.

"Now what?" demanded Bish, coming up out of the tunnel.

"You will walk out—with your hands up," the General snapped, jabbing his gun into Bishop's ribs. "And now you, Mr. Hardwick!"

There was nothing to do but obey. Tug followed Bish out and saw the girl huddled near her brother, who was trying to get up on one elbow.

"Come on, Countess. This is all there is—there ain't no more," Hardwick said with a tinge of bitterness in his voice.

Once outside, the General barked something in Cantonese and they were immediately surrounded. Their arms pinned behind them, they were rushed into the building. The girl followed a few moments later, walking ahead of a foursome that was carrying her bruised brother.

The room was low and rambling, but strongly built. There were a few windows, but they were well barred. A table, piled with dirty dishes, chunks of bread, and empty tin cans stood at one side, and a mongrel terrier had leaped up to scrounge among the remains. Illumination was supplied by a few box lanterns that

splattered with impure oil. The stench of decayed food, oil, mouldy hangings, and the perspiration of men, almost knocked them down.

The General stepped over and jabbered excitedly with three others who wore garish Oriental dress. The rest of the nondescripts appeared to be plain coolie types, with straw sandals, strips of cloth wound around their legs, and wide-sleeved tunics belted with flaming scarlet sashes, as their uniforms. There was a generous sprinkling of short broad-bladed swords, heavy ancient revolvers, and cavalry carbines.

"Beansie thinks it's gonner be a nice night," Bish said with an attempt at gayety. "But he'd sooner be back on the Bund."

They were hustled into a corner, where the Russian lad was flung down on a long, greasy bench. The General now seated himself at the table, first sweeping the dishes and debris to the floor.

The girl dropped to her brother's side, and Tug joined her. Serge was better, but still very weak from the tortures he had undergone in Shanghai. Bish stood near, whispered the story the Countess had told him so that Tug would know just what the situation really was.

The girl, however, was listening to the mad clacky conversation that was going on at the table.

One heavy Chinese, attired in the nearest to military uniform that could be found in the crowd, was doing all the talking. He read from papers and military dispatches in his hands between spurts of excited conversation.

"What's it all about, Countess?" Tug asked out of one corner of his mouth, as he thumb-nailed a match and lit a cigarette. "You are a Countess, aren't you?"

"Countess Astrid Khitrovo," the girl whispered, a faint smile tinging her eyes.

Hardwick let out a whistle. He knew the story of the Khitrovo family and their courageous efforts to aid the exiled monarchist Russians. All this was grist to his news mill. What a story this was becoming!

"Don't worry, you'll never write that story," the girl said, guessing his thoughts as she kept her eyes on the men at the table.

"No? Wait until we get out of here," Tug said slowly.

"You never will get out of here," the girl answered slowly.

Tug looked across at the men at the table. General Ling Kai Ching was now pointing out Bish and Tug. The others were nodding, and one particularly offensive looking Mongol grinned fiendishly.

"What's the game?" Tug asked.

"I'll bet we're for the soup," Bish said.

The girl now spoke: "The General cannot return. General Kiang Chek Tsu has refused to allow him to appear—under pain of death. He must disappear again."

"Not if I can get to a cable," Tug growled.

"That is the trouble," the girl replied. "They won't let you. They are going to—to behead the lot of us and get away."

Tug ran his hands quickly through his pockets in the vain hope he might find something to get them out of this terrible predicament. Not even his pocket-knife came to light. He'd dropped that, too.

"So the Wolf of the Woosung refuses to allow Ching to return and grab the glory, eh?" Bish said. "Well, Beansie could have told you that."

The big, evil-looking Mongol was now walking about flashing his great broad-sword and fingering its edge with anticipation.

The girl sobbed into her hands. Her brother tried to get up and say something to her, but Bish shoved him back with: "Take it easy, Serge. Beansie will have an idea . . . maybe."

**TUG** was boiling. He pushed past the three guards who stood facing them a short way off.

"Look here, General," he barked, forcing himself up to the long table. "We played the game with you. Now you've got to give us a break. You can't hold us here this way. I demand my rights as an American citizen. I

wish to communicate with my Consul."

The General smirked. "The same old story of the American in foreign lands. The minute he gets himself into trouble, he waits for his Consul. You should have thought of all these things when you became enamoured with the Countess. After all, she has no national standing in China. You are now outside the law after that affair at the Astor Hotel and later outside Shanghai."

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“All right, let us clear out with you. You can drop us anywhere—but at least give us a fighting chance for our lives. We took plenty with you in the air. Give us the same chance on the ground—anywhere.”

“I cannot afford to take that chance. Maybe with the lady, yes. She is too beautiful to lead to the block. But you gentlemen have completed your part in this grim drama. That is war, Mr. Hardwick—the fortunes of war.”

“Why you devil—!” Hardwick started to say. Then the full realization of Ching’s words came to him. He intended killing off the men, but planned to kidnap the girl—to make her a slave. The whole thought revolted him and he stood there trembling. For the first time in his life Tug felt the desire to murder a man in cold blood.

“You have a short time to contemplate your past—and the future of your souls,” General Ling Kai Ching said coldly. “We shall not be leaving for a few hours when it will be near daylight. Besides, we may first need a little advice concerning the plane.”

“You’ll never get it, and I hope the mug who pilots that bus hurtles it straight into the ground from five thousand feet,” raged Tug, now held firmly by two of the guards.

**T**HE guards shoved Tug back into his group and took their positions again. The General sat down with four of the most important looking of the uniformed men and ate sparingly of a meal that was brought in from somewhere outside. Their conversation was held in low tones now and Countess Astrid could not get much of what they were saying.

Tug sat back on the bench, folded his arms across his chest. Two of the coolies brought them some platters of pungent meat, rice, and greasy gravy. Bish wallowed into it with vigor, for he could always eat. The girl selected the best morsels of the poor fare and gave them to her brother, and soon a warmer flush spread across his face.

But Tug kicked his dish all the

way across the floor. “We’ve got to get out of here,” he snapped.

“Sure,” Bish agreed, cramming more food into his mouth. “But how?”

“That louse plans to make a common slave out of the Countess,” Tug told him between his teeth.

Bish gulped, then choked on a wad of rice. Finally, he put his plate down and stared around.

“Let’s rush ’em,” he said quietly.

“Don’t be a sap! Those guys would split our skulls with those choppers before we moved ten feet. Besides, we got to think about that kid Serge. He can’t stand up!”

“Well, we’re gonner get it in the neck, anyway. What’s the difference?”

“Maybe so. But we’d better wait until they try to get us to the block. We might hit on something. Keep thinking, Bish.”

For nearly an hour they sat turning wild plans over in their minds. But no feasible idea materialized. The girl, physically and emotionally exhausted, finally dropped to sleep beside her brother.

At this stage, the guards relaxed a bit, and Tug found himself agreeing that Bishop’s suggestion that they make a rush for it was their only hope. But just as a plan was forming in Tug’s mind, he saw the door open and two grease-splotted men, evidently mechanics, came in and spoke to the men at the table.

The General nodded, then came over to the hapless group in the corner. He smiled at Bish and bent his long forefinger: “You will come this way, please?”

“What’s the idea?” Bish said, going white.

“This way, I say,” the General motioned, giving another of his oily smiles.

Bish looked at Tug, and Tug looked at the General. There was no sign in Ching’s eyes that gave any hint as to what was wanted.

“Okay,” Bish said. “Beansie can take it. So long, Tug. We had a lot of fun while it lasted, eh? Be seein’ you . . . somewhere.”

One of the guards quickly yanked Bishop out of the group, sent him stumbling across the floor. Bish recovered his balance slowly, then suddenly spun fast. The guard went over like a blocked tackle, crashed to the floor on his face.

Bish laughed as two more Chinese grabbed his arms: “Leave it to Beansie, Tug. That was worth whatever I’m gonner get.”

They rushed Bishop through the door, and a lump as big as a cobblestone rose in Tug’s throat. Gallant little Bish—game to the last! He turned his eyes from the door, tried

to force any mental picture of what was going to happen out of his mind. But he couldn’t. He kept seeing flashes of Bish in his rattle-trap Ford . . . Bish sauntering on the Bund in his best with a walking stick . . . Bish pecking away at a battered typewriter . . . Bish—just Bish, who wanted to be called Beansie.

Tug spat out an oath, struggled with himself as he counted the minutes. He did not dare look down at the girl. Instead he kept his gaze on the General. Yet outside there was not a sound except the low piping chirps of a few early morning birds. A lantern spluttered and went out. A guard changed his position and turned to watch them.

Then, like a crash of doom, several loud reports echoed outside.

Tug jerked, set his teeth, and closed his eyes. So they had shot little Bish! Well, that was a better end for a white man than the sword and the block.

Silence again. Cruel silence that seemed to thump against his eardrums. Then the door banged open and the big Mongol came in, his great sword flashing in the dim light. There was a new glint along the edge, and Tug knew he had been whetting it on a grindstone. None of this made sense—if they had shot Bish.

The fiendish Mongol spoke quietly to the General, then turned, went down the room, drew open a low cupboard door, and struggled with something heavy and bulky. Tug watched a moment, then realized that they were going through with the beheading after all! That was a chopping block—a dirty block with a low curve in the top and a dark stain down the front.

The Mongol set it in position and took his stance beside it. He swung the big sword back and forth several times, then marked two scratches with the pointed end on the floor where his toes touched.

“Nothing like figuring the whole thing out right,” muttered Tug to himself grimly. “These birds seem to have this business down to a science.”

Then to Hardwick’s amazement, the door opened again and Bish came back! He had a strange grin on his face as he returned to the group. Tug was speechless. He got up and held his arms out.

Bishop grinned. “Little Beansie, the ballistics expert,” he snickered. “They didn’t know how to fire the cannons. I had to show them.”

“But,” Tug gasped, “I thought they’d shot you—like a gentleman.”

The girl sat up, stared about unable to make it all out.

"What are they doing?" Tug asked Bish quietly.

"Getting ready to clear out. They've got the bus re-fueled and two guys somewhere about who think they can fly it."

Tug wagged his head back and forth, and Bish jabbed him in the ribs when the guards were not looking.

"I did—did something out there. But I don't know what to do about it," he said.

"What are you talking about?"

"I—I mean I tried to get a gun or something. They were watching me, and I couldn't get away with it. But—"

"But what?" Tug implored.

Bish fumbled in his pocket, keeping an eye on the guards.

"You see, they made me show them how to load that Swedish gun for single and rapid fire and—" He broke off as a guard approached.

THEY were pulling the table back and setting the stage for the execution now. The guard who had interrupted their conversation continued past them and locked the heavy wooden door, while the General and his advisors stood up and moved over to the block. The big Mongol executioner waited expectantly, taking practice slices at the block.

"Make it fast! What have you got?" demanded the excited Tug.

"These! They're all I could pick up without their noticing what I was doing." And Bish brought out two of the 20 m.m. shells from the Swedish cannons and hid them behind him.

"We can't do anything with them, can we?" Bish said hopelessly.

"Wait a minute," Tug said, keeping his eye on the group around the execution block. "Let me think . . . Let me think . . ."

Two more guards now turned from the group around the block and began walking slowly toward them.

"Got it!" hissed Tug. "Get the Countess well into the corner with her brother. Then give me those shells—slip 'em to me behind your back."

Bish, puzzled, handed the shells over to Tug in a fast movement as they drew the Countess over.

"Now cover her," he whispered. Then he brought one of the shells around in front of him and twisted his body to hide it from the sight of the oncoming guards. With a quick inspection of the shell's nose, Tug twisted the fuse knob to zero, then did likewise with the second shell.

The two air cannon missiles were now changed into hand grenades—fitted with graze fuse attachments, they would explode on the slightest contact!

With a quick glance at the guards, Tug suddenly drew his arm back and hurled the first shell with a spinning motion, nose first toward the execution block.

"Duck!" he screamed, turning his back to the other end of the room.

There was a terrific explosion, followed by the screams of trapped men. The shell had hit the base of the block and blown it to smithereens. The General threw up his arms and took a burst of shell splinter full in his middle. He fell over the battered block with a gurgle.

Bish now leaped out of his crouch over the Countess and flattened the first of the two amazed guards who had come to get them. He felled him with a punch, grabbed his sword and gun and hacked at the other guard. The man went down screaming. Tug was quickly on him. He grabbed the Oriental's gun and cocked its heavy hammer. Together they now hurtled across the several screaming and groveling men who lay where the block had been. They were deafened and could hardly hear the cries of the wounded men on the floor.

Like two wild men they charged in and cut down those who were still full of fight. A tall screaming warrior hurled himself at Tug, but Bish brought him down with the butt of his gun, left him helpless. Tug bashed down two more heads with the flat of his sword, then ran up the room toward the Countess.

Two Mongol warriors now tried to get to the door and barricade the way. But Tug fired twice and they dropped their swords, grabbed their chests, and toppled to the floor.

"Keep back!" Tug bawled at the remaining Oriental. Then he dropped his sword, took out the second shell, and poised again. This time the shell sped across the room and crashed into the massive lock of the great door. Bish had upturned the table in his battle with a big Mongol, and they huddled down behind it. It seemed that a second passed before there was any reaction. Then came a screeching detonation—and the great door held them prisoner no more.

Bish led as they fought their way through the flailing arms of the wounded guards. He had to drill one of them with his pistol. But they broke through, with Tug carrying Serge and the Countess, a revolver in her hand, following.

Quickly, Tug yanked the door open. The great lock had been completely blown through the heavy wood. The old portal swung wide and they lurched out into the darkness beyond. "The ship's over here, headed into the clear," yelled Bish.

They staggered on, found the twin-motored plane, felled a man who came

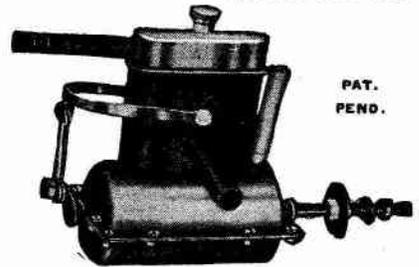
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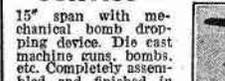
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out from the darkness undecided what to do, and snatched at the cabin door. Two more, hiding inside terror-stricken, were yanked out and felled with Tug's heavy revolver.

They got the Countess and her brother inside and slammed the door. Bish went through the wing tunnel again and left Tug to get the ship away. As the motors opened up, Bish's aero gun began to rattle again. He put burst after burst into a new detachment of men that came running up. But there was no danger now. Their plane was away.

"Whew!" gasped Tug. "There's nothing like cutting it close."

The big twin-engined fighter now left the turf-patched field and climbed easily into the half light of the oncoming dawn. Bish sat in the port nacelle, grinned over at Tug.

Hardwick checked everything again, then drew up the wheels. He

let the ship climb hard as he circled wide of Nanking, then plotted a due-south course that followed the Imperial Canal.

Finally, the sun peeped through the misty fringes in the east and splashed its warmth over the forbidding walls of the Shansee range. Then Hardwick relaxed, let her run on the robot.

He now sensed that he was being watched and turned to see the Countess, weary but lovely, peering over his shoulder.

"Where to this time?" she asked with a smile.

"All the way down, Countess. Hong-Kong is the safest place for us by now. Can you hang on that long? It'll be three hours at the worst."

"I could hang on for three years—after what I've seen," the girl said with an admiring glance at Tug.

Hardwick sat behind the big wheel,

his eyes looking into the distance. He wondered how long it would take him to forget this girl with straw-colored hair and a peach-bloom skin. He looked at his reflection in the air-speed indicator dial. "You newspapermen meet such interesting people," he said to himself.

"Well," he said, turning to the girl again, "are you through playing Chinese generals against the Soviets? You came near losing out that time."

"The Khitrovos are pledged to keep up the fight," came the proud answer. "But I do wish we had more men in our cause like you, Mr. Hardwick."

"But, Countess, don't forget my side-kick. He did a swell job, did Bish!"

"Will you kindly," a voice suddenly bleated out of the wing tunnel, "call me Beansie!"

## Highlights of the National Air Races

(Continued from page 21)

As Turner passed the second pylon on his last lap, he suddenly turned back fearing he had accidentally missed it because of the low blinding sun and a spray of oil from his engine. Ortman immediately whizzed by, with Kling a short distance above and to the rear. Then on rounding the last pylon, Kling dived from this slightly-higher altitude with his engine full out—and it was this neat maneuver that enabled him to slide his Folkerts past the Californian!

Actually, Kling made this effort only in the hope of getting second money. For at the time he was unaware of the place juggling that had occurred. Rudy did not know he had won until he was rushed by photographers on landing!

**I**N memory of Amelia Earhart, an all-women's race was held in stock ships with carefully worked out handicaps. The winner was Gladys O'Donnell, whose Ryan S-T earned

for her a \$450 award. The Taylor light-plane derby consisted merely of following a course in a schedule estimated by the contestants themselves. Minor prizes were given those who were most accurate.

A host of stunt fliers were on hand to liven up the between-race moments, and top man in the field of daring was undoubtedly Count Otto Hagenburg, who miraculously escaped death as his plane plowed into the earth while in inverted flight. Precision maneuvers were ably executed by that veteran aerobatic champion, Tex Rankin, and his runner-up Capt. Alex Papana, of Roumania.

Dick Granere and Mike Murphy rated a fur-lined tachometer, or some such award, for their crazy flying in light-planes. Mike's show consisted of taking off and landing his Cub on an improvised "field" atop a speeding automobile. He certainly can have my share of that!

The extreme in contrast in this ex-

hibition type of work was presented by Harold Johnson, who put a six-ton Ford tri-motor through various maneuvers, and Charles Abel, who stunted a biplane glider. The Army's trio of "Skylarks" completed intricate maneuvers in tight formation with service Boeing P-12E's. This will probably terminate their performances together, as these ships are due to be replaced.

In conclusion, I want all you fans to note that in my accompanying table listing the racing ships at the Nationals, I've given their Department of Commerce numbers and also their colors. So if any of these trim jobs ever lands at your local airport, you'll be able to identify it readily. That data will also be of use to you modelers who want to try your hand at making miniatures of the speed jobs.

And here's hoping a lot of you readers get to see next year's National Air Races!

## Yankee Doodling

(Continued from page 16)

U. S. and left the door unlocked. Houdini didn't know it, an' so he could not get out the way he worked it. Well, why should it interest me? How about some *Police Gazettes* or *La Vie Pareesiannies* or somethin' to read?"

The brass hats looked at one another, then at the prisoner. One of them had taken all of Phineas' personal belongings from him and was gloating over a small box of panatela cigars. He had passed them around to his cronies, looking covertly at

Phineas to see how the flyer was going to take his incarceration. Each of the brass hats lighted up and started out of the gloomy place, without deigning to respond to the prisoner's request for reading matter.

BANG! BONG! BO-ONG! Doughs, armed to the teeth, barged in from all parts of the bastille. They found a colonel leaning against the door to the Pinkham cage pawing sparks from his face. The Boonetown patriot was sitting up on his wooden bench sniffing at the ozone. The

brass hat whose dignity had been sullied was a tall individual with a Charlie Chaplin mustache parked under his elongated proboscis. One end of it had been neatly burned off.

"I say shoot him!" he roared when the doughs asked if anybody had been killed. He kept one hand glued to the side of his head.

Phineas Pinkham meanwhile continued to sniff the air, and now a bleak grin swept across his freckled map. "They can't blame me for that," he tossed out. "I didn't give 'em those

stogies. They stole my bag of stuff—an' they better give it back to me as one of them little jars is filled with leprosy germs an'—Well, I bet it's busted already. I—er—heard glass break wher—"

"L-leprosy?" the tall high officer exploded. Then he started running. In three seconds the prisoner was alone.

**H**ALF AN HOUR later a very imposing figure, accompanied by aides, strode into the bastile and looked in on the prisoner. Pinkham was leaning against the wall scribbling things with a pencil. They were crazy looking designs under which he had inscribed: *P. Pinkham. Stopped here May 19, 1918.*

In the current day and age, the fantastic and meaningless diagrams that Phineas had jotted on the prison stones would be called "doodles"—the symptoms of that artistic disease, "doodling," which is suffered by 90 per cent of the world's Caucasian population. Give a pencil to a person who has nothing to do, and he'll be bitten by the germ. The walls of telephone booths give him the best opportunity for his nefarious work, but any flat surface will do.

"Stand up, there!" a swanky looking officer barked.

Phineas, of course, was already on his feet—and he quickly recognized who was looking in at him. It was none other than General John J. "Black Jack" Pershing, the last gentleman in the world to whom to hand a loaded cigar—the C-in-C himself! And that rugged, well-chiseled face was getting as hard as a loan shark's heart. The Flying Corp's particular itch saluted with alacrity.

"Y-yes, sir. N-no, sir. Yes, sir. Sir, I would like to explain. I meant no harm, sir. I just tried to do my duty an—"

"Lieutenant," the C-in-C said sternly, "I understand you made the remark that you could decipher the message on this paper!"

"Yes sir. A Pinkham never fails to—"

"Then do it, Lieutenant," the C-in-C snapped. "I'll give you eight hours. If you succeed, all charges against you will be dropped. I promise that whatever disciplinary measures are necessary will be limited. Here you are, Lieutenant." And he handed Phineas a sheet of paper bearing the words:

*Things in Shell Boat Red Cross Midsummer Bug Four and Pieces of Seven Becky.*

"It won't take me more'n an hour, sir—maybe," Phineas said gratefully. "An' thank you, sir. A Pink-

ham always wants to do his duty, sir. I had a great, great grandfather or somethin' with Wellington at Waterloo. In the Revolution, a Pinkham lent Paul Revere a horse. An' in the Civil War, a Pi—"

The General had heard enough. He turned and strode out without a word. And the World War generation of the patriotic Pinkhams knew that the C-in-C was about as confident of getting the low-down on the message as he was of becoming Shah of Persia.

**T**WO HOURS passed. Then Phineas Pinkham demanded to be taken to G-2. M. P.'s quickly sprung him and he was driven back to the big rectangle of buildings and ushered into the labyrinth where A.E.F. sleefoots plied their trade. Brass hats were gathered and they surrounded Phineas, bugging eyes centered on the paper the Boonetown wonder held up for their inspection. Here is what they read:

<i>Things in</i>	<i>General</i>
<i>Shell</i>	<i>Fish</i>
<i>Boat</i>	<i>Launching</i>
<i>Red Cross</i>	<i>Drive</i>
<i>Midsummer</i>	<i>Night</i>
<i>Bug</i>	<i>June</i>
<i>Four and</i>	<i>Twenty</i>
<i>Pieces of</i>	<i>Eight</i>
<i>Seven</i>	<i>Eleven</i>
<i>Becky</i>	<i>Sharp</i>

The right-hand column had been filled in by Phineas Pinkham; the left, of course, was the original Boche message in column form.

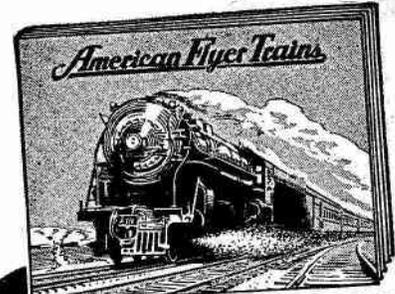
"Why—er—that's it!" yelled a general. "He's done it! All you got to do is read down the right-hand column. Why it was—simple! Quick, get General Pershing on the 'phone. But say, how did you do it, Lieutenant?"

"When a guy says 'bacon,'" Phineas replied, "what do you think of, huh? Eggs, of course. Haw-w-w-w! If you said 'Corned-beef' I would holler right back, 'Cabbage!' Of course, I had to rub a lot of words out before I got the right ones but there was only two or three that fit each one, and I finally switched 'em around until I got a message that made sense. We have got a General Fish, huh? That is the only word I was not sure of as there is 'shell game,' 'shell shock' and—"

"Yes, we have, Lieutenant," a big brass hat said, holding out his hand. "Shake!"

Phineas obliged and the brass hat let out a howl and leaped a foot off the floor. A very ugly buzzing sound filled the room when he shook something out of the palm of his hand.

"Haw-w-w-w!" came a familiar



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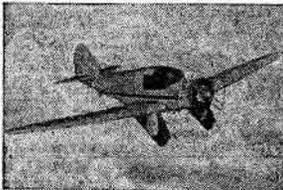
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guffaw. "It was a mechanical wasp. Everybody relax as it is only a joke."  
 "Y-yeah. Ha! Ha! Ha!" the Colonel laughed weakly. "Full of tricks, aren't you, Lieutenant? One on me, eh what? Ha! Ha! Ha!"  
 "Haw-w-w-w!" the joke master echoed.

**I**N less than twenty minutes, plans for the Cantigny offensive were pushed thirty days ahead. Then General Pershing personally congratulated Phineas Pinkham, and the Pride of the Ninth Pursuit was told he could make any request within reason while in Chaumont.

"Well," Phineas said promptly, "there's three bums—er—officers, sir, that I want busted. I—er—well, never mind, sir. I have a dame in Barley Duck who doesn't know where I am, and I would like to call her up. You could—er—have a dough there go get her an' take her where she could talk on the phone with me. Her name is Babette."

"A little irregular, Pinkham," the Commander-in-Chief said, a twinkle in his eye, "but I will see if such a call can be arranged. That all you want?"

"Well, I would also like to get me a hunk of paraffin some place," Phineas replied. "I've got to experiment on somethin'. You've got one spy to shoot, sir, and maybe if I fixed it then you could shoot two at once. It's a caution how you can't tell how the villain makes out in a book until you lift the cover, huh—sir?"

"A very strange fellow that!" the boss of the A.E.F. said to an aide later. "Cracked a little, no doubt. But still nobody's fool. Wonder why he said that to me about a book? Asked for a piece of paraffin, too."

"Well, sir," the aide declared, "I would say that a bullet must have bounced off his head in an air battle. An—er—General Pershing, you did not by any chance accept a cigar—from him?"

"Why certainly," the C-in-C smiled. "A Corona, too. Said he won a bet with a French general. Here it is. Smell that aroma."

The aide tore the cigar in half and crumpled it in his hands. "Ah—why—er—sorry, sir. I thought he—why—"

"You jughead!" the Commander-in-Chief of the Yanks bit out. "That was a sixty center, you blockhead! I was going to give it to Marshal—Why, I ought to give you a stretch of solitary."

Meanwhile, Phineas sat in cozy quarters furnished by grateful brass hats and lighted a match to a piece of paraffin. He sniffed the air, nodded his head, then tossed the smoldering wax aside.

**N**EXT day in G-2 Intelligence offices, the sting of the C-in-C's hand was felt. Three colonels found themselves majors, and two majors went back to wearing shavetail bars. A spy was rubbed out. And the man-hunt machinery of G-2 started to hum; for the brass hats in the brain center of Chaumont knew that there must be other Boche agents about. A rumor had been making the rounds for thirty-six hours that the Kaiser's top-hand snooper, Herr Kohme—supposedly executed in 1916—was still as much alive as a monkey with fleas.

It began when a Limey agent arrested a woman in Paris who was believed to be getting her pay via the Boche taxpayers. A typewritten letter found on the femme had the traditional Kohme trademark on it—a small wild boar's head. Thereupon, Intelligence officers pooled their gray matter, concentrating on the strange fact that Herr Kohme should have disappeared from the *guerre* several months before the Yanks had put their fingers in the pie and that there had been no more trace of him until the U. S. doughs were ready to answer the curtain call for their debut in Mars' Opera House.

Anyhow, while G-2 boiled, the doughs went over the top, banged their way to Cantigny, and showed the Kaiser that Uncle Sam was going to be a tough relief hurler. That happened on the night of May twentieth; and the Boche, figuring that they still had a month in which to gird their loins, were caught with their skivvies at half mast and were tossed for a loss.

When G.H.Q. received news of the win, champagne was opened. Phineas Pinkham had his share and was pretty well filled with the Frog silly juice when word came that all arrangements for his telephone call to his rapid heart beat had been completed.

"Thanksh," he grinned. "Whoo-opee! I'm a eagle. Say, who is the brass hat with the smudge under his bugle—that colonel there with the snake hips?"

"That one?" a shavetail answered. "Oh, he's Colonel Mervin Baglipp. He's one of the General Staff's best tacticians, Lieutenant. Boy, you're sittin' pretty, Pinkham. You ought to go out of Chaumont a major at least."

"Y-yeah?" Phineas gulped, seemingly oblivious to the fact that Colonel Baglipp was edging close. "Gosh, you think so, huh? Well, I expect to start back tomorrow to the Air Corpse in an air crate, as the General promised me one. That is where men are men and don't get their seats covered with shine from setting all day. Say, where is it I get that phone call through? Boys, I'm dyin'!

to parlay with mawn peteet Babette."

A few minutes later, Phineas picked up the telephone in a small side office and everybody cleared out to give him privacy. Then with a red pencil the Boonetown wonder absent-mindedly made scratches on a piece of blue paper lying near the instrument while he waited for the call to go through the intricate Yankee public utility system.

"Hello! Hello! Hello!" he began to yip after a few minutes had passed. "This is worse than the party line in Boonetown. He-e-e-ey, are you ther-r-r-aw? Hello! He-e-e-ey! It's a gyp. I'll see Pershin'. I'll—"

Suddenly a voice came over the wire. "That you, Lieutenant Pinkham? Hold the wire."

"You don't say!" Phineas spouted. "What did you think I would do with it—throw it out the winder? Hello! Hello, Babette, you itsy bitsy cherry!"

"Don't talk like that to me," a gruff voice rasped. "Hold that line, you—"

"Sure! Rah! Rah! Rah!" countered Phineas. "They won't get a touchdown. Rah! But, he-e-ey, where's Babette, you big punk—"

"Zo! Eet ees ze punk, oui?" shrilled a female voice. "You have call on ze tallyphone mabbe tan, feefteen kilometres jus' for to call eet moi ze punk? Pheenyas, you air ze beeg bum lak you have say. I see you *encore*—I keek eet *votre bra'ns* pfoeey, oui! Bah! *Aussi au revoir!*" And Babette hung up.

"Listen, cherry!" Phineas yelled into the dead mouthpiece. "It's a mistook. Don't you dare hang up on me. There's lots of other dames. He-e-e-ey, it took Pershin' an' Foch an' Haig to get me this call an'—ah cripes! That's a dame for ya." He banged the receiver on its cradle and stamped out. A major met him and grinned.

"You get to talk with the Frog mam'selle, eh?"

"How'd you like a punch in the snoot?" Phineas bridled. "Go milk an eel!"

"What did I say?" the officer gawped. "Why I— Look here, Lieutenant, you can't talk to me like that. I'll have you busted."

**T**HE morning after the push into Cantigny, Phineas Pinkham walked out of the barracks at G.H.Q. and ambled about the rectangle all day trying to line up a certain brass hat. But inquiries brought him the news that several officers were absent from Chaumont for most of the day on official business.

Meanwhile, G.H.Q. sat tight, expecting that the Boche near Cantigny would try a counter push when they had become organized once more.

Tacticians tacticianed overtime and General Pershing had G-1, G-2, G-3 and G-4 working nights. And over near Cantigny doughs were waiting for the head coach to send them some dope on the formation the Heinies might use when they launched the real counter attack from behind their own goal posts.

Old Sol was beginning to yawn in the western sky when the perky pilot from the Ninth Pursuit Squadron, standing near the gateway entrance to G.H.Q., heard the sound of a plane's power plant. A sentry gaped at him when he took what appeared to be a pair of miniature phonograph horns from the big pocket of his trench coat. The horns were united by a pliable band of metal and from the contraption dangled a small battery and some wires.

"My one-man airplane detector," Phineas explained with a grin. "They was made for my deaf grandpa back in Iowa who couldn't hear a sledge hammer hit an iron boiler at three paces. Of course, that crate up there ain't in sight yet, but with this apparatus I will tell whether it is a Kraut or a Yankee air wagon." And he adjusted his head set and listened.

A trio of sauntering brass hats eyed him curiously. "A bit off, I'd say," muttered one. "Carries all sorts of gadgets an'—there—he's taken 'em off."

"That is a D. H. 4," Phineas announced. "You wait an' see."

Another brass hat clicked his teeth together, looked up into the ozone. "He tagged it right, he did! Lieutenant Crock is piloting that plane and he's bringing Baglipp back from Troyes."

One of the officers now crabbed toward Phineas and said: "An' Crock is going to ferry you over to Bar-le-Duc in the morning, Pinkham."

"H-Huh?"

"That's right, Lieutenant. And as a parting celebration you will join us at mess tonight as a guest of honor. I don't doubt that General Pershing will drop in for a short time, too. You're a hero, Pinkham."

"Yeah," chirped Pinkham. "But say, can I go out and see that crate land? I always look a gift horse in the mouth, haw-w-w-w!"

**S**INCE Phineas was sitting as pretty in Chaumont as a China doll perched on top of a heap of orchids, a car was immediately made available and Major Garrity's burden was whisked out to the big circular field where the D.H.4 was coming to a stop. Colonel Mervin Baglipp disembarked from the sky barge and pulled off his helmet. He replaced it with an overseas scalp protector and strode up to where Phineas stood.

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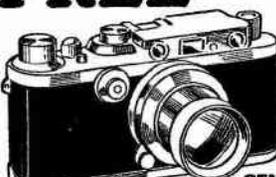



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"Well, well," he enthused, "Lieutenant Pinkham, eh, what? Haven't had the opportunity to congratulate you. Understand Lieutenant Crock, here, is to fly you back to your drome tomorrow."

"Yes, sir," replied Phineas, eyeing the D.H.4. "I'm about through here at Chaumont, having got the Allies out of their mess. Maybe we'll see each other again some time, though, huh?"

"I wonder," replied Baglippi. And Phineas decided that something was figuratively in the process of decomposition in Chaumont, just as Hamlet had concluded in Denmark.

"I won't motor back with you, Colonel," the freckle-faced flyer said. "I've been a ground hog for almost three days and I'm just goin' to sit here and look at this D.H. for a while, as I feel like a Arab just seein' a camel for the first time after being in jail for twenty years. I'll walk back to G.H.Q., as my constitution needs amending, haw-w-w-w!"

Accordingly, Colonel Baglippi got into the A.E.F. boiler and sat where Phineas had sat. Three minutes later he began to squirm. His toe kicked against a little tin can that rolled on

the floorboards, and when he stooped to pick it up something stabbed his empennage. He rose off the seat and smacked his noggin against the cloth top of the official jalopi.

The chauffeur braked the bus, looked back at the Colonel. Baglippi hit the seat again and began to paw at his torso. If Aladdin had appeared with his magic lamp, the Colonel would have wished for ten more pairs of claws. Suddenly he attacked his nose and trapped a tiny insect. It bit him before he could detach it. Examination showed it to be a mean looking black ant and Colonel Baglippi began to swear. As he rolled through the gate into the rectangle he gave sentries an exhibition of a man instilled with the spirit of St. Vitus trying to get out of a tangle of rope.

"That fresh aviator!" he howled. "Thinks he's smart, does he? Ow-w-w-w-w! Ouch! But I—I'll show him. Just wait!"

**LIEUTENANT PINKHAM** stayed with the D.H. even after the pilot had hied to a place where he could find food and lodging for the night. Phineas put on Grandfather Pinkham's ear set and leaned close to the crate while a pair of doughboys watched him. Suddenly to his ears came a sound as alien to a D.H. as is the chirp of a cricket to an ice floe: Tick tock . . . tick tock . . . tick tock.

The sound was faint even in the Pinkham trumpets. "Hm-m! They're not puttin' clocks in D.H.'s yet," he muttered. "I must look around a bit."

Phineas climbed into the pit and found nothing amiss. He crawled into the rear pit and found a small bundle of oily waste tucked out of sight under the makeshift observer's seat. When he picked it up it weighed several pounds. Promptly the self-appointed Intelligence Department tore off the waste and stared at a small contraption made of metal and wood. There was a small dial about the size of the face of a wrist watch set in the casing and the hand on it barely moved. But there were no numbers on the dial.

"Fool a Pinkham, huh? It's lucky I brought my ear set, haw-w-w-w!" chuckled the pride of the Iowa Pinkhams. "I bet when that hand makes a dozen revolutions, somethin'll go off—and it won't rain confetti. A nice mess we'll be having see swar."

Phineas put the bomb in his pocket and started toward Chaumont. Meanwhile, over in G-2, Colonel Baglippi had occasion to walk into the office where Phineas Pinkham had put the call through to Bar-le-Duc. The Colonel recalled that he had left his favorite briar in that room several

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hours before. Likewise he was memorizing an address he had picked up in Troyes.

After retrieving the pipe, Baglipp suddenly spotted the sheet of blue paper on the desk. The wind had turned it upside down, hiding the designs that Phineas had unconsciously drawn on it. The name and address he had temporarily committed to memory the Colonel now jotted down on the blue paper, folded it up, and put it into his pocket. Then he hied to his quarters to spend quite some time working on his physiognomy. He expended an equal amount of time with various parts of his anatomy that bore trade-marks of very testy black ants. He cursed Lieutenant Pinkham roundly as he applied soothing balm to every outraged portion of his fuselage.

The mess in honor of Phineas had not gotten beyond the soup when the Boonetown pilot placed a small object in the center of the table. A general, a pair of brigadiers, and a score of lesser officers gazed at it in wonder. Colonel Baglipp's soup back-fired—and before he was aware of it he yipped: "Ach du Lieber!"

"Why, Colonel," rumbled a Brigadier, "I could have sworn you said—"

"He did," Phineas yipped. "He's a Kraut! Grab him and scrape the paraffin off his dome just back of the left glimmer. I smelled it burnin' when he got singed with my phoney cigar." And then the red-headed, freckle-faced, buck-toothed Yank bounded from his chair to the table with the agility of a tomat and dove for the Herr before he could collect his scattered marbles. Holding the Kraut down with one hand, Phineas hollered for some one to give him a spoon. In less than two minutes the bogus Colonel was raised to his feet and thrown into a chair. A scar shone on his head where the paraffin and other make-up had been.

"A Heidelberg duelling scar," Phineas yowled triumphantly. "I bet he's Herr Kohme! Haw-w-w-w! I guess tricks don't have no use, huh? I must've been psychic when I thought to bring them ear phones of Grampa's along, huh? That tick-tock in the D.H. would never have reached my ears plain natural, and in the A.M. that bomb would have blown up when we was upstairs. Anyhow, when I heard he'd been in that D.H. that I was goin' to ride back to the Ninth in—well, I figured he'd be thinking of a way to wash me up, as I guess you huns—er—officers know that there's a reward waitin' for the Kraut who sends me out west, haw-w-w-w! Well, that is another spy to shoot."

"Donnervetter!" Herr Kohme guttured. Knowing that the tabby cat

had hopped out of the sack, he forgot all his English. "Ach, Himmel. Besser I shouldt haff notd went near das Pingham. Mein Freunds, they varn me und I t'ingk I ben smarter as eferbody und—he ist der deffil!"

Herr Kohme was quickly removed to a side room and G-2 brass hats gave him the works. While some ransacked his quarters, others stripped him to his birthday suit and fine-combed his duds. Moreover, General Pershing drove back from a brief inspection tour of Yankee billets as fast as his boiler could perk. On arriving at G.H.Q., he immediately went into a huddle with his brain trusters and tacticians. A brigadier laid a sheet of blue paper before him and stabbed a finger at it.

"Look here, sir. That Jerry that Pinkham just caught had this map on him. I figure it's the layout of the Boche counter attack. The Heinie musta had it so that he could advise our officers to do the wrong thing and expect an attack from the wrong spots. Those two lines there," he continued, pointing at a portion of the red scrawling. "It shows they'll come out of Lalval Wood in two waves, the Heinies will. Those round red circles undoubtedly show where their barrage will fall. And over there near Montdidier you can see where this Kraut marked the location of the 28th Infantry and—"

"Certainly looks like it," one of the colonels said. "Those curlycues there are meant for woods. The Lalval Woods. We can expect a counter attack either tonight or tomorrow night. You remember what Bag—er—this Kraut advised yesterday? That we should expect the counter attack to come from over here instead of— Why, this Pinkham is a marvel! He has saved the Cantigny salient."

"Where is the man?" the C-in-C wanted to know. "I'd like to congratulate him. Get word through to General Fish. Send out despatch riders, Colonel. I doubt if the Germans will attack before midnight. They will not have had time to patch themselves up before then, I am sure. But this Pinkham — I want to see him."

PHINEAS, however, flushed with his latest coup, was sight-seeing in Chaumont with a couple of shave-tails. At ten o'clock that night in an *estaminet* not far from the church of St. Jean Baptist, the Boonetown wonder was imbibing Frog brew and promising a country home and a limousine to a comely wench who sat at his elbow. Then in came a Yankee colonel with a Frog *capitaine* and they sat down near the Pinkham party.

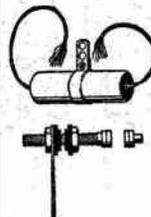
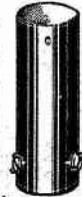
"Yes sir, that Pinkham did it! Got

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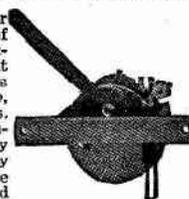
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Herr Kohme. G-2 found the plan of a counter attack near Cantigny on the Boche spy," the Colonel rattled off, his words seeping into the Boone-town flyer's ears. "Blue paper with red pencil marks. G-2 figured it out in a hurry. Boche will get a shock all right, all right. They'll find that the Yanks will be waitin' to—er—shellack 'em at every spot they try to get at. Marvelous fellow, this Pinkham. Like to meet him—"

"Aw-w-w-wk!" Phineas choked. "Ah—er—bong swar, mawn amnies. I gotta go—forgot to mail a letter or something. Adoo Claudette, mawn cherry." Then, face as white as the teeth of the femme he had deserted, the Yank barged out into the night. He yelled for M.P.'s, demanded transportation to G.H.Q. There was none to be had at the moment. So, limp as a boiled stick of macaroni, Phineas tried to steal a Frog colonel's buggy and was nabbed by gendarmes. He laid both Frog cops among the

sweet peas with two lusty swings and started running with half the military population of Chaumont on his trail.

"I got to get to the front," he gasped. "B-Battle plans—huh! I—I was j-just s-scribblin'—I'll git hung. I—" The resourceful Yank then thought of the D.H. that was waiting out there in the field beyond the buildings housing the A.E.F. brain trust. At eleven o'clock he reached it, his tongue almost brushing his insteps.

"Veet, veet, you grease monkeys," he yipped. "Get this bus warmed up as Gothas are coming. I heard 'em with my ear phones. It's Pershin's orders. Crock ain't nowheres around an'—I—I guess you don't know me, but me and the General is as close right now as two Scotchmen, huh? Do you want to get busted? Hurry up."

"Oh, awright, Lootenant," a grease monkey sniffed, "but you got to take responsibility. I don't hear no—"

"Shut up an' take the lead out of your skivvies," Phineas howled. "I got to get to—er—I'll get shot if—I mean—spin that prop, you iron stag on a lawn! Oh-h-h!"

In another ten minutes Phineas Pinkham was upstairs and headed toward the Channel. Gobs of sweat were rolling off his freckled brow. It was a hundred and fifty miles to the Cantigny fight area and he had forgotten to check up on the gas in the D.H. tank. The gauge read half full when he hit five thousand and his stomach shrunk to the size of a lichee nut. To add to his misery, over Suippes Boche archie began to puff up mayhem. Chunks of old iron bathtubs banged divots out of his top wing and a piece of an anvil bounced off the Pinkham cranium, scrambling the owner's mental assembly for the ensuing three minutes.

The Ninth's miracle man finally succumbed to instinct, turned the D.H. around, and headed for home and Major Garrity. And he was not entirely himself until he looked over-side to see a bright flare lighting up the carpet under his D.H.'s trucks. He blinked, pinched himself, and blinked again. Those landmarks down there were very familiar. The V-shaped farmhouse . . . trees . . . hangars . . . an orchard of apple trees.

"I—I am back at—it's the Ninth Pursuit drome," he gulped, then he swung his prop boss toward Switzerland. "It's my only chance! I won't git shot. I will hide out in the Alps until the *guerre* is over."

But just then the Hisso conked, and Phineas Pinkham saw that the bus was as empty of gas as a sewer is of wild flowers. He knew that he was stalemated, so he got ready to fight the crippled D.H. down to the linoleum.

CRA-ASH! He hit Garrity's front yard on the bias, spun around three times, and finally crawled halfway up a tree before he stayed put. It was Sergeant Casey who pulled him out of the wreck.

"Lemme die," Phineas wailed. "I hope my throat is cut. They can't shoot me then, haw-w-w-w! Lemme move my legs to see if they will drop off. Git away, Casey, you bum, or I'll slug you! H-Huh, my legs are okay. Ain't it tough, the breaks I git?"

"Goofy," Casey commented to the pilots that came running up.

"Welcome home, Carbuncle!" Bump Gillis yipped. "If we knew you was comin', we'd have spread mattresses out. How's Pershin'?"

"Huh?" the prodigal squeaked. "Don't mention his name. Let me alone, as I'm as good as hung, mawn amnies. They can't blame me. I will see President Wilson—"

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"Come on, men," Garrity hollered, "get him to his hut. Just humor him a little. Sad, isn't it, boys? Well—"

The patient sat on his cot all that night chewing his fingers and tearing a blanket to pieces. He was thinking of a Yankee casualty list and a scaffold. He could feel the rope on his neck and wondered if he would take it like Nathan Hale.

Dawn was breaking when Phineas suddenly hollered: "I'll show 'em! I'll spurn the blindfold. A Pinkham won't ever—"

Frightened, Bump Gillis jumped out of bed, eyes wild. "What's hap—Gothas—huh? Where's my pants? Wh—?"

THE big news hit the Ninth Pursuit an hour later. The Yanks had stuck out a couple of left jabs and an assortment of right hooks at midnight near Cantigny and had smeared a Heinie counter attack. Herr Kohme had been nabbed by Lieutenant Phineas Pinkham and a plan of the Boche attack had been found on Herr Kohme's person. Chaumont, though frantic with joy, was worried—for Lieutenant Pinkham had gone up to fight Gothas and had not been heard from. General

Pershing sent condolences to Major Rufus Garrity just after mess and regretted that he would not have the honor of pinning a medal on the hero from Boonetown, Iowa. Garrity sent for Lieutenant Pinkham.

"Awright, awright, I give up," the joksmith said dolefully. "I'll go quietly."

"What's eatin' you, you crackpot?" Garrity ripped out. "Are you still out of your wits? You crawled out of worse crackups than that before. Gettin' soft, eh? Pershing's combing France for you, you nitwit. That plan of the counter attack they found on the Heinie spy sure was the real McCoy, Pinkham. We will get decorated. Every squadron on the front will be jealous of—"

Phineas did not say a word. He turned and felt his way out of the Operations Office like a sleep walker. Captain Howell stopped him outside and yipped: "He-e-ey, Carbuncle! What in—? He-e-ey, you're famous an'—"

"Just lemme be," Phineas Pinkham squeaked. "I got to go somewhere all by myself. I got to sit down an' figger it all out. Just lemme be, you bums!"

### Can China's Air Power Stop Japan?

(Continued from page 13)

sair. The 90-11 comes either in a land-plane version for carrier decks or with pontoons for sea work.

More recently the Japanese have copied several American type ships, particularly the Boeing P-26; and we understand that one or two Douglas jobs have been given their attention, so we may expect something along that line later on.

THAT is the inside story of the Sino-Japanese sky fighting setup. What will decide the issue, is hard to define. It may be men (pilots),

money (national finances), equipment (the planes themselves)—or the whole outcome may lay in the hands of the Generals who plot the battles. The latter is one point you cannot ignore, for it must be remembered that the Chinese are one of the shrewdest races in the world—when it comes to doing the best they can with what they have.

If the War Lords of China ever do get together, Japan may be forced to give up her war of aggression in Cathay. But Chinese War Lords are like Chinese puzzles.

### Happy Landings

(Continued from page 34)

CHICAGO SCHEDULES A BIG SHOW YOU readers living in the Chicago area are in for a swell aeronautical show next January—for they've got a great exposition scheduled out there at the International Amphitheatre from January 28 to February 6. Reports have it that this will be the most comprehensive industrial exposition ever staged by the aviation interests in this country.

New planes will be flown directly to the doors of the International Am-

phitheatre. A 1,760-foot runway adjacent to the building has been approved by the Bureau of Air Commerce for this purpose. Many foreign manufacturers will also have engines, planes, and accessories there.

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<p><b>18" Balsa</b></p> <p>1/16x1/16 100, 5c 1/16x1/16 35 for 5c 1/16x1/16 18, 5c 1/16x1/16 15 for 5c 1/16x1/16 5 for 5c 3/32x3/32 30, 5c 1/2x1/2 30 for 5c 1/2x1/2 12 for 5c 1/2x1/2 10 for 5c 3/16x3/16 8, 5c 1/2x1/2 6 for 5c 1/2x1/2 3 for 5c 1/2x1/2 2 for 5c 1/64x2 4 for 10c 1/32x2 8 for 10c 1/16x2 8 for 10c 3/32x2 7 for 10c 1/2x2 6 for 10c 3/16x2 3 for 9c 1/2x2 3 for 10c 3 sheets or 36 lengths, double above prices; add 10c for pkg. chgs.</p> <p><b>Sheets 12"x2"</b></p> <p>1/16 or 1/32 10 for 10c 1/8 8 for 10c 1/4 2 for 7c</p> <p><b>18" PLANKS</b></p> <p>1x1 5c; 1x2 10c 1x1 1/2 9c; 1x2 10c 1x3 15c; 2x2 18c 2x3 23c; 2x6 39c 3x3 40c; 3x6 75c</p> <p><b>BAMBOO PAPER</b></p> <p>2 for 15c Plastic Balsa For cowlings, streamlining, repairing, etc. Large can 25c TISSUE, AA All col., doz. 15c Silver ... ea. 5c Superfine, wh. 5c</p> <p><b>WHEELS per pr.</b></p> <p>Breb Bisc Celu 1/4 .02 .04 .05 1 .03 .05 .07 1 1/2 .04 .08 .10 1 3/4 .07 .10 .14 2 .07 .15 .20 3 .10 .15 .20</p> <p><b>PINEWHLs. pr.</b></p> <p>Both sides nrke 3/4 4c; 1" 6c 1 3/8 8c; 2" 12c</p> <p><b>NOSE BLOCKS</b></p> <p>1x2x1 ..... 1c 2x2x1 ..... 2c 2x2x1 1/2 ..... 3c 2x3x1 ..... 5c 3x3x3 ..... 8c 3x3x3 ..... 10c</p> <p><b>BAMBOO</b></p> <p>1/16 sq. x12, 36, 5c 1/16x1/16 x15, dz. 10c</p>	<p><b>CLEAR DOPE OR THINNER</b></p> <p>5c per oz.; Large bottle, 8c 1/4 pt. 30c; 1 pt. 45c</p> <p><b>COLORADO DOPE</b></p> <p>6c per oz.; Large bottle 10c; 1/2 pt. 35c; pt. 60c</p> <p><b>CLEAR CEMENT</b></p> <p>5c per oz.; large bottle, 8c 1/2 pt. 35c; 1 pt. 50c</p> <p><b>PROPELLERS</b></p> <p>Balsa Paul-O. Mash. Cut Wlna 5" 4c 10c 6" 5c 15c 7" 6c 20c 8" 7c 25c 10" 8c 35c 12" 10c 45c 15" 15c 60c</p> <p><b>INSIGNIA</b></p> <p>24 and stripes 5c</p> <p><b>DOWELS</b></p> <p>1/16x6 . . . doz. 5c 3/16x8 . . . 2 for 8c 3/16x14 . . . 2 for 8c</p> <p><b>WIRE</b></p> <p>6-8-10-12-14 2, 3 ft. 1c</p> <p><b>WOOD VENEER PAPER</b></p> <p>20x30 . . . 1 for 10c</p> <p><b>RUBBER</b></p> <p>1/16 sq. . . . 25 ft. 5c 3/8 flat . . . 15 ft. 5c 3/16 in. . . . 50" 3/16 flat 12 ft. 5c</p> <p><b>BROWN RUB.</b></p> <p>1/2 Hat 12 ft. 5c 3/16 in. . . . 75c</p> <p><b>RUBBER LUBRICANT</b></p> <p>Large bottle 10c</p> <p><b>REED</b></p> <p>1/32-1/16 2 for 1c 3/32-1/8 1 ft. 1c</p> <p><b>PROP. BLOCKS</b></p> <p>1/2 x 1/2 x 5 6-5c 1/2 x 1/2 x 6 6-5c 1/2 x 1/2 x 7 4-5c 1/2 x 1/2 x 8 3-5c 1/2 x 1/2 x 10 3c ea. 1/2 x 1/2 x 12 3c ea. 1 1/2 x 1/2 x 15 7c ea.</p> <p><b>SHEET ALUM.</b></p> <p>.0004x5x11 1/2 2 sheets 3c .005 in. 6x8 5c .010 in. 6x8 6c 1/32 6 x 6 8c 1/32 6 x 6 15c</p> <p><b>WOOD, WATER SPRAYER</b></p> <p>15c 12" long; 15" 15c</p>	<p><b>CELLULOID</b></p> <p>6x8 ..... 5c 12x16 ..... 18c</p> <p><b>PROP. SHAFTS</b></p> <p><b>REAR HOOKS</b></p> <p>doz. .... 8c</p> <p><b>CAMEL'S HAIR BRUSHES</b></p> <p>Small 3c; Lge. 5c Extra large, . . . 8c</p> <p><b>NOSE PLUGS</b></p> <p>1/2" . . . 12 for 8c</p> <p><b>DUMMY RAD. ENGINE (Colu.)</b></p> <p>1 1/2" d. 15c; 2" d. 20c; 3" d. 25c.</p> <p><b>ENGINE AND COWL (Colu.)</b></p> <p>1 1/2" dia. .... 15c 2" dia. .... 20c 3" dia. .... 25c</p> <p><b>CELLULOID PANTS, per pair</b></p> <p>1/2" to 1" . . . 18c 1 1/2" to 1 3/4" . . . 23c</p> <p><b>ALUM. TUBING</b></p> <p>1/16, 3/32, 1/4 ft. 7c 3/16 or 1/4, 1 ft. 10c</p> <p><b>MODEL PINS</b></p> <p>1/2" or 1" pkg. 5c</p> <p><b>WASHERS</b></p> <p>1 doz. 1/2 or 1/4 10c</p> <p><b>THRUST BEARINGS, dz.</b></p> <p>Sm. dia. 10c; 1 1/2" 15c</p> <p><b>BUSHINGS</b></p> <p>1/16 . . . 1 for 1c</p> <p><b>SANDPAPER</b></p> <p>Doz. sheets . . . 5c</p> <p><b>MODEL STANDS</b></p> <p>Sm. 15c; lg. 25c</p> <p><b>PROPPELLERS</b></p> <p>2 blades 3 blades 1 1/2" . . . 5c . . . 8c 2 1/2" . . . 10c . . . 15c 3 1/2" . . . 15c . . . 20c 4 1/2" . . . 20c . . . 25c</p> <p><b>ALUM. COWLINGS</b></p> <p>1 1/2" 15c 2" 18c 3" 25c Specify whether anti-drag or closed</p> <p><b>BOMBS</b></p> <p>1/2" . . . 15c . . . 7c 3" . . . 3c</p> <p><b>GUNS WITH RING MOUNT</b></p> <p>1 1/2" 10c 1 3/4" 15c</p> <p><b>PURSUIT MACH. GUNS</b></p> <p>1/2" 14c or 1 1/4" each 5c</p> <p><b>WING AND TAIL LIGHTS</b></p> <p>12" long; 15" 15c</p>
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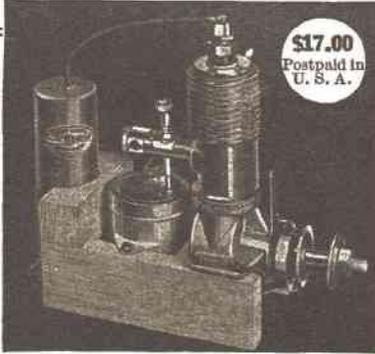
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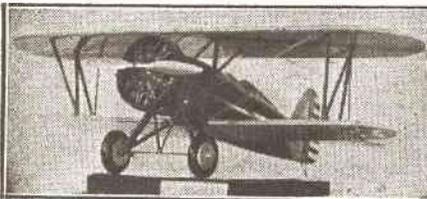
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**On the Light Plane Tarmac**

(Continued from page 23)

the table and doesn't want to waste time writing all over the country to find out the score. He wants to know then and there how much down, how much for insurance, and how much a month. The company that offers him the best answer to his questions and gets it to him first, is usually the company that gets his business.

If you don't believe us, look at the sales of the Taylor Cub. That company has come out openly and told in a straightforward manner what their plane costs and how much it'll nick your pocket book to fly it. A couple of other light-plane companies have done the same, notably Aerona, Taylorcraft, and Porterfield. But there are several other planes in the same category and others in a class a few hundred dollars higher that never do this.

Perhaps some sport job maker will see this complaint of ours and read it over twice. Perhaps a few of you may take the trouble to snip out this article and mail it to some of the companies to see if you can do anything with them.

The light craft makers should realize that young men and women who plan to enter aviation from the sporting side have one big considera-

tion—that of price. Those who are so well fixed that they don't have to worry about costs buy bigger jobs in the first place. They can afford to fool around in the Rolls-Royce brackets of flying.

But it is the ordinary person who matters—the person with just so much money to spare. That's the fellow who's out to buy light planes, and price is uppermost in his mind.

We wish the manufacturer would understand this and take all the price mystery out of their advertisements. Then the would-be sportsman pilot will know where he stands. As things are now, not one of you could name the prices of the ten representative light planes made in this country today. You probably couldn't guess within \$300 of any five of the prices. And if you don't know how much a plane costs, you're not able to figure whether the ship is down your income alley or not.

More often than not, the lack of a price statement in a plane advertisement gives you the idea that the cost must be so much that the maker wants to keep you in the dark in order not to scare you away. And we don't blame you for taking it that way.

**Battle Over the Bund**

(Continued from page 29)

blind, as so often happens during a man's first few aerial engagements. The sight of enemy planes, the roar of enemy motors, the flash of anti-aircraft guns, and the blaze of searchlights affected their normal senses and numbed their ordinary reactions. They dropped their bombs *anywhere* and machine-gunned *anything*. Only those who have been through this sort of thing can understand what this actually means, and what it does to men.

Innocent bystanders, neutral forces, and surface vessels of other nations were caught in this mad vortex. Japan, fighting for an initial victory, fought even more madly until for a few days it appeared that

Nippon would embroil herself in a Mars stew that would leave her fighting the whole world. Desperate, she cast anxious glances eastward across the Pacific and northward toward Soviet Russia.

Mr. Schomburg's cover painting depicts one of the first stirring battles at Shanghai. Over the flaming, wreckage-strewn city, a formidable flight of gun-bristling, bomb-laden Japanese Mitsubishi 93's have roared. But they are not having everything their own way; for courageous Chinese airmen have climbed their Curtiss Hawks swiftly into the sky to defend their people. Pouring a hail of lead, the first Hawk is attacking the leading Mitsubishi,

and the rear gunner of the Nippon ship has turned to reply. Meanwhile, bombs are dropping from a Mitsubishi bomber in the background. And a Japanese warship in the river below, also taking up the fight, is hurling A-A shells at the avenging Hawks.

**A**FTER those first clashes in July, China fought doggedly on, praying always for time. She realized that she has very little chance against Japan's great military forces, but she hoped that her airmen could block the Nipponese air drive long enough to get a few divisions of trained troops into a position where they could harass the ground advances of the enemy. And so, when the history of this conflict is written, the stand of the Chinese skymen over Shanghai's Bund may be recorded as the turning point in China's fight against the Japanese conquest.

But how great a part China's airmen can play in this strange campaign is hard to state. If she can be kept supplied with real sky fighting equipment, the Japanese ground forces may be curbed. And if Russia steps in quietly, as she has done in Spain, and provides China with additional fighting planes, Japan may ultimately find herself virtually stalemated. She might even be forced to withdraw.

Aircraft are still one of the pertinent factors in this strange war. Today, an army which would advance needs the assistance of aircraft. Certainly, it would be a grim stroke of irony if backward China, oldest of Empires, should carry the day in this modern war with the most modern of war weapons—the airplane.

**Gas Job Gossip**

*(Continued from page 46)*

**G**ENTLEMEN, I am a martyr to research and I give you my case. The plaintiff in this pseudo-wrangle happens to be the pinky of my left hand, at present in a very painful and swollen state. The defendant is a hardwood propeller—also seriously incapacitated—with a lengthy record of assault and battery. Exhibit "A" is a miniature gas motor. Exhibit "B", which may turn states evidence as a surprise co-conspirator, is 2 ounces of Kerosene Oil.

Attorney for the defense will be Efficiency. Attorney for the plaintiff, and that's where we'll fool you, will be myself. After all, who can defend my finger better than myself? *(And didn't some wise lawyer once say that he who defends himself has only a fool for a client?—Editor).* And you,

my dear readers, will be the jury.

Now let us get down to the case history of the defendant who is charged with mayhem. It is rumored that he is related to Charlie McCarthy, but this rumor is suspected as a plot to inject a particle of prestige into the character of Propeller.

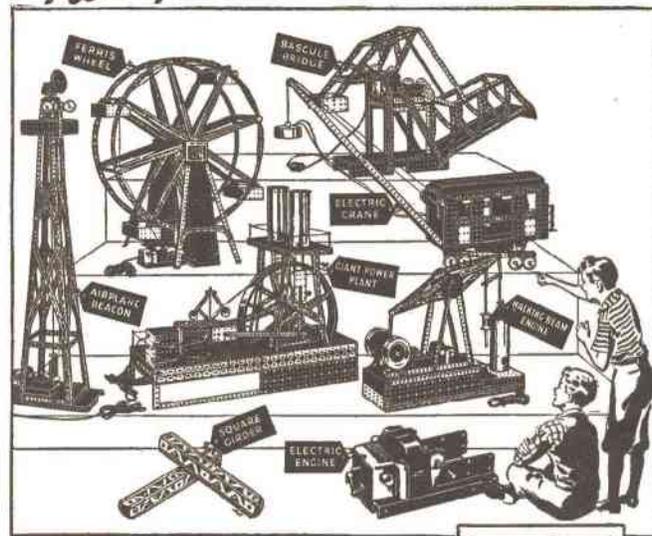
Efficiency, in stating its case for the defendant, infers I practically begged for whatever damage was inflicted upon my pinky. Only last week, it points out, I gave Exhibit "A" a dose of cigarette lighter fluid in an attempt to show it off before company. And there was ample evi-

dence that I had run the motor on Benzine too—of course I must admit to that, since you wouldn't exactly require a sound detector to find it out! At the time of the present allegation, however, the defense states I had gone further and supplied my motor with Kerosene Oil—certainly an unorthodox method in the caring and feeding of Baby Powerhouses.

This, asserts Efficiency, is the greatest point for poor Propeller. Throwing him in with such inebriated company was certainly bound to produce the result it did. (Junior, they further insisted, was fast

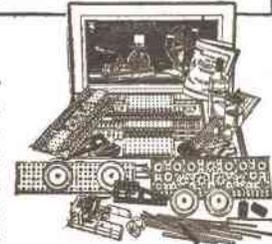
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enough company with just plain Gasoline—let alone all the other Octane relatives.)

So there's my case. In my mania for research, I admit to feeding Junior the aforementioned intoxicating liquids—only I insist it was for the benefit of the cause. Even if I did cause the motor to reel in the head and otherwise run amuck, that was no reason for Propeller to assert itself.

Meanwhile I have a badly scarred pinky sorely in need of a couple of gallons of liniment (Humm! I won-

der if Junior will run on liniment?) plus an embarrassed countenance. Sitting quietly in the courtroom are Kerosene Oil, Junior, and Propeller—and I maintain they are merely attempting to impress the jury.

I defy the gentlemen of the jury to stick around when those three babies get together and cooperate—not until *then* will I be convinced that the verdict is a fair one and based on the possibility that they aren't as innocent as they look.

And in the meantime—oh, my—pinkie!

**A Rollicking Rotorplane**

(Continued from page 47)

plate and the end pieces of the mount as shown.

The rotor assembly and the wing mount are now ready to be fitted to each other. Mark the exact center of the rotor mount and glue the wing mount securely in place at the mark.

The final step is to attach the wing tips at the required dihedral of 2 inches. Set aside to dry.

**MOTOR STICK AND TAIL**

**MAKE** the motor stick from a piece of 3/16" medium hard balsa and cut to the proper length. Taper to 1/8" at the rear. Cut out the front end as shown. Make the rear hook and glue and thread it to position.

The thrust bearing is a piece of 1/16" aluminum tubing glued to the nose with enough cement to form a skin.

The rudder and elevator are made from 1/32" by 2" stock. Cut out the rudder and elevator to the outline given on plans. Cement the tail surfaces to the stick, making sure that they are lined up properly.

**LANDING GEAR**

**TWO** pieces of 1/16" sq. bamboo are cut to the true length which is 4". Point the ends and stick into the fuselage. Glue securely, first making sure that you have the cor-

rect 4 3/4" tread.

The wheels are cut from 1/32" laminated balsa. Put a small bushing in each wheel.

Form two axles of .034 wire and cement to the landing gear struts. Put the wheels on and bend the axle ends over to retain them.

By this time the wing mount should be ready for gluing to the motor stick in the position indicated. Pins will hold the assembly conveniently while drying.

Cut the propeller blank from a block 5/8" by 1" by 6". Care should be taken in carving and balancing. Bend the prop shaft from .034 wire. Slip the shaft through the bearing and prop, imbedding the end in the hub. Do not forget to slip a couple of washers between hub and bearing.

**POWER AND ADJUSTMENTS**

**FOUR** strands of 3/32" rubber will provide the proper power. Before flying the rotorplane, oil all bearings. Warp the trailing edge of the elevator upward about 1/4". Set the rudder a little to the right.

When launching, bank it over to the right and slightly upward.

And here's wishing you luck! Any modeler having any trouble while building or flying his Rollicking Rotorplane should drop me a note in care of **FLYING ACES MAGAZINE**.

**Build the Hawk 75**

(Continued from page 41)

sq. stringers each 13/16" long in their respective notches. See side view of cowl on Plate 1.

The cowl is then covered with 1/32" sheet balsa. The front piece is carved to shape from balsa 5/16" thickness. The inner circle of this piece, which measures 1-15/16", is discarded. Round off the front edge with sandpaper as shown by the side view of the cowl on Plate 1. When this has been done, cement the cowl-

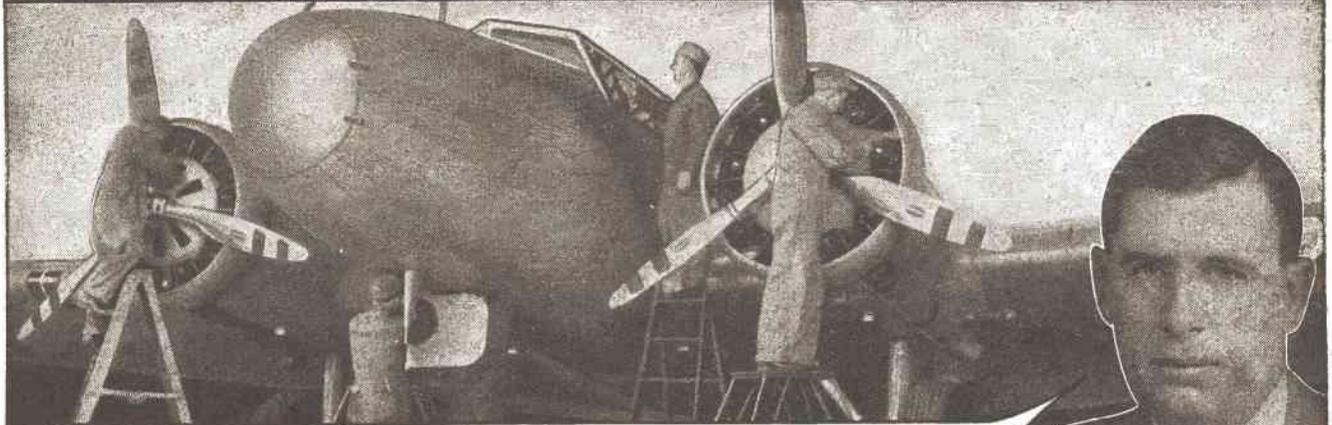
ing flush to the fuselage nose.

Shape the cockpit cover by bending thin sheet celluloid as shown on the plans, with a slight overlap resting on the body sides. To these overlapping parts apply cement. Then with the aid of a few small pins press firmly into position.

The black strips are paper strips blackened with India ink. In placing these into position use the cement sparingly. The forward part of the



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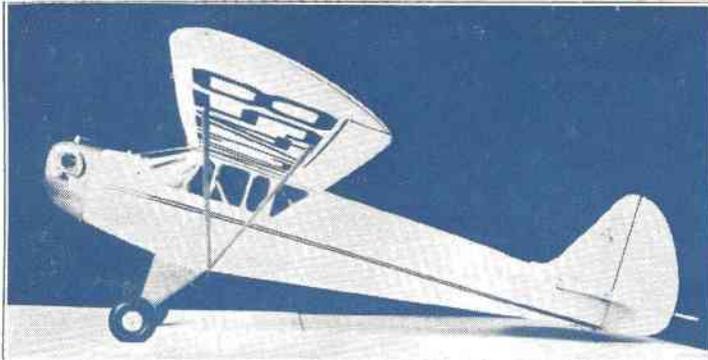
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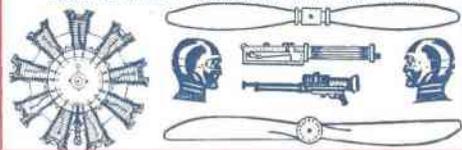


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