

A MODELER LEARNS TO SOAR by

ROBERT
McLAREN



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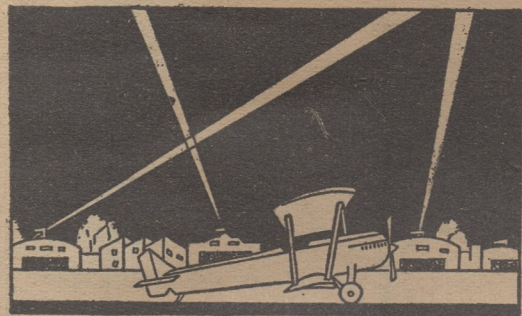
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Learns To Soar

By Robert McLarren

THIS, fellows, is my first attempt to talk about myself in all the years I've been knocking out aero articles. All my former stuff, you see, was founded on the editorial "we"—despite the fact only a guy with a tapeworm seems to have a real right to use that "we."

However, the experience I'm now going to relate was just good old vertical pronoun "I" from start to finish. And, brother, when you're 4,000 feet up in the blue alone *with no motor* that "I" becomes a most important consideration!

After eating, talking, writing, and sleeping aviation for some fifteen years, I figured I at least had a conversational acquaintance with it. But, believe it or not, in all those fifteen years *I had never seen a glider!* Somehow, my reading on that specific subject had given me the dim opinion that gliding was a passive, unthrill-

ing proposition. Well, I no longer labor under that screwy misapprehension. Instead, I now call gliding the greatest sport in the entire aviation game.

What happened to bring me to this conclusion? Suppose I first spout a couple of fundamentals as seen from my model building background: The true forerunner of the first airplane was the glider. And it's always appeared to me that the model airplane more closely approaches the characteristics of the glider, both in design and behavior, than does the powered airplane. In scaling down a real ship for flying model reproduction, we modelers have learned to enlarge the tail surfaces and wing area, among other things. And we have seen, too, how the glider possesses a much larger proportion of tail surface and wing area than does the powered plane.

Moreover, once deprived of power, all planes and models become gliders. And the function of a model's power plant is to gain altitude for the ship—generally, to lift it into an effective thermal (rising air) current—and then our flight really begins. The case of the man-sized glider is not dissimilar. For once towed to an altitude offering thermals, a glider pilot drops his tow line and is off.

Therefore, it finally came to me that some first-hand experience in the gliding field would be a progressive addition to my modeling. And here goes the story

Every day, more balsa builders are graduating from models to real ships. Several of those up-and-flying lads have, in fact, told you F.A. fans the stirring stories of how they went about it. But Modeler Bob McLarren doped out a different slant. Already a power-job pilot, he decided that models really have more in common with gliders. And then he was off—to become a soaring skyman himself!

of how I got it, when, and where.

Stanley A. Hall is one of gliding's pioneers. Indeed, I'd say he's the West Coast's most passionate advocate of motorless flight. At the tender age of 13 years, he designed, built, and flew one of the first primary gliders in the Southwest, and that's when guys like me were just donning our first long pants. Today, after eight successful gliders and more than 4,000 glider flights, Stan Hall is a Southern California Soaring Association officer, a consulting glider engineer, and a North American firm engineer as well.

After listening to him, I was soon biting my nails for my first motorless flight.

Having passed the primary stage years ago, Stan had to borrow a ten-year-old re-built training glider from Bill Barker and Tony Weissenberger of the North American Stress Department. We quickly hooked the trailer up and hauled the job out to the Dyer Airport on Los Angeles' famous Western Avenue.

This field, once a thriving aerocenter, is now abandoned to its memory of being the port at which Corrigan reworked his renowned Curtiss Robin for extra fuel tanks. Residents in the vicinity yipped about the field's dust, noise and danger, so the CAA and City Council closed it.

Just the spot, we figured—close to home, vacant, and plenty of room for towing. We pulled into it the following Saturday afternoon and had the glider parts laid out ready for assembly when a police prowler screamed up and laid a firm hand on our feverish activity.

"Yes, we know all about airplanes being forbidden here—but a glider isn't an airplane!" we argued.



Modeler McLarren (left) gets the lowdown on soaring from Glider Pioneer Stan Hall. "I intently absorbed all he said," relates Mac. "Then I climbed into Cherokee's pit alone. I was ready to solo!"

"There's no noise, no dust, and no danger to the houses around here, since we won't go beyond the field boundaries."

"The injunction includes lighter-than-air jobs, too!" the minions of the law went on decisively. But that didn't stump Stan. He proved our bus wasn't lighter than air—and hanged if the cops didn't drive off after we promised (1) to quit at sundown, (2) to keep generally quiet, and (3) to not get killed!

"HOW ABOUT first giving me a few simple pointers?" I asked Stan meekly after we got the glider set. Frankly, I was a little afraid of the blamed thing. For in a primary you sit right out in the middle of nowhere with just a small stick and two tiny pedals between you and empty space. So to me that glider looked about as inviting as flag pole sitting without the flag pole.

Every time I sneaked a glance at it, one big fact kept popping up to plague me: *NO MOTOR!* You see, when I pondered on sky skimming I always thought of black cylinders, propellers, exhaust stacks, and a healthy throttle knob in the pit. And I can fly that sort of thing. But here sat a forlorn collection of wings and tubing with nothing up front but thin air!

"The first three rules of gliding," Stan began with a grin, "are keep the nose down, keep the nose down, and keep the nose down!"

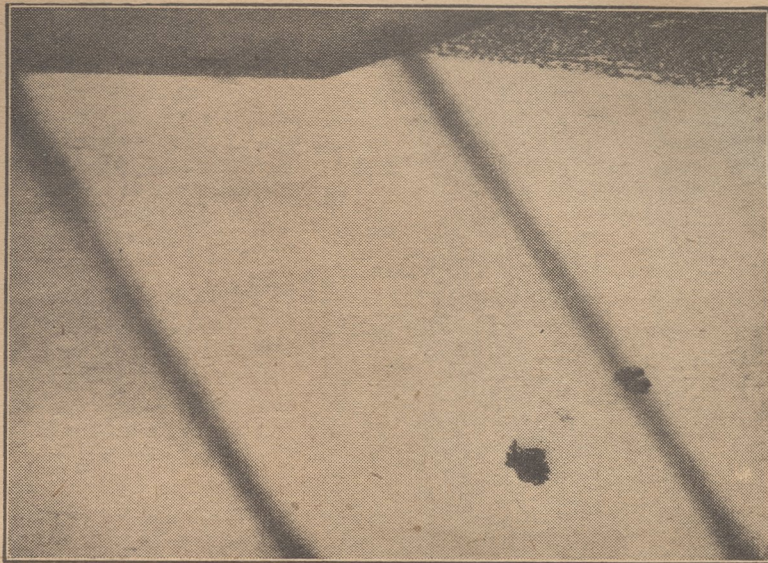
"Yeah," I laughed emptily. "I see."

We unspooled about 800 feet of tow-wire and hooked it up to the glider and to Stan's powerful convertible coupe. Then I wedged myself into the tiny seat. As Stan fastened the safety belt and I tested the controls, that same business of *NO MOTOR* hit me again. I was really nervous now, and I don't mean a little bit!

"Now don't be shaky, Mac!" Stan chided.

"W-why what makes you think I am?" I cracked back bravely. And I went on to repeat how often I'd flown power jobs, hoping

"Still another hour went by. Then, far below, I finally spotted Stan and the trailer down there in our own private corner of the dry lake bed."



that would cover my nervousness.

"Never mind all that," Stan replied. "You're plenty nervous—everybody is. Anyhow, just remember to keep that nose down and follow your aileron through with your rudder. Then you'll be okay."

He thrust a small, ring-ended wire into my hand. "Here's your tow-line release. Keep it in your hand all the time. When you're ready to let the glider go, pull it. Also, if I slow the auto down, pull it. And if anything unusual happens, **PULL IT!**"

Then he set my mind at ease, if you'll pardon my sarcasm, by telling me about the poor devils who'd been pulled into the ground and badly shaken up by forgetting to yank that release cable.

"Don't let go of it for an instant!" he concluded. Then he walked back to the auto.

Meanwhile, there was a young neighborhood lad on the left wing holding the ship level, and he smiled at me as if I were Lindbergh or some-

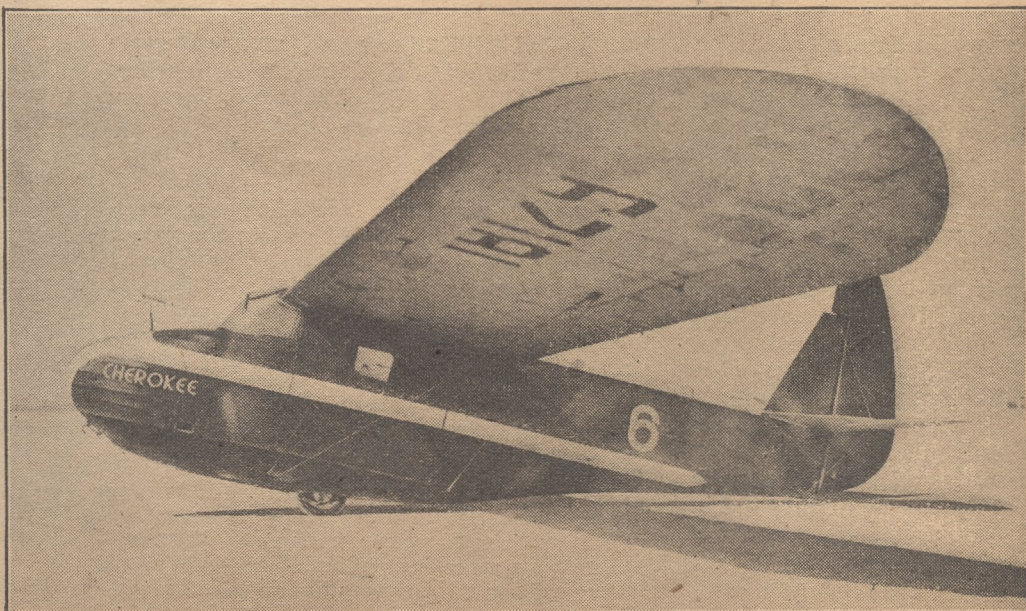
one. If you've got a glider, there'll always be a flock of air-minded boys around ready to help you. And their aid is appreciated in holding the wings of the glider level until enough speed is gained for lateral control.

Stan now honked twice from somewhere that seemed miles down the runway, and the boy, following instructions, waggled a signal that we were ready.

I saw the cable take up slack all the way along its length as Stan slowly drove forward. Finally, the nose jerked a bit and he halted for our final signal. The boy waggled the wing as an Okay—and contemplating my immediate future I felt three squadrons of butterflies going into a deep echelon in my stomach. Following orders, I quickly rocked the ship fore and aft to break the ground friction of the primary's long skid. And I began to move forward.

Stan wasted no time getting into second gear, and in about three seconds the boy had released the wing

Right: Stan Hall's renowned two-place utility soarer "Cherokee" in which he has established two records. It has a span of 42 ft. 8 in. and a length of 18 ft. Stan built it in his own backyard at a cost of only \$250.





Left: This striking self-photo snapped by Walt Craig, of Selma, Ala., gives you a graphic idea of what it feels like to be up in an open glider. Walt worked it by attaching a camera to his Franklin glider's wing and then running a string from its "clicker" to his cockpit. Fuel for the inner-man is all you need in a glider, and in this case it's a refreshing bottle of pop.

he'd said. My ring wing dropped, and instead of ruddering into a right bank I yanked the stick left and mechanically reached for the throttle that wasn't there. Then—Eureka! I felt the release ring in my hand. And I remembered what to do with it.

I gave a snap on the cable and found myself free—but still in a real mess. The ship was stalling fast. I fisted the stick forward and the glider shuddered for an instant and dipped. I was headed for my first glider landing. But I prefer to skip telling you about that. Sure, the glider is still in one piece. But my heart—also the base of my spine—took a terrific beating!

No matter, though, that rugged primary taught me a lot of things in the four flights I made in it that afternoon. It gave me basic principles, as it's supposed to do. And when Stan told me his plans for the next week-end, I was r'arin' to go—for it meant I'd get a crack at flying his *Cherokee*!

Just a few words here about *Cherokee*, Stan Hal's famous utility soarer: Designed and built in his own backyard, this red and silver two-placer has carried Stan Hall to two records. And in the interim it's been jockeyed around the sky by more of gliding's great—including the great German soaring ace, Peter Reidal—than any other Southern California product. *Cherokee* has a span of 42 ft. 8 in., a wing area of 210 sq. ft., and a length of 18 ft. It weighs 339 lbs. empty, and has a wing loading of 3.3 lbs. per sq. ft., an aspect ratio of 8.7, and a stalling speed (or best gliding speed) of 35 m.p.h. *Cherokee* cost just \$250 to build.

WE DROVE to Torrence, a suburb, the following Saturday afternoon. There, at the shops of Jay Buxton, grand old man of gliding, Stan stores his prize two-seater. And now, just a brief word on soaring, as distinguished from gliding, for the benefit of you chaps who "just came in":

Anyway, man has been gliding

Right: Gliding can be luxury de luxe, according to Walt. And as evidence he offers this shot portraying the comforts of mid-air magazine reading. Note his left hand holding the cord to the camera. A yank—and the picture's "took"!

since ancient times—but it was not until about 1929 that Americans got to learning about soaring. There are two forms of soaring: slope soaring and thermal soaring. Both are practically self-explanatory—that is, slope soaring means cavorting about among the mountains, hills, and slopes, from which air currents bounce off and upward. And thermal soaring, on the other hand, makes use of rising currents of warm air. These currents are not found within fifty miles of open ocean, but the desert region east of Los Angeles offers perfect spots for this type of sport.

There are a number of dry lake beds in this Death Valley area. Muroc Dry Lake is the best known. But since the Air Corps had taken over Muroc for practice bombing, we decided on Rosemond Dry Lake, some twenty miles farther north. It offered the same extensive, flat, pavement-hard stretch—just what we needed.

After some minor repairs and the installation of a new sensitive altimeter, we hitched *Cherokee* to the auto, said good-bye to Jay Buxton and also to Famed-Soarer Hawley Bowlus, who'd dropped in. Then at about 3 a.m. Sunday morning we left for Rosemond, eighty miles away.

As we drove onto the big dry lake, we found one section of the flats being churned into a dusty froth by a flock of so-called "gow jobs"—hopped-up Model A and V8 racing cars which find these dry lakes made to order for Sunday afternoon speed shows. We rolled by them and pulled up in

(Continued on page 64)



and I was skidding along the ground. Then it happened—that blinding swirl! But hadn't I heard Stan say "no dust" to those cops? Why, I thought I was in a Kansas cyclone. Dust from that auto racing ahead met me in a great gritty cloud, and I almost lost control. I couldn't see a thing in front of me, and Stan was out beyond, somewhere, hauling me down the middle of a field I couldn't even see.

In desperation and without the slightest impression of how much speed or lift I had, I hauled back on the stick. The gaining of altitude was only a minor consideration—to get out of that dust was all that really mattered to me. Lucky for me I wasn't in a powered ship; for I'll bet I would have plunked her down for one of the slam-bangest washouts yet seen on the Pacific slopes.

But the pull of the tow-line saved me. I came out of that heavy gray cloud at about fifty feet.

And right then it hit me that gliding was the biggest thrill a guy could have! There I was, fifty feet in the air, sitting out in the middle of cool ozone. No noise, no vibration, no exhaust roar or smoke, no anxiously feeling for that instant when your climb nears the stall and you ease the stick forward. My nervous tension had quickly left me, and I was already reaching for more altitude. Yes, this was really the nuts!

But abruptly there was the devil to pay! Stan's auto had evidently run out of field down below there, and somehow I'd forgotten everything

They Had What It Takes

XLI—"LON" YANCEY—ACE AVIGATOR

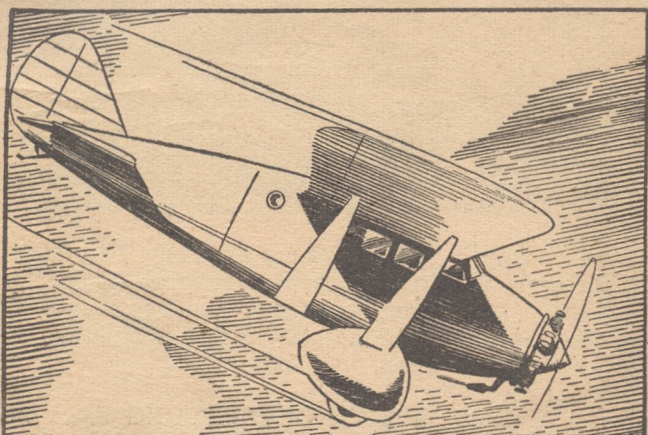
By ALDEN McWILLIAMS



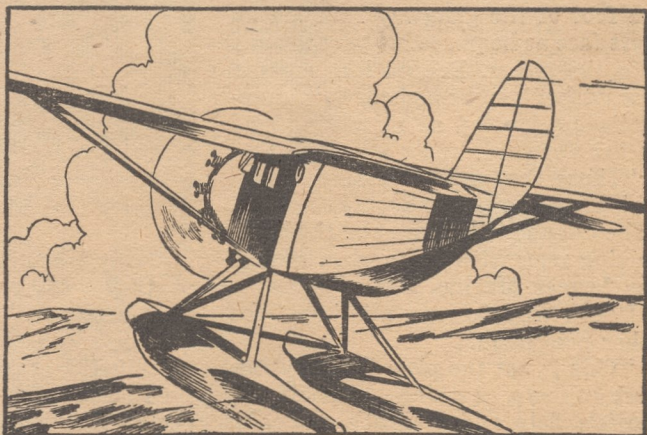
1—Born in Chicago on September 16, 1895, Lewis Alonzo Yancey completed a public high school course, then went on to study law and English. He enlisted in the United States Navy in 1911 and remained in service until his retirement in 1921. "Lon" was one of the best rifle shots in our sea-arm. Then in 1925 he joined the United States Coast Guard.



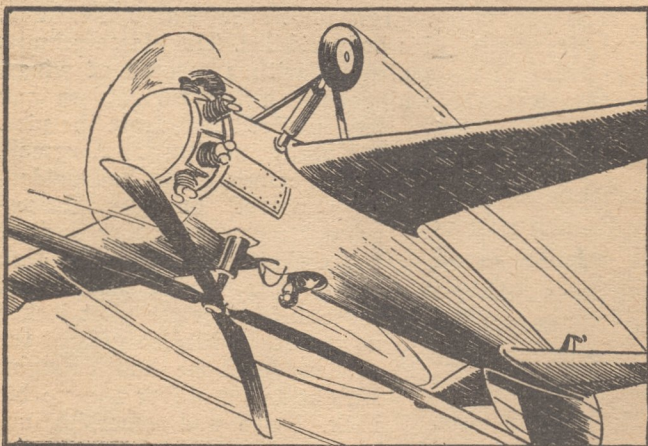
2—Early in 1926, while at sea with the C.G.ers, Lon became interested in aviation—primarily in avigation which was to become the major pursuit of his aero career. His sea experiences, he found, aided him in mastering flying problems. And because of the complete knowledge of avigation he developed, Lon was in great demand among the ocean-hopping pilots.



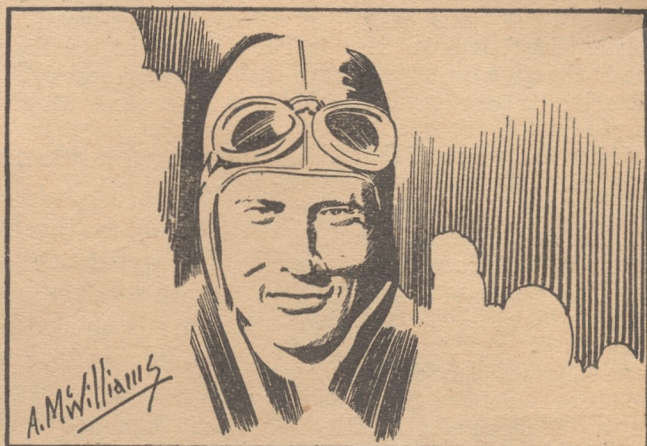
3—Captain Yancey and Pilot Roger Q. Williams took off on July 8, 1927, from Old Orchard Beach, Me., in the *Bellanca Pathfinder* for a flight to Rome. Thirty-one hours after taking off, the plane made an emergency landing in Spain. They then flew on to their original destination, where they were accorded greetings almost as fervent as those given Lindbergh.



4—The next year Lon, Pilot Bill Alexander, and Zeh Bouck made another Atlantic flight, this time to Bermuda. They set a precedent on this sea hop by being the first men to spend a night on the ocean and then taking off again under their ship's own power. The plane, which was equipped with pontoons, flew into Hamilton Harbor early the next morning.



5—Lon's next exciting exploit came in the Spring and Summer of 1930 when he flew down the east coast of South America and back up the west coast. Later, he became interested in the autogiro and was reputedly the only pilot ever to loop one. In 1938 he again practiced his expert avigation when he accompanied Richard Archbold, air explorer, to New Guinea.



6—Captain Yancey died at his home in Yonkers, N. Y., on March 2, and was buried in the Arlington National Cemetery. He had received decorations from the Pope, Italy's King Victor Emanuel and Benito Mussolini, also King Albert of Belgium. Moreover, he received a medal from our Navy for his meteorology work in the World War. We hail the memory of Lon Yancey!

"This Squadron Is Doomed!"

RICHARD KNIGHT FACES THE "RED NAZI"

CHAPTER I

MESSERSCHMITT MENACE

BACK in the misty darkness, the two *agentes de police* waited, watching the British destroyer which had just been moored at Pier Four. It was almost nine o'clock when two men came down the gangway. Neither was in uniform. The first man was tall, and he moved with a swift, poised step like that of a fencer. The dim blue war-lamp at the foot of the gangway revealed an alert face as he paused to peer around into the gloom. Behind him came a stocky, belligerent figure, fists automatically doubled at his sides, head thrust forward.

"There they are—the Americans," whispered the senior *agente de police*. "The tall one is Knight, and the hard-looking man with the broken nose is the former Marine, Doyle."

"Then why do we wait?" said the other policeman.

"This is not the place," replied the first *agente*, looking uneasily at Doyle's fists and Knight's powerful shoulders. "There is a guard-post at the end of the pier. We may need help."

Keeping in the shadows as much as possible, the two men tiptoed after the Americans . . .

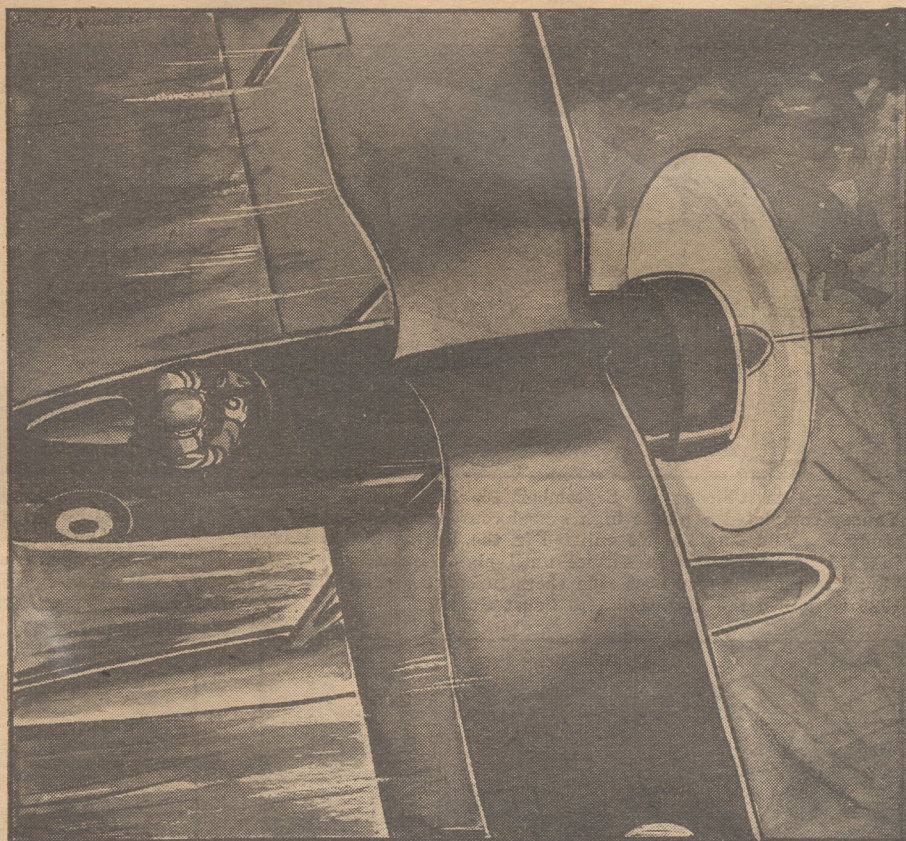
"I still say it's fishy," growled Doyle. "Last time we were in Paris, the Embassy gave us th' bum's-rush. Now it's 'Please come back. All is forgiven.'"

"Now that we're off that Limey ship, I'll admit something's peculiar," said Dick Knight. "Just because we did the British a little favor on that ferry-route affair doesn't mean they're going to let us hitch-hike around on the Royal Navy."

"Yeah, and how'd they know we were headin' for Le Havre, anyway?" demanded Doyle.

Knight paused as though to inspect the radiolite hands of his wrist watch. He glanced sidewise, and his eyes narrowed for a second.

"Don't start any fireworks,



Lothario," he said in a lowered voice, as they went on. "But we seem to have company."

"You mean th' Limeys are havin' us tailed?" erupted Doyle.

"I don't know. But some one seems decidedly interested in our—" Knight broke off, staring up into the misty darkness. A faint moan grew swiftly into the howl of a diving plane, then a motor was switched on with a thundering roar. Almost instantly, a searchlight flashed up, a hundred yards beyond the pier. A patrol station of the French naval air service was revealed, a ramp in front of a hangar with three or four Romano

R.90 seaplanes drawn up on cradles. Mechanics were running toward the trim little fighters, and several pilots came dashing out of a building beyond the hangar.

DIVING HEADLONG down the searchlight beam, a black Messerschmitt Bf.109 hurtled into view. So fast it was only a blur, it plunged through the light, its four guns blazing. Half a dozen mechanics wilted under that murderous fire, and the nearest pilot sprawled to the ramp, his body riddled. The Messerschmitt pulled up with a screech of wings, whipped into a tight turn at less than two hundred feet from the pier.

Knight stiffened. A small, bright crimson light had suddenly appeared on the Messerschmitt's cowl, pointing back at the cockpit. And there in that eerie glow was a gaunt and hideous face, as the pilot looked down with a fiendish grin at the sudden death he had wrought. Knight felt a shiver run up his back. There was something unhuman about that face; it was as though, in that dreadful light, it were bathed with blood.

"*Mon Dieu*—the Red Nazi!" he heard a voice cry hoarsely somewhere near him. One of the

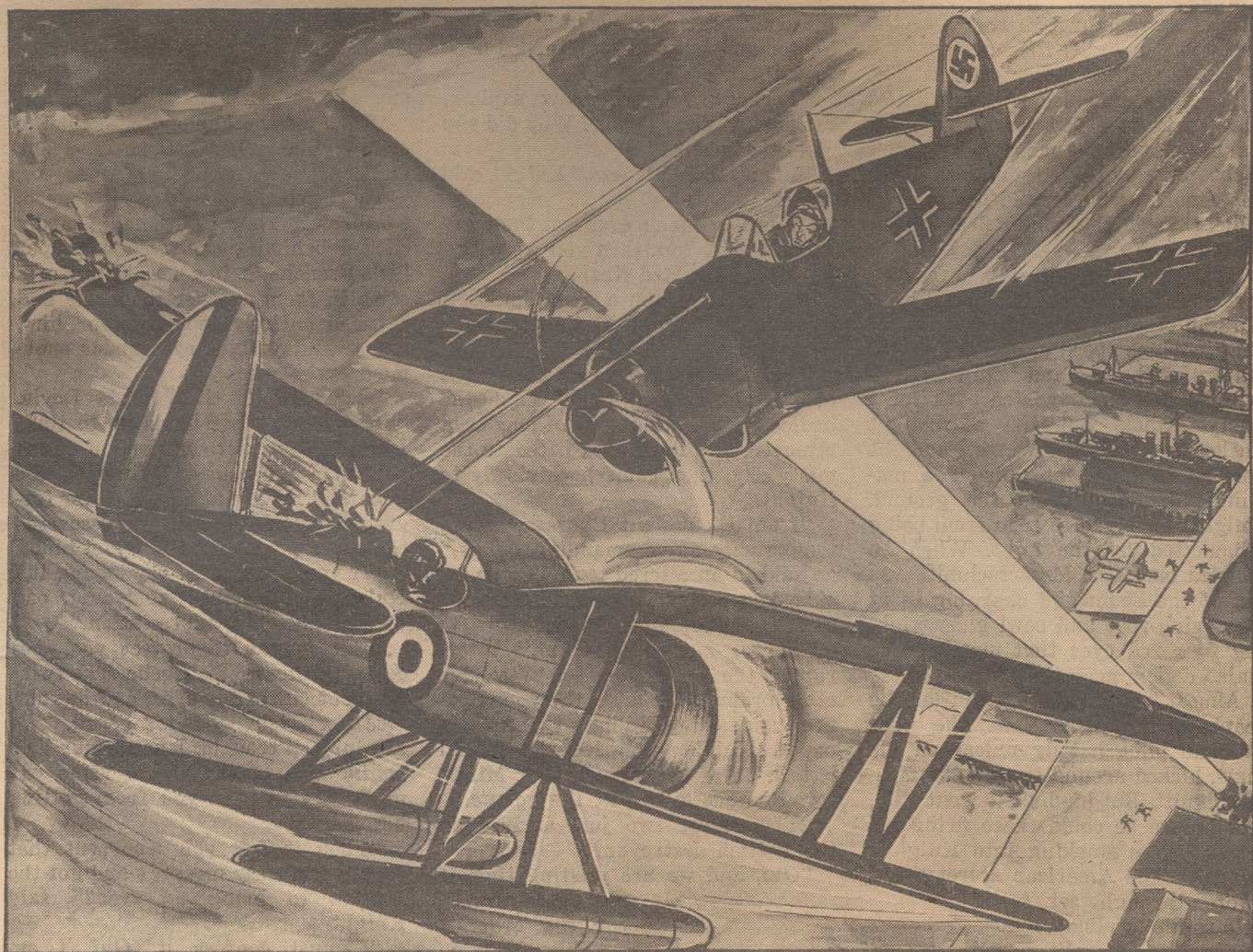
Eleven French sky fighters sent to flaming deaths! Twenty French Hawks destroyed! Yet what defense could there possibly be against those ruthless guns that never missed? General La Roche was desperate—even to the point of issuing a forged American Embassy message to bring Dick Knight. But though the Yank "Q" Agent boldly assumed the very command of that ill-starred squadron, no clue was apparent. And it wasn't until he climbed into the wrong Romano that . . .

NEW WORLD WAR MYSTERY THAT BLAZES WITH ACTION

By Donald E. Keyhoe

Author of "Death Flies Blind," "Ark Royal Riddle," etc.

Illustrated by Jon L. Blummer



two men trailing them had emerged from the shadows, and Knight saw he was an *agente de police*. The man seemed to have forgotten their existence as he stared up at that blood-red face.

A wounded *poilu* had reached one of the Romanos, was dragging himself up to the cockpit. Just as the motor started, with a flash of the prop in the searchlight's rays, the Messerschmitt nosed down again. From the far end of the patrol squadron ramp, a machine-gun stabbed wild tracers up into the murk, missing the Nazi ship by a hundred feet. The black fighter swooped past the pier, and that dreadful crimson face twitched a lightning glance down at the destroyer, and at the men on the dock. Then his guns spouted again, and an inferno of blasting lead and tracers mowed down the terrified Frenchmen who were still trying to reach the seaplanes.

"The butcher!" muttered Knight. The next instant he was racing down the steps that led to the ramp.

"Non, non—halt!" shouted the *agente de police*, and from the corner of his eye Knight saw a second

policeman run to join the first. Doyle wheeled, and a huge fist landed on the first man's jaw. He went sailing backward, landed in a heap, and Doyle sprinted after Knight.

Knight reached the cockpit of the idling Romano. The mechanic, cut down by the second attack of the Red Nazi, was dangling half out of the ship. The plane's turtleback was gouged with bullet-holes. Knight lifted the dead man down, sprang into the pit, and hastily tried the stick and rudder. The controls seemed to be intact. Just as he shoved the throttle open, to send the wheeled-cradle trundling down into the water, one of the French pilots opened fire with his pistol. Knight ducked, opened the 720-h.p. Hisso to full take-off speed. The seaplane lunged down the ramp, tore loose of the cradle, and roared away. Knight backsticked, swiftly

Flaming tracers battered Knight's headrest, gouged the fuselage. Quickly the other Romano pilot dashed in and triggered his guns. But his lunge at the gaunt-faced German was wild and the bullets smoked through the Yank's wingtip.

brought the ship onto the step. As he worked it up to take-off speed he cast a quick glance backward.

Doyle had reached one of the other seaplanes, was battling two mechanics and a policeman in the attempt to gain the cockpit. A pilot was running out from the squadron office toward one of the Romanos at the other end of the ramp. Knight crouched over the controls, lifted the fighter clear of the water. As he hurriedly fastened his belt, he saw the Messerschmitt pitch down for still another strafe.

Knight tripped the two 20-mm. quick-firing guns mounted in the floats, felt their faint throb as tracers sparkled ahead of the seaplane. The Hisso was revving up without a break, and he saw from the temperature gauge that it had been recently warmed up. With a swift turn,

he whirled back to intercept the diving Messerschmitt.

The weird red light was still on, and he could see the pilot's gaunt face jerk toward him. The black fighter whipped around, guns blasting. Knight stared through the V of the gull-wing, caught the side of the Messerschmitt in a hasty burst. The Nazi ship chandelied furiously, then shot back with four prongs of fire stabbing from its guns. The Romano's right wing trembled under a brief but venomous burst, and Knight saw bullets gash the right float as he kicked clear.

The Messerschmitt overshot, streaked down across the patrol base. Knight plunged after it, saw one of the Romanos speed across the ruffled waters of the bay and take off steeply. The Red Nazi twisted back for a hasty attack, but the searchlight flashed across his wings, and he zoomed in apparent fear of a machine-gun burst from the ground. Knight reversed to keep from being silhouetted by the light. When he whirled back, the Messerschmitt was out of the beam and charging in at him, wing-root and cowl guns winking four red eyes that matched the sinister glow near the cockpit.

Almost head-on, Knight hurled the seaplane at the Red Nazi. The other Romano pilot hastily unleashed his guns, kicked around toward the Messerschmitt. But his bullets went wild, and before he could cease firing his tracers were smoking into Knight's wingtip. The American secret agent swore through set teeth, held to his headlong attack. There was a split-second when he thought the Red Nazi would crash him out of the sky.

A split-second . . . flaming tracers hitting the headrest behind him . . . gouging the fuselage . . .

Then the Red Nazi frantically whirled to one side, and their wingtips missed by the hair-raising margin that meant life instead of death. Knight saw the red light vanish. Before he could reverse, the Messerschmitt was gone, a black wraith now swallowed up in the mists.

THE SEARCHLIGHTS on the British destroyer belatedly came on, pawing the murky skies. Knight nosed down, and the other Romano followed. He landed, taxied to the ramp, and cut off the engine. The other pilot taxied in alongside, jumped down just as the *agentes de police* seized Knight. He was a junior lieutenant, young, solidly built, with a square-jawed face just now a com-

bination of bewilderment and anger.

"Have no fear, Lieutenant," said the senior *agente*. "Both men are under arrest."

Knight saw Doyle nearby, handcuffed, two mechanics hanging onto his arms, bearing signs of battle. The lieutenant stared at him, turned back to Knight.

"Perhaps you will now explain, *Monsieur*. Who are you? Why did you steal that plane?"

"I don't like butchers," Knight said curtly.

The other man's eyes lost their uncertain look. "So, then you were trying to kill the Red Nazi?"

Knight gave him a grim smile. "I was hardly playing tiddely-winks with him."

The lieutenant looked along the blood-stained ramp from which the bodies of the slain men had now been removed. His dark eyes lifted to the misty sky, then came back slowly to Knight.

"I am Lieutenant Boussac, acting temporarily as commanding officer," he said in an altered tone. "Come inside, you and your comrade. I wish to ask you some questions."

"Sorry, *mon Lieutenant*," interrupted the senior *agente*. "We have other orders." He drew the young officer aside, showed him a typewritten paper. Knight glimpsed the official letterhead of the French War Ministry. Boussac stared at the *agente*.

"Then these two just arrived on the British destroyer?"

"*Oui*, and we are wasting time if we do not carry out the orders."

"Very well, go ahead," muttered Boussac. "I will look into this myself. There is more here than meets the eye."

"What was all the row about?" growled Doyle, as the police and the two mechanics took him and Knight to a wait-

ing *Surete* car. "I thought they'd be hangin' medals on you, after trying to knock off that devil."

"Something's up," said Knight. "I've a hunch that message from the Embassy was a fake. Be on your guard—"

"You will speak French, or not at all," broke in the senior *agente* sharply. Knight did not answer, and the group remained silent until the car drew up at the side entrance of a gloomy building blacked-out like the rest of Le Havre. The two Americans were marched inside to an elevator, then taken down a third-floor

hall to an unmarked wooden door. The senior *agente* rapped, and a prim-faced civilian opened the door.

"Ah, the Americans," he said. "Bring them in. There was no need to handcuff this man!"

"*Non?*" said the junior *agente*, sarcastically. "Then look at my face—and the two sailors who helped me."

"Take off the handcuffs," said the prim civilian. "Leave the Americans here."

The policemen dourly obeyed, withdrew. The door had hardly clicked behind them when a dapper little Frenchman in general's uniform came in from another room. He had a beard entirely too large for him, and twinkling blue eyes under enormous eyebrows.

"General La Roche!" howled Doyle. "So you put those bums up to this! I thought you were a friend of ours."

"But I am, indeed!" beamed the general. "France and I will never forget what you did when you recovered the stolen plans of the Maginot Line."

"If you don't mind my saying it," Knight said drily, "you've an odd way of showing appreciation."

"But it was to protect you, *mes amis*," protested La Roche. The twinkle went out of his eyes, and he fumbled nervously with his beard. "We are in deep trouble. I need your help again, and I was afraid some one might try to keep you from getting here."

"Then it was you who sent that forged Embassy message and got the British to bring us over?" said Knight.

"I must confess it. *Oui*, I am guilty," said the general. "Perhaps when this is over, I can—what you say?—make all square."

"This trouble of yours," said Knight, "it wouldn't have anything to do with the 'Red Nazi'?"

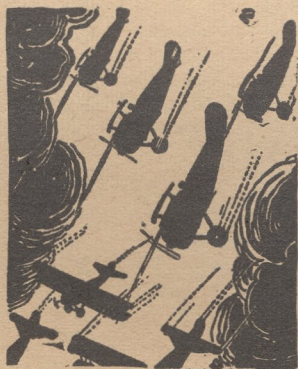
THE GENERAL started, and the prim-faced civilian gaped at Knight. "The British, they told you this?" exclaimed La Roche.

"No, I just met the gentleman," Knight said. He described what had happened. La Roche listened, with his eyes slowly regaining their twinkle.

"Name of a little pig! But did I not say these two were miracle workers?" he demanded of the civilian. "*Messieurs*, this is Gaston, my—what you say?—under-the-covers man. A one-man Intelligence system for La Roche—to make sure the Army and Navy Intelligence they do not hold back something."

Gaston bowed solemnly. Then La Roche abruptly sobered.

"But why did we not hear of this
(Continued on page 56)



Is the Red Air Menace Exploded?

OUR COVER PAINTING'S DRAMATIC STORY

BRAVE LITTLE FINLAND has fallen! But it certainly didn't fall before the pilots, gunners, and observers of the Finnish Air Service had fought themselves into a state of physical exhaustion in their determined effort to hold back the Red invader.

And above all, the Finns drew the curtain from the mystery of the so-called Red air menace.

To be sure, the publicity on the Russo-Finnish war was mainly centered on the ski-patrols and the truly gallant snow soldiers. But it was the air soldiers of Finland that really enabled the little nation to hold out as long as it did.

On our cover this month, Artist August Schomburg depicts an actual air battle between a Finnish Air Service Bristol Blenheim and a Russian Z.K.B.19 single-seat fighter somewhere over the ill-fated Karelian Isthmus—a scene that was duplicated practically every day during the course of the Finn-Red war. No matter what the air odds, the Finns proved that Russian planes could handily be bagged—and in job lots.

Now that the war is over, much can be told and much can be denied. We of FLYING ACES disclosed, in our recent April issue, many faults in the Russian Air Force. But we stated, too, that in spite of the obvious sky weaknesses of the Reds, "the multitudinous reserves will likely overcome Finland eventually."

This is exactly what happened. The Finns fought bravely and skillfully, but the human frame can stand just so much and no more when it comes to continued conflict. It's murder to expect airmen to fight on without rest, day after day. The Finns had a fair number of planes, but they did not have enough pilots to provide opportunities for needed leave and furlough periods, and six weeks of *unbroken action* is all the best air fighters in the world can

efficiently stand without cracking.

During the World War, airmen were never allowed to remain about the front more than three months at a time. After that, they got fourteen days leave away from the front and its airplanes and machine guns. Even then, the physical breakdowns experienced by hundreds of war-time aviators was a great problem.

What, then, must have been the sufferings of the Finnish aviators when they—a comparative handful—were compelled to fly and fight continually week after week without respite? They had plenty of planes according to reports.

They started out with between 80

Had the Finns doubled the number of pilots the story might have been different.

After the fighting started, the Finns increased their air power to approximately 500 first-line machines. A number of American Vultee fighters were obtained, France released some Curtiss Hawks, and Great Britain sent over 200 Bristol Blenheims, Gloster Gauntlets, and Gladiators. Some Hurricanes and Spitfires were also available, but they had not been loaded for shipment when the war ended. This résumé indicates also that Britain can't be so terribly short of fighting planes if she can afford to send them off to the assistance of Finland in hundred lots.

However, Finland had to give up. And Russia won out, as was to be expected, not because of skill but because of her great amount of manpower. This is a point that will effect any war. Manpower comes above high speed fighters, no matter how many of them you have. The American Brewster fighters did not get to Finland, for Finland was unable to get them there before the scrap ended. Britain and France *might* have offered more help, but a glance at a map will show the great

difficulties of getting an expeditionary force into Finland.

Authoritative military experts declared early in the war that any manpower aid intended for Finland would have been impossible because of the problems of equipping men for sub-zero Arctic conditions.

BUT LET US get to our big question—"Is the Red air menace exploded?" We'd say that it is, considering the fact that Finland, with what little she had, so consistently battled off the Russian sky invasion. Certainly, after this graphic show-up of Stalin's supposedly-unbeatable aero threat, no major air power need

(Continued on page 79)

From first to last, Finland's courageous fight was sparked by her determined sky battlers. True, she was ultimately hammered into submission. But Stalin's victory—won with raw manpower alone—didn't come until the "Skymen of the North" had exposed what really is behind the frightening mask of the winged Red bogey.



and 100 first-line fighters and bombers. They had many British Bristol Bulldogs which they did very well with in the first three weeks of war, outfighting the Red fighters and bombers consistently. As a matter of fact, recent figures disclose that this short Russo-Finnish war cost Russia nearly 1,500 planes! But Russia had more than 1,500 planes, no matter how good or how poor they were.

After all, it takes a fight and a certain amount of fuel, pilot time, and the proper number of machine gun bullets to shoot down a plane, whether it is capable of 150 m.p.h. or 400 m.p.h. There came, then, that ultimate period of breakdown—and that was when the Russians scored.

The Parachute Goes To War

By Dave Gold

Certified Rigger

Author of "What Makes a Parachute Tick?"

NEW ROLES for the parachute in modern warfare are today the object of plenty of study and experimentation—not only by the belligerent nations but also by the major neutrals. This is all in graphic contrast to the part played by the "silk umbrella" in the First World War when its use was naturally limited because of the lack of perfection in its design.

Most of us are quite familiar with the much-quoted statistics regarding the great number of lives that might have been saved had a prac-

tical parachute been available for the pilots of the 1914-1918 scrap. When that world conflict broke out, parachute descents from balloons were already comparatively common. A little experimentation had likewise been attempted early in the 'teens in equipping pilots of airplanes with parachutes.

In fact, a Capt. Berry successfully jumped from a Benoist biplane pusher piloted by Tony Jannus, over St. Louis in 1912. But because of a great lack of technical data and experience, it wasn't until 1918 that any real number of war pilots got parachutes. And the ones they got wouldn't have rated too high in a 10th Avenue rummage sale.

The observer of the sausage balloon, on the other hand, found his special parachute to be an excellent life-saver. As mentioned before, jumps from balloons had early become quite the thing—at such shindigs as state fairs, you know. So it

Left: Easy attachment is a feature of the Salvator parachute, which is standard equipment in Mussolini's sky force. Note how neatly it conforms to the contours of the flyer's body. Below: As you see in this close-up, the Salvator consists of a broad belt and a compact container. The ripcord, hanging down on the right, may be hooked to the plane for automatic operation when the airman bails out. France's popular Aviorex chute is very similar to this Salvator product.

Few fighting pilots enjoyed "security of the silk" in the last war. But in this new clash, the story's different. And so is the chute and its uses.



was a simple matter, considering the knowledge already on hand, to equip observation balloonists with chutes.

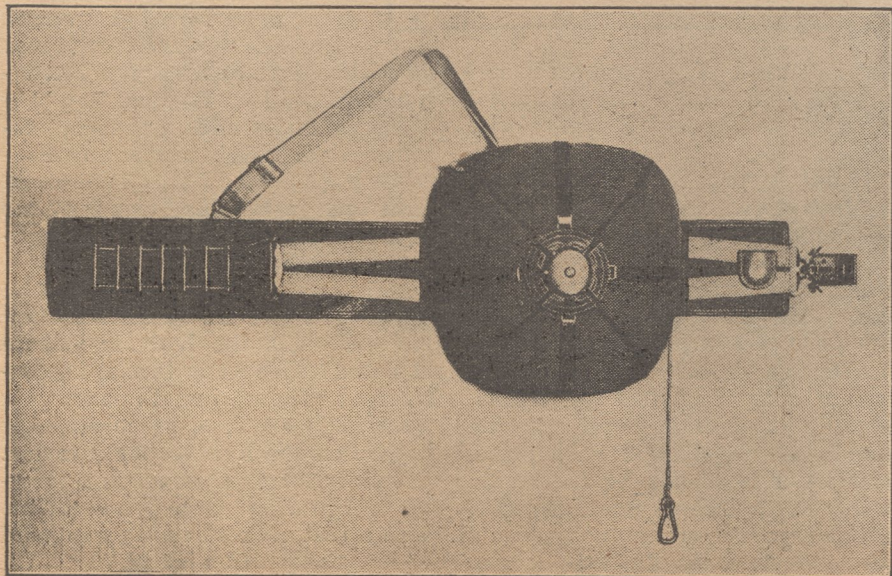
During that initial 20th Century war, two types were employed by these look-out men. One was the individual chute designed to lower a single person back to Mother Earth. The other type, a "basket" chute, floated the entire wicker-basket of the balloon to safety.

All of these air life-preservers were then similar in appearance and operation, however. They were all packed in simple containers and securely fastened to the basket, or to the rigging above the basket. In use, the weight of the load pulled the parachute out of its container, and it quickly opened once free. Because of this method of fitting, these chutes were known as "attached-type" parachutes.

It has been estimated that more than 700 lives have been saved by this type of chute. So this balloon device was surely an okay piece of goods.

Parachutes were also used at that time to drop flares. As you know, these flares turned the dark nights into temporary days and were thus of great value to the artillery and night bombers. They aided in night landings, too. Also the problem of supplying necessities to ground forces was frequently solved in those days by dropping supplies via the silk.

Today, the use of the parachute in modern warfare has increased four-fold. Especially has it become important in the saving of lives. In peace-time activities alone, almost 5,000 flyers throughout the world have gone on living in excellent health because the modern parachute trumped the old black card that bore their names. This life-saving was achieved through the remarkable advances made in developing a prac-



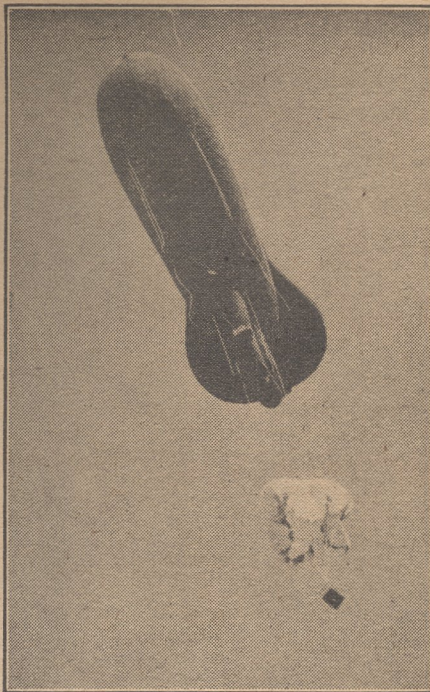
tical parachute for heavier-than-air machine personnel. The interesting story of this development would fill several volumes. Indeed, the great chute-designing pioneers each would fill a separate book in this absorbing history.

Airmen of the various countries in combat today are all equipped with practical chutes. And though it may sound like a pat on the back, it still remains that the United States leads the world in designs and technical advances in this field.

The Irvin chute—the direct result of the pioneering work done in the years that followed the end of the First World War by the U.S. Air Service's Parachute Division—is now used all over the world as standard equipment. England and the U.S.S.R. are but a couple of the countries in which the Irvin design is standard for fighting airmen. Other American designs, like the Switlik, have also enjoyed success in foreign markets.

HOWEVER, foreign countries have not been asleep in designing parachutes of their own. The Pak Parachute, a Czech design also used in England, and the G.Q. Parachute, a British design, although similar to American chutes in many respects, nevertheless present many interesting and worthy features. On the other hand, Italian sky fighters are equipped with the Salvator parachute. While in France, which employs quite a number of different types, the Aviorex is highly popular.

The Salvator and Aviorex designs are quite interesting in their departure from parachute design as we know it over here in the States. They employ a single wide belt that encircles the wearer's body. This instead



Down to the earth in a basket! Thus this First World War French observer is eluding a raiding Fokker's bullets. Scores of look-out airmen saved their lives in the '14-'18 conflict by "bailing out in the wicker." (Air Corps photo.)

of the sling type of harness that we use in our chutes. A single metal unit enables these get-down devices to be easily attached and taken off. Also, they are readily adjustable to all sizes of flyers.

Another interesting feature here is the employment of two systems of operation. That is, both a manual system (employing a ripcord pulled by hand at the jumper's discretion) and an automatic system (using a static lanyard that is attached to the ship and which pulls the ripcord when the falling jumper takes up the slack in the line).

It would be hard to try to estimate the number of lives that the 1940 parachute has saved in the recent European and Oriental conflicts. But in the Spanish civil war, in the Sino-Jap fight, and in the warfare currently on in Europe, reports continually came in of air battles accompanied by records of skymen using the silk to leap to safety from disabled aircraft. Without doubt, the modern

parachute is more than fulfilling its task as the life-saver of the air.

Parachutes are also playing their part in ground operations of troops, and they may some day work a great change in tactics of the artillery and infantry in combat.

The use, for instance, of parachutes to drop men behind enemy lines is attracting the attention of many a military strategist. Because of the numerous experiments in the past that Russia has conducted in this work, it is commonly thought that such aerial warfare is an original Soviet idea. But the truth of the matter is that both England and the United States, years back, did experimental work in this type of fighting.

Of course, the newspapers have frequently related that Russia's "vertical surrounding"—dropping troops behind the enemy lines—wasn't any too successful in the fight with Finland. This fact, though, reflects more on the poor efficiency of Stalin's command than it does on the idea of vertical surrounding. Undoubtedly, there is technical value in the scheme—when it's done right.

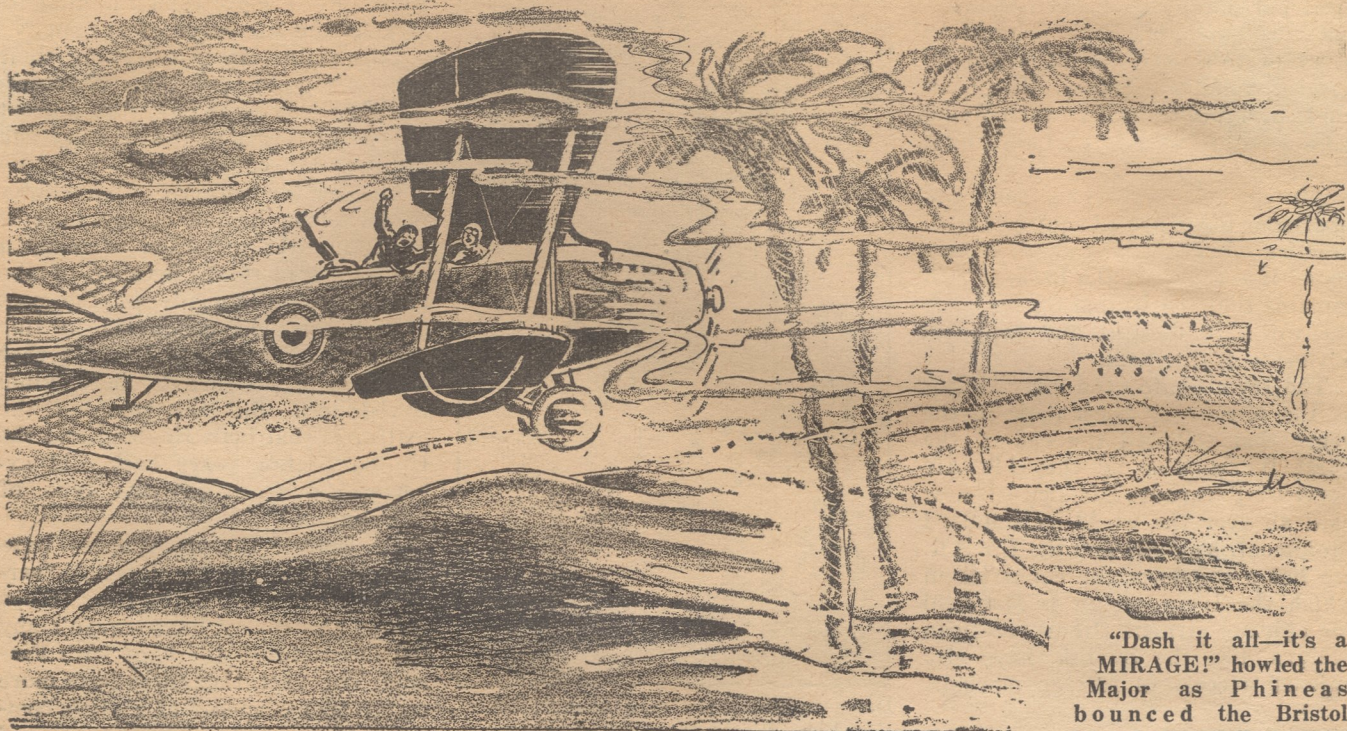
In 1929 and later, experiments were likewise made here in an attempt to develop plane-chutes—silk umbrellas large enough to lower entire aircraft to the ground. England, in fact, toyed with the idea of equipping planes with these chutes in such fashion that their cabins, filled with soldiers, could be dropped at strategic points during warfare. And even before 1929 actual drops of machine gun crews and their equipment, all by parachute, were made by our Air Corps at Chanute Field, Rantoul, Illinois.

(Continued on page 31)



Left: More and more, chutes are being used to drop supplies to advanced or cut-off troops. Modern tactics of this type were brought to perfection in peacetime by such men as our U. S. Foresters, seen here attaching water cans to the silk. Right: This is the standard Irvin seat-pack, which was developed after pioneering work by our U. S. Military Parachute Division. Irvins are also regulation equipment with several foreign nations, and no doubt many lives have already been saved by them in the New World War.





"Dash it all—it's a MIRAGE!" howled the Major as Phineas bounced the Bristol through the fading oasis.

Pharaoh and Warmer

☆☆☆

By Joe Archibald

Author of "Flight To The Finnish,"
"Briny Deep Stuff," etc.

Illustrated by the Author

PHINEAS PINKHAM sat on the veranda of the Continental-Savoy Hotel in Cairo—and we do not mean Cairo, Illinois. Phineas was in mufti and he lolled in his basket chair like a coupon clipper taking a rest from the trials and tribulations of Wall street.

"Huh," the Boonetown, Iowa, native, chuckled. "You would never think a *guerre* was going on anywhere—sittin' here. I wish the bums in Bar-le-Duc could see me. But I guess everybody can't be a Intelligent man. Still, I can't wait until I git my empennage into a crate an' fly over some o' them oasisses."

A tall character came out of the hotel and stood on the veranda for a moment. He had a black mustache and pointed beard decorating a face that was as dark as the Kaiser's chances of ever getting a Biergarten advertisement on the side of the Eiffel tower. The

man wore a fez and he smoked a cigaret in a holder as long as his right arm.

He took a look at the rain that was coming down out of Egyptian skies and scowled like a Stock-company heavy. He turned and gave Phineas a gander. "The rain she falls. Bah! She rains so little in Egypt, why must she rain tonight?"

"Haw-w-w!" Phineas replied. "I didn't start it. Go an' beef to Allah if you are a rug kneeler."

The fezzed ginzo took another look at Phineas, muttered something, then went out in the street. Major Rufus Garrity's agent touched a match to a Pharaoh Pippin cigarette and lolled in his basket chair some more. "It is good to be incog," Phineas told himself. "They know me too well around Alsace Lorraine by now. Anyhow, that spy, *Herr Doktor Number Seven*, is probably around here somewhere.

But he never saw me in his life. Haw-w-w-w-w!" Phineas went into the hotel and walked to the bar. A man with black glasses covering his glimmers figured Phineas was an Englishman and invited him to have a drink.

"Raw-w-w-w-ther," Phineas said. "Bloomin' stout of you, and all that, y'know. I'll take a Sphinx Flip. It's a nice quiet drink. Haw-w-w-w!"

The man with the smoked cheaters squinted at Phineas. "Er—aw—you think they'll catch the Mad Mullah? Beastly trouble maker. Embarrass the British no end if he gets the African desert tribes united. Imagine it, my good fellow. The Berbers, the Tauregs, and the Mahdists joining forces with the Gallas, Abgals, Barawas, Jidus, and Kalallas. Then there's the tribes in Libya and the French Sudan——"

"Don't forget the cannibals," Phineas said a little whoozy. "Well, I think I will take a stroll through the native quarter and buy some souvenirs for the bums back in Bar-le—Barleyshire-on-the-Tyne. A d o o, Allah eel Allah, and all that."

"That bum will bear watching," Phineas mumbled as he ventured forth into the drizzle. "I'll bet he's the *Herr Doktor* instead of the other guy. He don't fool me none."

Mummy's the word! Phineas learned that in short order when Chaumont sent him to the land of the pyramids to find out if the Krauts could take it. Anyhow, *Herr Doktor Number Seven* figured he'd grab off as many sheiks as there were tombs—plus a lot more, if any. But when Phineas went to work, the Dok grabbed one tomb any!

VON BLITZKRIEG BATTLES KING PINK'S CURSE

Dusk was crowding Cairo fast as he wormed his way through the crowd toward the eastern part of the city. He made his way down a narrow street lined with bazaars and filled with smells the like of which never had come out of an Occidental pigpen. Merchants yelled at Phineas in every language that had been spilled out of the Tower of Babel, and they tried to sell him everything from a trained scorpion to the pelt of a defunct Rameses. The Boonetown miracle man turned into a dark side street and looked up at a lighted window. And he spoke up when he saw a pair of sloe eyes surveying him. "Hi, Fatima! Take off yer face mask an' let me see ya—ugh!"

A club swept down and conked the Iowan infidel. A cloak was dropped over the unconscious Pinkham's shoulders, then he was picked up and carried through the door of an evil looking Egyptian tepee.

SOMETIME later, Phineas finally opened his eyes and got them back in focus. He was in a very small room lighted by a single candle. There was a narghile, an Eastern water-cooled dudeen, on the floor. A lizard crawled across Phineas' face and a rodent squeaked at him. The dirty matting hanging over a doorway was now pushed aside and a Colorado Claro character as big as Jess Willard came in and ran the ball of his thumb along the edge of a scimitar big enough to sever the head of a croc in one swipe.

"Dog of an infidel," the Tar-baby of the Nile said to the Yank flyer. "So you come find him Mad Mullah! *Bismullah!* Infidel weeth beeg tooths an' spots of a hyena—!"

"Now-er-let's talk this o-over," Phineas said, getting to his feet. "I-er—there h-has been a mistake, an'—"

The big Nubian flashed a mean grin and measured Phineas for the massacre. "Wa-a-ugh! Jelai Bin pay well for infidel's head. *Bismullah*—what is I see!" The big black lowered his noggin remover and stabbed a finger as big as a banana at a pin stuck to the Pinkham linen lapel. "*Bismullah-h-h!*"

"That is my lodge

pin," Phineas gulped out. "I-er—am an Ex-Exalted Ruler of The Knights Of The Red Fez, Aleppo Bazaar, Boonetown, Iowa."

A big dark flipper was extended toward Phineas. It gave him a grip he knew well. "Me, too! Lodge 401, Abou-Kir, white fellah. I don't keel. I get rooster and bring it here. Cut off head an' make much blood. I show you way to Abou-Kir."

"Yeah? That was the place I was goin' anyway. Er—git me out of here before that mad Arab comes back. It was that bum with the black glasses, I bet. He is the *Herr Doktor Number Seven*, huh? Well, I better git my bag an' *allez* out of Cairo, as if I don't—"

The black handed Phineas a bundle of old clothes he had pulled out from under a bench. "*Fellah!* Put 'em on—over white suit, yassuh!"

"I will git leprosy if I do," Phineas sniffed. "Say where did you learn to talk U.S., you—"

"I travel with circus as beeg wild man. I run away—then come back Africa. Put 'em on Moslem clothes, *fellah*. Somebody come—"

"Awright," Phineas gulped. "I'm an Arab, huh? Help me wrap these things around me, Sambo. What a smell—ugh!"

His burnous pulled up over the lower part of his face, Phineas stepped out into the dark street. "Rainin' worse than ever," he growled. "It is worse here than where the Frogs live. Well, thanks, Sambo. I—"

"White fellah do not speak about

weather while in Moslem suit. He get throat cut. Moslems know he is not son of Allah . . . Moslems don't talk about weather."

"The same to you," Phineas growled. "Adoo—"

Phineas walked into the Continental-Savoy a few minutes later and four attendants seized him and hustled him out. "What is the idea?" Phineas yelled. "I am a U.S. citizen—in disguise. Let me peel off this kimoner, an'—"

"Sorry, old chap," the porter said. "Blime! Spy ayn't yer?"

"Sh-h-h-h-h-h-h-h!" Phineas hissed. "That Kraut will hear you. I—there he is! Right there in that chair. He is *Herr Doktor Number Seven*. Arrest him! He tried to kill me. Po-o-olice!"

Seven Cairo cops seized the husky citizen with the dark glasses. He put up a whale of a scrap but was finally dragged off the veranda and into the lobby. He was asked to own up to being a Potsdam snooper.

"Blarst your blinkin' cheek," the accused roared. "Let me up at once, I say! This is a beastly kettle of fish, what?"

"We're askin' you," Phineas said. "You sicked a throat slitter onto me, an'. But you *do* look like a Limey without them windshields, an' maybe we have made a mistake. But who else knew I—?"

"I am Major Filbert Smythe-Brouthers, commanding Squadron 56, Royal Air Force at Mehr-Raj! And awfter me offering you a drink only this awfternoon, my man! You are a dashed ingrate, and all that!

Ponderously the stone arm lifted and its outstretched finger pointed at the Mullah. Then a single word rumbled from the throat of the statue—
"Infidel!"



Herr Doktor Number Seven! Tommy-rot and balderdash! Bah!"

"Eh—I am Lieutenant Pinkham of the Ninth Pursuit Squadron, U.S. Air Corps, an' am down here to help catch the Mad Mullah of Somaliland. H-haw-w-w-w! You can't trust nobody. I was followed by a Nubian who would have opened up my jugular if he had not belonged to The Knights Of The Red Fez. A Heinie must have hired him, as nobody else would want to kill me, an'—"

A man with a walrus mustache tipped his pith helmet back over his coco and stepped up close to Phineas. "Gad, your face is deucedly familiar, old bean. But I know we have never met before. Fawncy—er—permit me to introduce myself. I am Majaw Chauncey Reachbottom. Archaeologist y'know. Been waiting until this bally war ends so I can go back to excavating near the oasis of Wadda-Youmein. Ancient Egyptian city, and all that, y'know. But what makes me think I've seen you befoah, old thing, what? Deucedly queer, by Jove!"

Phineas was getting more gaga by the minute. "Er—I have no idēa. Maybe you saw me in another world. Haw-w-w-w! Anyhow, you guys dig up a good show. This rain'll let up and maybe tomorrow I will go out to see the Sphinx and pyramids at Geezer, an'—huh!" Phineas got white around the jowls and flopped down in a cane chair. "Uh - er - weather! Moslems don't speak about—he-e-ey! I demand to see the manager, veet veet! Where is he?"

"Right here, old chap. What seems to be—?"

"You had a guest here who wore a fez, huh? An Allah guy with a red sash tied around his middle," Phineas yelped. "What is his name and where was he from, huh? Oh-h-h-h-h!"

The manager consulted with his desk clerks. The manager was told that the man with the fez had not been registered at the hotel. He had been sitting in a corner of the bar most of the afternoon, all by himself.

Phineas went into the bar and looked at the table where the fezzed character had been sitting. The ash tray had not been emptied. There were three long cigarette stubs in the dish. Phineas pointed at them. "They've all been bent in a half-circle an' didn't break. He is no Scotchman, as he don't smoke more than half a cigarette at a time, huh? I guess I am

Sherlock Holmes, haw-w-w-w! Yeah, I sure am!"

"A real Moslem, no doubt, old chap," the manager said. "He likes to make crescents. Odd sort of chap he was. Egyptians are dashed creepy, and all that."

"Uh-er-bawn sour," Phineas said. "I m-must go up and pour cold water down my back. I have had butterflies in my dome since I got to this country." And Garrity's agent went up to his room and looked out the window. "I never have been here before," he said. "Maybe I dreamed I was. But things look like I had seen them before." The jokesmith shivered and the temperature was hitting a hun-



Phineas shook when he saw it. There were dark spots on the old cadaver's epidermis, the teeth bucked out—and the hair was the color of a rusty tin can!

dred. "I w-wish I w-w-was back in Bar-le-Duc!"

MAJOR SMYTHE-BROUTHERS knocked on the Pinkham door close to midnight. Phineas let him in and the Limey drew a chair up close and talked about the Mad Mullah.

"No end of a mess for the Allies, Lieutenant, if the Moslems of Africa

band together and make war on the unbelievers. The heads of all the tribes are going to meet and name the day to strike. Natives near the Tripoli border have already been shaking their fists at our Camels. Deucedly strange about this Jelai Bin. Grandfather was once Amir of Eastern Sudan. The Mullah was very friendly up to a month ago.

"Turned fanatic overnight," the Englishman went on. "He's got hold of a few planes—seen them flying over the drome. You know what I jolly well think, Lieutenant? He means to expedite matters to fly the shieks to a meeting place—take them weeks if they rode camels. This mad Mullah is progressive, what?"

"Huh? You use Camels at the drome?" Phineas asked. "Do they go six days without needin' water in the powerplants. Haw-w-w-w! I bet them Camel pushers git a lot of dates out there in the desert. Bet they got lots of sand, too. Haw-w-w-w-w!"

"Aw-er—ha-ha—ha-a-a-a!" the Major laughed sickly. He threw his cigar out the window for it had suddenly gone sour. "Place for Intelligence officer with brains is out at the airdrome. I blarsted well think the Mullah himself is riding around in a plane. Er—strange—my batman saw a plane—looked like an Avro—flying over Cairo four hours ago. Private hangar somewhere—"

"Wha-a-a-a-a-a?" Phineas gulped and hopped out of his chair. "Maybe it was—when do we leave for the airdrome, huh?"

"First thing in the morning. Go to Abou-Kir, Lieutenant. Have a Bristol there. Make you comfortable out at Mehr-Raj, no end."

"What can I lose, haw-w-w-w?" Phineas said. "I am itchin' to hear a prop blast. Adoo for now."

When the Major had gone, Phineas looked out the window. And the sky line of the old part of Cairo looked as familiar to him as the marquee of the Boonetown Bijou flicker theatre. Phineas knew he was getting looney. He had forgotten to give Major Smythe-Brouthers a shooting cigar. He tested his sanity by taking an inventory of the novelties he had brought from Bar-le-Duc. One little number intrigued him. He wondered if an occasion would arise to give him an excuse to use it. On the package were the words:

(Continued on page 72)



WISECRACK-UPS



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

DESERVES SOME CREDIT

Visiting officer: After all, I'm the man who made you great.

Conceited Ace (bristling): That's absurd! Why, I never saw you before in my life.

Visiting officer: What I'm driving at is that I'm the man who kept your confirmation records over at Headquarters.

SIGNING OFF

Radio commentator (in plane that's about to crash): "Well, folks, we're going straight down . . . faster and faster" . . . and now the earth is just a few feet below us, and—well, for further details see your local newspaper.

Dumb Dora thinks leap year is when they teach all the new parachute students.

POISON, FOR INSTANCE

Plane salesman: Come now, man! Suppose you bought a plane for ten dollars and on your first flight nothing happened? What would you do?

Pilot: I'd try some other way of committing suicide.

FINIS

Korporal: *Leutnant* Weinerschnitzel just took off in *ein* Messerschmitt und attackedt single handed *der* whole squadron uf Hurricanes!

Herr Oberst: *Himmel!* Dot's *der* last t'ing he should have done, yedt!

Korporal: It vas, *Excellenz.*

THE HARD WAY

Cadet: How long did it take you to learn to fly?

Screwball pilot: Oh, three or four.

Cadet: Months?

S. p.: No—airplanes.

SMOKED HIM OUT

Phineas: Did I ever tell ya about the time I was flyin' over a Havana cigar factory, an' my engine conked, an' I landed in the bay?

Bump: But how did they save you?

Phineas: They threw me a rope. Haw-w-w-w-w!

According to Dumb Dora, the aero designers are 'way behind times. "When," she asks, "will they get around to installing escalators on planes instead of elevators?"

THEIR FINN-ISH!

"Is it true that Stalin purged all the Russian aircraft designers?"

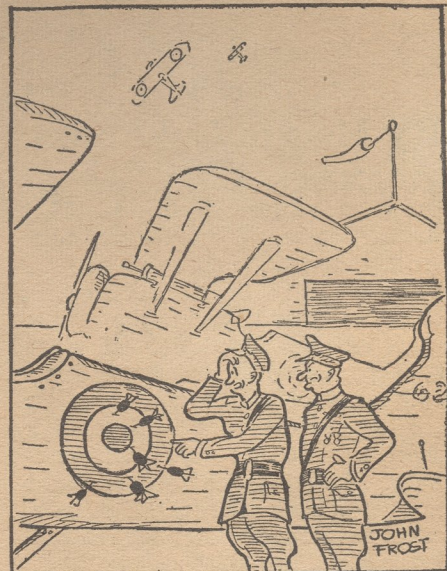
"Sure. He got mad when he found out that every Soviet machine had a fin on its tail."

RISKY BUSINESS

Phineas: Oh, boy! Did I fool that Brass Hat when I offered him that cigar!

Goomer: But that wasn't one o' yer loaded cigars, Lootenant.

Phineas: Nope. But he thought it was—so he didn't take it! Haw-w-w!



"Blarst it, Sir! Leftenant Sneeep is again making game of our Squadron regulations!"

PROOF WANTED

Astronomer: Look! A meteor!

Plastered flyer: Ya sure it ain't jus' a firefly doin' a 9-G dive?

SKIP IT

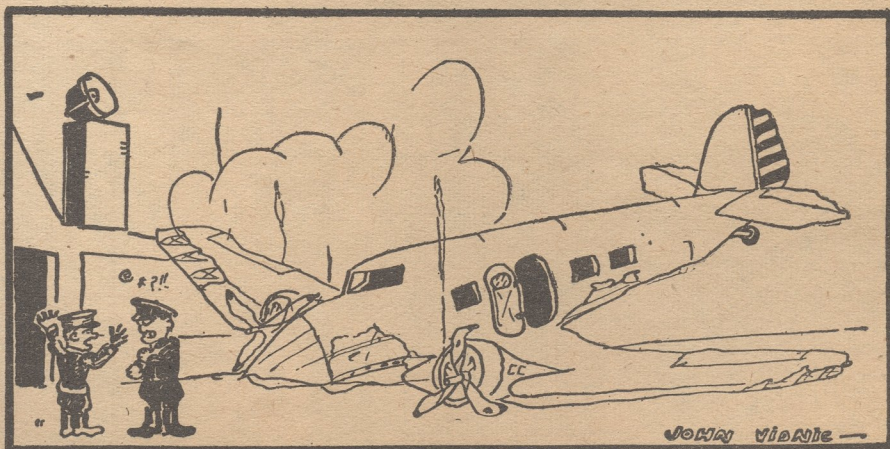
Goofus: Whatya think Jim got that airplane for?

Bloous: For flying, I imagine.

Goofus: Nope, for a thousand bucks. And whatya think he wanted it for?

Bloous: I suppose for flying.

Goofus: Naw, he wanted it for eight hundred bucks.



"All right—so I AIN'T neat!"

Hats Off To Helena!

It's Blazed the Way In Youth Aeronautics

Yes, our cheers are for Montana's capital, which so clearly demonstrated the great value of a high school aviation course covering both shop and air practice. And we're here to tell you that this Western city put its sky program over with something more than a bang. It put it over with—
an earthquake!

By Marvin C. Lupton

HELENA—and be sure you pronounce it *Helena*—today boasts of producing more men for the nation's aviation than any other city in North America according to the per capita figure based on her population of some 12,000 plus. And the residents of this capital city of Montana are further proud of the fact that the local high school is listed by the Civil Aeronautics Authority as tops in flight training among those high schools, which have sponsored pilot instruction work. A first-class honor!

What's most amazing about all this is that the city's pioneering in the field of educational aviation may primarily be attributed to the devastating earthquakes that smacked Helena back in October 1935! For as an aftermath of those earthquakes, Helena High School is now turning a full 12 per cent of her pupils into aeronautical channels. And here's the dramatic story—

Helena had finished a brand new \$500,000 school building in the summer of that memorable year of 1935—only to have the destructive temblors reduce it to a smouldering heap after only 34 days of occupancy. Immediately, the city education system launched revolutionary measures to care for the school-less students. Then it was that aviation was given its chance on an unprecedented scale.

"Sure, take the boys to the city hangar! Teach them the aero game." That was the school board's favor-



Lieut. Landon W. Fahrner is the "brain" behind the phenomenal success of Helena's air school. "Pop," as he's known affectionately to the boys, is recognized by the CAA as a pioneer in the field of aeronautical education.

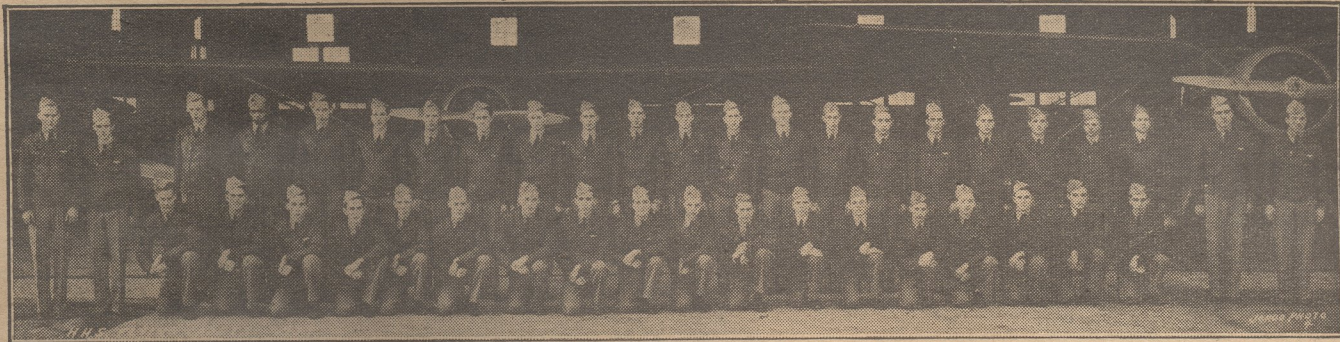
able reaction when Lieut. Landon W. Fahrner came along during that hectic period of stress and reconstruction and suggested the grand idea of aviation training right at the airfield itself. And since Lieutenant Fahrner had already won wide popularity for launching aeronautical studies in the school during 1933, his plan won the whole community's support. However, that was only the beginning—for the *real* work was yet to come!

So for two years, while more than a thousand students of the district jammed two dozen handy railway coaches for their "classroom" sessions, the 40 youngsters under Lieutenant Fahrner's tutelage met regularly at the municipal hangar for their training in aeronautics. While their brothers and sisters worried over



Left: Dozens of planes are put in shape each year by Helena's students. Here, two boys are finishing off a fuselage and wing repair job. Below: Before getting those final touches, ships are checked through this welding department. Those lads you see at the benches are learning all phases of aircraft metal joining. In their second year, after 240 hours of welding, they become eligible for work on licensed planes.





Serving under semi-military discipline, Helena High School's "Flying Cadets" are a mighty smart outfit. Membership in the Cadet group is limited to the students who have won their wings. On the ships seen in the background, the boys are trained to be both expert pilots and mechanics.

grammar and Latin assignments in their improvised classrooms, the Helena Flying Cadets were concentrating on such subjects as internal combustion, engine maintenance, aerodynamics, and theories of flight.

Today, to a man, those same forty youths are busy in varied aeronautical fields. Some are flying for Uncle Sam's Army and Navy, others are designing and repairing modern revolutionary craft for Lockheed and Boeing, and many have established themselves in general civil aviation.

At the city port, Lieutenant Fahrner turned over his own private plane for the use of his charges. He taught them to fly, to overhaul planes, and to weld and construct new parts. They developed into real craftsmen. It may be said that their accomplishments, under this special

course, were little short of phenomenal.

Meanwhile, the board of trustees, sensing the promising possibilities of the fine program, allotted \$7,500 for the construction of a school aeronautical building at the airport. A great step forward!

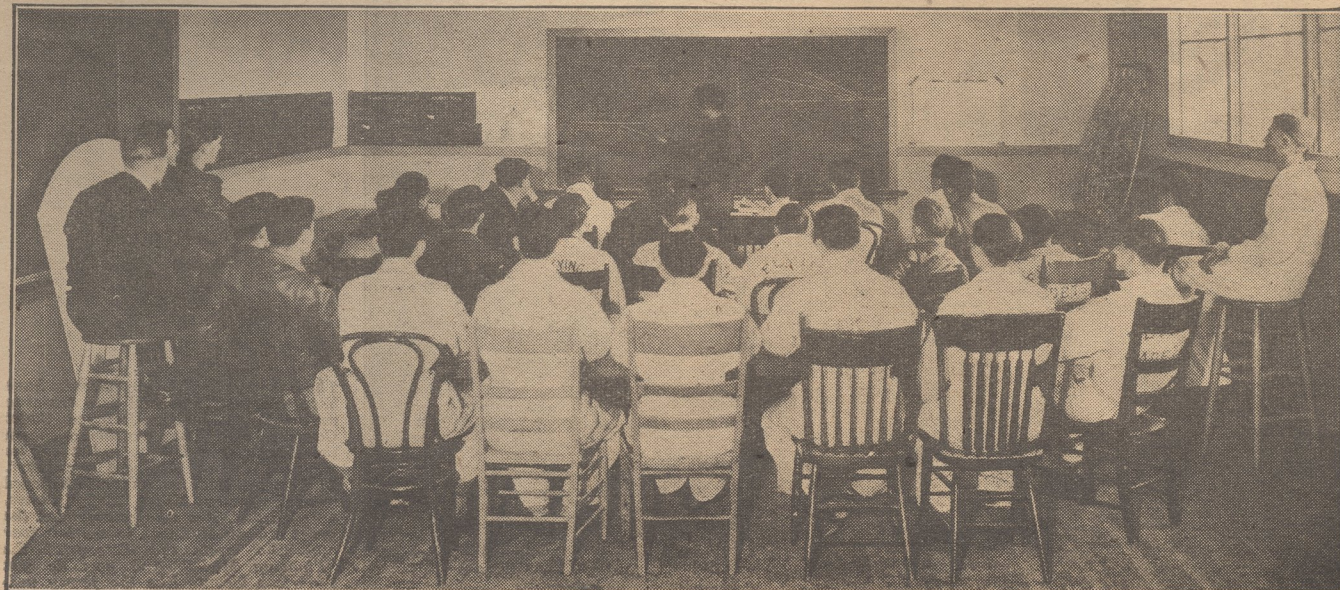
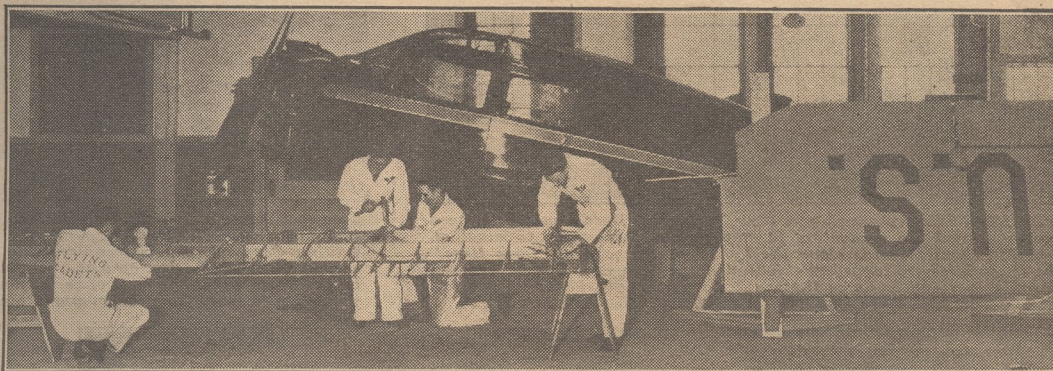
Even so, this amount of money was meager in the light of the dream which was in Lieutenant Fahrner's mind. He pondered the situation and finally called a meeting of all the boys. Present was Perry G. Means, engineer in charge of the huge reconstruction program for the school system. And together a special working plan was drafted whereby the money would, after cooperative construction work on the part of the boys, be stretched out to cover better

quarters and a lot of needed extras, to boot.

Meanwhile, Mr. Means, in a rapid survey of the earthquake damage, made careful note of all the salvageable material left from the demolished school buildings. And the possibilities were great. Huge timbers, sheeting, plumbing fixtures, and whatnot were to be had for the taking. Doors and windows were easily available. Then a local engineering plant contributed more than two carloads of scrap steel which was subsequently straightened, welded, and incorporated in the structural frame of the new plant.

(Continued on page 72)

Right: This shot shows advanced students repairing an Army model which has been brought to the "clinic." Below: "Skull practice" is a big part of the program, too. That instructor, up front, has just discussed airfoil coefficients and lift angles. Now his ruler points to a landing speed formula. And every lad is list'nin'—because a guy can't dream his way through mathematical square roots.





How a Nazi stronghold looks to raiding British pilots! This revealing shot of Germany's Heligoland was snapped by an R.A.F. observer. The camera's eye picked up all strategic points of the island. Designated by letters, they are: (A) Harbor with dredger; (B) Mole; (C) Pipe line; (D) Reclaimed area for future air field; (E) Highland; (F) Lowland; (G) Barracks; (H) Lighthouse; (I) Tunnel; (J) War vessels; (K) Hangar; (L) Naval stores; (M) Harbor; (N) Mole; (O) A-A battery; (P) Tunnel.

Through the Aero Lens



Knot-Hole Clubs are popular in New York City. Here's one that's been erected around the excavation for the new air passenger terminal on 42nd St. Those placards along the top of the fence read "Look Here." The lower holes are tagged "Pekinese." As you can see, the apertures are placed at varying levels so that any size person can kibitz in comfort. The peep-holes look plenty worn, too! (Kulick photo.)

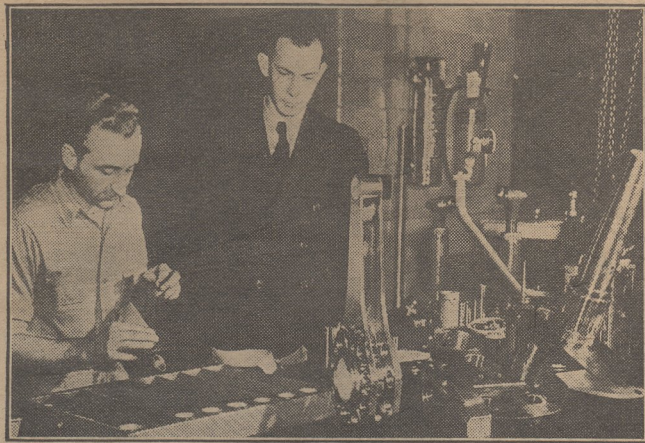


This shot shows a Bristol Blenheim that just returned from an observation flight over Naziland. Exposed film has been quickly handed to a waiting Corporal who is seen sprinting off to a waiting Photography car, where it will be developed and printed and made ready for inspection by the Brass Hats. The crew of the camouflaged plane is seen on the left preparing to jump from the wing and then check out for a deserved rest.

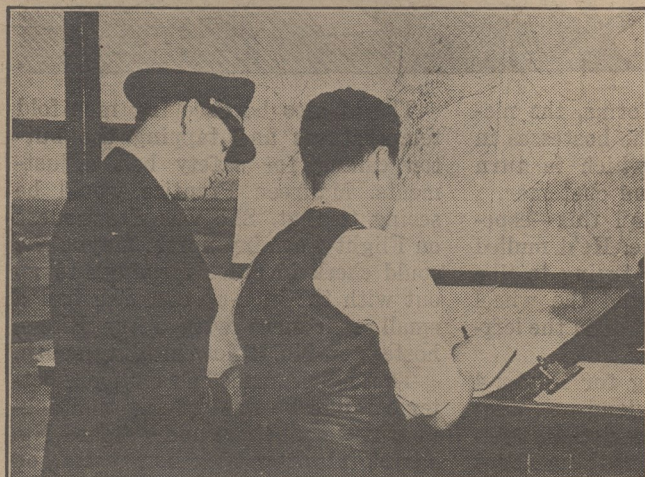


These lucky British Boy Scouts have been selected for special aero training under the new Air Defence Cadet Corps scheme. They are being shown the details of a Pobjoy radial engine mounted in an Airspeed transport. The cover-clad instructor is believed to be the famous Major "Taffy" Jones, noted R.A.F. Ace who commanded the great Mickey Mannock in the last war and who wrote the history of the "Fighting Mick." And how do you American Scouts like the jersey uniforms the British brotherhood sports?

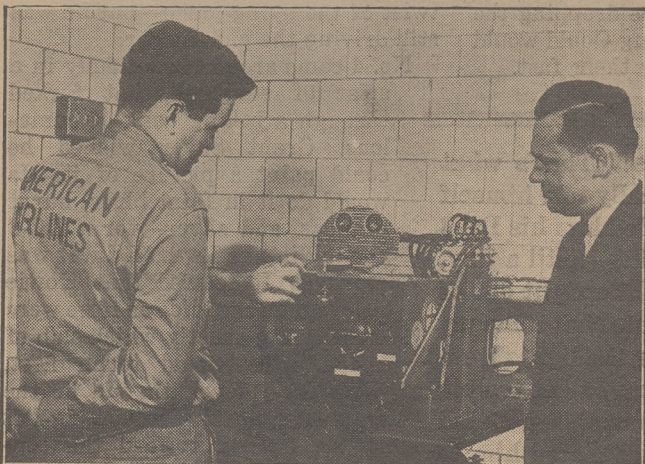
No matter how many hours a pilot may have logged, there's always plenty to learn to keep up with his job. And at LaGuardia Field, American Airlines has more than 200 persons answering school-bells. Some 30 skilled pilots are taking training, 50 men are absorbed in operations practice, 105 apprentice mechanics are boning on aero A-B-C's, and 33 nurses are learning to be stewardesses. The photos on this page show how the flyers—from beginners to veterans—are trained by American.



New engines are so complex that even the old pilots have to step into the repair shops to find out what's now inside 'em. Here we see J. D. McNeill watching a skilled mechanic sanding a connecting rod in the Engine Overhaul Department.



Would-be co-pilots have to make up flight-plans from current weather data. And as this stude works, a "never fooled" Flight Officer is looking on. If you're not perfect, they'll show you how you would have headed into three snowstorms, a line squall, and Minnie's washing!



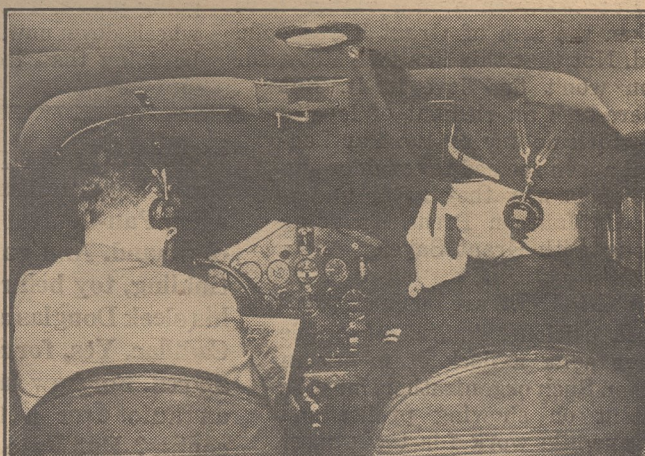
One pilot they all rely on—"George," the robot. Here in the Instrument Overhaul Department, a stude is getting a formal introduction to "George," who in turn is being checked prior to re-fitting in a ship. The expert gear-and-gadget plane flyer continually undergoes rigid tests to keep it in perfect working order.



The ground guy who makes veteran pilots cry. This chap is Instructor V. R. Evans, who directs the Link Trainer. He shows the flyers how they were "three miles off the beam" by submitting the evidence on the map in front of him marked by the flight-path recorder.



What the airline students actually look like. Here's a group of 'em, anyhow—but we can only hint at the way they feel after being drilled on flight data all day long. Some of these men were with the Army and Navy, but they're now down to earth studying more with American Airlines.



Of course, they finally get around to letting the student fly a plane. But the stude hardly knows he's in the air when the cockpit is hooded over for instrument flying practice. After six weeks in the training school, the new man is ready to go to work. Yet even then his rounds with the Link Trainer continue.

Pick-Up Pilot

By Arch Whitehouse

Author of "Rip-Cord Ruse," "Dorniers Disguised," etc.

Illustrated by Alden McWilliams

GRANT SAYER hated everything and everyone in the world—himself most of all. But on second thought, there *was* one exception. She was Maureen Prentice. No one could really hate her.

Everyone connected with Pan-Central liked Maureen, and more than several of them would have jumped at the chance to harbor deeper feelings for her.

But there was Grant Sayer. And they just couldn't figure him—and Maureen Prentice. Taken on first glance, if you eyed that situation at LaGuardia Field, you would get the impression that Flight Stewardess Maureen Prentice was a little weak in the bonnet to go for the guy who drove the pick-up car from the Commodore Hotel on 42nd Street out to the half moon of concrete and steel that embraced Pan-Central's eastern terminal. After all, Maureen could have hooked arms with Flight Captains, First-Officers, Chief Dispatchers or Traffic Managers. They all paid their income taxes on the big sheets.

But Maureen would rather have taken the arm of Grant Sayer—and did. Not that this is a love story, for you won't find love in it. But there was an element of loyalty—which no one on the Pan-Central apron seemed to consider and which is why they never understood Maureen Prentice's going along with Grant Sayer.

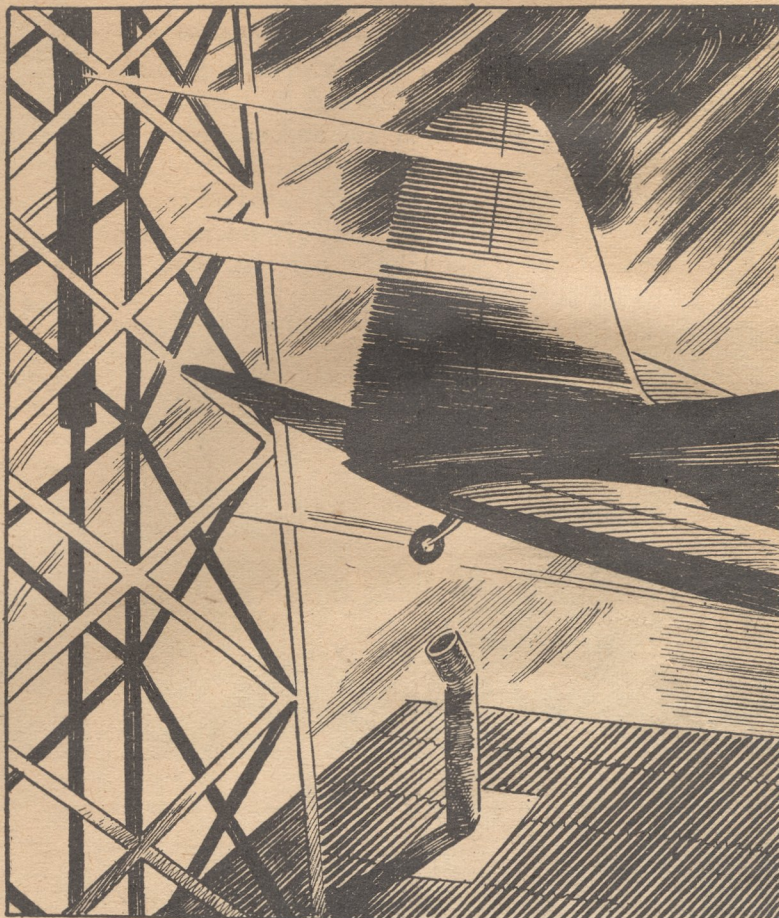
AIRLINES are business propositions. A flock of people have sunk a flock of money in them. Such organizations must be intent on showing profits and meanwhile work for the utmost in safety. And airlines are still getting a healthy chunk of Government subsidy which goes far toward keeping the props turn-

ing, the pilots in uniforms, the mechanics in tools, and the hostesses in trim outfits. All of which in turn draws the business man customer.

Grant Sayer knew all this—especially that safety angle. He'd mulled it over time and again trying to jibe it with his being behind the wheel of a pick-up car instead of in the left-hand seat in a DC-3 cockpit.

He was now waiting for Flight 4 to come in. Howie Layland was pilot on that run. Sayer knew that automatically. He knew everything about Pan-Central. He knew that Layland would be double-talking his orders to Co-pilot Gould, a swell kid who was going places. They'd be dropping the wheels down now. Young Gould would be doing that, locking them fast.

"Now I'm going places!" That's what Grant Sayer optimistically told himself when Pan-Central handed him his DC-3 command. And go he did—until a tiny, tinkling, toy bell rang him right out of his sleek Douglas and into that company Cadillac. Yes, for Sayer the lights were all red. For how far can you get tooling an auto over a traffic-mobbed closed course? But Fate hadn't slated him to stay in hot water. Abruptly a gun butt swung—and whirled him right into the fire!

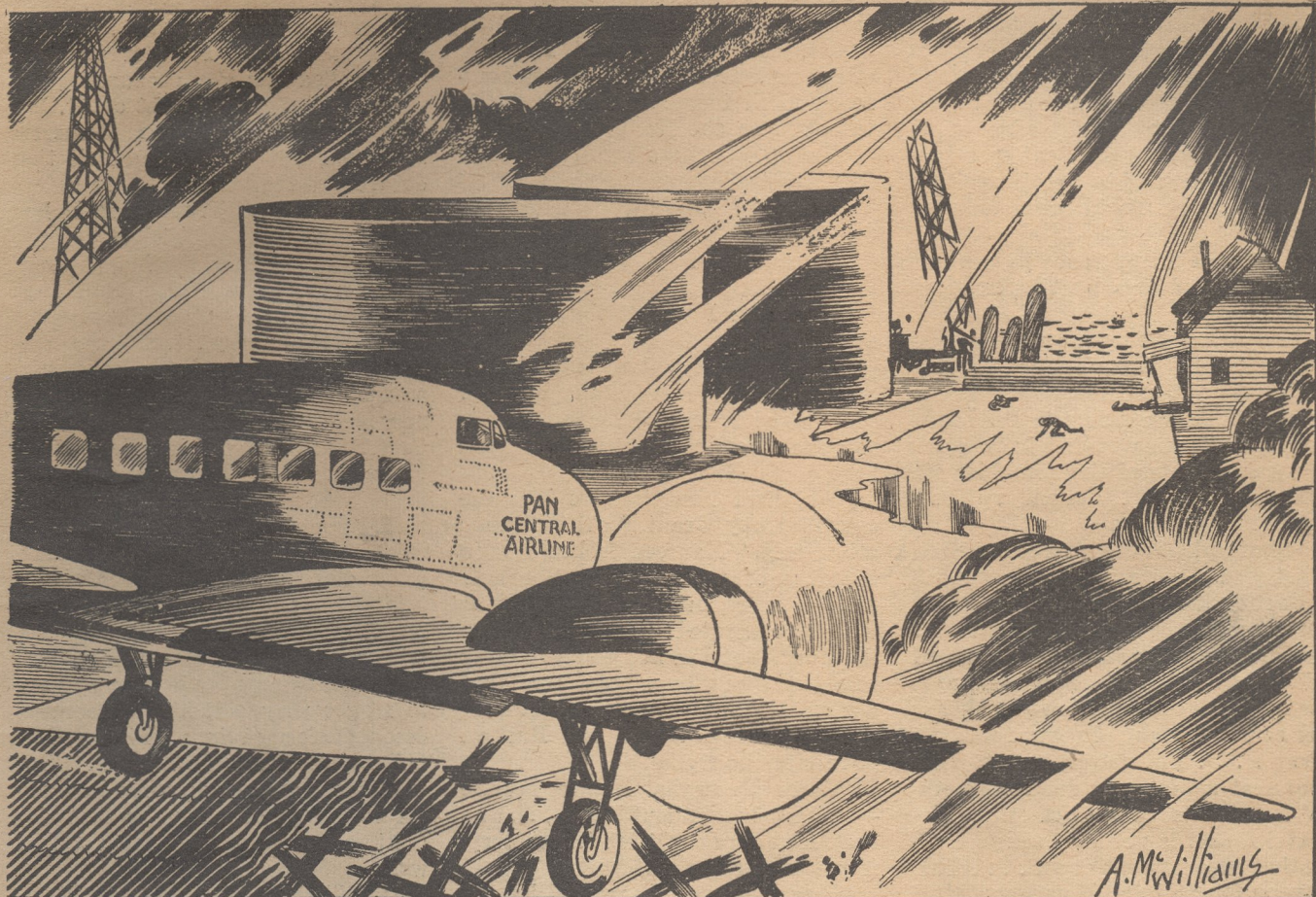


They'd also be checking manifold temperatures and tapping the button calling for safety belt adjustments. Maureen Prentice would be seeing to that. She was Stewardess on Flight 4 coming north. Maybe she could check in quickly enough to go out with the pick-up car. She had a small apartment with Jetty Binns, hostess on No. 3 now heading south.

Those girls, mused Grant, were better off than he was driving the pick-up car. He sat there and watched No. 4 bank into view, his elbow resting on the sill of the Cadillac driver's window. He had sat this way for hundreds of landings now. He knew every twist of the flying game—but he was still driving the pick-up car.

No. 4 came around beautifully in a splat of sunshine that forked through a rolling bank of cumulous. Grant Sayer wished he could paint a picture of it. He would do it in faint blues, burnt oranges, and silver—for a DC-3 coming in like Layland did it was glorious. It seemed that Howie held 'em on the glide as if he were considering exactly which slab of concrete he would touch first. With flaps down, there'd be the faintest hint of a ballooning lift as she settled toward the concrete. As for the actual contact, it was impossible to tell just when the tires touched.

"He's too good, that Layland,"



muttered Sayer. "I hope he never has any bad luck."

That was it—bad luck! You might be a great pilot like Layland. But if you had bad luck you were fortunate to wind up with a pick-up car job.

"That's the way to do it, Sayer," a voice said behind Grant's left shoulder. "That's how they become Flight Officers on Pan-Central ships. See that great landing?"

"Look," said Grant, twisting his head slightly, "if you take a little arsenic on the tip of a teaspoon and swallow it quickly—it does a good job."

"I would if I was driving this Pullman of yours."

"Sure, *you* would. But *I* won't I'll be back again tooling those babies through—yet!"

"Not while I'm checking around here, you won't," came the reply. The speaker was Clayton Malloy, the Inspector who hammered conservatism into the pilots thereabouts. He didn't tolerate any tangents.

"When most Inspectors are such grand fellows—why can't you be? Don't they ever shift you guys around?" growled Sayer. "You ought to be out at Albuquerque, wrapped up in a blanket and selling souvenir ca-

noes made in Hoboken. Go away. You make me tired."

"It's the places you're sleeping in these days, Sayer. Remember when you used to hole in at the Douglas Hotel when you flew out of Newark? Boy, did you strut then. Base pay and mileage—about six grand a year to squander. Nice money when you can get it."

"I'll get it again, Malloy," snapped Sayer. "I'll get it and I'll have the pleasure of having you. Okay me, too."

"You say the funniest things, Sayer. I can't stand you. Besides, I have a date. So long!"

Malloy stalked away. He wore an expensive suit. Swell gabardine stuff. Also nice socks inside shoes that glinted about thirteen bucks worth. He strutted because he had something to strut about—a brace of good luck shots. They'd put him where he was. And there was now talk of a ten grand a year job about to come up for him.

It was Malloy who had put the zinger in for Sayer after that crack-up Sayer had had.

The Douglas was up beside the

... More smoke, more heat—then sinister, lancing fingers of fire! Grant Sayer bit his lip, grimly pressed the Douglas down . . . down. Could he clear that flaming shack? Could they survive that inferno beyond it?

ramp now and "Buttons" Blaine was running the gangway down. Maureen was out on the platform with the manifest in her hand checking the passengers out. They had the freight door open up front, and new leather bags, linen-covered cases, and expensive pigskin stuff was coming out and being stacked on the truck.

GRANT SAYER watched it all. The passengers were heading toward the Administration Building. They would come out the side door in a few minutes, their baggage would be stacked behind on the Cadillac, and it would be another jaunt back to Manhattan.

Pick-up pilot!

Sayer frowned as he watched Malloy head for the gangway. Layland was signing his papers and young Gould was still aboard, waiting to run her into the hangar for a check.

Malloy was talking quietly to Miss Prentice. She was obviously busy and annoyed with the interruption. But he persisted. Sayer wanted to go over

STARRING GRANT SAYER — AND LADY LUCK

and punch him in the nose, but instead he had to put on his flunky act assisting the passengers in. Buttons was tucking the luggage away and handed over the check list to Sayer.

"Malloy is trying to edge in on your girl, Grant," Buttons was saying. "He's trying to date her for a dinner tonight. You'd better look out for that guy."

"And how many more passengers to get aboard this bus?" demanded Grant.

"Three more. They're sending telegrams telling their old ladies they ain't dead yet and to put the insurance policies back in the tin box—as if those wives wouldn't know quick if we ever bumped their hubbies off. What's it like to crack up bad, Grant?"

"Shut up! Get those three out here. I got plenty more runs to do today."

Grant climbed up into his seat, sat for a minute or two listening to the clacking of the passengers, some of whom had just completed their first air trip. The conversation was always the same: "Funny, I never felt a bit dizzy . . . I'm never gonna take that seat again—you don't see nothin' . . . The worst of this air-travel racket is getting back to civilization once you get down . . . This is your fourth trip? How wonderful! . . . It's swell, but you can't get a drink on board."

Then she was there, just under his elbow her long slender fingers pressing his arm.

Maureen Prentice was like Cartier's jewelry, 1928 champagne, the front cover of Vogue, and something turned out by Charles of the Ritz—Miss America dressed in Pan-Central livery. What more could a fellow ask?

Grant Sayer always had to repress a gasp when he saw Maureen Prentice. She added horsepower to a Pratt & Whitney and lift to a Lockheed. She made the interior of a Douglas warm up like Peacock Alley in the Waldorf Astoria.

Well, anyway you get the idea.

This was what Pan-Central was paying \$125 a month. She could have got a grand a week in the Follies, but she would rather do Flight 4 and have Grant Sayer. Her hair was auburn, her eyes of a shade best described as sparkling bluish silver. Her profile . . .

"Hi, Grant!" the vision greeted. "We had a lovely trip."

"Hi, Murrie," he said back, still amazed that such a beauty even spoke to him. "Coming back to town with me—this trip?"

"Sorry, Grant. I've got to do a class. They want me to take the new hostess class and lecture on 'The Care of Babies During Flight'—Miss Lawrence is ill today. But I'll make it with you on the No. 6 trip. Okay?"

"Yeah, I suppose so. But say, is that guy Malloy annoying you?"

"Malloy? No, he's just handing me the same old line."

"Wanted you to go to dinner, didn't he?"

"Told him I wasn't that hungry, ever."

"Maybe you ought to take him up once, Murrie," said Grant bitterly. "He might unlash and become human for the good of everybody around here."

"We don't need to give him the cure that way, Grant. We'll do it some other way." Maureen looked full in the face of Grant Sayer. She said nothing more, but she might just as well have shouted: "I'm with you to the limit. But I'm not going to work this thing out by stooping to that chump. It's not the right approach."

More doors slammed and Buttons gave him the signal.

"Queer about that lecture, Murrie—that business about babies, and all that. You sure could tell 'em a story, if you wanted to, eh?"

"Don't worry, I won't. They'll never get the inside on that trip from me."

She patted his arm again and smiled. That alone almost turned the Cadillac's engine over: "Anyway to-

night, then. I'll see what I can do with some eggs, some Canadian bacon, and a waffle iron."

Grant winced as he touched the starter. "You'd be smarter if you took up that Malloy guy and got a real meal once in awhile."

"Don't forget, we hostesses have

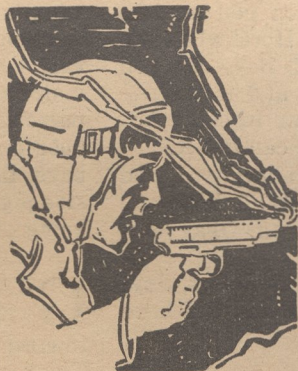
to keep below 120—or out we go. Why, I might wind up on a sight-seeing bus."

"Like me," added Grant resentfully. He looked suspiciously like a depth charge about to explode.

"Don't say that," the girl answered. "I didn't mean it that way. You'll get back, Grant. I know."

"Yeah? Well, you should think more about yourself instead of me."

The vision stood off, flaming with beautiful rage: "Grant Sayer, you have another think coming. It'll be bacon and eggs and maybe some waffles—or it will be nothing at all."



SHE STRODE toward the passengers' ramp and saw Pop Naismith, the Chief Pilot of the line. They called him Pop because he was the Old Man of the flight outfit. His real name was Munro Somerset Naismith, but he had lived all that down more than twenty years before—on the Western Front when he had been the 18-year-old idol of the flying A.E.F. Anyhow, the Munro Somerset part of his name had faded into the mists of antiquity along with his first aerial gunnery test and the citation he had received for his initial over-the-line patrol. He still wore a narrow row of ribbons which Pan-Central had ordered him to put up under his wings to show the traveling public that Pan-Central had real background in Pop Naismith, Chief Pilot. A British D.S.O., a French *Croix de Guerre*, a Belgian *Medaille Militaire*, and the Congressional Medal of Honor were, they figured, tributes to the efficiency of Pan-Central. There seemed to be a conspiracy to forget they actually represented deeds performed in a "Flying Coffin" 18,000 feet over Metz in 1918.

Maureen caught up with Pop under the wings of a Douglas that was getting its tanks filled from a fuel well.

"Pop!" she had called—and he already knew what was coming.

He smiled, stuck his fingers into the pocket of his jacket, Navy fashion, and lolled against the wheel of the Douglas.

"What? Again, Murrie?" he asked with a smile. "But it's the same answer. You get Malloy lined up, and I'll do the rest."

"But Grant can fly, Pop. That was just hard luck, that crack-up. It wasn't his fault."

"He was at the controls, Murrie," Pop Naismith reminded her for the twentieth time. "He was lucky to live through it. So were you. And a good many girls would have chucked this game after that."

"I don't quit that easy, Pop. And I'm for having Grant back on the left. He got a bad deal."

"You like the guy, don't you, Murrie?" Naismith said with a wry smile without looking at her.

"You would, too, if you really tried to understand him. He's got all it takes."

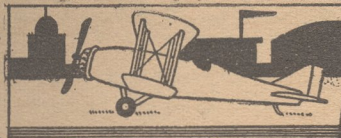
"You going to marry him, Murrie?" Naismith asked, still staring off into space, almost giving the impression that he was fumbling for words, that he really wanted Maureen for himself, but that he realized the many years that separated them.

"I don't know, Pop," she replied. "Anyway, I've tried to help him, but things just won't jell."

(Continued on page 65)

HAPPY LANDINGS

BY ARCH WHITEHOUSE



Air Races Coming East? . . . Who's Buying What?

AIR RACES COMING EAST?

WHILE most of the rest of the world struggles along with warfare, the really salient aero talk in these United States concerns the possibility of the colorful National Air Races classic being held in the East this year.

Newark, which has lost much prestige over the shift of sky business from its municipal airport over to LaGuardia Field in New York, is naturally making a strong effort to pull itself out of the slough of despond which is the sad aftermath of the big airlines moving out. If Newark Airport can get the National Air Races, it will be a big feather in its cap. No doubt that would help a lot in making up for the loss that community has suffered.

But whether Newark Airport is capable of handling such a spectacle is not yet clear.

The National Air Races have become the most important annual affair of its type in the world. The accommodation of such an event demands the finest in field, grandstand, and air facilities. The meet requires the best in authority.

With everything else equal, however, if the National Air Race committee can switch its vast organization from Cleveland, and if the field is found suitable for the show events and for the high-speed triangular race course, we are all for bringing the event to Newark.

There can be no question but that with the New York World's Fair only a short distance away, Newark is in a grand spot to attract at least a million people with the three-day sky meet. The details are the problem. A million people would probably bring 250,000 automobiles. Accommodation and comfort would have to be provided. Huge grandstands will have to be erected, and extra field crews would have to be trained in dealing with such crowds.

We who know the Newark Airport

layout only too well realize what the handling of that much traffic on the Pulaski Auto Skyway and Route 29 can be on a Sunday night.

A new triangular course for the Thompson Trophy Race is something to conjure with, too. We wonder a bit how such a course can be lined up in the Newark Airport area free from ground obstructions. The area surrounding the Cleveland Airport offered comparatively open country and a reasonable amount of safety in case of forced landings by the high speed racers. Even then, however, we have seen Roman Holidays at Cleveland.

A ten-mile triangular course with a finishing pylon at the Newark Airport involves the tough proposition of steering clear of vast industrial areas, the city of Newark, lower New York City and its skyscrapers and a batch of thickly populated communities to boot. Can it be done? There might not be any minor accidents on the

course. They'd probably all be fatalities.

Newark may want the National Air Races. But most certainly a lot would have to be done to work out true safety for the spectacle. We of FLYING ACES, here in New York City, would get a big kick out of having the National Air Races at Newark this year. It would be a great thrill to all of us; for we have as much sporting blood in us as the next. But knowing races, knowing crowds, and knowing Newark Airport, we wonder whether the CAA will okay the proposition.

As for bolstering Newark Airport's nipped aero rating, the Newark officials made a smart move in bringing the Brewster Aircraft Company there. And they can go much further along those lines; for there are dozens of fine manufacturing concerns looking for opportunities to obtain factory space near New York City.

But to keep the record straight on the National Air Races, we must point out that the National Aeronautic Association reports, as we go to press, that no city has yet made a formal application for the classic. Newark, though talking up the proposition, has made no official bid at this writing. And time is getting short.

WHO'S BUYING WHAT?

THE ORDERS being given by Allied countries for American military aircraft have now reached the staggering figures of \$1,000,000,000—if reports are correct. We are told that the Allies want 8,000 planes by next Fall from our American factories.

Yet our manufacturers admit they can't turn out 1,300 planes a month, as the orders demand. And on top of all this we read that Allied purchasing officers are holding up commitments on all future aircraft purchases.

None of this makes much sense to us. We do know that about 250 Lockheed bombers have been built and de-

(Continued on page 79)

Aero Book Reviews

TWO EXCELLENT books have come to our desk this month—*Your Career in Aviation* and *Elementary Airplane Structural Analysis By Graphic Methods*. The first named volume has been turned out by Charles S. Mattoon, Personnel Director of the Curtiss Aeroplane Division, Curtiss-Wright Corporation, Buffalo, N. Y. And the structural analysis work is by James P. Eames, aero engineer.

We can, after study of *Your Career in Aviation*, be rather optimistic about the chances of you fellows who sincerely wish to become part of the aero business. To be sure, there are still restrictions, and often red tape—but the opportunities are decidedly not black for the lad who'll really work at it, according to Mr. Mattoon's evidence.

During his many years in the aircraft industry, Mr. Mattoon has in-

(Continued on page 78)

On the Light Plane Tarmac

EVERYONE TALKS about the CAA pilot training program, but very few persons seem to know much about its real fundamentals. We get a slew of letters every month asking questions about the training plan, and it has become obvious to us that the real details and workings of the scheme may still profitably be discussed for you readers.

It might be well, then, if we took time out and perused the Air Commerce Bulletin, issued by the Civil Aeronautics Authority, to analyze, once more, what this pilot training business is all about. And since light plane flying is the basis of the program, the subject fits nicely into our Tarmac, here.

In the first place, the Civilian Pilot Training Act of 1939 authorized the CAA "to conduct a program for the training of civilian pilots through educational institutions and pursuant to such regulations as the Authority may prescribe." In plain English, this means the CAA is in charge of a program designed to train civilians to fly, but they will have to go through this program the way the CAA decides—and no other way. The reason much of this is a bit dark to many persons is that the official details are usually written in formal, Congressional language.

The program calls for sufficient training to prepare a student for a private pilot certificate of competency. That means, if you finish, you get a Private Pilot's ticket and you can fly and do anything that type of ticket allows—if you can foot the

bill for plane rentals or if you can buy your own job and cover upkeep and fuel bills.

The course is divided into two parts. The student is initially given 72 hours of ground school training at the particular university he attends. This teaching is by qualified CAA instructors and it includes history of aviation, Civil Air Regulations, aviation, meteorology, parachutes, theory of flight, engines, instruments, and radio.

The flying course includes a mini-

How the CAA Pilot Plan Ticks

The College System

Education Problems

Ray Tries the Hard Way

mum of 35 and a maximum of 50 hours of flight instruction. This sky work, also under the supervision of the CAA, is offered in "stages". In Stage "A" the student gets preliminary ground instruction, including an explanation of plane, instruments, throttle, brakes, fuel systems, and the use of the safety belt. Then he learns to swing a prop, warm up an engine,

inspect his aircraft, and more on parachutes. He is taught to taxi in all kinds and directions of wind. He is given flight instruction involving the usual series of elementary maneuvers, and if he has progressed sufficiently in eight hours of this he is allowed to go solo.

Stage "B" carries him on for three more hours, which include a one-hour solo-check and two hours of solo practice, take-offs, and landings. Stage "C" designates the advanced solo period which follows and includes eight more hours of dual instruction and fifteen hours of solo flight. Here the student gets precision landings, stalls, spins, power turns, cross-wind take-offs and landings, power approaches and power landings, and a 50-mile cross country over a triangular course with two full-stops at different airports.

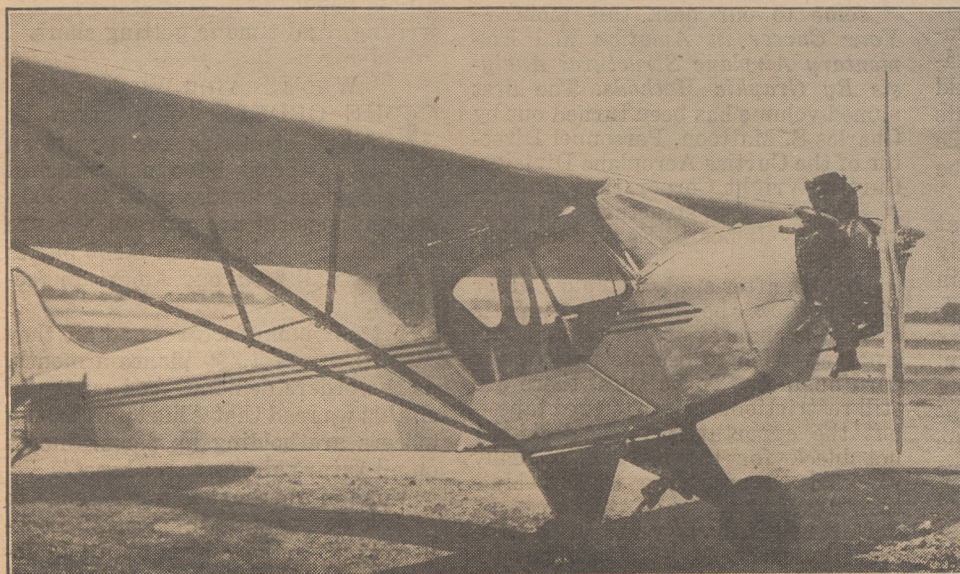
On the whole, the student gets a pretty fair idea of flying. And he should be pretty good if he gets through it.

But the average person wants particularly to know how a fellow goes about getting in on this swell program. What does it actually cost? And what is the general application set-up?

THE COLLEGE SYSTEM

FIRST off, applications were restricted to students (generally sophomores or better) in designated universities, colleges, technical institutions, 4-year teachers colleges, and junior colleges. These institutions were required to enter into a contract with the CAA to train a fixed number of students in conjunction with a field operator who provided the flight training. The air field had to be within ten miles of the school. The CAA at the same time entered into a contract with the operator.

How is it all financed? Well, the college may charge each student a laboratory fee up to \$40. The CAA will, in turn, pay the college \$20 per student for ground school training. The CAA then pays the flight operator something in the neighborhood of \$300 per student for the flight course, with local charges for similar instruction the de-



Left: Here's a close-up shot of the Piper Cub sporting the new 5-cylinder, 65-h.p. Angle engine. The interesting feature of this plant is that the cylinders and crankcase are cast in a single piece, and the whole motor is said to boast unusually light weight. We'll bet many a flyer will angle for an Angle-powered Cub!

termining factor in arriving at the exact rate paid.

Under these contracts, the operator provides approved flight instructors, certificated flying equipment, and public liability and property damage insurance, while the college will provide ground school instructors who are qualified for a rating in this work under the Civil Air Regulations. The operator, in addition, must supply one aircraft (of not less than 50 h.p.) and one instructor for each ten students assigned to his field.

Speaking of insurance, the student must furnish a statement signed by himself and his parents or guardian, releasing the college, the flight operator, and the Government in case of a passenger accident.

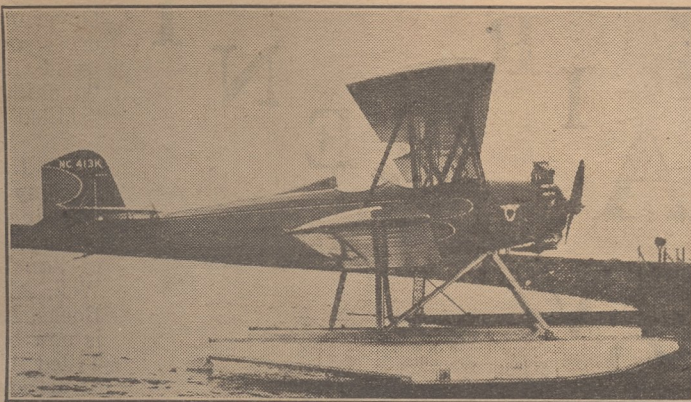
Those who wish to apply for this training under the college system must first be citizens of the United States. They must have reached their eighteenth birthday but must not have passed their twenty-fifth birthday. And they must not have had any solo flight experience. Out of the laboratory fee paid by the student, the college is required to pay for his medical examination, which is now six dollars instead of ten. The college also provides a minimum of \$3,000 accidental death and dismemberment insurance coverage. This coverage is on a 24-hour basis and must include all ground as well as flight risks in connection with the program.

"That's swell," you readers may say, "for the college man. But what about us poor lads who aren't in colleges? Many of us have had a tough time getting in four years of high school. But now where do we come in? Don't we get a break?"

These are fair questions, and they've caused something of a furor, as has been reported from time to time in our "Youth Air Movement News" section which has been running several months.

Yes, for the past six months or so there has been considerable pressure brought to bear on the CAA to alter the pilot training plan to include an equitable proportion of non-college men.

Right: Wacos become sleeker and sleeker, as evidenced by this 1940 Model-E version which mounts a 420-h.p. Wright engine. The top speed is 204 m.p.h., and the cruising velocity is 174 if you just like to loaf along. Did we hear some one say that looks like a machine gun sticking out of the rear wing? Nope, that's the pitot tube gadget used to run the airspeed indicator.



Still rating as one of the best all-around machines in the catalog, the Fleet is a neat job for the private pilot. Fitted with pontoons, like this one, it's just what the doctor ordered for the Spring and Summer. Swell for a week's tour of the lake districts, right?

EDUCATION PROBLEMS

ACTUALLY, the CAA does not appear to sympathize with the plight of the non-college man. The problem is not one as simple as sympathy. In the college man, you see, the CAA finds an applicant of known educational background. He has had so much math, so much science, so much history and geography, so he makes a pretty well-set figure as a candidate. They know he is capable of taking the fairly stiff ground course and passing it—because they know he has already passed certain educational tests or he wouldn't be in college.

In the case of the non-college man, the situation is much different. The non-college lad may have passed through high school, he may have only had two years of high school, or he may not have been to high school at all. As a matter of fact, as a non-college man he might not have gone through the third grade. These educational limitations would not necessarily prevent him from being a good pilot—from the point of view of actually learning to fly—but what would be his chances of getting through the required ground course?

The writer knew a man in the

World War who was as fine a pilot as he ever saw handle a plane—yet the man was an absolute ignoramus. He could only read the most simple sentences. He could just about sign his name in his log book and no more. He positively could not read a map, take six words a minute at Morse, or lay out a simple compass course.

How did he learn to fly? Well, he bought flying instructions at a school near London out of his own pocket—just so that he could get into the R.F.C.

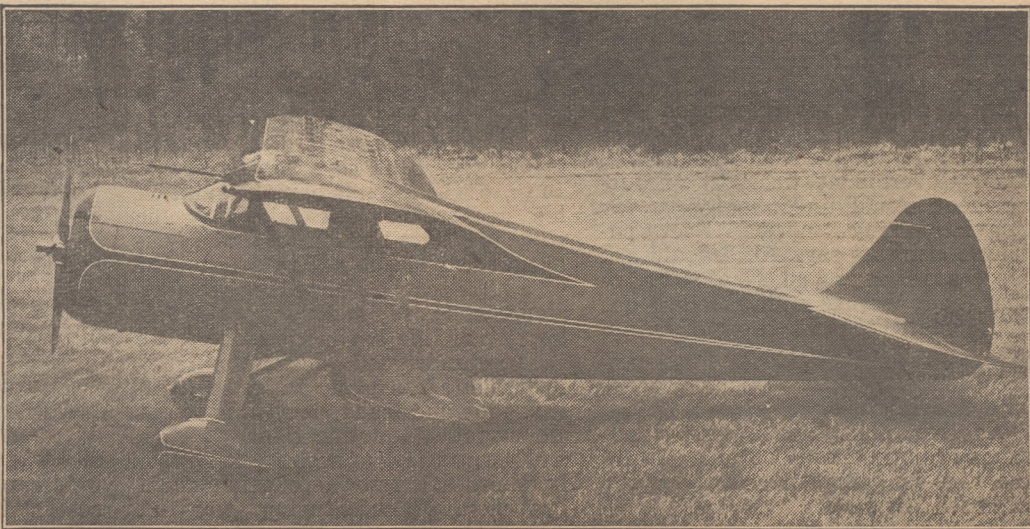
He never got in. But he did become one of the finest test pilots of the old war days—and a little mechanic wrote out his reports.

Anyhow, this problem of finding a standard educational background in a group of non-college candidates is one of the leading reasons why the CAA program has opened fire, as you might say, on the college man front. But while we said that first off the program was restricted to collegians, it is now true that the CAA is starting to do something for the non-college lads.

The Authority began working with a rule that not less than 5 percent of the group trained should be non-collegians. And the actual number being currently put through outside the university group is 700, or roughly 7 percent of the present total of 10,050 being trained. But it must be borne in mind that this is even less than the 10 percent of women enjoying the program in the colleges.

This has been looked down upon as mighty poor justice for non-collegians in a great democracy. Indeed, the National Aeronautic Association members recently went on record that the non-college quota should be

(Continued on page 78)



Youth AIRMENT MOVEMENT News



Here's our bright clearing house of info regarding the CAA pilot training program and kindred subjects. Brief, newsy bits—of interest to casual fans as well as actual candidates—will be our specialty each month in these columns.

By Herb Powell

Pilot Program Info

From Washington, as we went to press, came an official tab on the Civilian Pilot Training Program: By February 8, the 9,267 collegians then active had amassed 80,000 flying hours without serious accident and well over 3,000 of them had gained the solo stage where they chalked up 12,000 "by-themselves" hours. At that date, more than 7,000 were reported taking in the 75 non-college ground courses underway. But with only 760 flight courses offered in this off-campus category, hardly one in ten of these enthusiasts will win their way into the sky.

From Coupons To Flying

Remember our mentioning Al Bennett's plan to teach 100,000 common citizens to fly? Well, the scheme devised by this popular Hightstown, N. J., Cub operator is now getting some hopeful attention down Washington way. If the idea is adopted, the Government would deal out \$50 coupons through aero medical examiners. Each prospective flyer would get two of them, one of which he could redeem after he solos, the second when he finishes ten solo hours. And it wouldn't make any difference whether he was a college man or not. Such Government financial encouragement would undoubtedly go far in aviationizing America. "Every patriotic citizen," says Al, "should ask his congressman and senator to see that ten to twenty million dollars are appropriated to put this program into effect."

The Soaring Way

Another plan—one to get thousands of boys between 16 and 21 into the air—is being sponsored by the Licensed Airmen of America. Spark-

ing the lads into the building and flying of gliders and soarers comprises the LAA's scheme, and the Southern California Soaring Association will cooperate. Sounds swell to us. And if it also does to you, why not write to our old friend Charley McReynolds of the LAA? His address is 9121 Dalton Ave., Los Angeles, Calif. If you're interested in buying a soarer in kit form, by the way, you might contact Bowlus Sailplanes, Inc., 13785 Paxton St., San Francisco, Calif. One of the neatest things we've seen is that company's new sales folder, and it includes an "A-B-C Of Soaring."

Private Hopping Safer

A bright piece of news is that safety in private flying is continually improving. The CAA, you see, estimates that nearly a million miles were flown per fatal accident last year in the private department—a record almost three times better than that of 1932.

Job Tips

You fellows who plan on getting into aviation will be interested in several slants just brought out by Carl Norcross (author of *Getting a Job in Aviation*) in *Air Youth Horizons*, the AYA organ. Echoing CAA Chairman Hinckley, Norcross states that civil aviation will continue to grow on its own regardless of military angles. But, says he, the boy of 14 to 16 who intends to make aviation his life work must take "specific steps to assure himself of finding employment." He points to attainment of a high school diploma as one such step, since aero employers prefer fellows with this basic education. Also the air-minded lad should studiously investigate the many kinds of aviation jobs and learn something about the required qualifications of each and the locations of such work. Broadly, there are four aero employment branches: Manufacturing, work at

airports, with airlines, and with the Government. Special training, Norcross concludes, is what a chap needs most. True enough, there are some "unskilled" jobs—but only in the "skilled" field is there any real future.

U. S. Jane's

Many of us have wondered why someone in these United States hasn't put out an aero volume off the order of *Jane's All the World's Aircraft*. Well, Al Buranelli, over at Aircraft Books, Inc., 551 Fifth Ave., N. Y. C., is now busy completing such a work. Titled *Aircraft 1941*, it'll picture and describe all currently produced American planes, engines, and equipment. Construction practice and a roster of manufacturers and aero engineers will be included. This 500-pager will be out this summer, and \$10 will be the price.

Fort Wayne'll Come Through!

Nobody seems to know, at this writing, whether the National Air Races classic will be run this year. But you can be sure Director Bob Schott's peppy Fifth Annual Air Show will open July 21 at Fort Wayne, Ind. A starting feature before the races will be the "Parade of 1940," a demonstration of the various sky jobs now on the market. Attendance bettering last year's 35,000 is predicted.

Passenger Visibility

As a wartime measure, windows of European airliners have been fitted so that the passengers can't look out. And so we can congratulate ourselves for not suffering such restrictions on this side of the Atlantic. But if you don't mind our warping the subject a bit, we'd say just the opposite of congratulations are due our sky-liner designers when it comes to this seeing-out proposition. For they go right on putting gosh-awful, dinky, minus-visibility windows in our modern transports. Why our sky-traveling public stands for it is beyond us. Yeah, Mr. Douglas—when are you transport builders going to give us passenger jobs featuring really decent-sized windows a guy can see something out of, huh?

Feeder Line Problem

The insistent and growing demand for a flock of feeder airlines in this country is now giving the CAA people plenty to think about, says a Washington report. And Malden Bishop's *Airlines For All* article (May FLYING ACES) will, we hope, aid the fight for a solution. Meanwhile, CAA Administrator Hester points out that only 7.2 percent of the world's air route mileage is within the U. S.—which certainly backs up Bishop's arguments.

On the Lighter Side

Did you know that the U. S. produced 31715 planes last year? We didn't either. But to cut the kidding we'll explain that Art Peirce handed us that figure when he hit a "1" in-

stead of a “,” while jabbing for the right number—3,715—in typing his latest Piper Cub release. But never you mind, Art. Like all great thinkers, you’re just a mite ahead of your time. Why, the way those Cubs are coming out, 31715 will soon be a cinch! . . . The other month we mentioned a strange statistical report we’d received which had it that “313½ flyers” had done something or other. Well, we now think we’ve located that ½ flyer they were talking about. He sure must be the Bobby Draper who just got his Private ticket and bought a Cub up in Boston. For (you guessed it!) Bobby’s a 3½-ft. tall midget. . . . Speaking of plane salesmanship, Jack Wood and Dick McVey, Cub-men out in Mo. and Ill., recently did it the hard way. In 20-below-zero weather, they rode six hours in the cab of a round house locomotive, helped pitch coal—and sold Engineer Eric Darwitz a plane!

In the Slipstream

Three four-engined Vought-Sikorsky VS-44A passenger jobs will be used by American Export Airlines non-stop between the U. S. and Italy if and when they get the CAA’s Okay to start service. The VS-44A design is a commercial version of the Navy XPBS-1. . . . Artist McClelland Barclay has proposed a method for camouflaging planes “to confuse the enemy as to their size, shape, speed and direction.” The scheme calls for painting ships with special “trapezoidal designs.” Also new is an under-fuselage flap invented by Major Seversky to give a plane slower landing speeds and greater lift. . . . Blind persons were said to have been employed to operate Britain’s First World War enemy raid sound locators, the idea being that their sense of hearing was especially acute. But that plan is “out” in this scrap, says England’s War Office, because “sight

has been found needed to perform related duties.” . . . Japan, like Germany, is now reported to be making swell aviation gas out of coal. . . . Eastern Air Lines broke its one-day passenger record by flying 1,069 persons on March 1. . . . Strangest aero death of the month was that of Peter Larzen. He suffocated inside a sea-plane float while checking it for internal repairs. . . . It has been estimated that 1,155 planes were lost in the Russo-Finnish war, 794 by the Reds and 361 by the Finns. . . . LaGuardia Field is getting the razz for being the only airport demanding landing fees of military flyers. Disgruntled officers are arguing that the cost of the 100-plane free show the Army put on by request at the field’s dedication would far offset any total of landing fees through the years. . . . Omaha’s Junior Chamber of Commerce is planning to continue its
(Continued on page 31)

The Airmail Pals

LAST MONTH, lads, your R.H.P.D. said that a new record had been set up by you fellows requesting postal pals. Well, even that mark has been shattered now—for this trip we had a full twenty letters more than ever before! Here’s just a few of the ink slingers and their home towns—to show how our letters cover territory—

Robert G. Kuss, of Syracuse, N. Y., and Leroy Merrill of Muncie, Ind.; Curtis Branam, of Los Angeles, Calif., and Bill Crues, of Lawrence, Mass.; Stuart Beck and Carl MacPhee, of South Paris, Me.; Robert Lindwehr, of Astoria, Oregon, and Howard Soper, of Minneapolis, Minn.; Vetal Lucas, of Cleveland, Ohio, and Larry Bigler, of Bayard, Nebraska; Charles Bower, of Indianapolis, Ind., and John Abell, of Lebanon, Ky.; Robert Fox, of Lansing, Mich., and Bob Fisher, of Boston, Mass.

There were many others, too, but it’s almost impossible to list all the names. Anyhow, to all the fellows who wrote in during March—congratulations on setting up a record!

In the September, 1939, issue of FLYING ACES we announced our first A.P. 3-view winner. Ten issues have flown through the propwash since that date, bringing us many interesting missives telling what you lads have done. Well, here’s the latest—penned by Dwight Evans, of Plainfield, N. J., who says:

“In the March FLYING ACES I saw the letter that my foreign pal, Roy Bennett, of England, sent in, and I’d like to thank you for teaming us up. Boy, it’s really been swell writing to Roy.

“He tells me how they go around all the time over there with their gas masks and how the schools are equipped with air-raid shelters. Incidentally, as soon as the war is over, he hopes to come to the U. S. and see the New York World’s Fair. Let’s hope that the Fair is still going when he does come!”

That’s pretty dog-gonned swell, Dwight. We know you’ll have a zooming time when Roy can eventually make his jaunt over here. And for that letter of yours we’re putting a set of 3-views into the mail for you—Crash Carringer’s Hale Hellion, Kerry Keen’s old Black Bullet, and the Westland Pterodactyl V. Your Black Bullet plan is autographed by Arch Whitehouse, too. On second thought, though, we’re going to be different this month and enclose *two* sets. Ship one of ‘em on to Roy. We’re sure he’ll like ‘em.

Would the rest of you missive makers like to win yourself those 3-views.

Well, we’ll repeat the full dope once again. Here’s how:

Just sit down and tell the R.H.P.D. what you’ve done by mail that you’d like to let us all in on. You might not think of anything at first, but keep trying. And when you finish your letter, address it to R.H.P.D. Letter Contest, c/o FLYING ACES, 67 West 44 St., New York City.

And now for a personal to Floyd Todd of Kalamazoo, Mich.: Floyd, Sunao Muranaka, of P.O. Box 1225, Lihue, Kauai, Hawaii, says he’s written several letters to you lately but has not received answers to his notes. How’s about loosening up and shooting a missive to Sunao pronto. Also, Sunao says he’d like to correspond with other American fellows—especially ones on the Pacific Coast. There’s a hint, boys.

Well, that’s all we’ve got space for, pals. S’long.

THE R.H.P.D.

HOW TO GET AN AIRMAIL PAL

FIRST, write the best possible letter you know how. Use your best pen-and-ink handwriting or a typewriter. In your letter, introduce yourself fully—for this is the letter we’ll forward to the pal we’ll pick out for you. Tell your age, your interests in aviation, your other hobbies, and any additional items that might interest a new friend.

Then on a separate sheet tell the Right Honorable Pal Distributor what kind of an Airmail Pal you want. Send your letters to Airmail Pals, FLYING ACES, 67 West 44th St., New York, N. Y. Be sure to enclose a stamped, self-addressed return envelope, *plus* five cents in stamps or coin for each pal requested (our fee for the R.H.P.D.’s “Kitty”). We’ll try to supply you with a pal in line with your specifications, although we cannot guarantee to fill the bill exactly every time.

Your new pal’s letter will be sent to you, and yours to him—after which you will correspond direct.

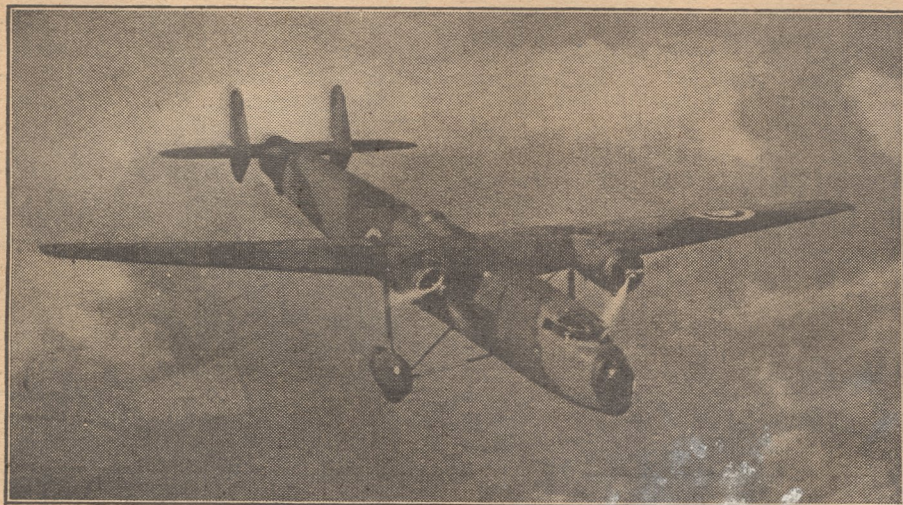
Do not ask for “lists” of pals. We cannot supply them.

Regarding foreign pen pals please note that because of the present European war we cannot supply foreign pen pals in all cases. However, we will fill as many requests as possible, then when the supply runs short we will substitute domestic pen pals.

If you are an American resident and want an overseas pen pal, *do not write a pen pal letter*. Instead, send us a short note telling in a general way what kind of a chap you are and what kind of a pal you seek. Enclose a stamped, self-addressed return envelope and five cents for each pal called for. A foreign writer’s letter will be sent to you, then you may correspond with him direct.

If you live outside of the United States and want an American pen pal, write a complete letter as described in the first paragraph of this box, and send it *without* the return envelope but *with* an International Reply Coupon worth five cents. Get the coupon from your local postoffice. Your letter will be forwarded to an American correspondent, after which you need only wait for his reply.

Modern Planes Album



HANDLEY PAGE HARROW

HANDLEY PAGE HARROW
THIS Handley Page Harrow is what the British call a heavy bomber. It is powered with two Bristol Pegasus XX engines of 925 h.p. each, giving a top speed of 200 m.p.h. with a bomb load of about 10,000 lbs. The plane has been designed mainly for long distance night raids for which it offers a maximum range of 1,840 miles. It carries a crew of four,

has a power turret in the nose, another set amidships, and a third in the tail.

There's nothing particularly graceful about this machine, but from all accounts it has been doing a grand job over Germany.

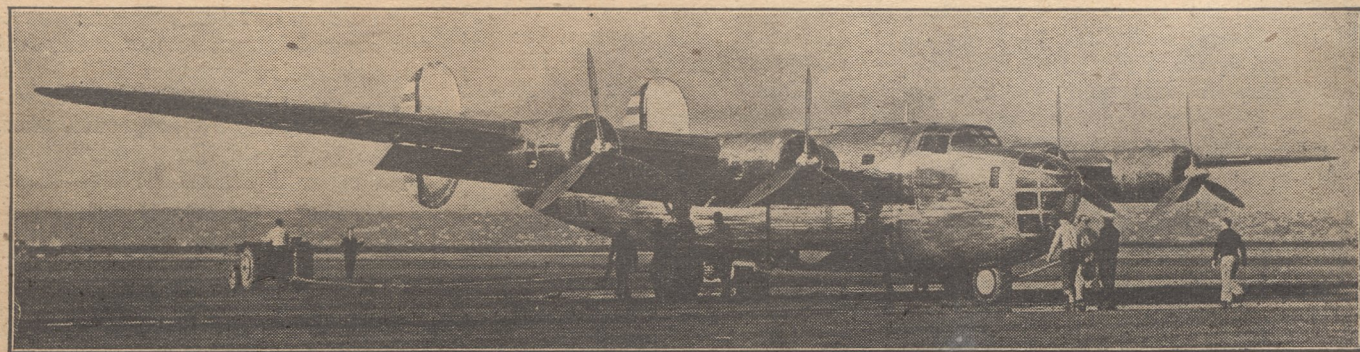
It is a high-wing cantilever monoplane. The wing is built up in three sections, making it very suitable for active service work and quick replace-

ments. Founded on a single, built-up girder, this wing features Alclad skin and reinforcement via ribs and stringers. The main girder is built up of laminated duralumin flanges, tubular diagonals, and vertical struts, the whole forming an N-type truss.

Handley Page automatic slots and slotted ailerons are fitted. Moreover, slotted flaps are hinged along the trailing edge between the ailerons and fuselage. These are controlled by hydraulic jacks.

The fuselage is likewise built up in three sections, with the nose of dural framework and covered with metal sheet. The center and aft portions are of tubular construction and are covered with fabric.

Bombs of various sizes may be carried in the internal racks set under the floor of the main compartment. Some four guns are carried in the turrets. The undercarriage does not retract. It consists of two long-stroke oleo legs, the upper ends of which are anchored to the extremities of the center-section spar girder. The lower ends are hinged to body longerons by axles and radius rods. The wheels are enclosed in streamlined pants.



CONSOLIDATED XB-24

THE CONSOLIDATED Aircraft Company, of San Diego, Calif., recently completed a new four-engined bomber for the U. S. Army Air Corps, and flight tests began at Lindbergh Field during February. The machine, labeled the XB-24, is a high-wing monoplane of all-metal construction. The wing is full cantilever and of high-aspect ratio, and the four tractor engine nacelles are mounted flush to the upper surface of the center section. Fowler flaps extend inboard of the ailerons.

Power is furnished by Pratt & Whitney 18-cylinder twin-row radial

air-cooled engines rated by the makers at 1,200-h.p. each. The props are Hamilton Standard 3-bladed hydromatic constant-speed types and are 12 feet in diameter.

Gross weight of the airplane is 40,000 lbs. It has a span of 110 feet and is 64 ft. long and 19 ft. high. Fuselage accommodations will care for a crew of from six to nine, depending on tactical requirements or the mission to be performed.

All control surfaces are fabric covered and fully counterweighted. The full cantilever horizontal tailplane has twin fins and rudders mounted at the tip. The all-metal

CONSOLIDATED XB-24

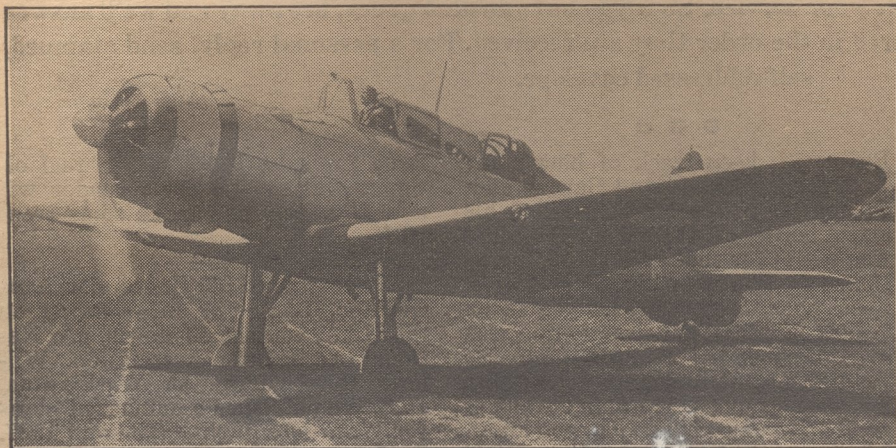
stressed skin fuselage is equipped with hatches and windows in the nose, tail, and turtledeck. The landing gear is of the tricycle type, with the forward wheel retracting into the fuselage. The two main landing wheels retract into the wing wells.

As usual, there is a lot of hush-hush about the XB-24's exact performance. The company simply speaks of "a speed of over 300 m.p.h., a range of approximately 3,000 miles, and a bomb carrying capacity of approximately four tons."

A tail turret is one of the plane's outstanding features.

FOUR LATE AMERICAN AND BRITISH MILITARY JOBS

England's Harrow bomber and Roc two-seat fighter are the overseas contributions and the XB-24 bomber and Dragonfly observation craft the domestic products in this month's review.



BLACKBURN ROC

BLACKBURN ROC

THERE'S really no explaining the British. On the one hand, they design some of the best-looking military airplanes in the world—and on the other, some of the worst. There seem to be no half-measures in the Royal Air Force.

Take a look at this Blackburn Roc, for instance. A Roc, in case you don't

know, was a mythical bird said to have had such great strength and size that it often carried off elephants for its lunch. That should give you the general idea.

This weird-looking machine—and you haven't seen anything until you've caught a side view of it—is listed as a Naval two-seat fighter. It is designed for action from aircraft

carriers, or it can be fitted with floats and used as a seaplane. A 900-h.p. Bristol Perseus sleeve-valve engine gives it a top speed which is "as yet a secret." Actually, the Roc is a "refined" version of the Blackburn Skua dive-bomber, which we'd call an insult to the Skua.

Structurally a low-wing monoplane with folding wheel gear, the Roc has metal-stressed skin, folding wings, and a metal monocoque fuselage. The tail-unit, when actually seen from the side, amazes one most. Its fixed fin and rudder are placed well ahead of the leading edge of the tail plane. Then the tail wheel nestles in a chunk of dural which appears to have no reason for existence.

The Roc's cockpit arrangements are something else. Here, the pilot has a wind screen which, being almost flat to the line of flight, must take plenty of m.p.h. off the "secret" speed of the sky monster.

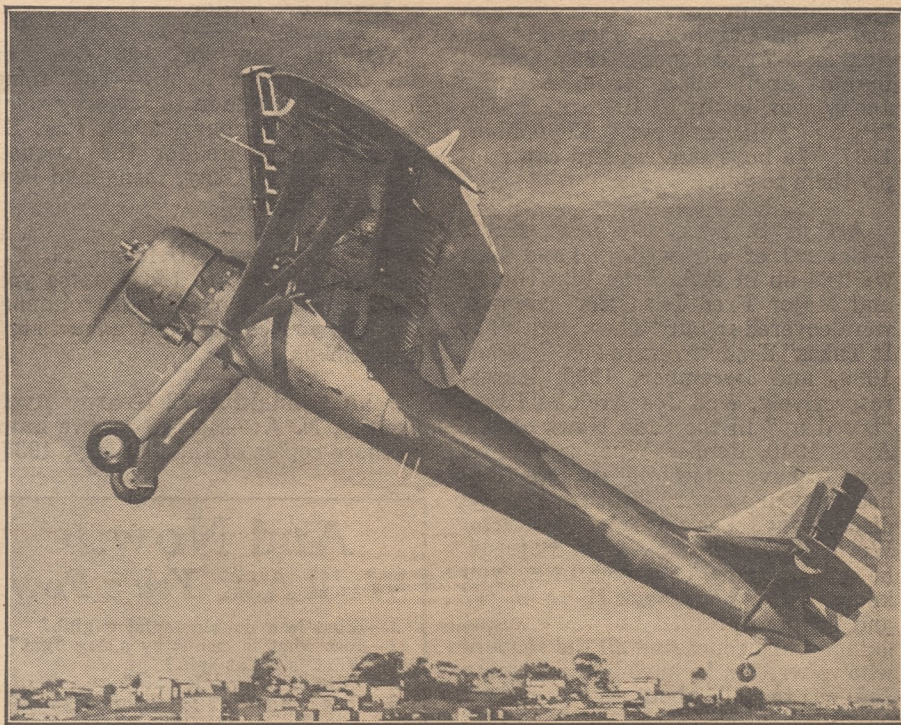
But anyway, the gunner or observer has a new Thompson-Nash automatic multi-gun turret, which perhaps makes up for a lot.

RYAN DRAGONFLY

WE ARE especially pleased, first off, to find that this new Ryan job for the Army Air Corps has a name, thus saving us from being restricted to a confusing letter-and-number designation! Known as the Dragonfly, it's intended as a new type of observation ship capable of special and unusual performances. In the trade lists and Air Corps books it will be known as the Ryan YO-51, but to us it will stand by its tag of Ryan Dragonfly.

Probably many of you have seen this machine in the news reels. It can take off and land in an extremely limited area and boasts an unprecedented range in speed, from almost a hover in mid-air to stepping out at a fast clip. Moreover, the Dragonfly, which is powered by a 420-h.p. Wasp Jr. engine, is able to make almost unbelievably quick take-offs, steep climbs over obstacles, and approaches at an angle that appears to be nearly vertical.

Again the hush-hush is plastered on thick. Due to military regulations, exact performances and details of construction have not been released for publication. But anyhow the aim of the designers was to "establish new standards of control of aircraft at extremely slow speeds."



RYAN DRAGONFLY

Generally speaking, the Dragonfly is a high-wing all-metal monoplane. Its wing, of some 50-ft. span, exhibits a generous dose of leading edge slots, a lot of flaps, and in addition a section which can be slid out to give the

wing a greater lifting area. The pilot can change the fore and aft position of the flaps by means of a crank control set just above his head. With all this, there appears to be very little upward visibility.

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.

John Hughes, 428 Locust St., Waterloo, Ia.:—We hope in some future issues to run a plan or two of First World War planes. Meanwhile, perhaps readers who have such plans will get in touch with you after seeing this item.

Jack Smoligan, Jr., Omaha, Neb.:—Tough, fellow, but we have no swap column in this mag of the type you refer to. Hope you can work out your deal, though, through our Airmail Pal department. Suggest you write the R.H.P.D. that you want a pal in the modeling line who's connected with a club.

Leslie Liddick, 1717 Walnut St., Harrisburg, Pa.:—You have model mags you want to trade for F.A. issues prior to 1937. Well, how about it, readers? Can you fix Les up? Les, by the way, is also looking for plans of World War ships of the more unusual and unpublished types.

Jim "Falcon" Parker, 595 Runnymede, Rd., Toronto, Can.:—Sure, we'll give your regards to the Griffon and Crash Carringer. Plans for the Fokker D-7 and Jones S-125 appeared in our April, 1938, issue. And the Jenny was in June, 1938, while the "Pylon Polisher" was September, 1937. We hope our readers can supply them to you.

Arthur S. Berg, St. John, Kan.:—Several of our writers have been written up in F.A. Arch Whitehouse and Major Fred Lord, for example, were covered in our "They Had What It Takes" department in the October, 1939, and December, 1939, issues, respectively. And Joe Archibald was "typed up" in the Club News of our April, 1940, number. What's more, we hope to have something on Don Keyhoe for you soon. Philip Strange was discontinued back when the Second World War started. As for Phineas, he had a slew of adventures, you know, which even back there in '17 and '18 bore prophesy of the current doings in Europe. And all the readers who've written in have been cheering Joe on to tell about those razzle-dazzle exploits.

Pete Malone, San Francisco, Calif.:—Brother, you're sure a hound for detail! Yes, Kerry K. *did* have several other Black Bullets. But he preferred to call the latest one his No. 2 job—perhaps to put off the income tax investigators. No, wait a minute. The fact was that he told

Barney to keep track of how many Bullets they'd had—and Barney added 'em up just after he'd killed his sixth bottle of O'Doul's! Yes, that was it. As for that "XY1P-46," mentioned in *Wings of the Black Eagle*, September, 1939, we'll let you in on a dark secret: That designation was made up just for the story—because we didn't want to say an actual ship had been crashed. We didn't want to create a wrong impression, you know. That's great about your Uncle. We'll bet he has some swell yarns to tell you. Those were *special* Heinkel two-placers in that *Golden Strafe* adventure. By this time, you must have read Don Keyhoe's first Eric Trent novelet—and we'll wager you found it ace-high.

Austin Sheldon, Hartford, Conn.:—Mighty glad to hear you get such a kick out of our fiction characters. And we're sure you've found Eric Trent a dashing addition to our crew of flying adventurers. On that matter of detailed dope on cockpits for models, we've turned your request over to the Model Editor.

William Gouthier, 163 Carteret St., Glen Ridge, N. J.:—Yes, some readers did write in to say they were seeking the January, 1938, F.A. So you'll trade yours for the August, 1939, number? Okay, then—and how about it, readers?

Charles Rogers, Delevan, N. Y.:—We could not list those items you have to sell in our editorial columns. Suggest you contact our advertising department.

John Cristaldi, 152 Kearny Ave., Kearny, N. J.:—Sorry, but we have no more copies of the January, 1935,

issue for sale. For that's a real old timer. But maybe some reader will note this item and make some trade with you.

E. Sommers, 5130 University Ave., Chicago, Ill.:—For information on the NAA, contact Al Lewis, c/o National Aeronautic Association, Willard Hotel down at Washington, D. C. We published a number of plans for Waco jobs during 1936 and 1937. Perhaps some of the other readers can help you out on that score.

Sherman R. Miller, Washington, D. C.:—You'll note that our Youth Air Movement News section had that info you sent us (March number). Yes, we get all those releases. Since you are in that non-college branch of the CAA, you should by now have gathered some swell dope on your experiences with which to compose a winning letter to our On the Light Plane Tarmac. Let's hear from you.

Gene Sommerich, St. Louis, Mo.:—Sorry, but we'll have to tell you and several others who wrote in that Snapshots of the War went out due to the increased interest in modern and New World War stuff. We gave that space over to Through the Aero Lens, you know. And the majority of the readers have hailed that double-spread of fotos. Not counting the "pressure vote," less than a score of fellows have argued with us for return of the Snapshots of the W. page. And even with the pressure vote, the ballots in favor of that department were far outnumbered by the fans who want us to continue with our modern air policy. So . . . But one of these months we'll come through for the minority with a lively feature on comparisons of sky jobs, and then a number of old shots will be brought out again to illustrate our points.

Raymond Smith, 14556 Archdale Ave., Detroit, Mich.:—So you have a lot of extra 1935 and 1936 copies of F.A. to trade? Swell! We're sure a number of readers will be writing you. And maybe they'll have the April '34, June '37, August '37, September '37, November '37, and April '38 issues that you're after, Ray.

Billy Randolph:—Sorry you feel that way, Billy. To be sure, we have to take all the info we get with a grain of salt—or rather a whole shaker full of it—but nevertheless,

And Now~ We'll Ask You a Few

- 1—What is a double radial engine?
- 2—Just what is meant by a dog fight?
- 3—What is a flat spin?
- 4—What is a throttle gate?
- 5—How is a plane's power loading computed?
- 6—What is meant by the safety factor of a plane?
- 7—What is meant by the term Coastal Command?
- 8—Explain the true meaning of the word "avigation."
- 9—A pilot skilled in aerostation flies what?
- 10—Who was Walter Wellman?

(Answers on page 66)

we feel that we allow for that element in our copy. There are plenty of authentic facts regarding massacres, purges, inhuman acts in concentration camps, and all that, as representations of the dictator type of rule. Hence, those characters that pop into the general run of modern fiction in nearly every magazine you see on the newsstands—and in movies, too, such as *Confessions of a Nazi Spy*—are not really out of line. It's all an expression against the hateful dictatorship policies. But it's true, as you say, that practically no country has clean hands in its international relations, and the Editors of FLYING ACES are very much with you in hoping that all wars stay away from our door. Meanwhile, most Americans favor the Allied side, realizing that a victory for the dictators would menace our own democracy after the wiping out of the democratic elements in France and England.

Jack Martin, Joliet, Ill.:—The letter you sent our Light Plane Tarmac department wasn't long enough, Jack. Maybe you've now gone ahead with your flying, though, and have a scad of sky experiences to tell us. Let's hear from you if you have.

Ray Keiser, Dayton, Ohio:—Glad to know you get so much enjoyment out of Dick Knight and Kerry Keen. Yes, we are giving more fact articles in the book now, as you'll note by glancing through our present issues.

Stephen Leonhard, Detroit, Mich.:—Pleased to hear your hurrahs for Through the Aero Lens. As for Modern Planes Album, most readers say they prefer the new photo system. But we'll keep your vote, and if the majority turn out to want the sketches back, we'll go after them.

Richard Martin, Portland, Ore.:—So you're another Eric Trent roofer? Swell! We can assure you Trent'll be right in there fightin' from now on. Phil Strange was dropped when the New World War started because so many readers kept asking us to slow down on the old First World War stuff. That overwhelming vote also knocked off Snapshots of the War. Majority rules, you know.

George F. Schminke III, New Orleans, La.:—They change those colors and rank indications so often, George, that an article in F.A. would be out of date too quick. But we'll be on the watch and shoot that feature in as soon as we find things more standardized. Your best bet, meanwhile, is to contact your nearest service office.

Charles Knapp, Cooperstown, N. Y.:—Sorry, I am not a doctor and so can't give advice on medical matters. However, if you definitely need glasses now, you stand little chance of passing a medical examination

for a pilot's commission in the Army or Navy Air Services. Had you passed first and then developed the eye trouble, they probably would have allowed you to stay in using correcting lenses in your goggles. We hope many other readers who have written in on this subject will, however, first consult a suitable medical authority before they give up hope.

Jack Finkelstein, Brooklyn, N. Y.:—Most modern planes today carry

automatic fire-fighting equipment forward of the engine fire-walls. These devices spurt streams of fire-suffocating chemical after thermovalves are released by flame.

George Bineth Brooklyn, N. Y.:—I'm afraid your father has information that has not been available to us. We have never heard of any German war plane carrying machine guns on the wings like the S.E.5 and the Nieuport, and our hun-
(Continued on page 63)

The Parachute Goes To War

(Continued from page 11)

However, large scale development of this art of raining warriors from the sky was not actually begun until the Soviet Union undertook it. The world was, therefore, surprised when Moscow reported first 25, then 100, then about 300 men and women had parachuted from fleets of large Russian planes. And military experts decidedly sat up and took notice when the stage was reached where as many as 2,000 Bolos jumped at once. Many other nations then began experiments with mass descents.

In Germany's attack on Poland, parachuting troops were used with salient success. Soldiers landed behind the enemy barricades at several important points and cut much-needed lines of communication. To be more specific about Russia's soldier-chuting, the Reds took over the important Petsamo sector in this manner, but the sturdy Finns wiped out these "silk" troops, then quickly put a crimp in Stalin's Petsamo drive by gallant counter-attacks.

IN HELPING to solve the problem of keeping men supplied with much needed articles, the parachute has more than ever shown its worth. Victims of peace-time disasters such as floods, earthquakes, avalanches, and the like, have many times been thankful for the bundles of necessities dropped from planes with chutes. So today are the soldiers in the present conflicts to whom supplies have been dropped.

Two graphic war incidents illustrating such use of parachutes can be given. In the invasion of China by the Japanese, the forces of Nippon have gone deep into Cathay territory. The problem of keeping them in food and clothes is an immense one, especially with the lack in that land of decent ground facilities for transportation. So planes have frequently dropped required food, clothing, and equipment. On one occasion a flock of ten extra large parachutes carrying supplies were dropped to troops in the Valley of the Yangtze, near Nanking, by the Japs' Tanaka Squadron.

Then in the Ethiopian campaign, likewise, Italy put the white canopies to use in overcoming its problem of supply. Marching across 120 miles of arid land—the Danakai Desert—the Italians found that the heat made the

problem of foodstuffs, especially meats, one that was especially hard to deal with. This was solved by showering the troops with fresh food by chutes.

Most remarkable was their accomplishment of dropping 72 live sheep and two live bulls! Nope, the chutes didn't save *their* lives for long. For those animals shortly became meals for the hungry soldiers.

AND SO the parachute has not only drastically alleviated the disaster of air fighting by saving lives but it has also injected pertinent new schemes and methods into the tactics of ground fighting where airplanes cooperate.

True, the full effect of modern warfare on the parachute is not yet apparent. But the battle skies of Europe are proving a thorough testing ground—though an expensive one—for all aeronautical appliances, parachutes included. Thus even greater perfection of the parachute is logically prophesied.

Youth News

(Continued from page 27)

popular aero ground school. Nice going—and let's see more C of C's follow in Omaha's steps! . . . Baritone John Charles Thomas was mad as all get-out the other day because he missed an American Airlines plane which the line didn't hold for him more than seven minutes. Well, we can't see why it was even held that seven minutes. There are schedules and other passengers to consider. They don't hold the 20th Century Limited, do they? . . . Boeing Flying Fortresses are so complicated that raw materials to make them come from all 48 states. . . . Tom Hardin, chairman of the CAA Air Safety Board says: "We consider the development of aircraft requiring less skill to operate to be of major importance. Today, spin-proof, 'stall-safe' aircraft can be built, and their use should save many lives each year." . . . Finally, we hail the CAA's new semi-monthly publication, the *Civil Aeronautics Journal*. It's packed full of handy facts and statistics, and we editors sure wouldn't want to be without it.

Flying Aces Club News

By Clint Randall

National Adjutant, Flying Aces Club

YES, CLUBSTERS, Spring's definitely here at last! And robins have nothing to do with our evidence—instead, the vernal season's arrival is proved conclusively by the flocks of people who are swarming out to the airports these sun-bathed week-ends. And when Clint made his usual trip down to Roosevelt Field last Saturday to get in a little flying, there were so many cars there that your N.A. even had a hard job trying to find a place to park!

You should have seen the hop-pilots' faces beam when they saw the crowds! The frigid weather this past winter kept a lot of people away. But now—well, the story's plenty different!

And here's another hot-shot sign that the ice skating and skiing season is done for: Two New Jersey Club members recently biked over to the Big City to say hello to Clint. Frank Schmaldfeld and Jim Winston, the lads who made the trip, said that their FAC unit was already out of "hibernation" and that they were planning some big things for the coming warm weather.

'Nuff said on that. Now for a batch of aero info and news—

WE ON the staff of FLYING ACES recently took in the première showing of a new motion picture dealing with aviation's history—*Conquest of the Air*.

Prepared by RKO Pathé News for Films Incorporated, who will distribute it, the film traces man's long attempt to conquer the air from the days of ancient Chinese kites and the early helicopters to the first balloon ascent above Paris in 1783, and on to the present day when aviation has become a commercial and military necessity.

Except for the earlier sequence, the film is composed entirely of authentic documentary material dating back to the first years of the motion picture camera. Technical assistance was given the producers by many aero authorities, including the CAA and the Section of Aeronautics of the Smithsonian Institution.

We got a great kick out of seeing

those old crates laboriously struggling to get into the air in this film which so graphically portrays how the pioneers fought on through the years to make aviation a reality. It would have been swell if you buzzards could have sat beside us and seen it all, too. But anyhow if you'll glance over on the opposite page you'll see three shots from the picture. They'll give you some idea what great progress has been made.

The film is scheduled for showings at schools and universities throughout the country. And if it eventually gets around to your neighborhood—don't fail to see it!

Incidentally, that great flyer, Jimmy Doolittle, sat in on the showing of *Conquest of the Air*—and it was great saying hello to him again.

BEFORE going further, let's cut our gun here for a few paragraphs and hand out all the dope on

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

We can't return photos submitted, and the decision of the judges—Wing Commander Herb Powell, Model Editor Dave Cooke, and National Adjutant Clint Randall—will be final. The picture of the winning model will appear on the Club page in each issue. And, of course, only FLYING ACES CLUB members are allowed to participate.

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

AND NOW for the "regular" Club News. Letter Number One in our batch is from Robert Ferraez, of Highland, Ill. He says:

"The F.A. readers in Highland, immediately after reading the March issue, asked me to write this letter and request more Eric Trent stories. We think they are even better than the Richard Knight yarns. Please put more adventures of that dare-devil, care-free young man in F.A.

"Here in Highland," Bob continues, "we have formed a FLYING ACES CLUB. Every one of the members is a reader of F.A., and only those who buy the magazine are eligible to join. There are eleven members besides myself."

Okay, Bob. Thanks for your swell letter. So far, only two Eric Trent stories have been run true enough—but there are a lot more coming! In fact, we'll have one every other month for you. Also, Bob, you fellows are well on your way toward that 18 number that's necessary to form a Squadron. But you can get a Flight Charter now. Look it up on our "Join the Flying Aces Club" page.

And now listen to Ken Steel, of Albany, N. Y.:

"I'm mighty proud of my FAC membership card," says Ken. "It ar-



Duane Berg, of Sullivan, Ind., wins the F.A. Distinguished Service Medal this trip as our Master Model Builder of the Month. Duane's seen here holding the craft that brought him the award—the "Scotch Monoped" built from plans in our December, 1939, issue.

our most recent D.S.M. winner:

Duane Berg, of Sullivan, Ind., is the lad who copped first honors in our special contest this trip to join our select group of Master Model Builders. Duane built his "Scotty" Mayors-designed "Scotch Monoped" (see photo) from plans appearing in our December, 1939, FLYING ACES. Congrats, Duane!

And now for the rest of you lads who haven't as yet entered our contest, all you gotta do is—

Once again Clint Randall is revved up and ready to take-off for his usual hangar flying session. And his prop-wash is blasting back and leaving a smoke-screen of flash news: All about a swell new aero film . . . The latest D.S.M. winner . . . A Clubster's story of the air-raid emergency system in Britain—Yes, and plenty more.

rived just this morning, and already I've framed it and hung it on the wall in my bedroom. I've got nigh on to sixty pictures of airplanes and famous aviators hanging on my wall, but I'd rather have that membership card than all of those snaps put together!

"Now," his letter goes on, "I intend to start looking up enough members to start a flight. And then when I get to that step, I expect to put the fellows in the Flight to work getting enough members for a Squadron. Keep your eyes peeled, Clint, because you're going to hear plenty from Albany in the future!"

We call that Determination with a capital "D"! Here, Ken's only a new member—and already he's got swell plans underway. We wish you all the luck in the world, fellow, and assure you of our fullest co-operation in getting things humming—and keeping them that way.

Another bit of news is that the newly-formed Griffon's Squadron No. 1, of the Bronx, recently had an election of officers. Here's the result of their vote: Commander, Thomas Jens; Captain, Harold Alexander; Personnel Director, Harry Pilbauer; Treasurer, Richard Halloran; Sergeant at Arms, Edward Jacobberger; Library Committee, Samuel Berkowitz; Publicity Committee, Julius Gang; Secretary, Modesto Cordero; Technical Advisor, Matthew Siegel; Proficiency Committee, Bernard Siegel; and Designing Committee, Rodolph Kobel.

Harold Alexander and Harry Pilbauer, of that outfit, contacted G.H.Q. the other day and asked that we repeat the information about their Squadron that appeared in the April issue. Here it is—

The Griffon outfit would like all Metropolitan FAC outfits to contact them immediately. They've got a great plan to consolidate all of the N.Y. groups into one big Wing. Address all communications to Thomas Jens, 965 Rogers Place, Bronx.

"WELL, Clint," says Fred Cory, of St. James, Northampton, England, "I suppose you're reading this while sitting in a big arm-chair with your feet propped up on the desk in the approved American style. On the other hand, Clint, I'm sitting in a dingy office and trying my darndest to get enough light

to write. My office, you see, is sand-bagged and padded against air attacks.

"I am surrounded by telephones," Fred's letter goes on. "One for the Decontamination Squad, another for the Auxiliary Fire Service, another for the Ambulance Squad, and yet another for the Control Room—and I'm the only one in the place. In front of me there's a big code chart which reads:

Warning Yellow: Planes over coast. Arouse men on duty.

Warning Red: Possibility of local raids. Men to stand by pumps.

Warning Green: All clear.

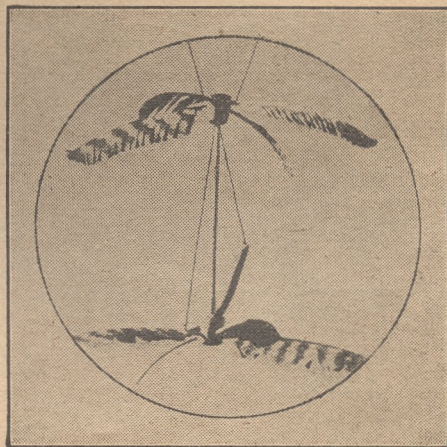
"Yes, you've guessed it, Clint. I'm a telephonist on duty at St. James No. 2 AFS depot. Behind me there hang gas-masks, tin-hats, decontamination outfits (oilskins), splinter-masks, and rubber boots. Incidentally, the last time I tried to get it all on it took me 30 minutes. And we're supposed to be ready in 7 minutes!

"In addition to being an A.R.P. telephonist, I also belong to the Northampton Air Defense Cadet Corps. You will remember reading at

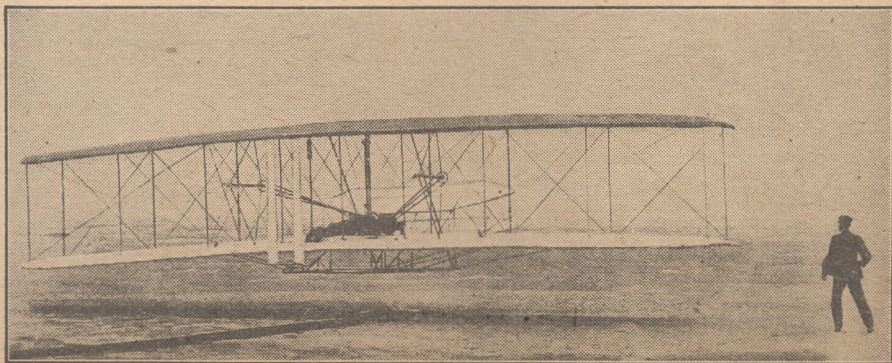
the beginning of the year that there were only 2,000 'reckoned' on joining the A.D.C.C. At the end of six months there were about 10,000 members, and now there are about 20,000. The R.A.F., incidentally, has now taken over the group."

That, lads, is one of the most interesting letters we've received since the war began. And to make it even better, Fred enclosed a note from the A.D.C.C. that said, in part: "Congratulations, American aviation. Your Curtiss fighters sure did show the German Messerschmitt planes how to fight last night."

(Continued on page 71)



Here we have a group of views from the aviation history movie "Conquest of the Air." The top shot shows Sir George Cayley's 1796 cork-and-feather toy helicopter, called the first heavier-than-air device ever to rise in free flight. The middle pic presents Otto Lilienthal's 1894 glider. And the bottom photo illustrates the first flight ever made in a powered and controlled airplane, December 17, 1903. On that epic day Wilbur and Orville Wright made sustained flights. Our photograph shows Wilbur in prone position flying the Wright machine. Orville is seen on the far right.



JOIN THE FLYING ACES CLUB

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Donald W. Douglas
Major C. C. Mooley
Clarence D. Chamberlin
Mrs. Charles S. Baylus
Lieut.-Col. Theodore Roosevelt

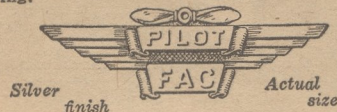
Official Charters

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

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



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



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

Send the Whole Coupon

regardless of which kind of wings you wish. Separate sets of coupons are needed for each insignia. Canadians send 15c, or three International Reply Coupons. Overseas readers send 1/-, or five Reply Coupons secured at the Post Office. Only one pair of either kind of wings to a member. If yours are lost, send 25c for new ones (2/-overseas). [60]

Do Your Full Share to Advance Aviation

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

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

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

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

Awards and the Aces Escadrille

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

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

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

Special Service!

This Aviator's Positive Identification Bracelet



Registration and Bracelet Only 25c!

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

Keepers of the Log

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

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

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

Correspondence

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

Official Supplies

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

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

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

June Membership Application

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

My name is

Age [60]

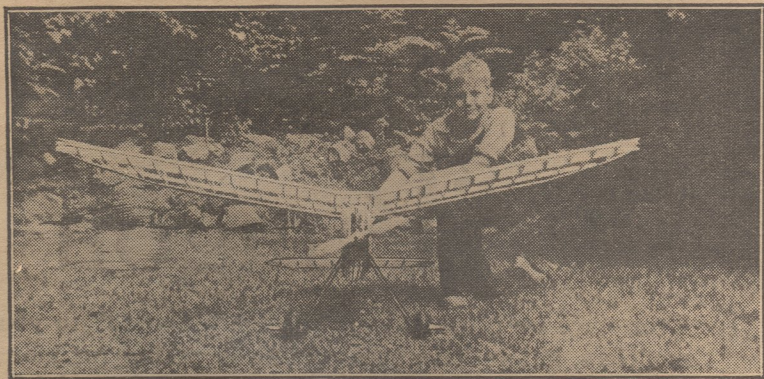
Street

City State

Do you build airplane models?

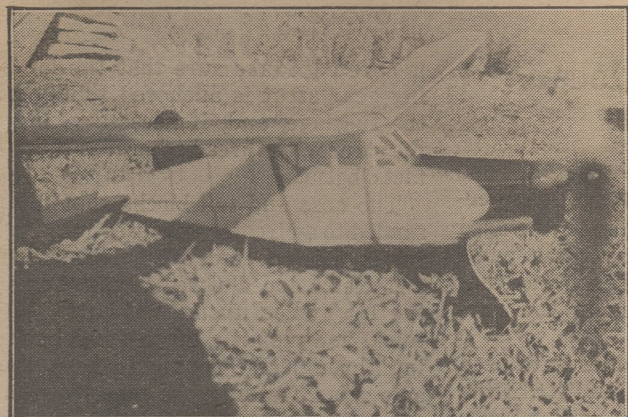
Mail this application, enclosing a self-addressed, stamped envelope. Canadian and overseas readers send the application, self-addressed envelope, and an International Reply Coupon worth 5c, secured at the Post Office.

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

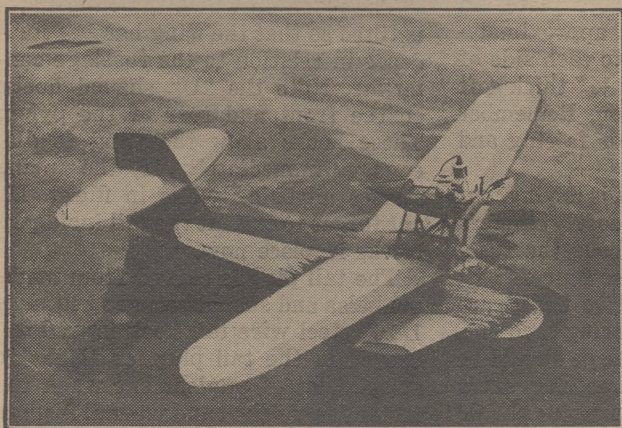


Billy Scholl, of Oklahoma City, Ind., sends us this striking photograph of his Ray Heit-designed "Scram" gas job, plans for which appeared in our July, 1938, F.A. Shortly after this shot was taken, Billy put the finishing touches on his job and powered her with a "Baby Cyclone" engine. He reports she revs up top-notch flights.

With the Model Builders

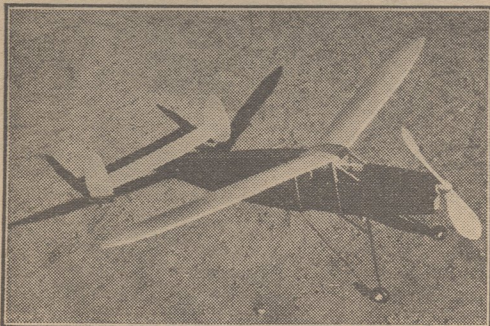
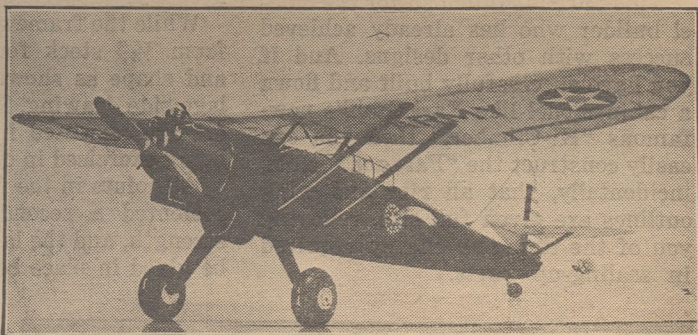


"This is the first model I have ever built from F.A. plans," says Ronald Kirkpatrick, of Covington, Ky., "and I am sure proud of the way it turned out." Yes, fellows, he's talking about this swell "Scotch Monoped" (December, 1939, F.A.). And we don't blame Ron a bit for boasting. Heck, she looks PULENTY sweet to us!



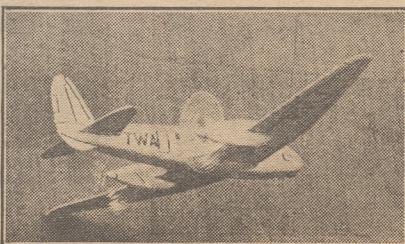
Bill Deriaz, of New Orleans, La., sends us this realistic photo of his completely-scaled World War Nieuport C17 C1. The ship has a 24-in. span, is equipped with movable controls, and carries a built-up Gnome rotary engine. What's more, the craft mounts two machine guns that are constructed exactly to scale, also wrapped struts and authentic markings. Whew, what a job! But the finished product is certainly worth it.

Left: Pete Bowers, who's now attending the Boeing School of Aeronautics, sends us this snap to show what he's done with his "Gas Powered Duck" (August, 1939, F.A.). As you can see, the ship is now a flying boat instead of an amphib. By the way, another Bowers gas job will appear in an early issue of F.A. Be on the lookout for it. Below: Our Gas Model of the Month is this beautifully finished Douglas 0-41A observation miniature built from plans in our December, 1938, F.A. Fred Fescharek, of Asbury Park, N. J., our expert builder, says that the ship has a 50-in. span, weighs 2¼ lbs., and is covered with silk. He also says that she is a snappy flyer and lands hot, due to her extra weight. This is one of the best models we've ever seen.



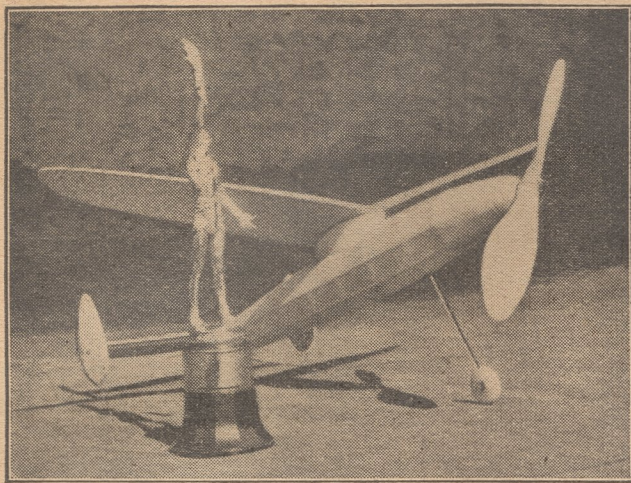
Paul Nail, of Lubbock, Texas, made a corking job on this "Scientific" model, judging from the photo. But he says he hasn't flown the craft yet because of the seasonal high winds up his way. When those breezes calm down, though, watch his slipstream!

Below we have a swell shot of a self-designed solid transport. Conceived and built by David Alexander, of Aiken, S. C., the ship is "powered" with two Allison pushers. Those TWA markings and the celluloid props give a very realistic appearance to the model. And that gray backdrop makes one think that the ship is a passenger job, flying into ceiling zero.



Rae Davis, of the San Diego (Calif.) Aeroneers, is the lassie in this pic. She's displaying her "Mystery Maid" gas buggy which recently took first place in a California tourney. The ship is a gull-wing, cabin job, painted vividly so that it may be seen when flying high.

Below we have a shot of the "Paragon" standing proudly next to the trophy she copped at a New York MMAC contest.



Plecan's "Paragon"

Ever since we presented the "Scotch Monoped" to you modelers, letters have been coming in asking for more one-wheel tourney-takers. Well, builders, we've at last got another job for you that fills that bill. And is she a prize winner? Just look at that photo on the left!

★ ★ ★

HERE, BOYS, is a CLASS "C" contest model that refuses to stay on the ground. During its ramblings through the ozone, it has had its share of roof-top and tree-top landings, yet it's still in one piece! What's more, all repair work that's been necessary has been minor.

The trophy this job won (see photos) was awarded for the highest average time in the cabin event at the first Metropolitan Model Airplane Council contest held last year at Holmes Airport, New York City. The first two official flights the "Paragon" made were of two minutes duration each. But on the third try, the model was taken in hand by a kind thermal, raising the three-flight average to three minutes, plus. In tests conducted during cool evenings after the contest, the average flight time was two minutes.

This model is intended for the model builder who has already achieved success with other designs. And if you have successfully built and flown a cabin model like Earl Stahl's now-famous "Hi-Climber," then you can easily construct the "Paragon." Note, incidentally, that all ribs and wing outlines are given full size, relieving you of the time and energy required in scaling-up parts.

By Paul Plecan

Author of "The F.A. Gas Flea," etc.

FUSELAGE CONSTRUCTION

USE HARD balsa for the longerons. Medium balsa may be used for the cross-braces as these parts are not subjected to the strains that the longerons carry from the rubber tension.

After the fuselage sides have been assembled, they should be lifted from the plan and pried apart with a razor blade. Now, the cross-braces are cemented between these two sides, resulting in a framework as shown in step one on the fuselage plate. In step two, balsa blocks, approximately $\frac{1}{2}$ " thick, are glued to each side of fuselage as shown. Use $\frac{1}{4}$ " thick soft stock on the tail portion. Remember that these blocks are for fairing and need not be strong.

While the framework is drying, cut from $\frac{1}{8}$ " stock four soft stringers and shape as shown above the fuselage side drawing. These four stringers are cemented in place next, care being exercised in centering each one.

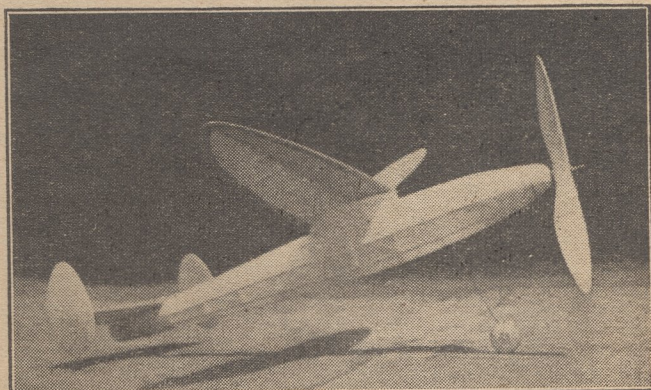
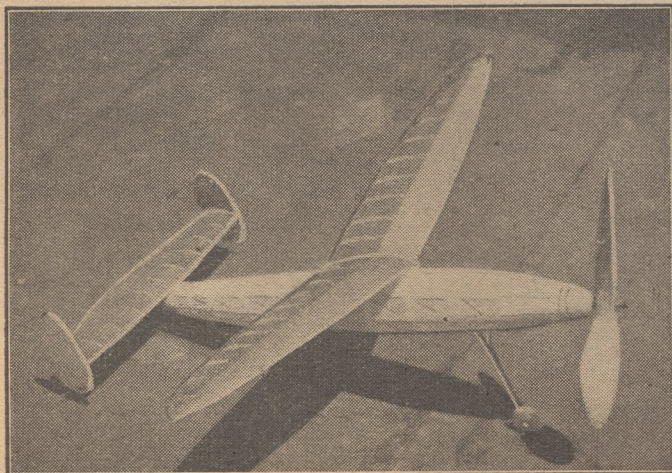
All joints in the fuselage should be cemented a second time for extra strength, and the landing gear should be glued in place before the fuselage

is covered. Make sure that the landing gear strut is anchored solidly in the fuselage, and, if necessary, bind the strut with thread wherever it contacts balsa.

The nose and tail blocks should be sanded to a circular cross-section. The fuselage is covered with plain tissue and clear doped three times. Carve the $1\frac{5}{8}$ " wheel from hard balsa, $\frac{1}{4}$ " thick, and mount a large-faced bushing through the center to keep the axle from wearing the wheel center away. The cross section of the wheel should be an approximate streamline, and the wheel should revolve freely on the axle.

The pylon on which the wing rests is tilted so that the wing has $\frac{1}{8}$ " incidence in relation to the fuselage centerline. Note the "U" shaped hooks on the front and rear of the pylon. These hooks allow the wing to disengage immediately if the plane strikes anything while in flight. Do not forget to cement the tail incidence blocks in place now.

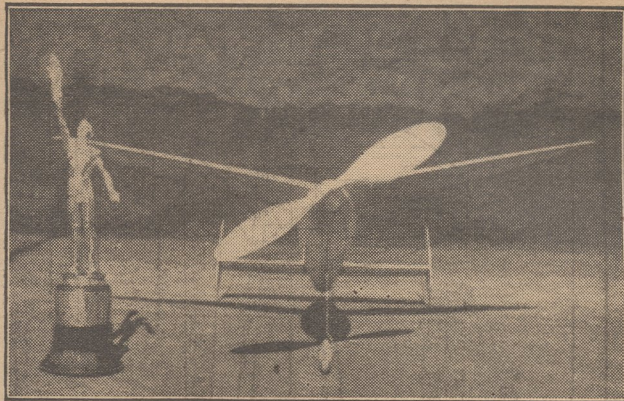
The tail plug is carved from medium balsa and should be a snug fit. The $1/16$ " steel wire tail hook is well anchored in the tail plug, as it has to stand a lot of punishment when the motor is stretched and wound. A piece of cambric or rubber tubing slipped



Above: Here, fans, we have a swell one-quarter front view of the "Paragon." Doesn't she look powerful with that big prop up front? Left: In this pic, our model's lines are brought out even more graphically. Sure, that stab's big—but it's also a sure-fire thermal-catcher that makes for long flights.

over the hook will protect the rubber motor from being ripped under full winds.

Again with her trophy! It takes a REAL flyer to cop prizes like this. And you can easily see from this front-angle photo that the "Paragon's" got everything it takes to bring home the bacon from tourneys!



NOSE PLUG AND PROP

THE NOSE plug is carved from medium balsa, and when the prop shaft is being formed, it should be so drilled that the prop points down and to the right. This is necessary to overcome stalling under full power and to provide a slight right circle. The nose plug should have a bushing or large washer cemented to its front and rear face to keep the rapidly revolving shaft from chewing up the wood and changing the amount of right and down thrust.

Carve the prop from a block the size indicated in the drawing and work in a slight amount of undercamber in each blade. The cross-section, "B-B," gives the approximate airfoil that should be carved into each blade.

The free-wheeling feature is absolutely necessary in a design of this type, but the particular one to use is left to the choice of the builder, since there are so many types to pick from. The type shown, however, is very simple and practically fool-proof. This ingenious jigger is the brainwork of Louis Garami, who needs no introduction to old FLYING ACES readers. Oh yes, don't forget to use a ball-bearing washer, as the motor exerts a lot of pressure between the prop and plug. The ball-bearing washer will decrease the friction, also, making it easier for the propeller to free-wheel.

For best results, the prop should have a smooth finish. Gloss is obtained by six coats of dope with in-

termediate sanding, permitting the propeller to slide through the air with the greatest of ease.

A motor consisting of 24 strands of $\frac{1}{8}$ " flat rubber should be used, and it should be well lubricated with a good brand of lubricant, so that plenty of turns can be packed into it to provide ample power for long, flat-glide flights.

BILL OF MATERIALS

Six strips $\frac{1}{8}$ " sq. by 36" hard balsa for longerons and cross-braces;
Two sheets $\frac{1}{8}$ " by 2" by 36" soft balsa for stringers, wing trailing edge, and pylon;
Two strips $\frac{1}{8}$ " by $\frac{3}{8}$ " by 36" medium balsa for wing leading edge and stabilizer trailing edge;
Two sheets $\frac{1}{16}$ " by 2" by 36" medium balsa for ribs and spars;
One block $\frac{1}{2}$ " by 2" by 36" very soft balsa for nose and tail fairing;
One length $\frac{1}{16}$ " spring steel wire for strut and prop-shaft;
One block $\frac{13}{16}$ " by $\frac{1}{8}$ " by $1\frac{1}{8}$ " for prop;
One sheet $\frac{3}{16}$ " by $\frac{1}{4}$ " by 36" soft balsa for stabilizer leading edge;
One sheet $\frac{1}{32}$ " by 2" by 36" balsa for leading edge covering;
One length cambric or tough rubber tubing for covering prop shaft and rear hook;
One length .030" wire for tail skids and free-wheeling hook;
One ball bearing, one $1\frac{1}{2}$ " hard balsa wheel, two sheets colored tissue, fifty feet $\frac{1}{8}$ " flat rubber, two ounces cement, two ounces dope, and a bit of elbow grease.

WING AND STABILIZER

THE WING and stabilizer outlines should be drawn to double the size shown on the plans, bringing them up to full size. The ribs are shown full size, as are the curved wing trailing edges. The spars and leading edges should be tapered before assembly, as per instructions on the drawings. Note that no dimensions are given for the size of the wing leading edges; they are made from $\frac{1}{8}$ " thick stock tapered to the height indi-

cated on the leading edge of each rib.

The piece indicated by the number 12 is the dihedral joiner, and should be cemented to the rear of the spar of each wing half. When this has been done, each tip should have $3\frac{1}{2}$ " dihedral when the wing is in a level position. The $\frac{1}{32}$ " sheet balsa used for the leading edge covering should not be cemented in place until the entire wing has been completed, with dihedral.

In covering the wing and stabilizer, brightly colored tissue should be used in order to offer the best visibility possible when the model is outlined at a high altitude against the sky. Red is an excellent color for this as it can be distinguished more easily against the sky or a green and brown background on the ground after the model has landed.

The stabilizer should be glued directly to the tail incidence strips. Cement the stabilizer on "cock-eyed"—that is, leaning toward one side so that the rudders are offset

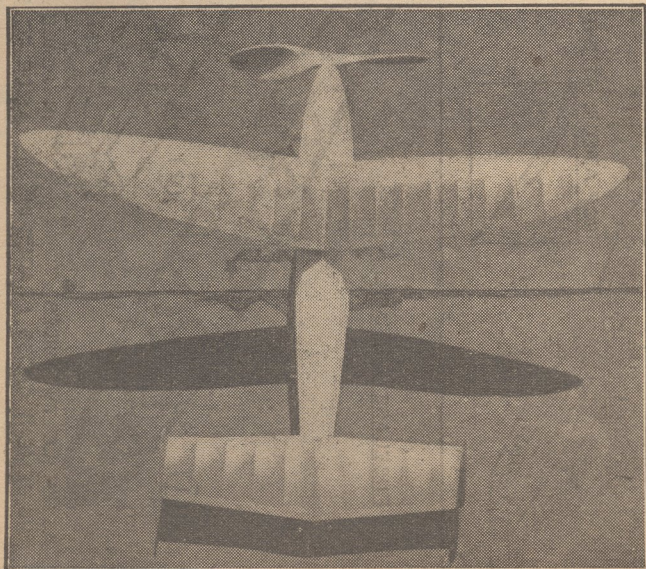
slightly for a right circle. Looking from above, the right tip of the stabilizer should be slightly nearer to the nose of the model than the left tip end.

FLYING AND ADJUSTING

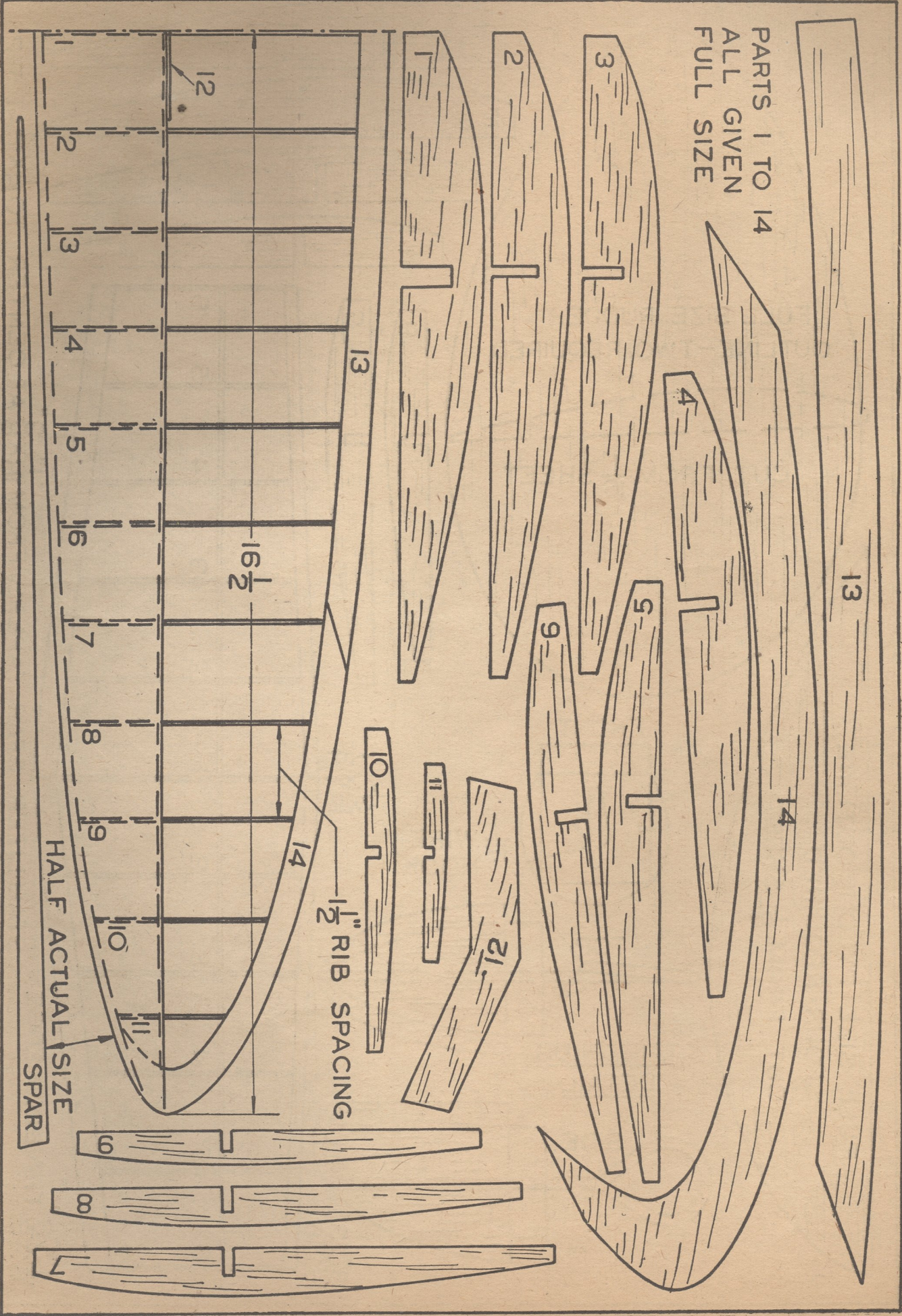
AFTER the model is completed, it should be glided to see if it is balanced properly. Any diving tendencies should be counteracted by using small incidence blocks cemented to the leading edge of the wing where it rests on the pylon. Conversely, stalling tendencies should be nullified by using incidence blocks under the trailing edge. Due to the slight offset in the rudders, the model should glide in right-hand circles, and should climb in circles smaller than those in the glide.

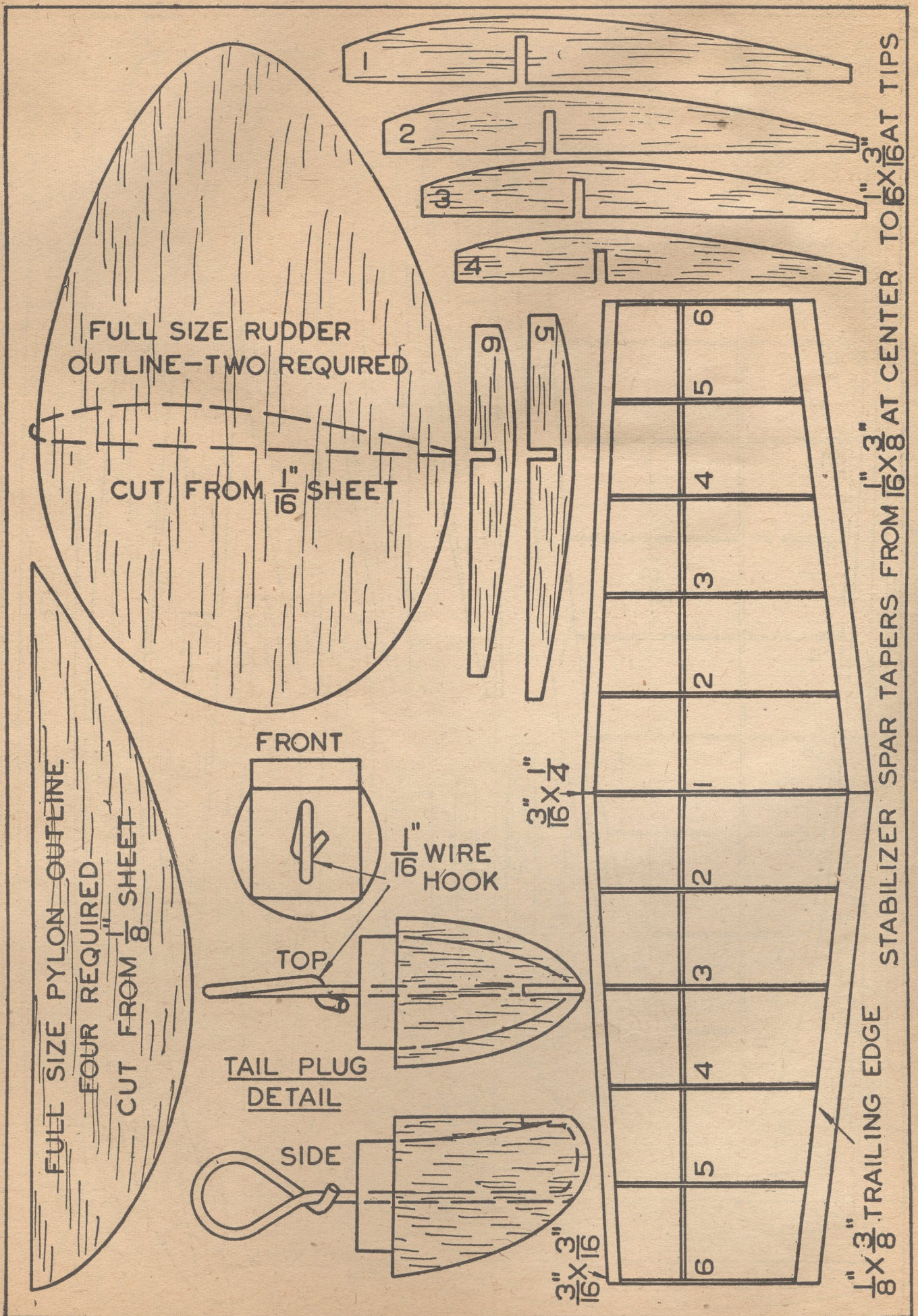
After the model has been flown under 100 hand winds, the wing and stabilizer should both be left alone, further ad-

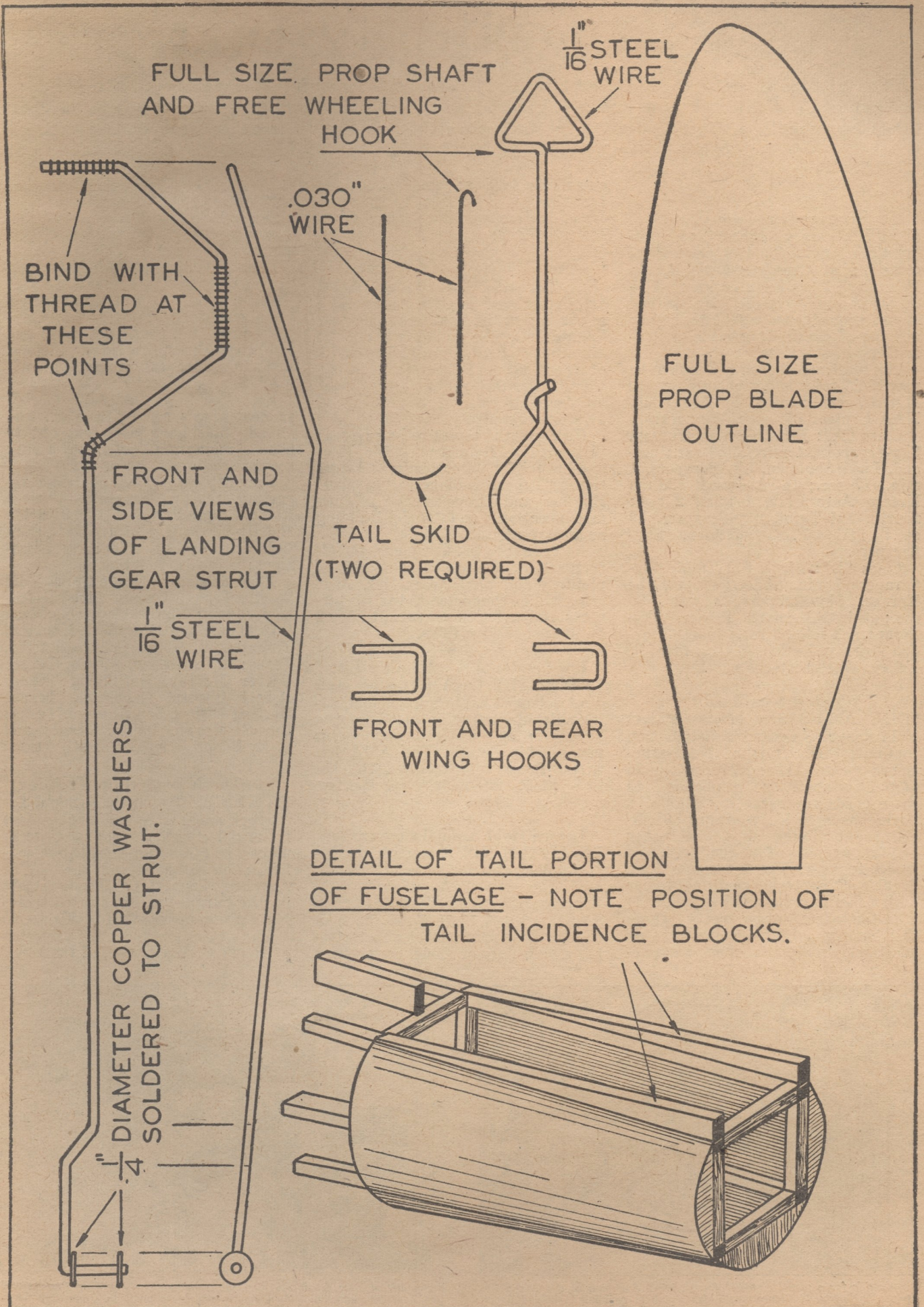
(Continued on page 80)



Pencil streamlining tapered wings light weight! They're only three of the features that Paul Plecan's contest winner sports. Full plans for this Class "C" model are on the following four pages.







News of the Modelers

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

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Sky-Scrapers Clean Up

COPPING eight places out of a possible ten in the two gas events contested at Creedmore, N. Y., on February 22, the Brooklyn Sky-Scrapers club, directed by Carroll Moon, proved once again that they are one of the leading model organizations in the East.

The meet, which was run under the new NAA rules and sponsored by the MMAC, was directed by Al Young, NAA Contest Director. Winners:

Class "A": First, Gordon Murray, Sky-Scrapers, 1 min., 50.3 sec.; second, Leon Shulman, Sky-Scrapers, 1 min., 17 sec.; third, Frank Ehling, Kresge Aero Club, 1 min., 2 sec.; fourth, Sal Taibi, Sky-Scrapers, 59 sec.; fifth, P. Fruchtman, Sky-Scrapers.

Class "B": First, Sal Taibi, Sky-Scrapers, 1 min., 54 sec.; second, Abe Kerner, Sky-Scrapers, 1 min., 39 sec.; third, Bernard Feiner, Sky-Scrapers, 1 min., 3 sec.; fourth, Gordon Murray, 1 min., 30 sec.; fifth, R. Kelley, Westchester Penguins.

Contest Kits Ready

THE AMA'S new official contest kits are now ready for distribution to Contest Directors of NAA-sanctioned meets. These kits contain 35 official competition armbands, 40 score cards for recording flights, 4 timing pads each containing 50 official flight timing slips, and other helpful supplies for conducting a model tourney. The kit comes in a durable "fibrestock" carrying folder with a flap to protect the supplies.

In the case of larger meets (where this supply might be inadequate) additional materials may be pur-

chased as follows: armbands, 3 for 5c; timing pads, 10c each; score cards, 10c each; additional container-folders, 10c each.

Aero Course For Teachers

AN EXTENSION course in the elements of aviation has been inaugurated at the Teachers College of Connecticut. The course is under the direction of Prof. Orra E. Underhill, of the Science Department, in cooperation with the State Department of Aeronautics and a number of aviation organizations.

Here are the topics to be covered: "History of Aviation," "The Pilot and his Job," "Meteorology," "Aviation," "Types of Planes," "Airplane Engines and Propellers," "Aviation as a Vocation," and "Model Building as an Avocation."

According to present plans, the director will make use of sound motion pictures and airplane models. Also, trips will be conducted to various airports and aviation personalities will be invited to give talks.

Prospective AMA Member List

RECENTLY, the AMA mailed to all Academy Chapters in good standing a list of prospective members who have written to Headquarters for membership details. The AMA has urged those who received the list to contact all nearby prospective members.

Texans Hold Annual Convention

IN A FIVE HOUR session, the 90-odd delegates to the annual Southwest Gas Model Association, held February 24-25 in Corpus Christi, Texas, voted to place a maximum of \$30 for first prizes in any forthcoming single class of model competition

sanctioned by the SWGMA, thus eliminating "professionalizing" of contests. However, it was agreed that a cash award of \$25 and a trophy may also be presented.

In addition, the group held an election of officials. The new officers are: President, E. F. Burgdorf; Vice-President, Jerry Heller; Secretary-Treasurer, Mrs. Herbert Fisher; and Publicity Director, Byron Buzbee. E. F. Burgdorf was also named State NAA Contest Director.

Fort Worth was officially selected as next year's convention city, and already bids have been sent out to hotels, restaurants, etc., to assure accommodations.

Committees and their chairmen reporting to the convention were: Rules, Ralph Pressler; Constitution and By-Laws, E. F. Burgdorf; Contests and Activities, Johnny Clemmons; Awards, Sid Smart.

Floor delegates: Willie Gunn, Fort Worth, Texas; Tommy Givens, Graham, Texas; Bob Barlow, Oklahoma City, Okla.; E. F. Burgdorf, Houston, Texas; C. S. Morse, College Station, Texas; R. L. Kirkley, Austin, Texas; Garver Murray, Harlingen, Texas; Robert Obsurn, Galveston, Texas; Herbert Fisher, San Antonio, Texas; Burnell Brown, Dallas, Texas; and S. M. Udden, Corpus Christi, Texas.

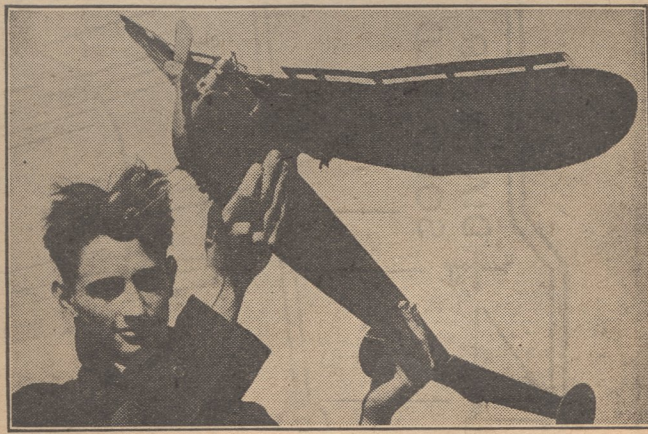
Pittsburgh Leadership Training

IN KEEPING with the demand for more and better qualified leaders in model aviation practices, techniques, and building, the Recreation-Education Division of the WPA, Allegheny County, with headquarters in Pittsburgh, Pa., has started training a group of leaders for this work.

The classes are under the direction of Harry G. Vogler, Jr., of the Boys'



How's this for a model display? Sweet, huh? And look at those trophies in the background! Cleveland's Balsa Butchers and the Cleveland Press Junior Aviators cooperated in making this booth at the recent Sportsmen's Show. That's Korda's Wakefield winner hanging in the foreground.



Something new in model airplane construction—Handley Page slots! Bob Hayes, here, put them on his novel gas craft to prevent stalling. The job is a one-wheel "B"-Classer and has been flown very successfully in several Eastern competitions. (Kulick photo.)

Club of Pittsburgh. With a thorough program of shop practices, nomenclature, theory of flight, contest procedure, and instruction in the building of model aircraft, it is intended that this program will enable outstanding candidates to learn all phases of model aviation through actual experience and instruction and thus qualify for the training of others.

Badger Case Cleared Up

WE are happy to report that word has come from the NAA saying that the case of the Wisconsin contest regulations, reported under the heading "Badgers Censure Rules" in our May issue, has been cleared up. Al Lewis, Secretary of the AMA, states: "The State NAA-Academy Contest Director of Wisconsin, Conrad Hansen, on behalf of the Contest Directors from his State, has now made arrangements with the NAA that without exception all Wisconsin gas meets are to be conducted according to NAA rules. The cooperation on the part of the Wisconsinites with National Headquarters in pledging their strict adherence to NAA rules enabled the NAA Contest Board to sanction forthcoming Wisconsin Meets."

New AMA Address

THE Academy of Model Aeronautics, along with the NAA and other divisional affiliated associates, has moved to a new location in a more central section of Washington—Wiltard Hotel, Washington, D. C.

"Cub" As First Prize!

A PIPER Cub will be given as first prize at a Summer Greenville, S. C., Torque Fliers contest. Also, liberal cash awards will be presented.

Jimmy Metchicas, president of the group, says that so far the only logical plan they have figured out by which to award the Cub is to present it to the group of modelers who score the most points at the meet. However, he's wide open for other suggestions. If you have any, address your letters to Jimmy at 107 W. Washington St., Greenville, S. C.

Dyask Smashes World Mark

AIDED by a powerful spiralling thermal which blew over the field on the heels of an off-shore wind, Vy Dyask, 14 year old modeler of the Gashappy Aeroslappers of Caribou, R. I., chalked up an amazing new world gas job mark on February 30. The new standard—no less than 3 hr., 10 min., 31.7 sec.—wiped the old time from the record books by a generous 2 hr., 46 min., 23.7 sec. margin.

Dyask's startling flight ran his competitors into the ground. For Hal Ispedekalis, the second-placer, had to be content with a meager 23 min., 7.9 sec. hop when the wind which had favored the winner died to a whine.

Meteorologists credited Dyask's record to "a cyclonic mass of air (Continued on page 62)

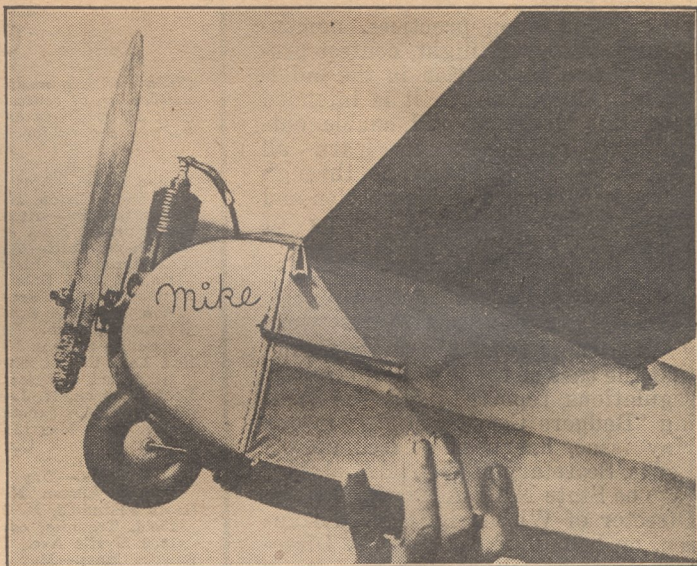
CONTEST CALENDAR

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

- Boston, Mass.**—April 27; Junior Aviation League outdoor meet to be held at Smith Playground, Allston. NAA sanctioned. Write Gunnar Munnick, 101 Alstead St., Quincy.
- Pittsburgh, Pa.**—April 28; Allegheny Mt. Area Model Club meet at Butler Airport. Merchandise prizes. NAA sanctioned. Info from Harry Vogler, 1633 Duffield St.
- San Diego, Calif.**—April 28; San Diego Aeronauts Fifth Annual Gas Model Airplane Contest at Aeronauts' Field, 6 miles North of Old Town on Escondido Highway. Contact Dan Halacy, 3375 Dale St.
- Boston, Mass.**—May 4; Indoor meet of Junior Aviation League to be held at Irvington St. Armory. NAA sanctioned. Details from Gunnar Munnick, 101 Alstead St., Quincy.
- Wyandotte, Mich.**—May 5; Indian City Model Airplane Club gas meet. All classes for merchandise awards. NAA sanctioned. Dope from Fred Bashore, 558 Bondie St.
- Salt Lake City, Utah**—May 5; Class "B" gas meet at Central Airport. NAA sanctioned. Info from Jack Douglas, 105 E. 2 St., South.
- East Paterson, N. J.**—May 12; 2nd Annual Gas Meet at Cherry Hill for all classes. Generous prizes. NAA sanctioned. Write Vincent Bonnem, 18 Hobart Place, Garfield.
- Beloit, Wis.**—May 12; Seventh Annual Southern Wisconsin & Northern Illinois Model Airplane Meet at Rock County Airport. NAA rules. Full info from Conrad Hansen, Jr., 2372 Riverside Drive.
- Boston, Mass.**—May 18; Outdoor meet of Junior Aviation League to be held at Smith Playground, Allston. NAA sanctioned. Details from Gunnar Munnick, 101 Alstead St., Quincy.
- South Plainfield, N. J.**—May 18; 3rd Annual Queen City Gas Meet for all classes at Hadley Field. Trophies, cash, and merchandise. NAA sanctioned. Info from Walter Marienshek, 1800 Myrtle Ave., Plainfield.
- Saugus, Mass.**—May 19; N. E. States Gas Championships at Saugus race track. Trophies and merchandise. NAA sanctioned. Address letters to Leonard Day, 2 Dodge Ct., Danvers.
- Pittsburgh, Pa.**—May 19; Allegheny Mt. Area Model Club meet at Butler Airport. NAA sanctioned. Write Harry Vogler, 1633 Duffield St.
- Linden, N. J.**—May 30; New Jersey Outdoor Championship Meet. Gliders and rubber models. Trophies, medals, and merchandise. NAA sanctioned. Dope from Frank Krysiak, 321 E. Price St.
- Boston, Mass.**—June 1; Indoor Meet of Junior Aviation League to be held at Irvington St. Armory. NAA sanctioned. Write Gunnar Munnick, 101 Alstead St., Quincy.
- Poughkeepsie, N. Y.**—June 2; Hudson Valley gas meet at city airport. Merchandise awards. NAA sanctioned. Dope from Howard Clark, 205 Grand Ave.
- Fort Wayne, Ind.**—June 2; 2nd Annual Mad Modelers' Gas Model Contest to be held at Municipal Airport. Tourney under NAA rules. Contact Walter Krull, 414 E. Washington St., for blanks.
- Boston, Mass.**—June 8; Indoor events of New England Championship Rubber Meet to be held in Boston Garden area. NAA sanctioned. Info from Gunnar Munnick, 101 Alstead St., Quincy.
- Milwaukee, Wis.**—June 9; Gas model contest to be held at Curtiss-Wright Airport, Highway 41 and Silver Spring Rd. Trip to Nationals for Wisconsin champion. Out of state entrants invited. NAA sanctioned. Information from Edward Tschernoscha, 2451 N. 26 St.
- Boston, Mass.**—June 9; Outdoor events of New England Championship Rubber Meet to be held at Harvard College practice field. NAA sanctioned. Contact Gunnar Munnick, 101 Alstead St., Quincy.
- Madison, Wis.**—June 16; Madison Gas Model Club contest at Royal Airport. NAA sanctioned. Contact Marvin Schumacher, 2042 E. Dayton St.
- Williamsport, Pa.**—June 16; Penn. Championship Gas Meet at Williamsport airport, Montoursville. NAA sanctioned. Write Dr. John Holmes, Jr., 339 Pine St.
- Pittsburgh, Pa.**—June 16; Allegheny Mt. Area Model Club meet at Butler Airport. NAA sanctioned. Info from Harry Vogler, 1633 Duffield St.
- Oklahoma City, Okla.**—June 16; Gas model meet for all classes. Cash prizes and High Point Visiting Club Trophy. NAA sanctioned. Contact Carl Huddleston, 317 S.W. 39 St.
- Sacramento, Calif.**—June 16; Superior, Calif., Academy Gas Model Meet at Mather Field. Flying course, airline trips, and merchandise awards. NAA sanctioned. Info from A. R. Timberlake, 1841 Ceramay Way.
- Bowling Green, Ohio**—June 23; Bowling Green Model Airplane Club rubber meet. NAA rules. Contact Dick Craft, Secretary, 204 S. Church St.
- Anderson, Ind.**—June 23; Anderson Gas Model Club Open Contest. NAA rules. Full dope from H. Tremps, R.R. 7.
- Chicago, Ill.**—July ??; National Model Airplane Meet sponsored by the *Chicago Times* in cooperation with the Park District. Application blanks and complete information will be available shortly. Watch FLYING ACES for announcement of where to write for further news.
- Salt Lake City, Utah**—July 7; Class "A" gas meet at Central Airport. NAA sanctioned. Info from Jack Douglas, 105 E. 2 St., South.
- Boston, Mass.**—July 13; Outdoor meet of Junior Aviation League to be held at Smith Playground, Allston. NAA sanctioned. Write Gunnar Munnick, 101 Alstead St., Quincy.
- Poughkeepsie, N. Y.**—July 14; Hudson Valley Midsummer Gas Meet at city airport. NAA sanctioned. Contact Howard Clark, 205 Grand Ave.
- Omaha, Neb.**—July 21; Gas meet at Benson Park. Trophies, merchandise, and cash. NAA sanctioned. Info from L. B. Bush, 610 Redick Tower Building.
- Baltimore, Md.**—July 28; Balt. Model Airplane Assoc. contest for rubber and gas to be held at Municipal Airport. Merchandise and trophies. NAA sanctioned. Write George Geil, 1509 Abbottston St.
- Ottumwa, Iowa**—July 28; Annual All-Iowa gas and rubber meet at Municipal Airport. Cash, trophies, and merchandise. NAA sanctioned. Dope from C. P. Oleson, c/o Municipal Airport.
- Pittsburgh, Pa.**—July 28; Allegheny Mt. Area Model Club meet at Butler Airport. Info from Harry Vogler, 1633 Duffield St.
- Boston, Mass.**—Aug. 10; Outdoor Meet of Junior Aviation League to be held at Smith Playground, Allston. NAA sanctioned. Write Gunnar Munnick, 101 Alstead St., Quincy.
- Pittsburgh, Pa.**—Aug. 18; Allegheny Mt. Area Model Club gas meet at Butler Airport. Contact Harry Vogler, 1633 Duffield St.
- Poughkeepsie, N. Y.**—Aug. 25; Hudson Valley gas meet at city airport. Merchandise awards. NAA sanctioned. Contact Howard Clark, 205 Grand Ave.
- Salt Lake City, Utah**—Sept. 1; 2nd Annual Douglas Trophy Gas Model Meet at Central Airport. NAA sanctioned. Dope from Jack Douglas, 105 E. 2 St., South.
- Philadelphia, Pa.**—Sept. 7; Fourth Annual Invitation Meet of Quaker City Gas Model Airplane Association to be held at Northeast Philadelphia Airport. NAA rules. Dope from William L. Lukens, 5507 Boyer St.
- Wyandotte, Mich.**—Sept. 8; Indian City 2nd Annual Gas Meet at Fort and Penn. Ave. field. NAA sanctioned. Contact Fred Bashore, 558 Bondie St.
- Boston, Mass.**—Sept. 14 and 21; Junior Aviation League meets. NAA sanctioned. Write Gunnar Munnick, 101 Alstead St., Quincy.
- Pittsburgh, Pa.**—Sept. 15; Allegheny Mt. Area Model Club meet at Butler Airport. Write Harry Vogler, 1633 Duffield St.
- Pittsburgh, Pa.**—Oct. 6; Allegheny Mt. Area Model Club Championships at Butler Airport. Dope from Harry Vogler, 1633 Duffield St.

This Job's Got Everything!

Our second contest craft of the month! Yes, power fans, here's a sleek sky scooter for you that's a natural tourney taker. If you live in the city and need a ship that'll give those other guys a run for their money—then here's your meat. And if you hang your hat in the country you'll want to build this baby to cash in on her top-notch flights. Anyhow, you'll be missing a good bet if you don't listen closely while Ace-designer Gil Shurman gives you the dope on his latest petrol pretty!



"Mike" Gas Model

By Gilbert Shurman

Author of "Rambler" Gasliner

JUST WHAT is an "ideal" model? We'd say that in order to come under that head a ship would have to be comparatively small—about five foot span—and weigh about two pounds. Also, it must necessarily have the ability to stay up for long, flat-glide flights.

Well, builders, this month's gas job has *all* of those features! Its small size allows for easy transportation, and packing is facilitated by the removable motor unit, as well as the detachable wing and tail. And its light weight automatically assures a fast climb.

Yes, we're talking about "Mike." This little job has everything that comes under the head of "desirability"—including a retractable undercarriage!

Whereas some retraction gears for

models are difficult to keep in good working condition, the one that's incorporated into "Mike" is fool-proof. And the single wheel retracts so cleanly that parasitic resistance is cut down a great deal, thus making possible flatter and longer glides.

The general appearance of "Mike" is one of clean lines without the loss of simplicity. This one-wheeler is no more difficult to build than a "box-like" gas job, yet is streamlined enough even for the most critical builder.

Okay, boys, that's just about enough gab for now, so let's turn to the instructions and see what's what. All set? Then hold tight—because it's coming fast!

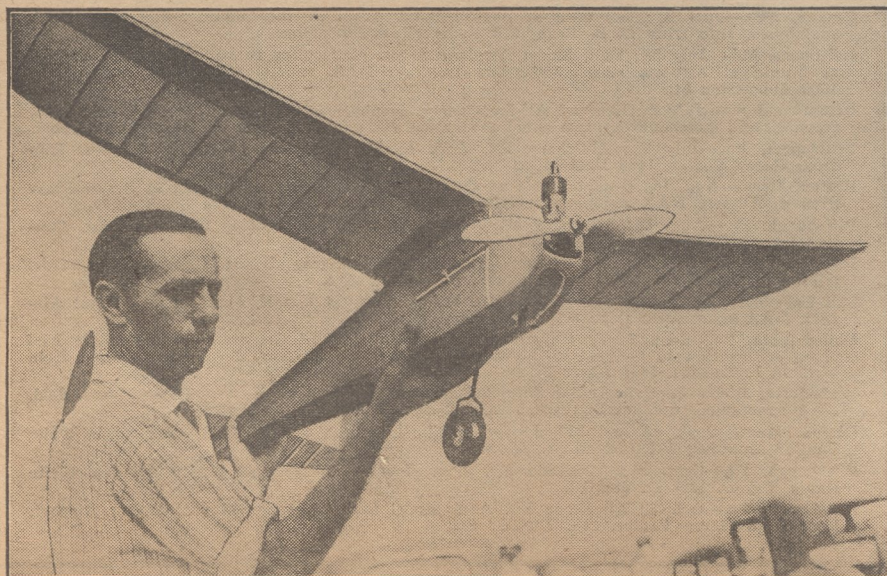
FUSELAGE AND LANDING GEAR

NOTE THAT the side view of the fuselage is symmetrical. The height of the basic rectangle at the first upright is $4\frac{1}{2}$ "; the second upright, $4\frac{3}{4}$ "; the fourth upright, 4". The widths of the basic rectangles are $3\frac{1}{2}$ ", $3\frac{1}{2}$ " and 3" respectively. From the fourth upright back, the fuselage is straight. A full size drawing, using these measurements, should be made to insure a good basic structure.

The rectangular framework of $\frac{1}{4}$ " square balsa is built directly on the plans. When finished, the $\frac{1}{8}$ " by 1" stringers are added to the top and bottom of the framework, and the $\frac{3}{16}$ " stringers to the sides. The addition of the $\frac{1}{8}$ " sheet stabilizer mount and $\frac{1}{4}$ " sheet wing mount completes the fuselage.

The landing gear should be bent accurately from $\frac{3}{32}$ " steel wire. All the soldered joints are bound first with copper wire. Tie the aluminum tubing sockets to a piece of hard $\frac{1}{4}$ " square balsa, glue this unit at its proper station, and then add the various cross braces as shown on Plate 3. Note that the bottom stringer becomes two pieces from the landing gear forward and forms a slot in which the landing leg slides.

Slight adjustments may be necessary to get the retracting system to work correctly. The weight of the



Left: "Mike" may be fitted with a two-bladed prop for contest flying, and here we see our model as snapped at a recent Long Island tourney. Under ordinary conditions that undercarriage would retract when not in contact with the ground, but the tension was removed for this photo. The "truck" is actually not a landing gear on this job, for it is used in the extended form solely for take-offs.

Bill of Materials

(Complete plans on the following pages)

Ten strips $\frac{1}{4}$ " sq. by 5' for longerons, wing spars, and wing leading edge;
Eight sheets $\frac{1}{16}$ " by 2" by 36" for wing and stabilizer ribs;
Five sheets $\frac{1}{32}$ " by 3" by 36" for wing leading edge and center section covering;
Four sheets $\frac{1}{8}$ " by 2" by 36" for fuselage stringers and stabilizer mount;
Four feet $\frac{1}{8}$ " diam. aluminum wire for wing tips;
Two feet $\frac{3}{32}$ " diam. steel wire for landing gear;
Three strips $\frac{1}{16}$ " by $\frac{1}{4}$ " bamboo for battery box and wing pegs;
Two strips $\frac{3}{16}$ " sq. by 5' for stringers;
One sheet $\frac{1}{8}$ " by 3" by 36" for rudders;

One strip $\frac{1}{8}$ " by $\frac{1}{2}$ " by 36" for stabilizer trailing edge;
One strip $\frac{3}{16}$ " by $\frac{3}{4}$ " by 5' for wing trailing edge;
One strip $\frac{1}{8}$ " by $\frac{1}{4}$ " by 36" for stabilizer leading edge;
One strip $\frac{5}{16}$ " by $\frac{1}{8}$ " by 36" for stabilizer spar;
One strip $\frac{1}{2}$ " by 12" by $\frac{3}{8}$ " pine for motor mounts;
One sheet 6" by 6" by $\frac{1}{20}$ " plywood for motor mounts;
One sheet $\frac{1}{8}$ " by 5" by 7" plywood for motor bulkhead;
One sheet $\frac{1}{4}$ " by 2" by 36" for wing mounts and back of bulkhead;
One 6" length aluminum tubing, one $\frac{1}{8}$ " diam. landing gear bearing, one pint dope, half pint cement, eight sheets tissue, yard and a half silk, 3' hook-up wire, sheet brass scraps for battery contacts, soft balsa blocks for cowling, .010 sheet aluminum tabs, one $\frac{3}{2}$ " air wheel, bolts, nails, pins, sandpaper, etc.

model should hold the wheel out without having the job tip forward. And when the plane is lifted, the wheel should swing up under the cowling. By adjusting the tension of the rubber band and the angle of the landing gear leg, the correct balance of forces may be obtained.

MOTOR MOUNT AND HOOK-UP
PLATE 1 carries detailed views of the motor mount. The runners are made from $\frac{1}{2}$ " by $\frac{3}{8}$ " pine, and $\frac{1}{20}$ " plywood gussets are glued and nailed to these for strength. The mounts are bolted to the $\frac{1}{8}$ " plywood bulkhead with $\frac{3}{4}$ " brass bolts. The spacings shown on the plans are for a Brown engine, but any $\frac{1}{5}$ " h.p. motor may be used by simply changing the position of the bolt holes to conform with those on your power plant. The coil and condenser are mounted to the rear of the fire wall with aluminum straps and wood screws.

The battery box shown on Plate 2 is made of $\frac{1}{8}$ " hard sheet balsa. The box is made to accommodate two intermediate batteries which should prove sufficient for running your engine. Glue two brass contacts at one end of the inside of the box and cement the wire spring to the other end.

The ignition diagram is detailed on Plate 1. By using "alligator" clips in connecting the wires to the coil and condenser, the motor may be completely removed from the rest of the plane.

TAIL AND WING
THE TAIL construction used is simple, light, and strong. Start by pinning the $\frac{1}{4}$ " by $\frac{1}{2}$ " trailing edge to your full-size plans. After

the bottom ribs are in place glue the $\frac{15}{16}$ " by $\frac{1}{8}$ " spar in position and finish the stabilizer by adding the top ribs, which bend from the leading edge over the spar to the trailing edge.

Note that the center ribs, both top and bottom, are $\frac{1}{16}$ " by 2" wood to strengthen the stabilizer against the tension of the rubber bands. The $\frac{1}{8}$ " thick balsa rudders are sanded to a streamlined cross section and glued to the stabilizer after it has been covered.

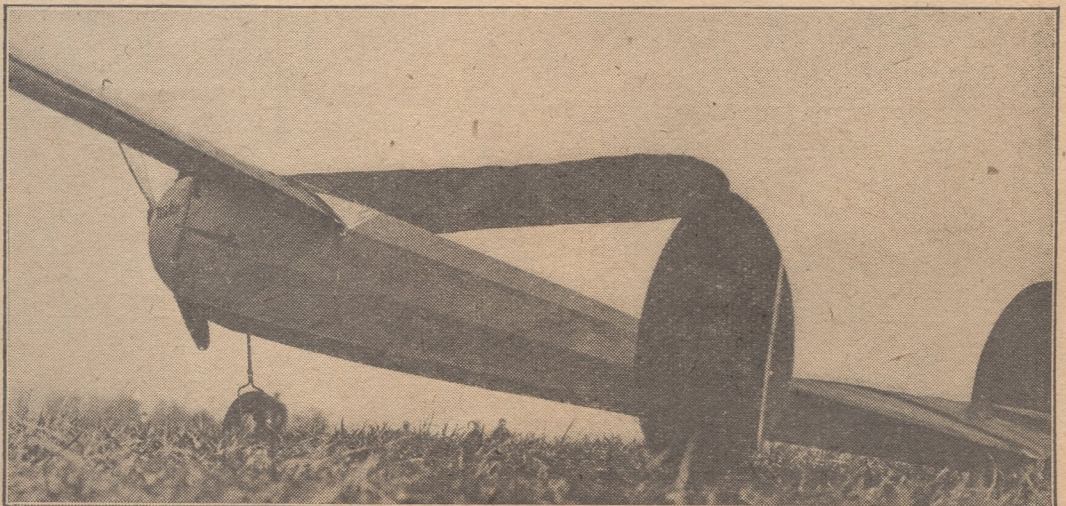
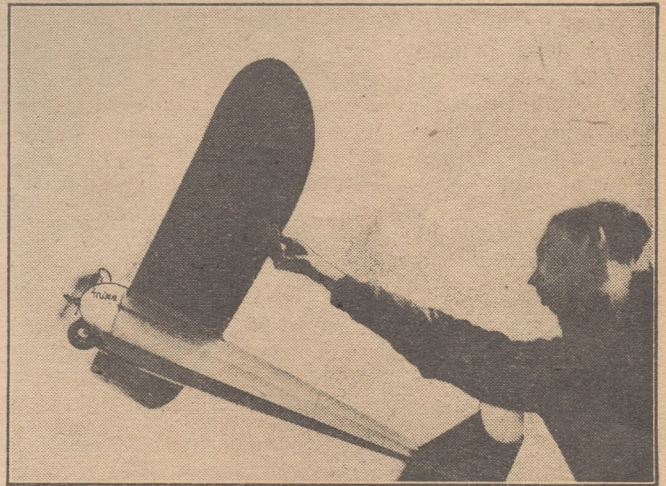
Twenty wing ribs, for which a full size template is given on Plate 2, should now be cut from $\frac{1}{16}$ " sheet balsa — "C" grain. These ribs are spaced 3" apart on the $\frac{1}{4}$ " sq. hard balsa spars.

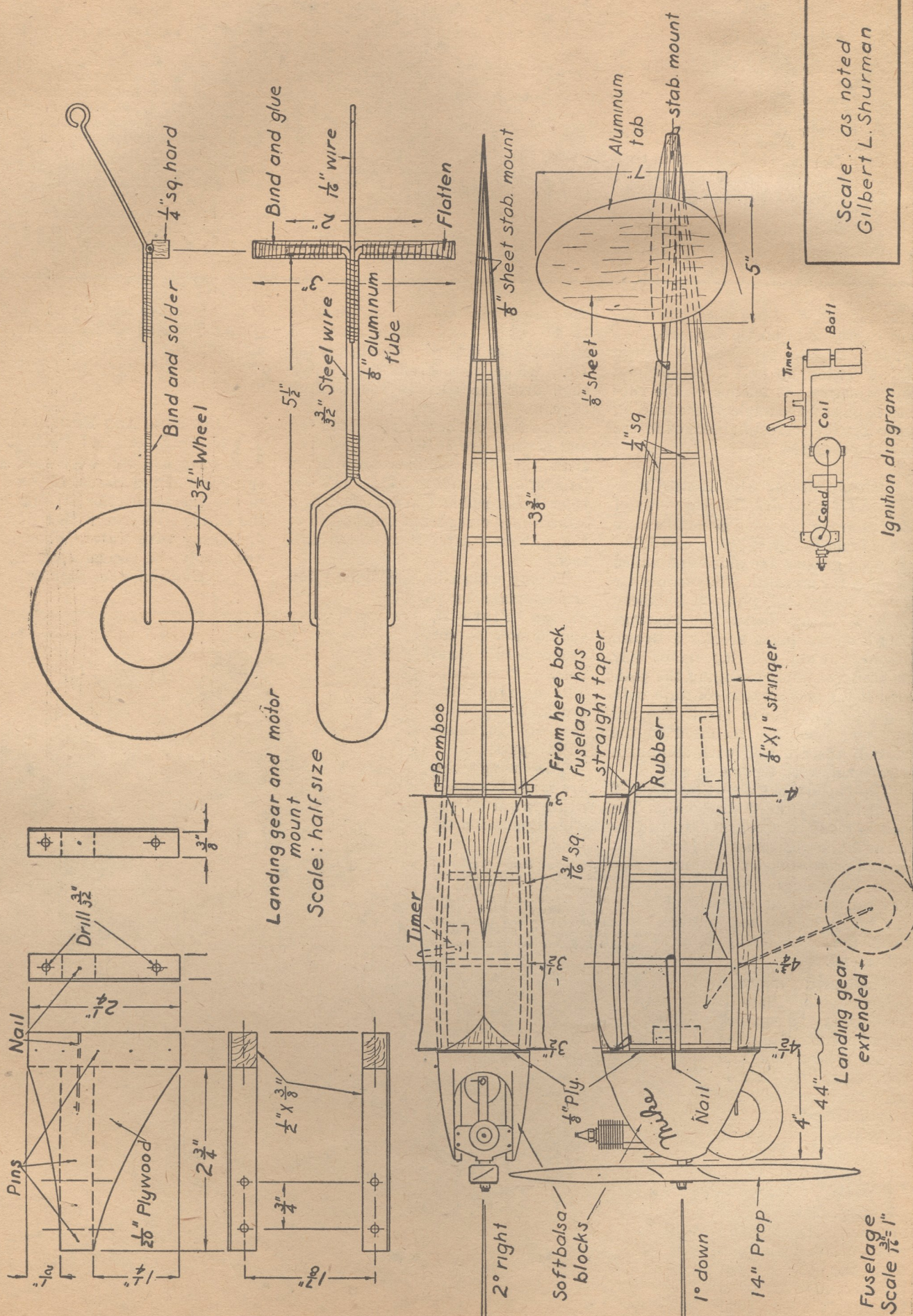
The wing tips are made from $\frac{1}{8}$ " aluminum wire. This type wing tip

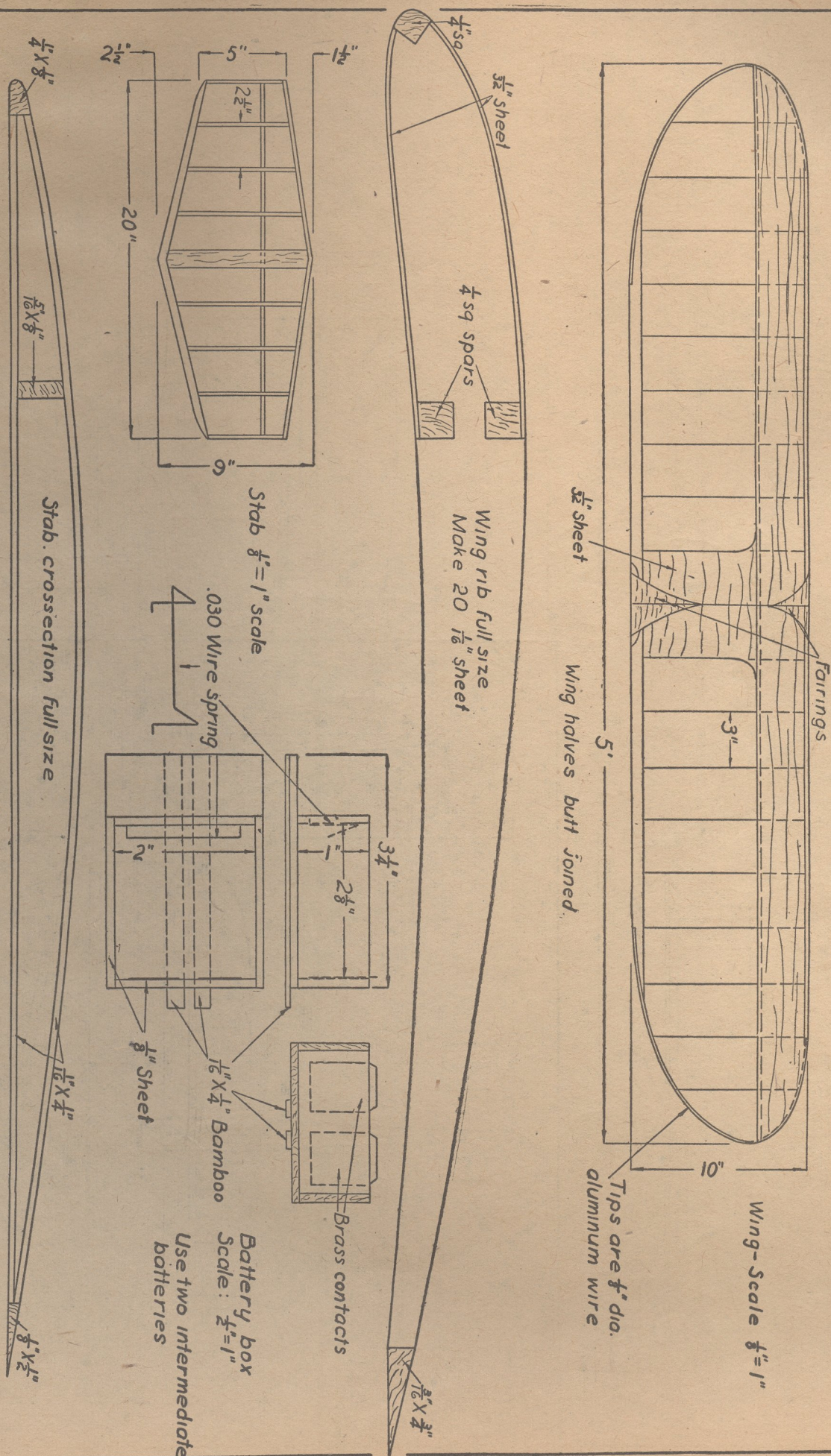
is easy to make and is also light and strong. The leading edge of the wing, both top and bottom, and the center section is covered with $\frac{1}{32}$ " sheet balsa.

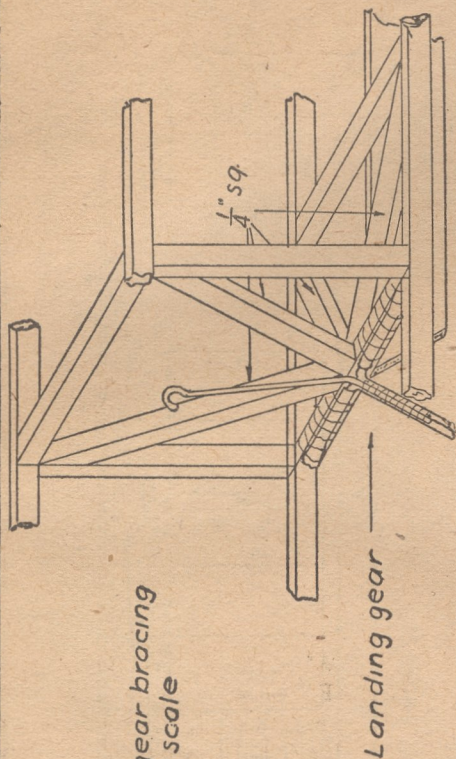
COVERING AND FINISHING
ON THE original "Mike," the wing and tail were each given two coats of red tissue. If you'd like to use the same color scheme, cover the entire structure with a first coat and spray with water. When this is dry, apply the second coat, sticking
(Continued on page 80)

Right: She's off! Under the expert supervision of one of the author's fellow modelers, "Mike" takes to the air for a roaring hop. See, her wheels' up already. Below: This three-quarter rear shot shows how stable our model is with her three set-down points on the ground.



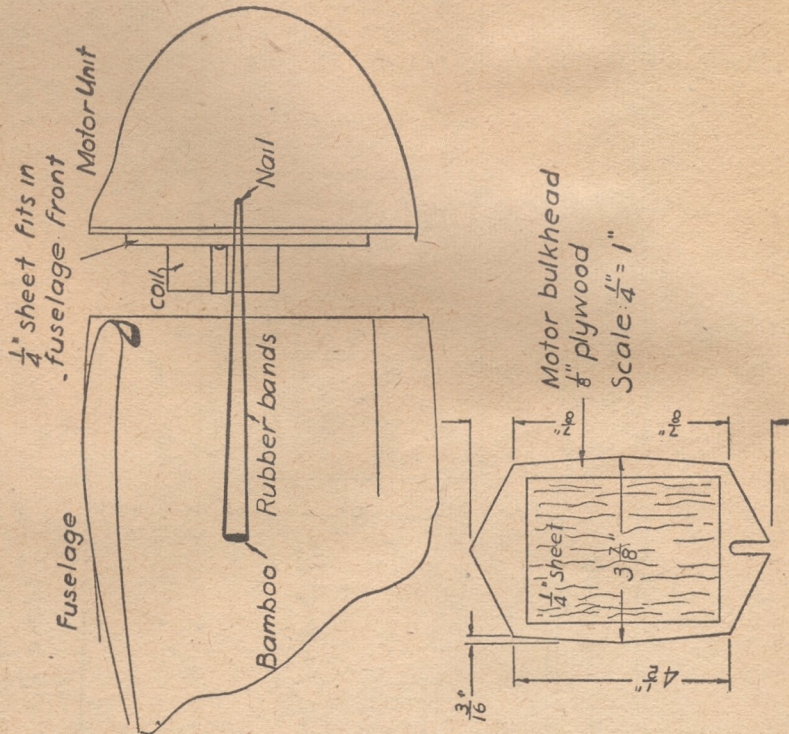




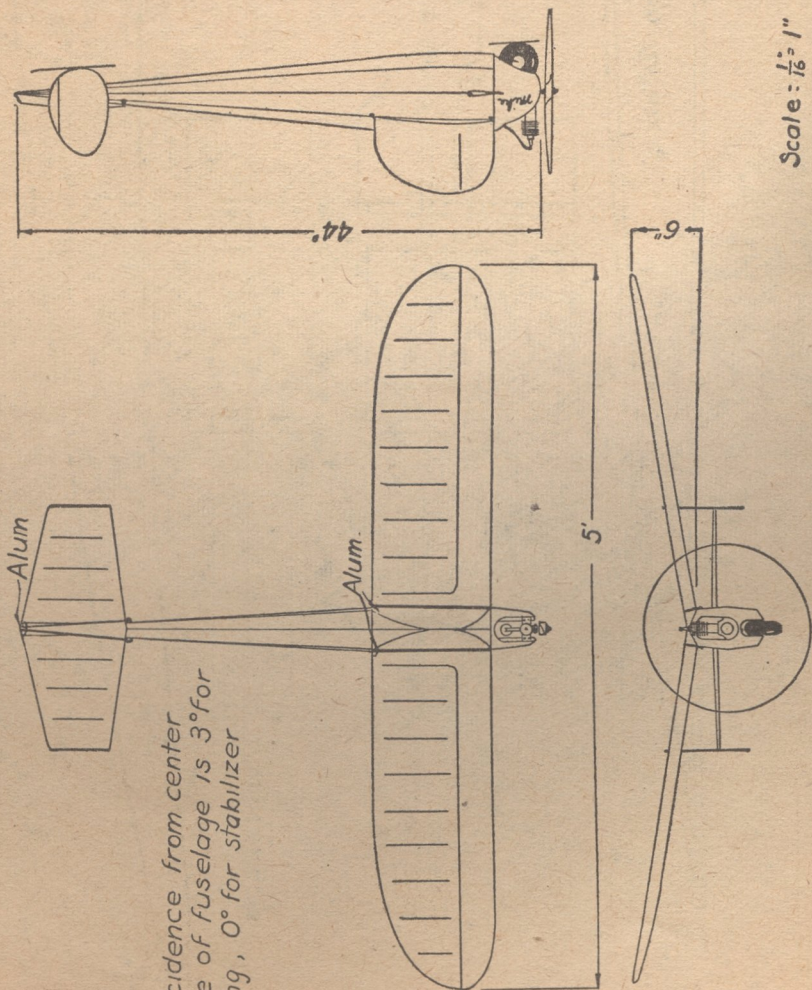
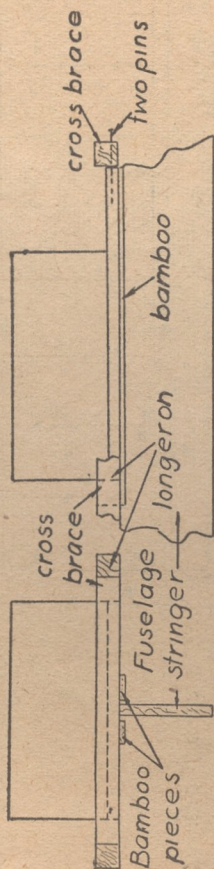


Landing gear bracing
Not to scale

Landing gear



Battery box mounting
No scale



Incidence from center
line of fuselage is 3° for
wing, 0° for stabilizer

The Mosquito Sportster

Yes, Ol' Sol has at last thawed out the ponds, and soon there'll be squadrons of hypo-carrying winged hellions on your trail—mosquitos! But if you want to beat Mom Nature's buzzing buzzards to the punch, just turn out THIS "Mosquito." You'll be able to run any 'skeet into the ground after the track practice Ernie's hot-shot flyer will give you. And we don't mean Citronella!

By Ernest Copeland

Author of "Try This Galloping Gull," etc.

IT'S A pretty tough job to find a ship that can be flown out of a small lot and still be dependable. A craft of that sort must be small, light, and strong—which is an unusual combination on any model tarmac. The "Mosquito Sportster," though, can meet these specifications and still have plenty to spare. Sure, that backyard type of flying is really tough on a model, but the "Mosquito" has survived over six months of it!

This month's stick job has sampled just about every obstacle you can think of—roof-tops, parked cars, trees, and iron fences included. That all-balsa tubular fuselage has had five rubber motors break inside it without any sign of strain. But in spite of its strength, a high standard of lightness is maintained. The long flights of the "Mosquito" can be traced to this and the careful design of the ship.

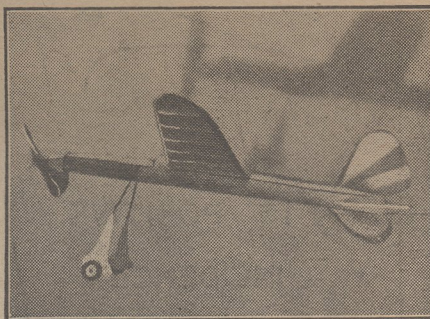
And now that you're all steamed up about the "Mosquito Sportster," get out your supplies, grab your trusty razor blade, and hop to work!

FUSELAGE CONSTRUCTION

ALL-BALSA fuselages are usually good things for the beginner to pass up, since they generally have to be either planked or hollowed or shaped from intricate slabs of balsa. The "Mosquito" fuselage, however, is a departure from the above methods since it is formed almost entirely

from one sheet of balsa. This sheet should be of soft, clear balsa measuring 1/20" by 2" by 13".

The sheet is sanded smooth on both sides and submerged in hot water until it is soft and pliable. It is then bent around a 1/2" diameter dowel, wrapped with gauze, and set aside to dry. After the wood is dry, remove it from the dowel and cement the seam.



Here's a photo of the "Mosquito Sportster" showing the model in normal flight attitude.

The bulkheads are now firmly cemented in the ends of the tube.

A strip of soft balsa, 1/8" by 9/16" by 13", is shaped according to the side view and sanded smooth. This strip is rounded on top and made slightly concave on the bottom so that it will fit the tube snugly. When cementing this piece over the seam of the tube, it is important that a good job be done since all the important parts will be attached to it.

The next parts formed are the nose and tail plugs, which are also soft balsa. Note that a length of 1/16" outside diameter aluminum tubing is forced through the nose plug as a prop shaft bearing.

The entire unit is now given two coats of thin dope with sandings between coats. Your model shop probably has the six and ten nought sandpapers which are just right for this operation.

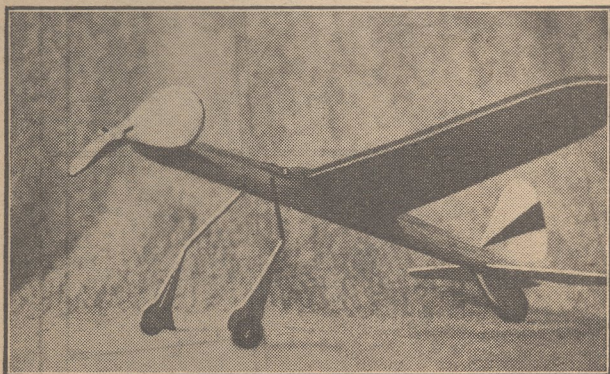
The landing gear and other wire parts are bent from .030 music wire. Those landing gear pants are cut from 1/20" sheet balsa and cemented firmly to the legs of the landing gear. Be sure the grain runs as shown in the plan, otherwise your fairings will crack off.

WING, TAIL, AND PROP

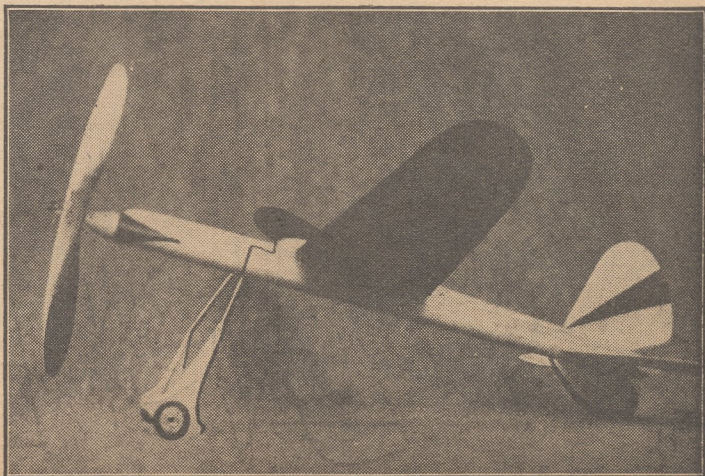
MAKE all wing parts from medium balsa. In assembling the wing, the trailing edge is laid down first. Then the ribs are cemented in position and the spar and leading edge are anchored in their respective notches. The structure is then removed from the plan so that the up-turned tips may be mounted. Finish the wing by sanding smooth and covering with colored tissue.

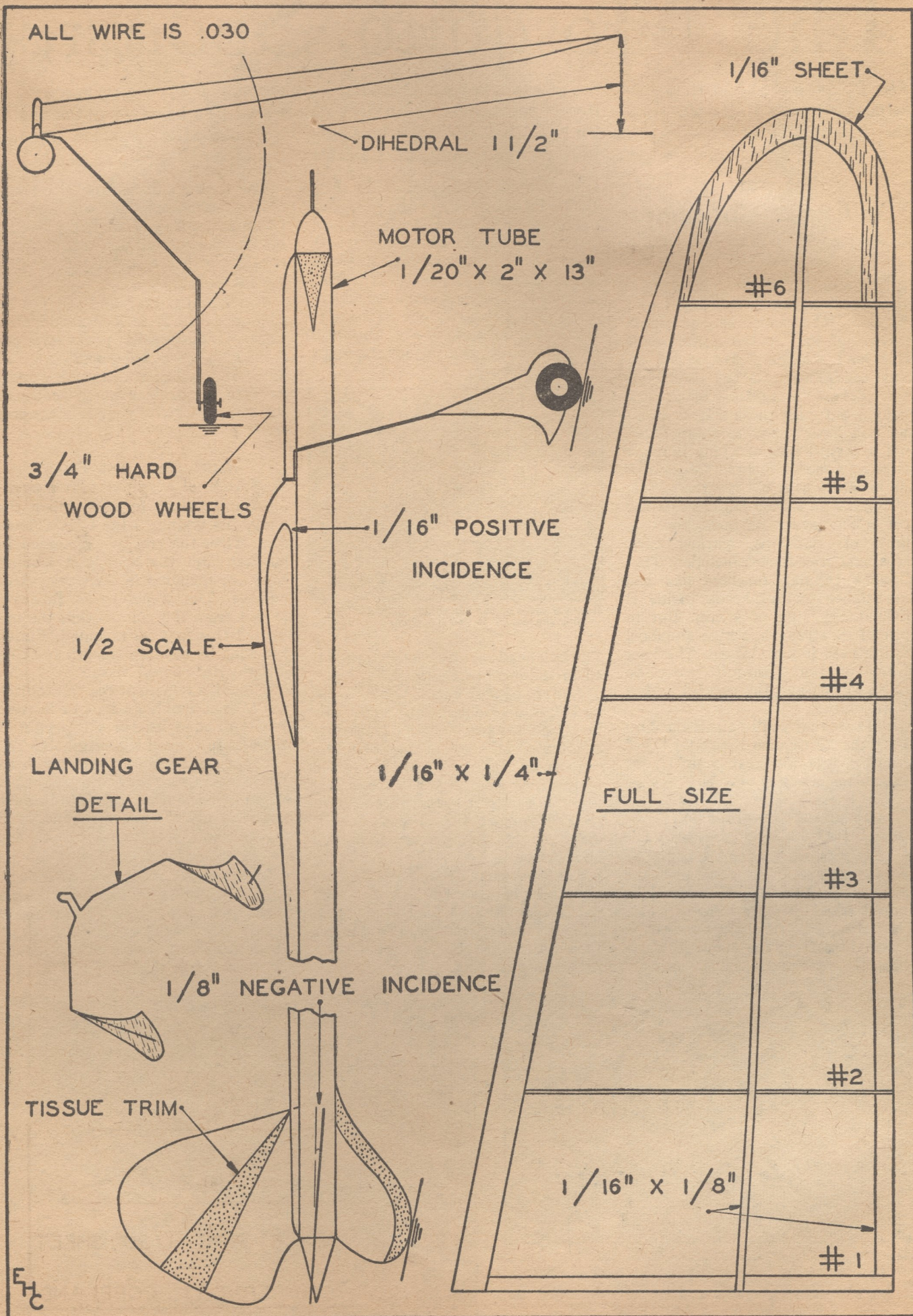
The tail surfaces of the "Mosquito" are a balsa butcher's idea of heaven. Why, we even used a sharp pair of scissors to cut out the originals! The outlines can be traced directly from the plans since they are full size. When laying out the tail skid be sure that the grain runs vertically. The tail surfaces are sanded smooth but not doped.

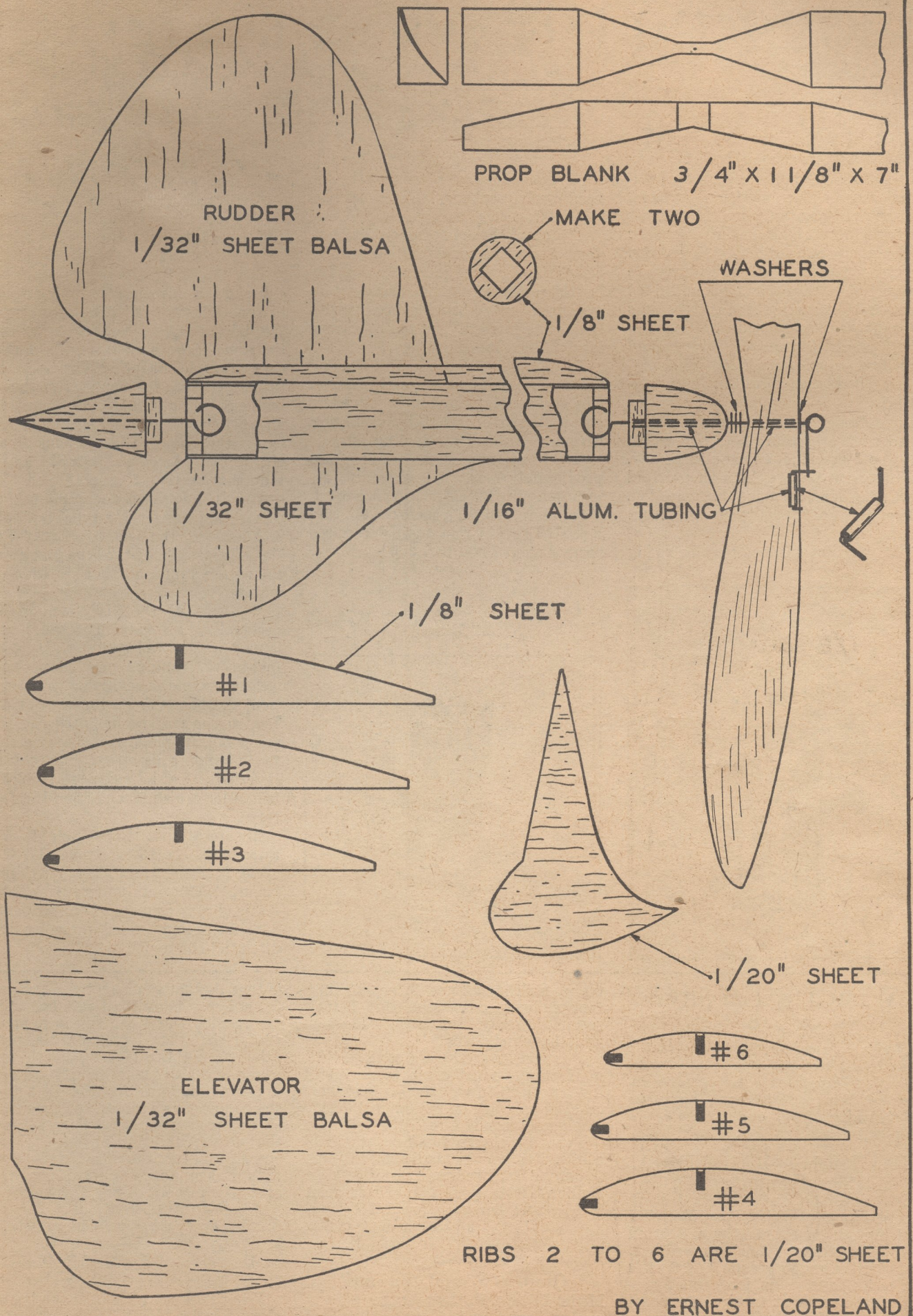
The prop is carved from a block of hard balsa to the preliminary shape shown on the plans. Each blade should have an under-camber of about 3/32". A length of aluminum
(Continued on page 71)



Above: With her "legs" spread wide, our "Mosquito" in this view looks strikingly like her insect namesake. Right: Smashed props are few and far between with this job, for her landing gear extends well forward, thus making for perfect set-downs every time. Now turn to the plans, boys, and get to work!







Logging the Motor Market

Super Cyclone "G"

AMONG the new features included in the 1940 Super Cyclone of the "G" series are its optional dual and single ignition system, transparent gas tank, and down draft carburetion utilizing the propeller air blast, according to the maker. Engines of the "G" series may be converted to operate in six different manners, namely: *upright single ignition, inverted single ignition, upright dual ignition, inverted dual ignition, single ignition with fly-wheel, and dual ignition with fly-wheel.*

The dual ignition motors are supplied with a special "hot" coil which fires both spark plugs simultaneously. In the event one of them should foul or a plug lead becomes disconnected, the engine continues to run on either plug.

The upright engines may be easily

and quickly changed, it is stated, to an inverted running position, or vice versa, without additional parts. The cylinder construction is arranged so that it may be turned 180 degrees for either right or left exhaust. The needle valve seat may also be changed to function on either side.

The crankshaft is of one piece construction with crank pin and counter weight integral. The connecting rod is "H" sectioned aluminum alloy with oversized bronze bearing inserts with both ends bushed. The main bearing is of 7/16" diameter.

A tubular shaped full-floating wrist pin is hardened and ground. The light weight piston is lapped to obtain a perfect fit. The crankcase carries the usual air cooling fins.

Specifications: Bare weight, approximately 7 oz.; flying weight, approximately 20 oz.; displacement, .647; bore, 15/16"; stroke, 15/16"; h.p., 1/5 to 1/4; minimum and maximum r.p.m., 1,000 to 7,300.

The Ohlsson "19"

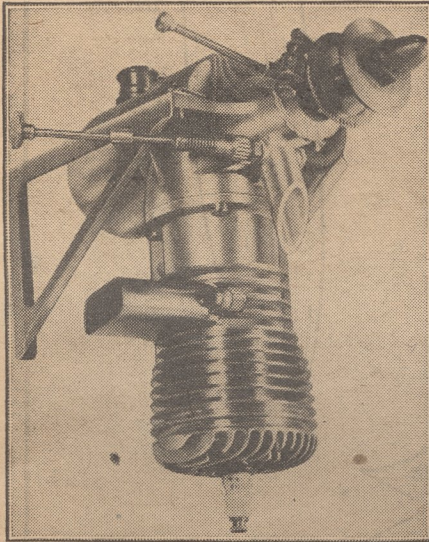
THE OHLSSON "19" is the latest powerplant to join the rapidly growing group of Class "A" motors. Its cubic inch displacement, being .197, is at the top border of the Class "A" competitive division, is reported to be quite large enough and powerful enough to fly many of the Class "B" models.

The "19," with the exception of its cylinder, is identical in appearance to the Ohlsson "23." The crankcase, fuel tank, needle valve, and timer are the same on both motors. This allows ease of replacement or exchange of the two engines for competitive flying in Class "B" and "A," the mounting dimensions and over-all specifications being the same. The cylinder head on the "19," however, is 3/32" lower than that on the "23."

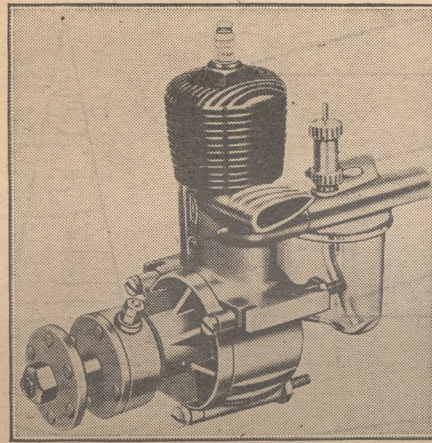
The fuel tank on the "19," which carries a poppet-valve type gas cap, is known as the Ohlsson "Jiffy-Fill Tank." Gas caps of the type just mentioned are found on all 1940 Ohlsson motors.

Features of the "19" include individually ground, matched, and lapped piston and cylinder, enclosed fool-proof timing, one piece spot welded crankcase-cylinder construction, and ball bearing thrust bearing. The engine may be mounted radially or upon beam mounts, and is reported to function equally well upright or inverted. Also, all engines are block-tested before shipment from the factory.

Specifications: Bare weight, 3 3/4 oz.; bore, 11/16"; stroke 17/32"; cycle, 2; ports, 3; h.p., 1/7; maximum r.p.m., 7,000; minimum r.p.m., 500; static thrust (ounces) 24; fuel parts, 3 to 1; recommended propeller and pitch, 9"-10" by 5".



Left: Here's a three-quarter front shot of the inverted "Super Cyclone." Below: The latest Ohlsson motor—the "19."



What Do You Say?

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

They Laughed—But He Placed Model Editor, FLYING ACES:

My favorite and longest lasting model was a 16-inch "Puss Moth." I had her for seven months and fitted her with pontoons for wet weather, skis for the snowy season, and wheels for clear days. This job copped second place for me at an airplane model meet, too. The other contestants laughed when they saw my little

plane, for they all had three and four foot endurance models. But I took second, anyway. Boy, did those other guys have red faces!

But you know the old saying. "All good things must come to an end." Yep, poor "Ginny," as I called her, cracked-up when on her longest flight. The nose actually kissed the tail!

I've now started making small 2" solids. I've constructed about twelve to date. Also, I've made a small "Hale Hellion" from your plans. Her span is 1 3/4" and her guns are 1/16" long.

FRED SAFFORD
Teaneck, N. J.

Overseas Test of "Snoony"

Model Editor, FLYING ACES:

May I give my belated opinion of "Snoony"? I quite agree with Vargas

—that is, that "Snoony" was a great flyer. I was more than satisfied with the results. But I can say in support of "Irish," that I took off the prop (though not the landing gear) and found she also makes a nifty glider.

I can't account for the fact that she balanced as a glider, for the model should have been tail heavy without the nose plug. But anyway, I can speak well of the "Snoony"—even though she nearly parted my hair after coming out of one of her loops!

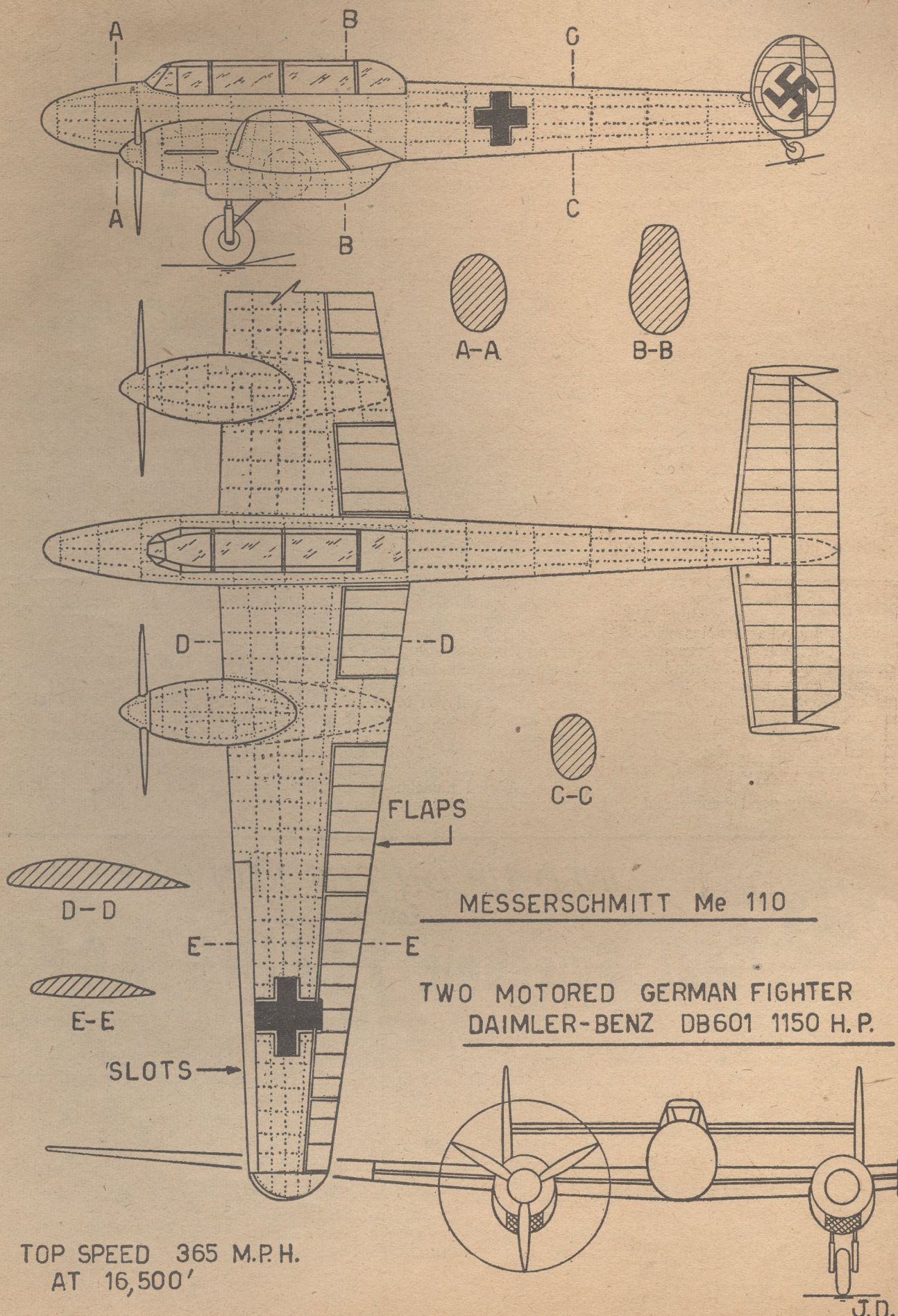
WALLACE JESSE

Liverpool, Lancashire, Eng.

Desperate for "Moth" Plans Model Editor, FLYING ACES:

What do I say? Well, I say give me plans for the "Moth" (August, 1937,
(Continued on page 54)

HERE'S THE NAZI MESSERSCHMITT ME 110 "DESTROYER"



What Do You Say?

(Continued from page 52)

F.A.) before I go nuts! A friend of mine built that bus, and the way it flies don't seem possible. I asked him for the plans—but he lost 'em! Now I'm willing to buy the plans for that job from anyone who can supply them. Kick through, huh, boys?

BILL ANDERSON
26 Greenwood Hill
Stamford, Conn.

Editor's note: We haven't any of those plans handy at the office any more, Bill. But we are hoping one of our readers will fix you up—for we'd hate to see any of our fans end up in the funny factory.

Bomb and Glider Fan

Model Editor, FLYING ACES:

I really enjoyed that article in the March issue on scale bombs, and I am planning to make a flock of them out of hard wood. Also, I built the "Hutter Sailplane" (April, 1939, F.A.) but there hasn't been any good flying weather hereabouts in which to test it. I will send you a photo of it as soon as I can. She's sure a beaut!

ALVIN GEYER
Lafayette, La.

Wants Contest Commercials

Model Editor, FLYING ACES:

I have no complaints about F.A. except I think the model section is slipping. For months I have bought each issue and hoped to find some plans of a commercial job along the lines of the "Hi-Climber" or Herb Spatz' "Moth" and "Sky Gull"—but each time I have been disappointed.

I am writing this letter in the hopes that you will satisfy my desire in one of your early issues by publishing a really good commercial.

Incidentally, the best flying I ever saw in my neighborhood was made by an F.A. "Hi-Climber" belonging to a friend of mine.

A. E. DENNON, JR.
Fort William, Ont., Can.

Editor's note: We feel sure that "Plecan's Paragon," which is featured in this issue, will answer your request. Why not build it and let us know how you make out?

Proud of His "Monoped"

Model Editor, FLYING ACES:

The "Scotch Monoped" (December, 1939, F. A.) is the first model I ever built from F.A. plans, and I'm certainly proud of the ship. It has been the center of attraction around my neighborhood for some time now. Not only is it a good looker, but it also flies swell. I was surprised at the climb and glide of this ship. And when I flew it minus one rudder—it still kept its stability very well!

I also made a Bell XP-39 stick (January, 1940, F.A.). But it turned out terrible as a flyer, though pretty fair for looks. Still, it's probably my fault my Bell wouldn't fly. You see, I changed the design a little to suit my own taste. Oh, why! Oh, why!

RONALD KIRKPATRICK
Covington, Ky.

George vs. "Specialists"

Model Editor, FLYING ACES:

While looking through some back copies of F.A., I read several "What Do You Say?" letters that I couldn't quite understand. I noticed some of the lads want nothing but solid jobs, while others tell you to toss out the solids and print more plans of flying scale models.

Well, to my way of thinking, these fellows are not using the old gray matter. A real modeler is one who can turn out anything from a sim-

Workbench Tips

Sanding Sticks

ARE YOU one of those modelers who bend and fold sandpaper to get it into small corners or to clean out notches? Well, if you are, then you'll be interested to know that those sanding sticks your sister uses on her finger-nails are really top-notch for that work. They're coarse on one side, smooth on the other. And every dime store has 'em.

—JOE BROWN

Tailor-Made Ribs

I HAD always found it quite difficult to make all ribs the same size, even when using a template. And so I devised the following method:

Buy a stamping pad from the dime store, then cut only one rib of the required size. Fasten a handle perpendicular to this rib. Now, utilizing the pad, employ the rib as a stamp and mark on a sheet of balsa the required number of ribs. Also, it's a good idea to mark a few extra, for splitting, as you know, is something that very rarely can be avoided.

—EDWARD ST. JOHN

ple stick job to a gas craft. In other words, I don't think a builder should become a "specialist" in any one phase of the game.

GEORGE WHEATON, JR.
Oakland, Calif.

Con "Snowbird"

Model Editor, FLYING ACES:

I built the "Snowbird" stick job (April, 1940, F.A.) but it wouldn't fly. Maybe it's the model, and maybe it's me. But no matter what I tried, the danged thing still wouldn't fly worth a hoot. Finally, I took off the

(Continued on page 63)



LINED UP ON THE RUNWAY

for the

Next Smashing FLYING ACES

FACT—"I Trained Chinese Sky Fighters!" Capt. Alex Kentrall's amazing story of his experiences at a Canton flying base.

"Raid On A Maginot Drome." A smashing cover painting and the story behind it.

Also Ned Cady's "Eyes For the Air"—giving you the inside dope on sky-going glimmers. And "Airplanes Go Plastic," by Aero Engineer James P. Eames.

FICTION—Eric Trent, devil-may-care skyman, in a new air-war mystery novelet.

Crash Carringer meets "The Griffon"! An Arch Whitehouse "extra special."

Who else? Why none other than that master of laffs—P. Pinkham!

MODEL BUILDING—Plans for the "Hurricane" low-wing commercial—by Earl Stahl, who gave you the famed "Hi-Climber."

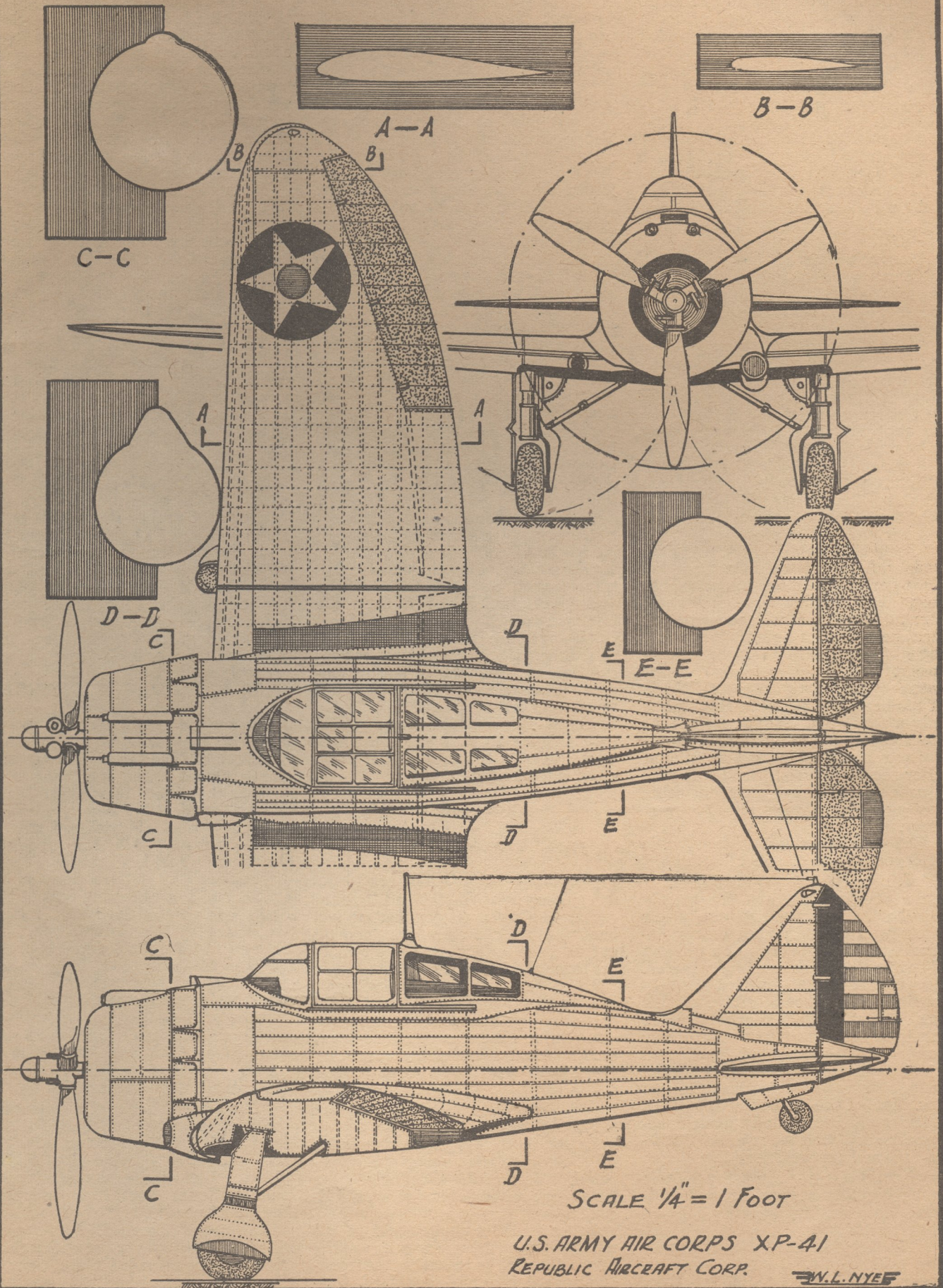
The "Red Ripper" gas job—a swell 6-footer that's bettered 11 minutes. Plus a peppery stick model. And other A-1 features.

In July FLYING ACES

On Sale May 24th (Canada One Week Later)

REPUBLIC AIRCRAFT'S SPEEDY ARMY PURSUIT—THE XP-41

A number of this type are being constructed for our Air Corps



"This Squadron Is Doomed!"

(Continued from page 8)

latest attack by the Red Nazi? I left strict orders—" he stopped, as a double-rap, repeated twice, sounded at the hall door. Gaston opened it, guardedly, and Lieutenant Boussac came in. He looked at Knight and Doyle, lost some of his worried expression.

"Then it is all right, *mon General*? I was afraid it was some trick and I should have kept these men—"

"I vouch for these gentlemen," nodded La Roche. "But what of the Red Nazi? They just told me he struck again."

Boussac's squarish face shadowed. "Without warning, *oui*. He must have approached from the sea, gliding with his motor off. On a night like this, who would have expected—"

"I would expect that mad *diable* even if the fog were down to the ground," said the general. "Sit down. Now that you are here, you may as well listen to what I tell Messieurs Knight and Doyle. If I omit any points, you can add them."

Boussac looked apologetically at Knight. "I am sorry if I did not understand, back there. With all that happened—those poor men dead—and my first day of command—"

"Forget it," said Knight. "I'd have wondered, too, if some stranger had come barging into my squadron like that. But I still don't understand about the Red Nazi. Why does he spot his face with that light?"

"The man is insane," cut in La Roche. "He is trying to destroy the entire squadron, to avenge the death of his brother—his twin. But that is only a part of it. Madman or not, he has some diabolical method of knowing our plans, even within minutes after some decision is made. He proves it with the most insulting messages—but I am ahead of my story."

The general brought out a bottle of cognac, some glasses.

"Help yourselves, *mes amis*. It is not a pretty story, and the brandy may help. It goes back to one of our pilots who through unnecessary enthusiasm killed the crew of a German U-boat after they had surrendered. Boussac, here, had disabled the submarine with a bomb, and the crew was scrambling on deck with their hands raised to prevent further bombing. Then this other pilot—a Lieutenant Gourand—dived in and raked the vessel with machine-gun fire. Most of the crew were killed, but a few were rescued and the story became known. Boussac was later summoned, and he confirmed it."

"I think Gourand must not have realized what he was doing," muttered Boussac. "At any rate, he paid with his life."

"The Red Nazi killed him," the general said grimly. "I might have understood that revenge motive then, but to destroy an entire squadron for

what one man did—no, that is madness, not war."

"You say the Red Nazi is the twin brother of one of the Germans who were killed?" queried Knight.

"The brother of the U-boat commander," said La Roche. He fumbled with his beard. "We are not sure of the name—the prisoners may be lying—but we think it is Mannrich Streim, a former secret agent who joined the Nazi air force when war broke out. Streim had a twin brother in the submarine service, according to our Intelligence."

"But that does not matter. The point is that one by one the pilots and many of the mechanics of Squadron 85 have been killed by this mad German, just as you saw tonight. He has been seen that closely only once before, but almost every time he has sent his warnings that he would strike—or a hint that some one in Squadron 85 would die."

"Perhaps these gentlemen would like to see the 'Red Nazi' file," suggested Gaston.

"Very well," said La Roche, "bring it in."

Gaston went into the other room.

"How many pilots of Squadron 85 have been killed?" asked Knight.

"Eleven, including the unfortunate men tonight," Boussac said gravely. "Of the original Flight 'A,' I am the last man to—"

All four men jumped as the roar of a diving plane came with startling suddenness. The sound swiftly increased, until it seemed that the unseen ship must be headed directly for the building. Then its wings howled in a furious zoom, and from somewhere nearby there came the boom of an explosion.

CHAPTER II

THE WARNING

GENERAL LA ROCHE ran to the other room, Knight and the others at his heels. Gaston had jerked back the black curtain, was staring out into the courtyard. Knight could see three or four men huddled against a wall. One of them had a flashlight, and by the rays Knight saw a cloud of smoke and dust and battered masonry, where the side of the adjacent building had been blown open.

"General, I saw the plane!" Gaston said hoarsely. "It was the Red Nazi—I saw the red light shining on his face!"

La Roche turned pale, clear under his beard. "*Sacre nom!*" he whispered. "How could that fiend have found out where this office is hidden?"

Police whistles shrilled out in the misty night, and there was a growing commotion below as excited pedestrians poured into the courtyard. Gaston closed the window quickly.

"Go down there and have the gateway blocked," La Roche ordered Gaston. "Above all, don't let anyone know about this secret office."

He drew the curtain as Gaston hurried out. Knight listened intently, but the sound of the mysterious plane had faded out. He shook his head. "Even if he knew about this place, General, how could he spot it on a night like this?"

"He must have the eyes of a cat," said La Roche. He wiped his perspiring forehead. "*Monsieur* Doyle, I think I will have some of that brandy, too. The red devil is getting on my nerves."

"You and me both, General," grinned Doyle. "Hey, what's that I hear now?"

The sound of fire-engines speeding by came, half-muffled, through the darkened windows. Knight peered around the edge of the curtain.

"He must have let go an incendiary bomb somewhere—looks like a real fire."

Boussac sprang to the telephone. While he was calling the squadron office, Gaston came into the room, panting. "General La Roche—the mad German dropped another message."

La Roche snatched the canvas message-bag Gaston had in one hand. There was a long crimson paper streamer attached to it, and the edge of a crumpled paper was protruding from the bag. In heavy letters at the top were the words—

THIS SQUADRON IS DOOMED!

The general eyed it tensely. "Look, *Messieurs*! A roster of the original Squadron 85. The evil pig has crossed off the names of the dead!"

"But this time he missed!" said Gaston excitedly. "See, Boussac's name is crossed off with red crayon—with the time '9:51'! He thought that bomb would kill Boussac—"

The telephone clattered back on its cradle, and Boussac came around the desk, a frightened look on his face. He stared at the roster a moment, then managed a shaky smile.

"So, I am dead, *non*?" He splashed some cognac into a glass. "Well, the dead man can still drink. That should be a hopeful sign, eh, *messieurs*?"

"Never mind the bravado, Boussac," snapped La Roche. "This matter becomes more serious every moment. What did you learn?"

"Three pilots took off the instant the Red Nazi was heard," said Boussac soberly. "But he was gone before the searchlights could locate the plane. A thermite bomb was dropped on Pier Seven, and fire is sweeping the warehouse."

La Roche groaned. "And only this morning twenty new American Hawks were unloaded there. How in Heaven's name did that madman know?"

Boussac slowly put down his glass, and Knight saw that his hand was shaking.

"That I might understand, *mon General*. But how could he know I would be in this building at 9:51 when I alone knew I was coming here?"

THERE WAS a brief silence, while the others stared at him. Boussac grimly smiled. "Now, *Monsieur Knight*, perhaps you understand why terror has swept our squadron—and elsewhere—when the name of the Red Nazi is mentioned."

"You think this German has supernatural powers?" Knight said drily.

"I have stopped thinking," Boussac said in a weary voice. "I know I myself have not long to live. I try to hide what I fear, so the replacement pilots will not see it. Beyond that—" he shrugged, emptied his glass.

"I'd like to see that file Gaston mentioned," said Knight.

"Here it is," replied La Roche. He opened a large folder, and Knight saw a number of messages scrawled in French and some radio codes typed on French Navy blanks. "The first message was this one—the radio in our BF code. It says, 'Gourand, the murderer, will die today.' There was no signature. The message was sent on the wavelength assigned to Squadron 85."

"I remember when it came," said Boussac dully. "Gourand pretended to laugh, but I knew he was afraid. He took off in charge of the evening patrol up the coast. There were heavy clouds that day. Gourand was climbing up through, with the other planes spread out for safety, when tracers were seen blazing through the cloud. Then there was an explosion, and when the rest of the patrol dived out of the clouds they saw Gourand's wrecked R.90 flaming down into the sea. A moment later the black Messerschmitt appeared, and one more of the patrol was shot down before the Nazi devil fled back into the clouds."

"Was the red light on his cowl then?" queried Knight.

"*Oui*, even though it was hardly dusk."

"So he established that name right at the start," Knight said musingly.

"What do you mean by that?" General La Roche said quickly.

"I was only thinking your Red Nazi perhaps is not so mad, after all."

"But all his acts bear it out," insisted La Roche. "It is obvious he is vengeance-mad. Look at these messages he dropped—the frightful threats he makes. Gloating over killing some poor pilot who had nothing to do with Gourand's act. Taunting the rest with warnings of their death, even naming the hour."

"You said all the original Flight 'A' had been destroyed, except you?" Knight asked Boussac.

"Yes, and I escaped by a miracle, as the general can tell you," Boussac said with a grimace. "I was starting on a special mission the night after

Gourand was killed. General La Roche had brought me some confidential papers to take to London. I had taken off, and was at about five hundred meters when a blast of tracers came from the dark. One blast—and my ship was afire! I jumped just in time. For my gas tank exploded a few seconds later. The Red Nazi dived after me. And I had to wait until I was almost down before opening my parachute, or he would have riddled me."

"It was a close escape," agreed La Roche. "Three seconds more and Boussac would have been dead. But how the Red Nazi could see his plane so well in the dark, I still do not understand."

"Have you considered abolishing Squadron 85?" asked Knight.

"It would do no good," La Roche said gloomily. "The Red Nazi would probably follow the pilots into other squadrons."

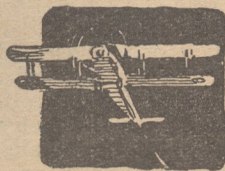
Knight lit a cigarette, looked thoughtfully at the Red Nazi's messages. "Has it struck you as odd that the German officials permit this pilot to carry on that revenge business so freely?"

"Why shouldn't they?" said La Roche bitterly. "He is destroying one of our finest squadrons. And he does not neglect military objectives if they fit in with his other plans. Take the burning of Pier Seven tonight, for example. Moreover, there have been other such instances."

"That's just what I meant," said Knight enigmatically. He glanced at Doyle. "What do you make of it, Lothario?"

"Somethin' mighty screwy," said Doyle. "But where do we come in?"

"I want you to join Squadron 85," said the general. "As senior member



of the Joint Army-Navy Board, I can arrange it. We need cool heads—brains not paralyzed with fear of this fiendish German."

Knight looked at the bearded little general, and then his thoughts went back to that scene at the ramp, with the black Messerschmitt diving into the group of terrified Frenchmen, cutting down the helpless mechanics and pilots.

"We're not at war with Germany," he said slowly. "But of course, if you were to cancel the special discharge-releases you gave us when we were up in the Maginot Line getting those American pilots out of your air force—well, we'd be back in the French Army, wouldn't we, Doyle?"

"We sure would," Doyle said, with a crooked grin.

La Roche's face lost the disappointed look it had had at Knight's first words. "*Merci*, my good friends! I knew you would not fail me. Come, we will go to my hotel and discuss

the rest over a good dinner and a bottle of wine."

* * * *

A CROSS darkened France, across the Maginot Line and the West-wall, the murky night hid the arrival of a German Staff car at a little woods not far from Lebeurg. A narrow strip of cleared ground lay close to the woods, and back under the trees was a temporary hangar large enough for two or three planes. Close by was a shed and a small barracks, one end of which housed an office.

The officer who had come in the Staff car entered the office, looked quickly at a saturnine major who straightened up from a radio set in one corner.

"*Guten Abend, Herr Oberst*," said the major. His face had a peculiar expression.

"*Was ist?*" said the colonel, anxiously.

"The French have called in those two *verdammt* Americans," muttered the junior man. "Knight and Doyle—the ones who wrecked our scheme in the Maginot Line."

The colonel scowled. "That must be attended to swiftly. Mannrich Streim should—"

"... *has it struck you as odd that the German officials permit this pilot to carry on that revenge business so freely?*" came a crisp voice from the radio, as the major turned up the volume again.

The colonel started, and the major looked at him tautly. "You see, *Herr Oberst*? That is the voice of the American, Knight. If he follows up that thought—"

"... *He is destroying one of our finest squadrons*," came the unhappy voice of General La Roche. "*And he does not neglect military objectives ... take the burning of Pier Seven tonight ...*"

The two German officers waited silently until the conversation from that distant room in Le Havre was ended. Then the colonel grimly faced the saturnine major.

"This Knight has been a thorn in Germany's side for too long. This time he and that ugly clown Doyle must be destroyed!"

"Streim had the chance," mumbled the other man. "I wonder why he did not take advantage of it."

"He probably had a good reason. If they ever suspect the truth about the Red Nazi, everything would be ruined. But he must be given orders tonight to get rid of the Americans immediately. You will have one of your men ready to carry on when-ever Streim sends the word."

"One man is always standing by ready to go," said the major. He smiled sourly. "*Ach*, what a thing it will be, sometime, when the real story of the Red Nazi becomes known."

"Be careful you do not laugh too soon," said the *Oberst* curtly. "I will feel better when I hear that Knight is dead."

CHAPTER III

FACE TO FACE

LIEUTENANT BOUSSAC carefully closed the door to the squadron pilots' messroom, emptied since the luncheon hour.

"It is quieter in here—we use this room for all our conferences," he told Knight and Doyle. He glanced at the French uniforms with which they had been outfitted. "I telephoned General La Roche you were now ready for duty, and he said he was sending Gaston with a message of some kind."

"I see you don't like Gaston," observed Knight, as Boussac paused.

The young squadron commander shrugged. "It is nothing important. I don't like mixing civilians in with the Service—especially when this Gaston is nothing but a private spy for General La Roche. But the man is clever, and he undoubtedly has served La Roche well. There are always petty political affairs the Staff officers have to know."

"What's this map over here?" cut in Doyle, pointing to the wall.

"The map of our operations area," explained Boussac. "Squadron 85 is entrusted with the key defense of sea traffic coming into Le Havre from England and other countries. Until the Red Nazi commenced his devilish tactics, we were fortunate in conveying all our assigned vessels into port safely. But since then, the German fiend has sunk at least four British ships and one French, and possibly some of the neutrals which are reported missing."

Knight eyed the map meditatively. "How do you know the Red Nazi sank the ships?"

"Each time, an S.O.S. with mention of the Red Nazi or a black plane was heard. The messages were cut off before details could be learned. Then when squadron pilots flew to the spot there was only floating wreckage and a few bodies in the water. No one knows whether he led a raiding flight or struck alone using perhaps an attack-bomber instead of the Messerschmitt."

The door opened, and Gaston came in, prim as ever, silent-footed. He nodded coolly to Boussac, came over to Knight.

"General La Roche wishes, *monsieur*, that you assume temporary command here, giving your orders through Lieutenant Boussac."

Boussac flushed, and Knight spoke up quickly. "I can't do that. I'm willing to make suggestions, if something occurs to me. But I won't take over command from—"

"It is all right, *Monsieur Knight*," Boussac broke in with a wry smile. "I expected this. After all, I have not done very well in the brief time I held command."

"I think I had better see La Roche," said Knight. "Just because Doyle and I had a little luck before, he thinks we—"

The moan of a siren broke into his words. Boussac jumped. "Alerte

alarm! There must be a raid somewhere in our area."

Before he could reach the door, it burst open and a pilot sprang inside, hastily putting on his helmet and jacket. "Boussac! The radioman just received a call for help—the freighter *Celeste* from New York with another shipment of planes—the S.O.S. was cut off."

"*Pardieu*, just like the others!" grated Boussac. "Order the ships of 'B' Flight started at once. Wait—what was the position the vessel gave?"

"Longitude 0° 15' W., latitude 49° 40' N.," said the pilot hurriedly. "That is only about twenty miles offshore. She is ahead of schedule."

"Tell the radioman to report any other calls," snapped Boussac. He wheeled to Knight. "But I forget—you are now in command—"

"Nonsense," clipped Knight. "Go ahead—and we'll simply offer a helping hand in this."

When they reached the ramp, mechanics were hastily starting up seven Romano R.90's. Boussac motioned to a perspiring warrant officer. "Have Number 11 and Number 13 brought out," he shouted above the roar of the engines.

"No, that'll waste time," said Knight. "We'll take two of these ships that are already started."

"Very well," said Boussac. He caught the arm of a blond young pilot running by. "*Monsieur Knight* will take your ship—use a reserve plane."

He assigned one of the other "B" Flight ships to Doyle, and the displaced pilot hurried to get another plane. Three minutes later, the flight thundered across the Baie de la Seine and up into the leaden afternoon sky, heading out to sea. There were broken clouds, with a ceiling less than three thousand feet. Boussac led the flight in a steady climb, leveled out below the clouds. Ahead, the sea stretched gray and empty. Knight strained his eyes trying to see the freighter, but there was no vessel in sight. Near the reported position Boussac raised his hand-mike to his lips, and Knight heard staccato French words rattle into his headphones:

"Three and Five, descend and search—vite! Six and Seven, remain at—"

A bright flash somewhere back of Knight made him whirl in his cockpit. He stared in consternation.

One of the Romanos had exploded and was in flames!

AS HE WATCHED, sickened, the unfortunate pilot tumbled out of the ship, his clothes on fire, and went hurtling down toward the sea. His parachute opened, burned away. Knight jerked his stick back, sent the R.90 roaring up into the clouds. There was a break nearby, and he zoomed the seaplane toward it in a tight chandelle.

The ship was half-way through the break, its wingtips lancing the cottony mists at one edge, when two streams of tracer shot from out of the cloud. A furious burst ripped his

left wing, smoked across the cowl before him. He rolled swiftly, and the tracers curved away. He had a flitting glimpse of another ship. But it was only a blur in the cloud.

He tripped the Romano's guns, came around on shrieking wings. His tracers probed through the misty grayness before him, and as he climbed he thought he saw the other plane for an instant. But when he broke through on top of the clouds there was nothing in sight. He circled, watching sharply.

Suddenly, wings showed on his left. He was about to trip the guns for another burst when he saw it was a Romano, and then he recognized Doyle's homely countenance. Doyle stared across at him, pointed down into the cloud. Knight shook his head, made a puzzled gesture. They circled a few minutes longer, then spread apart and dived through separate holes in the clouds.

Flight "B" had reformed, was starting to climb up between two clouds a mile away. Knight motioned to Doyle, pointed back toward Le Havre. When they landed, ten minutes later, he quickly drew Doyle aside.

"See if you can find Gaston. Keep him and anyone else away from this mess for a little while."

"Hold on," Doyle blurted out. "What about that business back there—what hit that seaplane?"

"You know as much as I do. See you later."

A few minutes afterward, Knight stepped to the messroom window and saw the planes of Flight "B" landing. Doyle had located Gaston, was engaging him in conversation out on the ramp. The prim-faced Frenchman was watching the seaplanes as they taxied in, and his eyes, Knight thought, had a strange expression.

Boussac came into the messroom, with Gaston and Doyle behind him. Knight turned away from the patrol-area map.

"Did you see anything of the Red Nazi?" he said quickly.

Boussac shook his head. His face had a haunted look. "It all happened so swiftly—poor Deveraux, going like that." He shivered. "It's exactly the way my ship burned—but I was lucky."

"Did any of your pilots see the attack?" asked Knight.

"One man says he saw a flash of tracers, but when he looked up there was only a wingtip visible from the cloud, and it was gone before he could tell what kind of plane it was."

"The point is," Gaston said primly, "that this was simply a trick to get part of Squadron 85 out there."

"Obviously," snapped Boussac, "since there was no freighter. The S.O.S. must have come from the plane which shot down Deveraux."

"I've been studying this map," said Knight. "Perhaps we can set a trap for *Herr Streim*."

"What do you mean, *monsieur*?" Gaston inquired solemnly.

"According to this bulletin tacked

alongside, the freighter carrying those planes is really following a secret zigzag course which will bring her into Le Havre after dark tonight. Now if our Red Nazi were to learn what he thought was her true position for, say, six o'clock, he might try to strafe the vessel before heading back to Germany. And if he thought one of the Squadron 85 pilots would be out there, especially one of the original pilots, he almost certainly would swallow the bait. Boussac, you are the only one left from the original 'A' Flight, and he has tried twice to kill you."

BOUSSAC'S FACE was a trifle pale. "That is right," he said, thickly. "You mean I should go—" "No, I will be the one to fly out there—but you will have your radio operator send a message ostensibly to you, saying that the rendezvous position has been changed, and then give a false position. Make it about twenty miles southwest of Etretat. I will be there ahead of time, circling in the bottom of the cloud and waiting for *Herr Streim*."

"And I'll be there, too," grunted Doyle. "You're not goin' out monkeyin' with that hellion by yourself."

"Thanks, Lothario, but this is one job I want to tackle alone. Well, what do you think, Gaston?"

"It might succeed," said Gaston. He spread his hands in a typically Gallic gesture. "After all, you are now in charge. From what General La Roche, says, you have never failed—"

"The general has a fine gift for exaggeration," Knight said drily. "I've slipped up plenty of times. By the way, Boussac, I want a ship with a two-way radio."

"I will see to it." The lieutenant went out. Knight and Doyle followed after a moment. Gaston remained in the messroom, and as Knight closed the door he saw the prim undercover man frowning at the bulletin tacked by the map.

"See here, Dick," Doyle said agitatedly, "what's th' idea, leavin' me out of this? That swine of a German is poison, and you go off tanglin' him by yourself."

"I want you to help me," Knight said in a low voice. "As soon as I take off, get to a phone—somewhere off the station, over on the pier will do—and call General La Roche. Tell him to come down here and order everyone grounded."

"Why not have Gaston tell him—he's the old boy's go-between?"

"That's exactly what I *don't* want," said Knight.

"Say, what's back of all this?" demanded Doyle.

"Just a hunch, and I'm not sure yet where it leads." Knight clapped his partner on the back. "After the call, come back and keep your eyes peeled for anything unusual. I'll be seeing you."

Boussac had ordered a ship started, and Knight went over to it, leaving Doyle glum-faced.

"I don't like this, *Monsieur Knight*," said Boussac. "You are taking the risk I should take. At least let me go with you. Two against that devil might be better than one."

"You've had two narrow shaves already," said Knight. "No, you stay here. If I see it is too much for me, I can duck into a cloud. But I've made one change. Have your operator send that fake rendezvous message to read 'twelve miles East of Pointe de Barfleur.' And wait until I'm in the air, so I'll be sure to get there first. It will take me about thirty minutes at cruising speed."

"But I have already sent the other message," exclaimed Boussac. "I thought you wanted it sent at once, before the Red Nazi had time to start back to his own lines."

"A good idea," said Knight. "But this other will give me more time to



get there ahead of him. If he really has swallowed the bait, he'll be listening to get any other messages."

Knight climbed into the ship, and the mechanics pulled the ropes from in front of the cradle wheels. As the Romano slid down into the water he put on the headphone helmet, plugged in the receiver. The ship was in the air, headed West, when he heard the message crackling into the phones. He smiled to himself, climbed steeply until the clouds were below him. Then he changed course and shoved the throttle full on.

His route would take him ten miles south of the false rendezvous named in the last message, and he would have to swing north and come in, circling, to carry out his scheme. At cruising speed he would never make it. But with the Hisso wide open, there was a chance. He eased the ship down until he was flying in the top of the cloud formation, hidden from all but the keenest eyes, and still able to scan the skies above and to the northeast.

A trap. It was more than that, a double-trap, and unless he had luck he might be the one to be caught. He switched on the radio transmitter, waited for the output gauge to come to life. The needle quivered, sank back to zero. Dead! Knight's eyes narrowed. He had half expected it, but he had not been sure . . .

AFTER TWENTY MINUTES he slanted the Romano carefully down through the clouds, saw the Pointe de Barfleur almost directly beneath. He flew West for three minutes, swung North, then climbed back through the clouds, gradually making a circle that would bring him over the rendezvous announced in the message. Above the clouds, the setting sun was bright and red, and he

nodded with satisfaction as the ship settled with the sun at his back.

The Hispano was beginning to heat up. He slackened its speed a trifle, watched the clock. In another minute he dipped through the clouds for a swift look below. There was nothing to be seen but a trawler putting out to open sea. He backsticked, surveyed the clear sky above the clouds. Twice he repeated the maneuver.

The third time, as he warily brought the Romano up to the top of the cottony mists, his sharp eyes caught the flash of sunlight on tilted wings, a mile away. Another ship was skulking along in the top of the clouds!

For an instant the sun shone brightly on the other plane's wings, then it banked for a quick spiral down through a hole in the clouds, and Knight saw the color of its wings—dead black.

"Hooked!" he muttered. But hooking that devil was far from hauling him in. He switched on his gun circuit, shoved the throttle full on again. The R.90 roared toward the hole through which the black Messerschmitt had disappeared. As the sea-plane plunged steeply through the break, a swift *da-dit-da-dit* of code signals sang into his earphones, but he had no time to try to decipher their meaning.

For the Red Nazi was whipping back, in a steep turn—less than a hundred yards away!

Knight's guns flamed out a fierce burst, and the tracers smoked through the cowl of the black fighter. The Messerschmitt jerked wildly to one side, and he thought his try at the prop had succeeded. Then the black ship whirled around, furiously, all four guns blazing. The cockpit enclosure was shut, the crimson light was off. But Knight could see the savage, gaunt face of the pilot as he hastily kicked out of that murderous barrage.

The Red Nazi overshot, but hurled his ship back for another attack before Knight could align his guns on the spot he wished to hit. The Romano staggered as a pounding blast struck the right wing. Knight slammed the stick back, lifted the bullet-torn sea-plane out of range in a desperate Immelmann. The Messerschmitt shot up after him, guns still spouting. Knight plunged the Romano into the clouds, reversed and came out with hand taut on the gun switch-button.

The Red Nazi was now again charging out of the mists, hardly two hundred feet distant. As he saw Knight, he snapped the Messerschmitt into a lightning turn. But Knight's guns were already pounding.

The tracers sparked across the gap, struck into the tail of the German fighter. The Red Nazi frantically hurled himself aside, as that deadly torrent flashed forward, toward his pit. Suddenly the Messerschmitt's nose dropped, and Knight ceased fire instantly. He thought, for a second, he had wrecked the flippers. Then he

saw the pilot had sagged over in the cockpit, half falling onto the stick.

With an effort, the Red Nazi pulled himself erect, trying to turn away and reach the clouds. Knight flipped a burst past his wingtip, drove him in toward the coast. The gaunt face twitched around, glaring at him, fixedly, then one hand lifted in token of surrender. Knight watched, eyes slitted. But the man made no attempt to break away.

They approached the shore in a long, flat glide, and at an altitude of three hundred feet the Red Nazi looked back again. Knight had already spotted a stretch of beach on which a landing could be made, and he pointed down. The Messerschmitt angled into the wind, then its flaps went down and Knight knew that the German had given up any hope of escape. He reached inside his uniform tunic, loosened the automatic in his armpit holster. Then he made a swift landing and taxied the R.90 up onto the beach.

The Messerschmitt had stopped a little over two hundred feet away. Knight climbed down onto one pontoon, jumped to the beach and ran toward the black ship, leaving the Romano's engine idling. The Messerschmitt's prop was turning over slowly, but the pilot made no attempt to escape as Knight approached.

Warily, the secret agent came in from the left, gun poised. The gaunt face of the Red Nazi looked out at him, and the man slowly, painfully nodded as he gestured with the pistol. There was something strange, unreal about the face that was revealed when the cockpit enclosure slid open.

The pilot climbed out, stumbled from the wing to the ground, and Knight saw a red stain at the back of his right shoulder. Slowly, unsteadily, the man came toward him, his right arm dangling.

He was within ten feet of Knight when the secret agent's eyes caught a sudden tensing of the man's right hand.

CHAPTER IV

SECRET OF GOURAND

"UP with your hands! *Handen hoch!*" he snapped. "And be quick about it."

The pilot's right hand jerked up, and Knight swiftly reached out, took the gun at the man's hip.

"A good act, *mein Herr*. But you overdid it—just like your friend Mannrich Streim."

The pilot's deep-set eyes stared at him. "*Ach*, then you know even that?" he said hoarsely.

"Right," said Knight calmly. "And now you can take off that mask."

Without a word, the pilot reached up and unfastened his helmet, and with it a cleverly made papier-mache mask. In place of the gaunt, savage countenance of the Red Nazi, the white, defiant face of a young German pilot was revealed.

"So you're one of Streim's puppets?" Knight said grimly.

The pilot looked at him sullenly, but did not answer. Knight could read a fanatical hatred in the young German's eyes, a readiness for any trick that might save him.

"If you're smart," the American said coldly, "you'll talk and save yourself trouble. There are some Frenchmen back at Le Havre who wouldn't hesitate to tear you to pieces if I took you back there."

"What do you want?" questioned the pilot, frowning.

"The names of Streim's aides—your whole system," rapped Knight.

"*Nein*, I tell you nothing," snarled the young Nazi. His lips set obstinately. Knight saw him glance toward the Romano, and then beyond the seaplane toward three coast patrolmen who were hurrying along the beach.

"They won't help you," Knight said curtly. "Take off your belt and get over to that seaplane. I'm going to take you back on the wing."

To his surprise, the young pilot turned deathly pale. "No, no—you have no right—I am a prisoner of war—"

"Get going," Knight said grimly. He lifted his gun. The pilot took a step backward, his eyes twitching toward the seaplane.

"Wait—I will tell you whatever you want. Only do not make me go—"

There was a sudden spurt of flame from under the cowl of the Romano. The next instant the seaplane blew up with a deafening roar. Both Knight and the young German were knocked flat by the blast. Knight scrambled up, dragged the pilot back from the flaming wreckage.

"So that was it!" he said harshly. "You knew there was a bomb in there, about due to go off."

"Too bad it did not explode sooner!" cried the other man. "At



least, the other *verdammt Amerikaner* did not get here, so there is one less of you meddling swine."

Knight went rigid. "That code message—just before I landed! What did it say?"

"You think I will tell you now?" said the pilot mockingly.

Knight turned, hurled the German's gun far out into the water. "The patrolmen will take care of you! And if Doyle's been killed I'll see you shot for it!"

"You're too late!" shouted the young Nazi, as Knight whirled toward the idling Messerschmitt, the helmet and red mask in one hand. "Your *Schweinhund* friend is already in the air!"

Knight vaulted into the Messerschmitt's cockpit, blipped the motor swiftly. The coast patrolmen broke

into a run, waving their arms. But there was no time to explain. Knight shoved the throttle open, and the black fighter lunged down the beach. The leading patrolman raised a pistol and fired frantically, then threw himself flat as the Messerschmitt roared over his head. Knight pulled up in a tight climbing turn, raced back on a straight course for Le Havre.

A tiny green light was glowing at the side of a special radio in the cockpit. On the other side was a map with a course laid out from a point in the Saar Basin to Etretat. It had been changed, midway in that swift dash across France, to lead to the false rendezvous position East of the Pointe de Barfleur.

Knight hastily plugged in the headset wires which dangled from the helmet he had taken. The mask slipped down over his face, and he fastened it securely so that he could see through the eyeslits. The earphones suddenly rattled with a blast of code from somewhere high up in the ultra high-frequency band. But he could not make it out. He changed the wavelength to the assigned band of Squadron 85, and a familiar voice sounded excitedly in the phones. It was General La Roche.

"Lieutenant Boussac, make for the coast ten kilometers north of Saint Mere Eglise!" the general shouted. "The Red Nazi has just killed Knight and escaped after landing on the beach."

RICHARD KNIGHT'S jaw set grimly. This was a fine jam. Some one back at the coast patrol station must have been watching with field glasses and had jumped to the wrong conclusion on seeing him take off in the Messerschmitt after the Romano exploded. Even if they got the true story from the young German, it might not be relayed to Le Havre in time. He reached for the generator switch to cut in the transmitter, then stopped. Boussac was in the air—and probably some of the squadron with him, in spite of his plan to have the entire outfit grounded temporarily. And Doyle would be with them, seething with lust for vengeance on the Red Nazi.

Knight swore to himself. There was only one way—and the odds were a hundred to one against him. But if he didn't take that chance, Lothario Doyle would die.

At top speed, the Messerschmitt thundered across the bay toward Le Havre. He could see the faint blur of the coastline ahead, dim in the fading daylight. For one taut second he thought he had missed the squadron ships—then he saw them. They made almost a full flight. And one more R.90, out at the side, was racing in straight at his Messerschmitt.

The ship flying apart from the others made a swift turn to cut in for a broadside, and Knight saw Doyle, bareheaded, crouched over in the cockpit. Doyle's guns blazed furiously, and Knight felt the pound

of bullets back somewhere in the tail. He nosed down, heading straight for the squadron base. Doyle charged after him fiercely. And as Knight stared back he saw Boussac and the squadron pilots whirl around in swift pursuit.

Knight's pulses were hammering, but it was not fear of the blazing guns behind him. The fast Messerschmitt had easily put him safely out of range. But hidden somewhere in Doyle's ship was a time-bomb like the one which had destroyed the Romano on the beach. At any moment now, Doyle would be blasted into eternity. And if he carried out his mad scheme too soon, Doyle would be drowned . . .

A searchlight flickered up through the growing twilight, and Knight saw the station directly ahead and less than a thousand feet below the roaring black fighter. He slipped the throttle back to cruising, banking swiftly to meet Doyle's savage onslaught. The guns in Doyle's floats flamed viciously, sending tracers sparkling across the Messerschmitt's left wing. Knight ruddered clear, cut in sharply and tripped his cowl guns. The first burst went wide, as he intended. He pressed the rudder, fired again, oblivious to the other Romanos, now almost in range.

Doyle banked in a lightning turn, tried to cut inside the Messerschmitt's turn. Back of the mask, Knight's eyes fixed desperately on the tail of Doyle's ship. If he missed, he would kill the man who had always shared his dangerous life, fighting side by side with him . . . If he lifted the mask and revealed himself, Doyle still would die . . .

The Messerschmitt's cowl guns rasped, and for an instant Knight's heart stood still. Then a vast relief welled up inside him. For Doyle's ship was nosing over, the tail shot half off—and Doyle was bailing out!

The Messerschmitt trembled under a sudden terrific barrage. Knight jerked his eyes away from Doyle as he saw the chute open. Boussac and two patrol pilots were charging in, and beyond them two more Romanos were darting around to catch him with a crossfire. Knight whirled the black fighter, cut loose all four guns.

The Romano on Boussac's left twisted frantically as Knight's tracers gouged across the wing. The pilot leaped convulsively under a blast of hot lead, tumbled over his stick. The seaplane went helling down into the water, crashing headlong, not far from the ramp. It had barely hit when there came a blinding flash nearby. The bomb in Doyle's wrecked plane had gone off as the ship struck.

Boussac and the nearest patrol pilot cut in wildly, as Knight swung back above the station. The Messerschmitt's cockpit enclosure split under a lash of French bullets. Knight ducked, slammed the plane into a screeching chandelle and whipped back at a zooming Romano. A searchlight slashed across his cowl, blinded him for a second, but he tripped his

guns, held to the dive. When the light shifted, the Romano was tumbling into the bay, one wing crumpled.

One of the patrol pilots banked hastily, fled off into the gloom. Boussac and the remaining pilot closed in for one last frenzied attempt to down the Messerschmitt. Knight heard a howl through the earphones. It was La Roche, wildly exhorting the patrol leader to down the "Red Nazi" . . .

A BURST from Boussac's guns raked the cowl of the black fighter. Knight hurled himself aside, as glass and alcohol flooded back from the shattered compass. Fragments of glass and splinters of metal flew into his face, but the mask saved him. The next instant the Messerschmitt was whirling in a vertical bank, with Boussac's ship almost under Knight's guns.

Thin red lines of flame shot from the wing-root guns as Knight pressed the stick-button. The Romano flung wildly to the left. Knight ruddered, sent the smoking tracers angling in, through the wing, to the flashing prop. Above the drone of the motors he thought he heard a faint, shrill scream as the prop went to pieces and the Hispano revved up, unloaded. Then Boussac was helplessly gliding down toward the ramp, and the last patrol pilot was racing off into the dusk, away from Knight's smoking guns.

Knight closed the throttle, put the flaps down. Machine-gun fire crackled up at him from one end of the ramp, ceased as he switched off the motor. By the glow of the searchlight he could see the assembled crowd staring up at him. The Messerschmitt howled down over the water, then the howl became a moan, and the moan a whisper as the black fighter stalled, a hundred feet from the ramp.

The nose dropped, ploughed into the water, and the Messerschmitt came to a jolting stop with its nose resting against the incline of the ramp. Instantly the searchlight was focused on the ship. Mechanics and pilots ran forward, yelling, and Knight heard a wild shout, "Kill the Red Nazi!"

Then a platoon of Army mobile-guards dashed through the mob, driving the men back. As Knight climbed out he saw General La Roche, and back of him Doyle and Boussac. The young squadron leader had a dazed look. Over at one side, Knight suddenly glimpsed Gaston. The prim-faced undercover man had one hand inside his coat.

"Bring him in here!" La Roche's voice rose above the clamor. "Silence, everybody! Sergeant, bring that diable to me!"

Two hulking gendarmes dragged Knight up the ramp. La Roche reached out, jerked off the helmet and mask. For a moment there was not a sound.

"Knight!" gasped the bearded little general. "*Sacre Dieu*, what madness is this?"

Knight looked past him, at Doyle's

stunned face. "I had to make you bail out, Lothario—there was a time-bomb in your ship."

The color came back into Doyle's face. "Then that explosion—Dick, you crazy devil—you risked all this to save me—"

"Look out!" Knight said sharply. "Grab Boussac—quick!"

The squadron leader jumped back. A gun was suddenly visible in his hand as Doyle wheeled toward him.

"Keep back—*Schwein!* I'll kill the first man who—"

There was a loud report, and Boussac's gun fell from his fingers. He groaned, caught at his arm. Gaston came forward, smoke curling from the muzzle of his pistol.

"Thanks, Gaston," said Knight. "That was neat work."

"It was nothing," said Gaston primly. "I am a dead shot. I could have killed him. In fact, I should have liked to."

"*Mon Dieu*, will somebody please tell me what all this is about?" howled General La Roche.

"You've been the victim of a clever little trick worked out by Herr Mannrich Streim," said Knight. He motioned toward Boussac. "There is your *real* Red Nazi—as bloody a butcher as any man who ever lived."

"Yankee scum!" snarled the man who had called himself Boussac. "I should have killed you last night when I had the chance."

"That thought should give you a lot of comfort when they stand you in front of a wall. General, you might tell your guards not to let anyone leave the station. If you'll come into the mess I'll show you something that I'm sure will interest you."

* * * *

"SO you see," said Knight, "it was a scheme to get control of Squadron 85, as well as access to considerable secret information. That dictaphone planted behind the map shows how thoroughly Streim worked it out. When your men trace the wire I think they'll find it goes to the radio shed, and that Streim's spy-operators were relaying conversations verbatim to Germany, by a special ultra high-frequency set hidden somewhere in the shed and hooked up with the regular transmitter."

"There's probably another dictaphone in that 'secret' office of yours, connected up the same way. It's obvious that the Germans knew just when to rush over one of their 'Red Nazi' pilots, and they were getting the information too fast for any intermediate defensive steps."

La Roche fumbled helplessly with his beard. "But I still do not understand. What of Gourand? And the strafing of the U-boat?"

"We can't be sure, but it's probable that Gourand was making a regular attack on the U-boat as a matter of duty. Maybe he had to kill some Nazis after they got on deck to keep them from firing on him. It's obvious that Streim saw a chance he'd been waiting for while he played the role of Lieutenant Boussac, reserve pilot

called to the colors. I imagine he had already planned the Red Nazi scheme and was waiting for a good chance to start things rolling. His twin brother's being in the U-boat service must have given him the idea—but I'll bet money Streim's brother wasn't on that particular sub.

"Anyway, that was the beginning. The Germans sent over a pilot tricked up for the 'Red Nazi' part, to build up the revenge idea, so Streim could gradually remove all the pilots senior to him and become commanding officer, or at least high enough to be in on the important conferences. Squadron 85 is a key to the defense of this area, and once Streim had worked in several spy-pilots as replacements he could pull off raids on dark or cloudy nights, pretending to be chasing the 'Red Nazi' or other Germans, and blaming the raids on them. The burning of Pier Seven would have been just the start. With this area so familiar to them, they could have burned or bombed a hundred vital points, beside sinking freighters in this area. Every time a pilot or mechanic seemed to be getting a little suspicious, Streim and his men could plant a time-bomb in a ship and blame it on the Red Nazi, or perhaps order the men out into range of the Red Nazi's guns, as they did last night."

"Then that red light business and the mask was just to scare th' heck out of everybody?" queried Doyle.

"Simply a good bit of dramatization," nodded Knight. "By having him send warnings, saying when a pilot was going to die, it was sure to

cause a reign of terror. And Streim could easily see to it that the pilot was sent out, either with a bomb in his ship or to some place where one of the 'Red Nazi' unit could get him. They probably guided the 'Red Nazi' ships by their special radio sets during thick weather."

"You think there were several Red Nazis, then?" exclaimed La Roche.

"Had to be," said Knight. "The fellow I forced down on the beach near Saint Mere Eglise is behind stone walls by now. I think he can be made to give you the rest of the details."

"Hold on," interrupted Doyle. "How about that business last night—when the bomb hit that courtyard?"

"That wasn't dropped from a plane. The Messerschmitt flew over near enough to carry out the idea, and one of Streim's men set off an ordinary bomb there in the court, then pretended to find that message he gave Gaston. Streim—or Boussac, as he called himself—arranged that to clear himself of any suspicion by having himself threatened and apparently just escaping death. He must have done the same thing that time he claimed the Red Nazi set his ship on fire—planted a bomb in it and set it to go off just after he jumped. He planned to get rid of us earlier today—those two Romanos, Number 13 and Number 11, were fixed for us. Poor Deveraux got 13, and that was 11 you were just flying. I found out from the Nazi I forced down that you had a bomb aboard, but I didn't

dare warn you by radio for fear you'd turn back and Streim would shoot you down when he saw you had caught on. I didn't dare lift that mask for the same reason. Streim and that Red Nazi flight of his would have nailed you before you realized what was up."

"And here I was trying to bump you off," said Doyle, disgustedly. "Thank the Lord I'm not a dead shot like Gaston here."

"Knight grinned at the Frenchman. "I was a little uncertain about you, Gaston—my apologies for suspecting you, and thanks for clipping Herr Streim."

Gaston's prim face broke into a smile. "To be frank, *Monsieur Knight*, I had my doubts about you."

"And I sat around like an old fool, doubting no one," said La Roche dismally. Then his face brightened, above his huge beard. "But at least I am clever, to know where to find the miracle workers, eh, Doyle?"

"Me, I turned out to be a dud," said Doyle. "But that reminds me. What was it you said about squaring things for havin' us pinched last night?"

The general's blue eyes twinkled. "It so happens I go to Paris tomorrow. Perhaps you like to go backstage with me tomorrow night at the Folies Bergiere. The chorus, they are all friends of mine."

"What a man!" said Knight, as Doyle seized La Roche's hand and pumped it vigorously.

The general chuckled. "*Oui*, in my small way I am a miracle worker, too, *non?*"

News of the Modelers

(Continued from page 43)

charged with negative ions which hung in the atmosphere just above the field." Understood to be a rare phenomenon in Rhode Island, it is said to be caused by icy air from the Arctic colliding with a heated breeze from Long Island Sound.

When Dyask released his *Spitballer*—he's said to have given his job that name because it's a miniature of the British Spitfire—it immediately shot up vertically, partly in a corkscrew and partly on its back, until it had attained a height of between 300 and 800 feet. At this point, the *Spitballer's* motor timer snapped off (it could be distinctly heard by the fellows on the ground) and the ship leveled off on one wing.

A series of banks to the left and to the right, first over the north side of the field, and then over the south, followed. Higher, then lower, went the *Spitballer*, amazing Vy Dyask as much as his modeler friends. All this time, the clock ticked on.

A shout went up as the former record went into oblivion. Still, Dyask's job flew on. It never wavered until after the 3 hr. mark was passed. At that time, vibration loosened its neat tricycle landing gear and threw the model's C.G. back, ever backward, toward the tail wheel. Then the *Spit-*

baller shivered throughout its length and glided gracefully down to its maker's feet.

Proudly hanging his new gold trophy over the plane's prop, Champion Dyask posed for photos. And officials wired Headquarters seeking acceptance of the new mark.

Editor's note: We of FLYING ACES feel that Vy Dyask's mark should be accorded the full—Hey! Wait a minute! Maybe we'd better read the above item all over again. And WHAT does our desk calendar read as we write this? April FIRST? Oh, maybe that explains things. Yes, we guess it does. Anyhow, we'll give an original Phineas drawing photographed by Joe Archibald to the first reader who sends us a list of ten mistakes made in this news piece.

Kresge Indoor Results

MARCH 9 marked the date of the Kresge Aero Club's Annual Indoor Contest. Many radical types of gliders were entered in this Newark, N. J., meet, and many new designs won prizes. Results:

Glider—Senior: First, Edward Linfante, 33.5 sec.; second, Roger Hammer, 33 sec.; third, Fred Turner, 31.4 sec. Junior: First, John Powell,

27 sec.; second, Martin Ryan, 25.5 sec.; third, Jack Stroebel, 25 sec.

Stick—Senior: First, Henry Struck, 9 min., 46 sec. high; second, Frank Haynes, 9 min., 31 sec. high; third, Sidney Reich, 9 min., 21 sec. high. Junior: First, Julius Rudy, 5 min., 39 sec. high; second, Edward Tiefeld, 4 min., 45 sec. high; third, Michael Gural, 4 min., 30 sec. high.

Scale Meet For Omaha

A MODEL show will be held in Omaha, Neb., in either late April or early May, with the assistance of *The Omaha World-Herald*. The committee, which was appointed by the Omaha Advisory Board of Model Airplane Clubs, is headed by L. B. Bush, State Director of model aeronautics for the NAA. In this non-flying competition, ships entered will be judged for construction, detail, workmanship, fidelity to scale, and originality in design.

New Officers in Syracuse

ROBERT L. HORTON was recently elected President of the Syracuse, N. Y., Model Airplane Club, which is sponsored by the Syracuse Exchange Club and directed by Harry C. Copeland. Other officers are: Charles T. Marcy, Vice President;

Virginia Redmond, Secretary-Treasurer; and Jean S. Chadwick, Assistant Secretary-Treasurer.

Lessons For Ohio Beginners

DETROIT'S model classes under the Department of Recreation are concentrating on stick-type ROG craft for beginners. The Department has 32 classes a week, 15 for construction and 17 for flying. Stephen Corbett is the director.

Building sessions are held in school rooms, flying in the gymnasiums. A series of simple stick-type contests for builders less than 16 years old, now being held in all centers, will be topped off with a city-wide championship tourney.

Creedmore Novice Meet

DESPITE poor weather, the MMAC-sponsored Novice Meet was held at Creedmore, N. Y., on March 17 according to schedule. Longest flight of the day was made by H. Millar, Metropolitan Model League, 4 min., 35 sec. out of sight. Results:

Class "A": First, Ralph Moscatel, Sky-Scrapers; second, Warren Plohr, MML. Class "B": First, H. Millar,

MML; second, Ralph Moscatel, MML. Class "C": First, Jerry Stolloff, Sky-Scrapers; second, George Gilchrist, Sky-Scrapers.

Big Meet for S.C.

TWO PERPETUAL trophies and prizes totaling \$500 will be offered to contestants participating in the Columbia, S. C., Aero Midgets' meet scheduled for June 16. It is reported that the perpetual trophies are the first such ever offered in the South. The tourney will be mainly for performance consistency, and the ships that make the most flights over 20 sec. will be named as winners in the contest.

Harris Brothers Win

DON AND DOYLE HARRIS took top honors in a tourney contested by the Durham (N. C.) Model Aeroplane Club on February 24. W. J. Hammit was the director. Results follow:

Construction: First, Don Harris; second, Doyle Harris; third, Paul Carswell. Endurance: First, Don Harris; second, Thomas Hubbard; third, Doyle Harris. Altitude: First, Doyle Harris; second, Bill Council;

third, Don Harris. Distance: First, Don Harris; second, Doyle Harris; third, Thomas Hubbard.

Lynchburg Novice Contests

UNDER the leadership of Rutledge Fuller, the Lynchburg (Va.) Model Club is sponsoring indoor competitions for novices. The top places in the first tourney produced average times of 19.3 sec. to 21.3 sec. in the six events contested. The next meet brought improved duration marks. And with microfilm made from a home-developed formula of clear dope, thinner, and castor oil, Riley Montgomery turned in a novice record for the city of 1 min., 57.6 sec.

CGMS Hobby Show

THE FOURTH Annual Gas Model Hobby Show, sponsored by the Chicago's Central Gas Modelplane Society, will be held at Exhibition Hall, Hotel Sherman, Chicago, Ill., May 7 to 11. The show will be open daily from 1:30 to 10 P.M. There will be plenty there to attract gas addicts, with a flock of attractive booths displaying ships, new gadgets, and whatnot. Many special features are also on the bill.

What Do You Say?

(Continued from page 54)

landing gear and prop and made a peachy glider out of it. As a motor job I say fooley to the "Snowbird" stick!

RICHARD PATTERSON
St. Paul, Minn.

seen. It glided like a DC-4 with its wings off!

CLAUDE WARNECKE
Paducah, Ky.

His Monoped a Heavyweight

Model Editor, FLYING ACES:

I built "Scotty" Mayor's "Monoped" just as the plans specified. My model turned out very strong—but also very heavy. It just wouldn't take off. I'm now building the "Mystery Tailless" (April, 1940, F.A.). Here's hoping it turns out better.

HARRY WELLS
New Orleans, La.

Again—the "Hi-Climber"!

Model Editor, FLYING ACES:

Congratulations for Earl Stahl's "Hi-Climber" (August, 1939, F.A.).

I built her and she's a real humdinger. I made several changes, however—such as a four-inch longer wing with polyhedral and a one-bladed folding propeller. My plane averages sixty seconds and is very stable.

How about more plans like this, and a real streamlined Class "A" contest model with about a thirty-six inch span?

BROOKS MONROE
Charlottesville, Pa.

Editor's note: Don't know about that Class "A" job, Brooks, for the average builder seems to like larger craft better. However, next month we'll give you another Earl Stahl commercial model. Hope you like it as well as the "Hi-Climber."

All Questions Answered

(Continued from page 31)

dreds of pictures of war-time planes fail to bear out such evidence. We have seen them mounted outside the engine cowling but never on the top wing. Yes, further information along this line would be interesting. The book you mention can be bought at most drug-book counters for one dollar. Sorry, we do not conduct swap columns.

Bernard Kalnoske, Shenandoah, Pa.:—Mexico has about 160 first-line planes in her air force. There are no true P-36's in France. The French are using about two squadrons of Curtiss Hawk-75A's, a light-

er version of the P-36. They have added four more guns to each plane.

Bruce Jaeger, Gerber, Calif.:

The caption you refer to from that old mag. most certainly was in error. The "Flying Razor" was the Fokker D-8 a monoplane—not the E-5.

George S. Scraton, Jr.:—The Allison firm has a 2,000-h.p. engine in the experimental stage. I do not know whether the Lockheed XP-38 has been accepted by the Army Air Corps or not. No report has come out that another has been built, even. There are about 61 Douglas

torpedo-bombers in our Navy.

Teddy Cohen, Miami Beach, Fla.:

—Sorry, but we know nothing of the Bell Airacobra doing 678 miles in a power dive. However, you will find considerable info on the Airacobra in our May number.

Art Harszy, St. Louis, Mo.:—We appreciated reading your letter to our Light Plane department—and we hope the weather clears up for that sky ride of yours. To win the two bucks, though, a letter must be about some angle of flying itself.

BY ARCH WHITEHOUSE

A Modeler Learns To Soar

(Continued from page 4)

a deserted sector. And with the *Cherokee* assembly job taking only ten minutes, we were quickly ready to go.

In the sky overhead, Clyde Schlieper and Wes Carroll were droning back and forth in their famed Piper Cub. About four hours later, they landed at Long Beach with a new world's endurance record.

Now we unspooled more than 1,800 feet of tow-line, then Stan slid into the tiny cockpit for a first test hop to check the rigging. As per usual, some boys were on hand to aid us. Finally, I walked back to the car (a good third of a mile!) and watched for the wing-wag signal. Stan was ready. So I began driving the car, slowly at first, then in racing style, across the dry lake bed.

Setting the throttle after a bit, I peeked back at Stan. He was now more than a thousand feet up behind me. *Cherokee* was only a silver and red dot in the sky. A smaller red dot—the cable parachute used to lower the cable end after casting off to prevent its coiling on the way down—was flagging back and forth below *Cherokee's* nose.

An instant later, Stan had cast off and was heading for parts unknown. I hopped out of the auto and released the tow-line, then got back in and drove back to the parachute end. This end I attached to the bumper, then I headed for our trailer base where he had agreed to land. The sight of that great winged bird was breath-taking. In fact, in Stan Hall's hands, it was awe-inspiring. Several slow turns, a long straight glide, a quick turn onto the field, and a silent smooth landing made up Stan's preliminary ten-minute warm-up. He hopped out, tightened a turnbuckle on the left flying wires, then asked me to climb in.

Cherokee's rear pit, located just under the wing, is entered by a side panel which lifts upward. After I'd got in and secured the panel, one of the boys roared away in Stan's coupe to take us off.

Brother, to describe all my sensations on that first *real* glider flight would take pages. We bumped along the ground, rose slowly, then when the lad got the auto into second gear, we really zoomed. I looked out the small window and saw the car far below. It was racing across the lake bed, throwing out a long cloud of white alkali dust behind it. The tow-line curved downward from our nose until it disappeared into the tiny speck that was our tow car. The little red parachute flapped gaily about ten feet below us.

AFTER about six minutes, and at 1,200 feet of altitude, Stan pulled the release and *Cherokee* hopped upward in a great hundred-foot lunge. She had shuddered throughout her

structure as that 85-pound weight of the tow-line was released. And at that precise instant we caught a thermal!

Strangely enough, it's difficult to be sure you've really caught a thermal. Some veteran soaring pilots like Stan Hall, Peter Riedal, Dick Dupont, and Bob Stanley have learned to feel them "by the seat of their pants." But most persons must rely on the indicator of the sensitive altimeter, which they suddenly see mysteriously climbing.

At any rate, right when you know you have a thermal, you must swing into a quick bank. For since a "riser" is in reality a miniature cyclone swirling in a great cone upward, it is all too easy to glide straight on through and lose it. But the quick bank catches it square on your wings—and you go up like an express elevator.

Well, Stan nonchalantly nabbed this baby right on the nose and we started skyward. Later, at 1,700 feet we lost it because of one or two things. Either we banked out of it or it just naturally petered away of its own accord. Meanwhile, Stan and I talked back and forth just as we would in a quiet room. There was only the slow murmur of the wind through our rigging and the sight of the ground 1,700 feet below to tell us we were flying. It was a thrill I'll never outlive!

Stan now banked slowly to the right just in time to catch a close-up of the endurance flyers in the Cub. We exchanged greetings and they hung around us completely intrigued for several minutes.

On the way back, however, we were treated to a sight which wasn't so pleasant. A couple of gow riders were doing a 130 m.p.h. straightaway in their racing bus on the dry lake below us when another gow suddenly slashed out at well over 100 per and caught them broadside!

From the 600 feet altitude we had at the time, we clearly saw bodies hurtle through the air and crumple on the hard lake bed. Both racing cars—suped-up V8's—were reduced to wrenched masses of spare parts. The sight, as you can well imagine, sent a cold shiver down my spine, and Stan, wishing to banish the tension, right away leaned around to me and spoke up: "All right, Mac, you take *Cherokee*!"

I grasped the stick, mechanically brought it back, and still thinking of power jobs, reached for the throttle that wasn't there, with an idea of gaining a little altitude for the swing into the landing field. Yes, I still had a lot to learn about the subconscious reactions of flying a motorless job. Sure enough, I stalled her, lost about 400 feet of altitude, and skimmed across a barbed-wire fence on the border of the dry lake with just inches to spare.

AFTER LANDING, we leaned comfortably against *Cherokee's* nose and Stan related to me a wealth of dope on glider flying tactics that I now wouldn't take a million bucks for. I intently absorbed it all. And when a little later I sat down alone in *Cherokee's* streamlined pit, I felt confident I was ready to do some real solo gliding.

The swell soaring experience that followed is a memory I'll always thrill to. Signals exchanged, Stan raced the auto across the sands. Then *Cherokee* climbed me into the clear blue sky. Lightly loaded, it reached nearly 1,400 feet before I felt that little pull that meant I was as high as the tow-line would permit. I cast off and watched the parachute flutter earthward. Baby, here I was solo in a soarer—in a plywood and fabric bird whose flight depended upon my own two hands alone!

I kept her there evenly for about two minutes, my eye glued to the altimeter. Then suddenly the needle began to swing up. Slowly, I nosed *Cherokee* into a shallow bank and began shooting heavenward. I attained some 2,500 feet, then I lost the thermal. I proceeded to head across the lake bed with my heart doing happy nip-ups. I was soaring—soundlessly, effortlessly.

In another six minutes I saw the needle bob up again. Once more I was off in an exciting climb, and this time I was determined to stick with the riser. I held her in a tight left turn and watched the dial.

To a full 4,200 feet I stayed with it, but then I nosed out, before getting lost in the high blue, and looked around for the lake. About five miles away she was, nestled down behind the hills. I could just make out the great white expanse and some dust trails of the gow jobs.

I headed for it—but on the way I caught another thermal. Nope, I couldn't resist taking it—and next thing I knew I was up in the hills of the great Sierra Madre Mountains, soaring on silent wings. I didn't want to come down. I felt I was nearer to heaven than I'd ever been. I wanted to stay up there 'til the people of the earth quit fighting and found a lasting peace.

But it was getting late, Stan might be wondering—and I was plenty hungry, not having eaten since a snack the night before. So I headed back West and looked for the lake.

After another hour, I spotted Stan and the trailer in our own private corner of the dry lake, and I nosed into a steep dive. I banked over the car, yelled to Stan, then straightened out for my landing. No three pointers in a glider, you know. You simply keep her level on that single nose wheel.

Without a bounce, I rolled along the packed sand, applied the wheel brake, and came to rest hardly ten

feet from the spot where I had left. Record of my first solo soaring flight: 4 hours and 10 minutes, and 4,200 feet altitude! And then Stan had the nerve to ask: "Well, Mac, what do you think of soaring?"

I opened my mouth. But finding only a flock of understatement clogging my throat, I closed it again. What could I say? Frankly, fellows, I was speechless. Soaring's great! Undescribable! *The very best there is!*

What is your exuberant correspondent doing about it? Well, wait until you see my new *Condor*! It's going to have a 52-foot span, panel lights and— But you'd better not get me started on that. I might go on gabbing for a week.

Pick-Up Pilot

(Continued from page 22)

"He piled that Douglas up, Murrie, no matter how you look at it," the Chief Pilot reminded her again. "He ignored flight orders. He had the wheel. Still, I wouldn't tell you to give up all hope. Why don't you work on Malloy? After all, Malloy is the man!"

"But why can't the line transfer Grant to another division? Why keep him here buzzing a pick-up car? He's losing too much in that bus."

"Look, Murrie," Naismith explained for the twentieth time. "We could give him test jobs and special charter flights. He could fly them back and forth from the central repair depot. But don't you understand that we can't transfer ticketless men into flight jobs. He's got to get around Malloy!"

"Isn't there some way?" she pleaded again.

Naismith wagged his chin, lifted his peaked service cap, and scratched his silver gray hair. Somehow Maureen Prentice's eyes followed his long thin hand, and she winced slightly at what she saw.

"Pop—I never knew That would across your head ?"

Naismith rammed his cap back on. He drew in his breath. "An old wound, Murrie," he said with a rather guilty tone.

"I've never noticed it before Pop. It"

"Yeah, I know. It was a bad one! Yes, and under the circumstances I shouldn't be alive."

"The war, Pop?" she asked faintly peering around his turned-away face.

He nodded. "Walked into a Sop with prop one day. Careless like. Should have killed me. But it it just turned out to be a bad scalp wound. You know how they leave scars. That's all. Just looks bad."

"You were lucky, weren't you, Pop? Funny about luck. Some have it, and some don't. Grant Sayer, for instance, is one who doesn't have it."

"Look, Murrie, forget it. I'll try to work out on Malloy for you. He's a tough guy to shave. But he may want to shoot one of his cousins into

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one of our co-pilot spots one of these days. I'll do what I can, Murrie."

She watched Naismith stride away. He was still slim and lean. He had a first rank job. He had been a war hero and had lived to enjoy the fruits of wide experience. But there was luck, too, in Pop Naismith's log book. Another man walking into that prop would have had Fate against him. If that had been Grant Sayer, for example

Maureen Prentice flipped a salute to the Assistant Maintenance Manager and hurried away to the hostess classroom to give her lecture on "The Care of Babies During Flight."

GRANT SAYER split the traffic of Manhattan for what seemed hours on end, then turned the car over to Toby Ryan at the city terminal at 9 o'clock. After washing up, he changed into his civilian clothing, pulled on a polo coat purchased in better days, and belted it tight. Finally he flipped the brim of his hat down over one eye and walked west on 42nd Street.

He remembered Maureen's invitation for a snack supper, but he ignored it. He went into a cafeteria, grabbed a glass of milk, some indigestible pot roast, and a baked apple. He found a table and sat down feeling utterly alone despite the swirl of gorging humanity about him.

This was different from the other days when he was flying into Newark, had his own car, and enjoyed fine rooms at the Douglas in Newark proper. Then it was hot showers, real

**GRAPHIC!
DRAMATIC!
EXCITING!**

meals, clothes, and entertainment. A movie, perhaps, or maybe some bowling at the Essex House, plus Monday Q.B. dinners and afternoons of golf out at Crestmount. All the hotels liked the clean cut lads of Pan-Central "just to drop in" with their flight jackets gleaming.

Grant Sayer held a chunk of poorly-cooked beef half way to his mouth and pondered on it all. Yes, Fate had treated him much better then. And considering his ability to fly, it wasn't just, he figured, for Fate to give him the go-by now.

Abruptly, a waitress came and grabbed his empty meat plate with a nasal whine: "You finished with this, Mister?"

"Take it away," he cracked back at her.

"Well, yer don't hafter bite me do yer?"

"I gotta bite something. Not much to chaw on in that pot-roast. I'll bet one of the chefs is minus a shoe. Have a look around when you go in back!"

"Listen, Gable. The Commodore Hotel is down the street. This isn't it. You backed into the wrong stall."

"Yeah? Well, I've been there, too," growled Sayer, bisecting his baked apple with a bent fork. "An' I'll be there again, too, baby!"

"I'll be waitin' for yer, Handsome. I'll be standing near the florist's, and you'll know me because I'll have a cocoanut palm under each arm. An' I'd just as leave wash dishes there as here."

Disdaining to reply, Grant Sayer went back to his thinking. He saw,

in his mind's eye, the day that ended his sky career—as clear as though it were being shown on a screen: Flight 10 out of Miami for the north. A storm had slapped them all the way to Jacksonville. Only a handful of passengers had started, and most of them had quickly chucked it for the rattler. Who could blame them? Wasn't it like riding a mad roller-coaster all the way up?

The teletype had ordered them to stay grounded at Jacksonville. And then it happened—happened fast.

There was an auto—a big car, all bright and new. It had everything from white-walled tires to chromium exhaust ports, plus leather splash guards and a guy in livery. Then Maureen Prentice, his stewardess, had stepped into the picture.

"It's a baby," she half screamed.

That was in the waiting room at Jacksonville. Maureen was trembling. She was dripping wet from the rain. The manifest, splashed and torn, hung from her hand.

"It's a baby!" she cried, grabbing him with one hand, "and we've got to get it north!"

"We're grounded, Murrie," he had pleaded.

"We must get permission to go through. The baby *has* to go through, Grant. It's dying! And it's the only way its life can be saved!"

"Can't they put it on a train?"

"There's no time. Too slow by rail. It's choking to death! A bronchoscope must be used to dislodge something caught in its windpipe."

"Can't they do that job here?"

"No, the big surgeon who could handle it in Jacksonville is away and can't be reached. And the mother is afraid to risk anyone else—except a specialist she knows of at Rockefeller Foundation in New York."

Maureen was clacking away like a twisted news tape running berserk through an automatic typing machine.

"Where's the mother?" demanded Grant.

"Collapsed! But hurry, Grant. We can radio through for a car at Newark. The chauffeur has the baby outside."

"You're crazy. We're grounded!"

"But the baby will *die* if we don't get the obstruction out of its lungs!"

There was a face off in the distance—Hell-or-Hoboken Pyle, the Traffic Manager guy. He was shaking his head and holding up a message tape. That meant the weather was bad. And if old Pyle admitted it was bad, it must be terrible. Generally, he'd send a guy off in a tornado!

"We've got to go, Grant. The baby will die! You fly while I nurse it."

THEN they brought out the baby. It was in a white basket with frilly things around it. And its little face was distorted with the effort of breathing. Mouth agape, it was wheezing spasmodically in frail gasps for life.

"Poor little guy," said Grant.

"We've got to risk it," Maureen Prentice was saying again.

"Maybe you are—but I'm not going without an Okay!" Dick Feverell, Sayer's co-pilot, was saying.

"I'm ordering you to go," shouted Sayer, his mind now made up. But then he realized such orders were out. "Never mind, Feverell," he reconsidered. "You're quite right. You can't risk it. Maureen and I will take the chance—alone. Put the baby aboard!"

"You're crazy!" Hell-or-Hoboken Pyle was saying. "They'll take up your ticket, Grant."

"So what? This kid's dying. What's a ticket?"

"He might die anyway, you dope! You'll be four hours or more getting north in this stuff. The kid can pass

fore. He sat there in the cafeteria and flew it all over again.

Pyle had raged as they made for the Douglas. Then the ticker tape flipped madly from the teletype:

"... Unauthorized flight—Forbidden attempt to complete Flight 10... Demand that Flight Officer Sayer report via telephone or teletype to Newark at once... Positively refuse to allow flight... Situation unfortunate, but can do nothing until weather abates..."

But Grant Sayer was not to be stopped now. He was up front—flying. And into his mike he was barking: "Flight 10... Flight 10... Taking off Jacksonville... Visibility zero... Flight 10 taking off... Time 9:24."

Maureen had lashed the basket to Seat Two, then had kneeled beside the seat and... closed her eyes. She had mumbled a few lines of a prayer and they lifted from the runway to battle the tempest.

"Flight 10 forbidden to leave... Flight 10 forbidden to leave!" The words had hammered through the air and into Grant's ear. But "Going through!" had been his grim reply as the Twin-Wasps snarled and the props bit into the storm.

For twenty minutes he fought her on instruments, then he reached the clear at 18,000. Thereafter, he sat tense, reported through on schedule, and ignored the repeated demands of *"Turn west and get into Atlanta."*

"There's no one there who can take care of this kid, is there?" demanded Sayer of the Division Manager. "They got one of those gadgets that gets things out of kids what swallow things?"

"How do we know? Anyway, you'll never get north."

"There's a guy in New York who can do it. He's got one of those gimmicks and we're on our way. Phone him and make sure he doesn't go out of the town tonight. He's got a patient. Flight 10... signing off."

Maureen came in a few minutes later and wagged her head. "You've got to go down. The baby can't take this altitude. We'll kill him up here. Get down lower, Grant. He's fighting like a little soldier—but the oxygen's too thin."

"But, Murrie—it's bad down there. We'll never get through in time."

"I tell you, get down, Grant! Say, to about 5,000 feet. Give him a chance. Please!"

"Okay doke! Flight 10 coming down to 5,000 feet... somewhere over Raleigh... I think... Get that bronchoscope guy at the Rockefeller Foundation... Flight 10 coming down to 5,000 feet."

At 5,000 they took the storm's brunt again. It lashed them from all sides. They rocked, swayed, and rolled. But somehow Grant Sayer managed to keep her nose pointing NNE.

THAT was many weeks ago. A lot had happened since then. They had moved from Newark to LaGuardia.

Answers

TO QUESTIONS ON PAGE 30

- 1—A double radial engine is one that has two rows of cylinders around the main crank-shaft.
- 2—The true meaning of a dog fight is where a great number of planes engage in aerial battle and where all recognized formations and tactics are disregarded.
- 3—A flat spin is a maneuver in which the airplane drops flatly toward the earth while spinning about its vertical axis.
- 4—A throttle gate is a metal box containing the main throttles and ignition adjustment levers.
- 5—Power loading is computed by dividing the gross weight of the plane by the rated horsepower of its engine. It's expressed in pounds per horsepower.
- 6—The safety factor of a plane is the ultimate strength of a plane, or unit of an aircraft, divided by the greatest load which is to be imposed on that plane or unit under the most violent flight conditions.
- 7—The Coastal Command (in Britain's Royal Air Force, for instance) is the general term given to all planes used out of coastal airports and used in coastal defense.
- 8—The term "aviation" is used to indicate the modern science of air navigation.
- 9—A pilot skilled in aerostation is the flyer of a lighter-than-air ship—an airship pilot.
- 10—Walter Wellman was an American aeronaut who in 1912 tried unsuccessfully to fly the Atlantic Ocean in a dirigible-type airship. He was rescued after crashing a few miles off the New Jersey coast. His airship was lost.

out any minute, if it's got something in its windpipe. Suppose you crack up? That does for three people and a lot of airplane. The airlines get another black eye because you want to get your name in the papers!"

"You're getting one without me getting my name in the papers, Pyle!"

It seemed so easy then. Pyle never saw Grant's left flick out like an adder's tongue. It caught him just where Sayer aimed it. And it dropped him.

"Come on!" yelled Grant. And they raced the baby to the ship.

THAT TRIP reeled off before Grant Sayer's screen of memory as though it had happened the night be-

dia Field—and Flight Officer Grant Sayer had become a pick-up pilot, driving the passengers from their hotel to the field instead of flying them on a flight plan from New York to Miami.

It was crazy how that flight had finished. But the whole world was crazy. They had somehow hung on and reached Camden. They were battered silly by then. It was like taking a ride in a runaway cash cylinder in a department store.

Maureen had hugged the basket tight as she huddled on the floor. The baby somehow slept in fits and starts, but she watched it every mile of the way, checking its respiration continually and hovering over it as though it had been her own.

She checked with Grant up front every ten minutes or so. He was weary and worn. His eyes were blood-shot, and he turned his head and moved his arms like a punch-drunk pug trying to last the round out. The big Douglas rattled, groaned, and creaked. Could the designs of man, the alloys of science, and the sinews of the human frame stand it another twenty minutes?

Grant Sayer was as near being air sick as he had ever been in his life. He mumbled into the muzzle mike like a man under the influence of a drug. His words came out in jets of fuzzy-tongued speech.

"Flight 10 . . . Flight . . . Flight 10 on its way . . . Calling . . . Calling Newark . . . WREE . . . Flight 10 . . . S'where over Trenton . . . Trenton. Flight 10 . . . Trenton . . . Get the butterfly net . . . Flight 10 . . . Come in . . . Newark!"

They screeched a weather report that would have frightened a Gloucester fisherman. They ranted meteorological data that sounded like the Nautical Almanac read by a maniac. They gave the wind speed, the ceiling, the barometric readings. And they might just as well have been reading the figures off the driving band of a howitzer shell for all it meant to Grant Sayer.

"Get off west . . . anywhere, Sayer!" they barked from the storm slashed tower at Newark. "Try Reading . . . try Scranton . . . You might even hold her down at Allentown . . . but for heaven's sake don't come into Newark. It's murder!"

Sixteen thousand short-wave radio nuts got a thrill that night which would have put Orson Welles to shame. Boy, that was a lulu of an air drama.

"I'm coming into Newark. Get that guy with his windpipe fish-hook. We got him a patient. Flight 10, somewhere over . . . over New Brunswick . . . Flight 10 . . . signing off . . . I'll be seein' ya. Clear the field."

Somehow he found the radio beam cone of silence outside Elizabeth and took a chance. He ran it out the proper number of seconds as best he could figure. Then he turned back and put the flaps down, half-blind and hardly able to distinguish the "A" from the "N" on the beam.

Just at that minute, Maureen tore the door open and stood like a ghost between the two seats. That was where the mistake was made. Grant would have been lowering the wheels. But she cried to him: "Get her down! Get her down! The baby is choking . . . choking . . . He's having a convulsion, I think."

"Hang on, kid! Hang on . . .!"

They came back, turned again over the cone of silence, and he shut the engines down. The big Douglas bucked and swayed in the inky lane—and glided down. Grant Sayer held her, staring ahead while yelling into his mike for lights, rockets—anything.

"Please!" came Maureen's voice behind him.

"Get back there! Flat on the floor! Grab the baby!"

She went back, and Grant Sayer sat and took it.

He saw a dim, hazy flash of the runway ahead now, and hoped he was at the right end. He held her and watched the air speed indicator. Then he saw the red light on his dash! The wheels were still up!

"Wow!" he gasped and reached for the retractable gear lever. But it was too late.

She was down! A wing-tip dipped and the blades of two props slashed at the concrete and ripped three motor studs away. She had hit—with the anvils of eternity jangling and spitting their sparks.

BER-R-R-ONG!

The big Douglas tore out her belly plates and went hammering along the concrete on her keel. She threw one engine clear, dug in a wing-tip, horsed around, and hurled flap-surfaces away like billboards in a tornado.

Grant snapped the switches, snapped his belt, and—just sat there.

Inside, Maureen Prentice was reaching for the baby. The child had been hurled part way out of the basket. She drew him back, her hand under his head.

Then she knew.

In her hand lay a tiny, tinkling, wet toy bell!

She held her hand open, stared at it. The baby glanced up at her and smiled. They wouldn't need the bronchscope now. Grant Sayer had piled up \$80,000 worth of Douglas—and the crash had done the rest. With life oozing out by the seconds, an airplane crash had provided the impact that had forced the tiny toy bell from the baby's bronchial tube!

An \$80,000 operation!

Maureen clambered to her feet, jerked the door open, and stepped out full into the beam of the crash car. She tried to explain—but there was \$80,000 worth of wreckage behind her which monopolized the scene—which defied explanations.

Someone took the baby and the frilly basket. A doctor agreed that there was now nothing the matter. The baby might have swallowed the little bell, but there was nothing to get excited over any more. It had



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simply coughed it up again.

That was what the doctor said.

BUT what the Division Manager said was something else. What Inspector Malloy said was also something else. They did congratulate Miss Prentice, because they believed she had caused the child to emit the foreign body. After all, she WAS a registered nurse and ought to know about such things. They agreed she had acted with rare courage and fidelity.

But a pilot who forgets to lower his wheels—after he had refused to obey flight orders—was quite another thing. After all, it took hours to get that mess off the runway. What's more, Douglas airliners don't sell for hay.

Grant Sayer—pick-up pilot!

The charges were about a mile long and on paper they were all correct. There was nothing much that could be done about it. Inspector Malloy was not mincing words when he said so.

That's how it all had happened.

Later, a father in Jacksonville sent Grant Sayer a very nice note—of thanks. And he wished to know what had become of the little bell because he wanted it for a souvenir to put in Junior's baby book!

Funny, but Grant Sayer could always laugh about that. He laughed again as he went out of the cafeteria.

He trudged along toward Broadway and stood staring up at the news flashes racing around the sides of the triangular *Times* building.

It was the same old stuff: Peace talks . . . Hitler says this . . . Chamberlain says that . . . bombers dropping bombs . . . politicians ranting about the coming election . . . Policeman shot . . . serious oil plant fire somewhere in Pennsylvania . . . another Canadian contingent crosses the Atlantic safely . . . two more trawlers sunk . . . movie star marriages for the eighth time, or something.

Then someone was shouting to Sayer. Someone from an auto at the curb.

"Sayer! Hey, Grant!"

It was Toby Ryan. He was in the pick-up car.

"Sayer! Bin looking for you all over. Telephone and everything. Take over this bus, will you?"

Toby was out like a cork from a bottle. He was shoving Grant in.

"Look! Lower Broadway, quick. There's two guys there with some stuff. They got to get out to that Pennsylvania oil fire right away. Pick them up and get them over to LaGuardia. The Chief's orders. Get it?"

"I saw something about it on the lights up there. Okay. Buzz off."

"I gotta get back and take the other bus. So long, Grant!"

Sayer was glad to be doing something again. He'd been thinking too much anyway. He tooled the pick-up car west on 42nd and shot down the elevated highway. As he drove, he wondered what it was all about.

They were waiting for him in front of an office building near City Hall. Two important but tough-looking guys. They had a flock of crazy-looking equipment and bundles of crazier-looking clothes. They wasted no time, either. The stuff was thrown into the car and they were off again hell-bent.

"What's this all about?" asked Grant when they were back on the elevated road that skirted the river.

"That oil fire at the Lubeoil plant—it's a heller!"

"Saw a news flash on it . . . Times Building," said Sayer.

"We gonner try to put it out. Oil fire shooters," explained the man with the big cigar.

"More fun, eh?"

"It's better than workin'. Dough in this racket, brother. We get a couple a year and we don't work much after that."

"Takes nerve, don't it?"

"What's nerve? But of course there's some things you're afraid of and some you ain't. Them guys of yours, for instance. Flying them planes every night. I wouldn't go for that. That's *too* nervy."

"I wouldn't know," said Sayer scowling.

"You stay in this boiler, Brother. You always got one foot on the clutch, anyhow, and you can stop when it gets soupy. Personally, I won't be satisfied until we're on the ground packing that dynamite in. That's sport, Brother—when that charge goes off and blows out the light. We'll get the big fire out there, then the little ones around it will be easy."

"It must be sport," agreed Grant.

"Yeah, we make plenty and sock a little away now and then. And you can always drive a red cart when times get tough."

"Red cart?"

"Sure! Explosives—dynamite and T.N.T. for the mines. Truck driving."

"Not for me!"

THE MAN LAUGHED and whipped around to his pal: "He says he wouldn't like to drive a red cart, Joe. Tell him how much stuff *we* got in back here."

"We got enough to blow this boiler all the way to Yonkers."

"Yeah?" said Grant easing up on the accelerator. "You taking *that* stuff through by air?"

"Sure! But we don't tell 'em that. It's packed pretty nice."

"Baby! Baby!" said Sayer suddenly feeling cold. "Happy landings!"

"Let's hope! I wanna get at that fire. I like oil fires!"

Grant Sayer said no more. He was too intent on his driving.

At LaGuardia they ran into Hades let loose. There was a Douglas on the apron, a couple of doctors and several hostesses, Pop Naismith with a map and a weather tape, Jerry Clothier, the newspaperman, plus Malloy, all efficiency and bounce. There were also black bags, large cardboard cartons with red crosses on them, special medical equipment.

And now Maureen Prentice was at

Grant's side.

"Grant! So glad you came. They're going out to the fire. Got doctors for some burned men out there. Nurses, too—hostesses because they're used to flying."

"Yeah, they got something else, too," said Grant, watching the oil shooters packing their queer boxes and asbestos suits aboard. "They sure might need those nurses!"

"It's terrible," she replied excitedly. "A lot of third degree burns. Need all the tannic acid dressings they can get out!"

"Why don't they run out of Cleveland? That's nearer. Three hundred miles from here, isn't it?"

"It's the dressings, Grant. And the men you brought up from downtown. Had to get the dressings in bulk here in the city."

"Come on!" Pop Naismith was calling. "Everyone aboard!"

Naismith had seen third degree burns in France—men blinded, blistered over half their bodies, faces charred beyond recognition.

Harry Tilton, the traffic manager, shepherded the doctors and nurses into the cabin. Malloy helped a mechanic stow cartons into the nose compartment.

"Where's Wardell?" Pop Naismith snapped, taking a strip map from Tilton. Then he caught sight of Grant talking to Maureen. He glanced from Sayer to Tilton, then back at Malloy.

"Wardell's not here yet. No time for him to make it from the city. You'll have to go without a co-pilot. This is an emergency," Tilton barked.

"Nothing doing!" blazed Malloy. "This plane doesn't go out without a full crew. You know the rules, Tilton."

"All right," agreed Naismith. "You got a ticket yourself, Malloy. You come along and make yourself useful for a change."

"No, Naismith, that job isn't for me. You know the rules."

"All right, but you come along anyway. We'll take Sayer, too. He's over there. They can use him after they land. Oke?"

"Well, to cover everything, Okay!" Malloy agreed.

"Come on, Grant!" yelled Naismith.

Sayer found himself being shoved across the apron by Maureen. He was trying to tell her what the oil-shooters had taken aboard, but it was all too dizzy. She was screeching in his ear and tugging at his arm, and he was soon in the cabin, sitting next to the guy with the big cigar who liked to shoot oil fires.

THE EFFICIENCY of the airport was in high gear now. The big Twin-Wasps were wailing and sending the thermometer needles up the dial. Naismith was in the front seat listening to Malloy check the radio set with the control tower. Malloy was seeing that Aviation—the commercial side, at least—was getting a square shake. Pop Naismith wasn't worrying about Aviation. All he could

think of was rows of tortured bodies—seared and burned.

The cabin door abruptly closed with a metallic bang. Tilton ran out in front and gave Naismith the tally-ho and they thundered out to the runway. Then they got the flash from the tower and rumbled away.

Inside, Maureen saw that everyone was clicked into a belt—except Grant, who got up and instinctively wandered up the aisle to the control pit door. He leaned and watched Naismith ease the juice into the Twin-Wasps and guide the big Douglas across Jersey to head for the bends of the murky Delaware beyond Easton.

A short, chubby doctor looked up at Maureen. "We can use you when we get there, Miss Prentice, in fact, all the R.N.'s we can get. At least thirty men out there are reported to have third degrees. That tannic acid solution up there—only stuff that can save them. Thank heaven for Davidson, the chap who discovered that tannic acid trick. Only thing we got!"

"That isn't all we got, Doc," Grant Sayer was thinking. "Baby, oh baby!"

Malloy came down out of the front pit. He was all nerves. He glared at Sayer, yet he wanted some one to talk to.

"We'll never get anywhere near it," he said. "Got a tip out of WWQ—Bellefonte—that two more big tanks have gone up, pouring burning oil all over the river. It's sweeping all around the plant now. Never be able to get in."

Malloy had spoken low, but the stubby M.D. overheard him.

"We got to!" the doc mumbled as he stared out across the sea of foliage and rock that blanketed "Hell's Stretch" over the Alleghenies.

"How the heck are we going to? They're cut off from the southwest by burning buildings, cracking coil plants, and refinery equipment. They're all ringed in by fire—the burned guys!"

The stubby doctor went whiter: "River afire? Cut off on all sides? What's a good swear word?"

"Couldn't we drop the stuff to them?" said Malloy.

"Sure! Sure you could! But you couldn't drop the docs to do the work, and those chaps can't dress their own burns."

"And you ain't dropping the stuff those oil shooters brought, Malloy," said Sayer, leaning against the door. "You signed that stuff on, didn't you?"

"Sure. The oil-shooters. They got gear and asbestos suits. I signed them on. So what?"

"Dynamite!" said Sayer calmly—that is, as calmly as he could under the circumstances.

Malloy went through some fantastic facial contortions.

"Sure!" cracked Grant. "What did you think they shot oil fires with—cap pistols?"

"But . . . but . . . I didn't know! Dynamite!" gasped Malloy.

"Take it easy. Don't shout it all over the ship."

"But I signed it on. It's . . . It's . . ."

"Yes, it's explosive—and it's not supposed to be on board. Against the rules. Funny, eh, Malloy?"

"I didn't know—did I?"

"You signed the stuff on. I saw you loading some of it yourself."

Sayer left him at that, went aft, and sat down. He saw Malloy attempt to collect his wits, then go back into the control pit.

"If we had a chute, I'd go over with some of the dressings," Sayer said to Maureen. "I might miss the fire some way and land safely."

"I wish you were up front flying her," said Maureen, her fingers clenched on his shoulder.

"If you knew what else we had on board, you wouldn't. Besides, what's wrong with the Chief Pilot?"

She disregarded his question. "You'd get us in, wouldn't you, Grant?"

"I'd get you in? What do you mean? We can't get in, according to the latest report. The whole place is surrounded with burning oil!"

"But it's a big place, isn't it, Grant? These oil refineries usually are."

"Look! Just what are you trying to get at?"

"I don't quite know. All I know is that I wish you were up front."

"Well, I think I will stick my nose in up front at that!"

He went to the pit, moved in close behind the two seats, and stared ahead. Malloy sat dumb. Naismith had two steady hands on the wheel, but he was licking his upper lip with his tongue.

AHEAD, they now sighted a curling black smoke formation hanging over the refinery like an inked-in dragon. A dotted film of sticky soot already flecked their windscreen. Flaming feathery ashes, twisting and tumbling on the cushion of volcanic heat, danced out of the ebony death trap, drew crazy designs, and corkscrewed away. The Douglas thundered on in, and Pop Naismith circled the smoke, the knife-like wings slashing through what seemed like a battalion of fire-snorting Black Huzzars that threatened to storm them and bayonet their control surfaces.

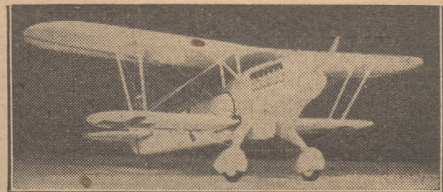
Through the base of the smoke a flaming serpent crawled around the projection of land. The refinery was fire-bound on two sides. The third was even worse. There, a savage broken tank head spilled flaming fluid to feed the writhing monster. Meanwhile, the current of the river carried the blazing reptile's tail around under the overhang to sweep on and complete the cordon of death.

Pop Naismith circled again and studied the double row of buildings that provided the third flaming side to this triangle of terror. He glanced quickly at Malloy. Then he turned, peered through the slot down the cabin at Maureen, and gave the signal

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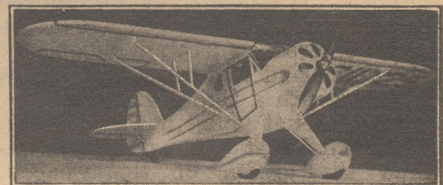
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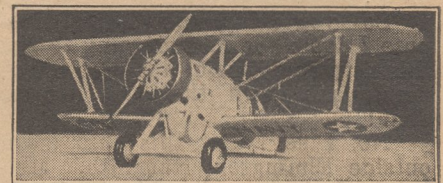
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for the fastening of the safety belts.

"Whew!" breathed Grant Sayer.

"What are you going to do?" Malloy suddenly raged, facing the Chief Pilot. "Not—not try to—?"

"Sure! Ever been burned?"

"You mean—you mean you're going to try to put this plane down *inside* there?" Malloy cried, fingering the inside of his collar.

"Why not?" said Naismith calmly. "Can't get in any other way. Those fellows have been lying there like that for Lord knows how long. I can try, anyway! We have to help them."

"You fool! You'll kill us all! Why, I'll—I'll ground you for ten years! Aviation will get another black eye!"

"Shut up! There's a bunch of fellows down there with black faces, black arms, and black legs—burned. What's a black eye in the face of all that?"

Grant Sayer stood back in the narrow companionway, listening. He thought of Lincoln's Gettysburg Address and wondered whether it was as good as what Naismith had just said. And now, closer than ever, he saw the flames roaring and writhing along the banks of the river like a scene from Dante's *Inferno*.

Then fury broke right there in the control pit. Malloy jerked out of his seat, fingered something blue-black! It glinted and Naismith squinted at it, his mouth a tight thin line.

"You're not going down in there, Naismith," Malloy snarled from behind the breech of the weapon. "You're not going to kill all these people just to satisfy your fool hankering for heroics. We had enough of that on Sayer's show. You're not going to give the papers a headline! We got *dynamite* aboard. *DYNAMITE!*"

"Dynamite?" gagged Naismith.

"Yes, dynamite—belonging to those oil-shooter guys. I didn't know."

"So—you didn't know? Well, suppose I don't know? I'm going to put this ship down inside the confines of that plant down there. It can be done!"

"No, I say! Put this ship down outside Elmgton, Naismith," Malloy barked. "Let the plant officials arrange to get the stuff in from there. It's their funeral! Why kill more people?"

"Funeral?" bellowed Pop Naismith. "Fifty funerals—unless we get in, Malloy. Those chaps can't wait any longer. Go ahead—ground me. But I'm going to ground this baby in there if it's the last thing I do. I'm running this bus—dynamite or no dynamite. That part of it's your fault, anyhow."

"You won't, Naismith! Take your hands away from those throttles!"

Malloy's arm came down then, swishing the blue-black gun through the strange lights of the cockpit. There was a thud. Grant Sayer yelled and grabbed Pop Naismith as he slumped over the edge of the pilot's seat, his peaked cap rolling away. Malloy's gun fell to the floor.

THE DOUGLAS LEAPED like a Baracuda caught on a No. 3 gaff. The aisle floor did a mad tango, and Maureen Prentice stumbled down the cabin and fell across Grant's legs. Nurses cried out and tugged at their belts while the doctors swore and stared wild-eyed at the tangle in the cockpit doorway.

Sayer, however, was quickly back on his toes. He clambered over Naismith's body, shoved the wheel back toward the instrument board.

"Take it, Malloy!" he yelled. "Take her over. He's out!"

"I . . . I can't!" Malloy gasped, steadying himself with a trembling hand. "I can't . . . I must have killed him—Pop Naismith!"

Maureen Prentice was now pulling Pop clear. His polished heels clunked on the flooring. She made to stanch the blood above his temple, and she was crying: "Take it, Grant! You can do it!"

Grant Sayer took over, checked the throttles, flaps, wheels, and manifold pressure.

"What do you say, Malloy?"

"It's against—" He stopped, a strange look on his face. Then he said: "Go to it. You win! Take it in!"

The stubby doctor now spun out of his chair as his safety belt came apart. He crawled on his hands and knees along the aisle to the unconscious Naismith. Maureen pointed to the old scar which Malloy's blow had opened, and she talked fast. The doctor nodded and reached for his bag.

Maureen now clambered over and pulled Malloy away. He swayed, clutched at the door jamb, then went down on his knees, bruising his face on the arm of a chair.

Maureen left him to the others. She scrambled into the co-pilot's seat and slapped Grant's thigh.

"All right, laddie," she smiled. "Go to it!"

"Sure—but *can* I land this buggy? Hang on to your heart, sweetheart—this is dynamite!" Then he dropped the big ship's wheels.

NEXT, he drew the throttles back. The Douglas settled, again started down. Another second and she was swishing through a black column of smoke, and they both sniffed acrid fumes. Heat from below made the great transport dance a dithering fandango. Grant steadied her, stared ahead as he fought to keep her level. More smoke, more heat—then sinister lancing fingers of fire!

He spotted a long roadway that sliced through the plant area, running from the burning refinery buildings to the cracking-coil sheds at the river end. He nodded grimly, dipped a wing to clear a flaming shack. Maureen gasped, clutched the sides of her seat—then smiled, somehow, grimly. Whether Grant landed her or not, *this* was flying!

The Douglas galloped against the billowing cushions of heat. Charred lengths of burning planking, which was sending up garlands of sparks,

almost grazed the leading edge of their wing. The big plane dipped under Grant's guidance, slammed her dural body through a belch of flame. Another insane bank and the port wing sliced through an opening between two flaming towers. Grant gritted his teeth, flattened her out again, and shot into a new billow of smoke.

They came out half blind. With an oath he knocked out the soot-streaked window, and through the break he watched the roadway below with streaming eyes. He shoved her down, eased off, and waited, staring ahead at a shed which loomed up garnished with flame.

The Douglas now seemed to hang suspended amid a nightmare of swirling smoke.

Then came the first low thud and moan of the undercarriage oleos. Another thump and his heels eased down on the brake pedals.

"Grant!" gasped Maureen. "You sure can fly, boy!"

"And land, too—when I have my wheels down," Grant answered.

His heels pressed a little harder, he brought his wheel back gently, and the Douglas drew up like a majestic charger under a curb rein. She stopped twenty feet from a flaming coil shed.

Maureen let out a triumphant shout. And the next thing Grant Sayer knew, Maureen was ramming his shoulders back against the seat. Her eyes were seven inches from his, pouring out rapture, joy—and trust.

A quaking voice from somewhere behind them broke it up. "That—that was *flying*! No other pilot in the East could have brought her in here."

"Know any in the West?" demanded Maureen Prentice.

"You're right. No other pilot I know of could have done as fine a job." It was Malloy speaking. His face, a parchment mask streaked with blood, was a title page to a whole volume of penitence.

"Does he get your Okay for a flight job now?" demanded Maureen.

"He certainly does. I'll sign his application for renewal. But can you get her out of here, Grant?" Malloy husked.

"Sure I can, once we get these hospital guys out of here—and that dynamite."

"That *what*?" cried Maureen.

"Oh, nothing. I was just talking figuratively. I mean, it was dynamite for Malloy to let me aboard this ship—with no ticket. That's what I meant, isn't it, Malloy?"

"Cripes, I hope so! You can do me a great favor—if that is what you meant."

"Sure I was talking figuratively. I don't know anything about cargoes, anyhow. But now we got to get Pop Naismith out of here, eh?"

"Yeah. And I'm sure glad the doctor says he's in good shape. I deserve to face a homicide charge, all right. But I'm mighty happy for poor Pop's sake it wasn't homicide. I only hope he'll find it in his heart to forgive me," moaned Malloy.

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"Let's go. We've done all we can," said Grant. "There's the signal that the shooters have broken through the fire to bring in outside help. And it won't be long now before they'll have all the big flamers smothered out. What's more they're heading Naismith up to the hospital shack, and those burned chaps are already under treatment. Yes, let's get moving. I don't like risking Pan-Central's equipment too long in this spot, and we'd be in the shooters' way when they get to this corner, anyhow."

"Yeah, we've got to take care of the equipment," agreed Malloy. "That includes the personnel—the hostesses, doesn't it?"

"Yes," smiled Maureen foxily after Grant had expertly swung the ship around and had again skilfully evaded the flames and wreckage and taken the Douglas back into the air. "Yes," she repeated. "And I know the swell-est little Italian restaurant on 48th Street. Big tables where three can

sit with ease—plenty of room."

"Italian restaurant nothing!" spoke up Malloy. "I'm taking you two to the Rainbow Room—and never mind the expenses. We're going to celebrate!"

"Celebrate?" queried Grant.

"Right!" cried Malloy. "We're going to celebrate Pop Naismith's swell determination to put this thing over, also his early recovery from that poor-fool smack I handed him—and your great job of flying, too, Grant."

"Don't worry about Pop," spoke up Maureen. "You only tapped him on an old wound, and the scar tissue took the brunt of it. He'll be Okay—and if I know my Pop Naismith he'll forgive and forget."

"Well, suppose you just mark that Rainbow Room on the strip map, here," said Grant to Malloy, "while I open the throttle a few notches. Heck, we're sittin' gabbin' and wastin' time like—well, like a lot of pick-up car drivers."

Flying Aces Club News

(Continued from page 33)

On that score, we assume that they're referring to one of those clashes between the French flyers and the Germans.

And thus from Fred's letter we can see how England is prepared for emergencies which may arise through attacks by the Luftwaffe. And if the Nazis have planned any retaliation

for what happened a short time ago at Sylt—Fred may be put to work sooner than he expects! However, let's hope not!

Your N.A. sees that our space for this trip is all used up, boys. So until we meet once again on the ol' tarmac—

Bum sour!

The Mosquito Sportster

(Continued from page 49)

is forced through the prop as a bearing.

Several coats of clear dope will strengthen the prop and give it a

smooth, glossy finish. Since a "dead" airscrew creates a great deal of resistance during glides a free wheeling device should be added to the hub

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of your rarin'-to-go "Mosquito."

When installing the free wheeling, be sure that the prop remains in balance. Exact equilibrium can be obtained by adding small amounts of dope to the lighter blade. This assures a smooth-running, vibrationless prop.

ASSEMBLY AND FLYING

THE RUDDER is cemented into a slot in the indicated position. The tail skid is glued in a vertical position directly under the rudder. A coat of cement along the bottom edge will strengthen the skid for landings.

The wings should be given a thin

coat of dope and the butt ribs whitened until the dihedral angle is set at $1\frac{1}{2}$ " for each tip.

Cement the elevators lightly to the fuselage at the angle shown on the plan. When completed, the model is glided indoors to check this angle. Since every craft is slightly different due to variations in balsa the angle might have to be changed.

Don't permit the tail surfaces to droop while the cement is drying. Add the landing gear, 4 strands of $\frac{1}{8}$ " lubricated rubber, and the nose and tail plugs. Before going outdoors, glide the ship again to be sure that the free-wheeling device is "percolating".

Hats Off To Helena!

(Continued from page 17)

Thereupon, the boys took a hand. They organized into crews, poured cement, salvaged and hauled materials, hoisted the huge girders into place, laid sheet metal, and generally aided in the wood working. Residents and merchants of the town co-operated with them wholeheartedly in their efforts.

AFTER MONTHS of work that lasted into the spring of 1936, the building was completed. Today, it is insured for \$30,000, exclusive of planes and equipment. The structure contains 10,000 square feet of floor space, and a new addition, now planned by the board, will supply 7,500 more. The excellence of this

layout is graphically evidenced in our accompanying photos.

Great strides in the teaching had already been made by 1935. Since that time three new graduating classes, increasingly large, have gone out into the channels of American aviation. A placement service, established with Boeing Aircraft, alone, is reported to have taken care of all graduates who have applied during the past three years.

The high reputation of the aero course has spread rapidly over Montana, and in January, a year ago, the state legislature passed a bill by which aviation training at the capital city school was generously thrown open to the youth of the entire state

A calm day is best for test flights. Launch by hand, and gradually increase the number of turns to maximum. About eight hundred turns with a winder is tops. The climb should be smooth and steep and in a right turn. Practically no adjustments should be necessary. If, under full power, the model flies in tight right circles without climbing, warp the right trailing edge down so that the circle will be widened and the ship can climb.

And now you're set for some really sensational sport flying. The original "Mosquito Sportster" averaged more than a minute without risers—and your ship can do it, too!

on a tuition exchange basis.

Concerning the Helena school, C. L. Egtvedt, president of Boeing Aircraft, says: "We are delighted with the quality of work turned out by the graduates of the Helena institution. The nation needs more such schools!" And Clinton M. Hester of Montana, who is Administrator of the Civil Aeronautics Authority at Washington, states: "I am proud that my home state has established this unique institution. Montana is showing the way to academic aviation."

They're certainly right in what they say. America does need more such schools. Meanwhile, hats off to Helena whose school has blazed the trail!

Pharaoh and Warmer

(Continued from page 14)

THOR'S LIGHTNING.

50c

Early next morning, Phineas checked out of the hotel. When he and the Major had their mess and were crossing the lobby to the exit, the beef eating archaeologist dropped his copy of *Punch* and scratched his head. "Dash it all. That chap is familiar. Deucedly aggravating, y'know. Not being able to recall his face. Red hair and protruding teeth and freckles. Fawncy! Well, it'll jolly well occur to me."

"Who is that old coot?" Phineas asked the Major.

"Reachbottom? Why he digs up mummies and that sort of rot. Head of a museum in England, I understand. The funny old geezer has been digging for years."

THE trip to Abou-Kir was uneventful. When the Major looked for his personal pilot he found that the chap had been on a four day binge at a nearby Mediterranean resort called San Stefano. Lieutenant Wallaby had two black eyes and a hangover that would last at least a fortnight.

"Oh, itsh you, old shing, wha-a-a?" Wallaby said and sat up in bed. "Go way. Goin' join Foreign Lesion. Forget shwell girl—wouldn' marry me."

It was apparent that Lieutenant Wallaby could not be trusted to take a kite upstairs. Major Smythe-Brouthers promised his Camel pusher that he was through in the *guerre* and to consider himself under arrest. Just as he finished admonishing the young Limey, there was a commotion under the bed. Phineas looked down and saw a bird stagger out onto the matting on the floor.

"He is guilty of fowl play, too, Major, as look at that thing!" Phineas said.

"Uh-er-what is it?" the C.O. yelled. "Wallaby—?"

"Um-m. Got out of basket, huh? Nishe birdie. Bought it at bazaar, yesh. Hoopoo bird. Very rare speshimen, pip pip. Carriesh messhage to Garsha, peddler shays. Better'n a pishin. Half pishin an' half Gypshun hawk. Better'n mail shervice. Bought it to shend letters to my girl in Shloppshire—pip! Hic—"

"Some binge, what?" the Major growled.

"He wasn't at no Hepworth League rally," Phineas admitted and picked up a pair of shorts, a topee, a helmet, and goggles. "Well, there is nothing that has got even a half a wing I cannot pick up and put down, Major."

A half hour later, a Bristol was leaving Abou-Kir. The Major leaned

forward and told Phineas how to get to Mehr-Raj. Then he settled back in his pit and nodded his noggin. He had been doing a lot of elbow bending in Cairo and had neglected his shut-eye.

The air was hot and the Rolls power plant hummed a lullaby. Lieutenant Phineas Pinkham was enthralled and a trifle jittery. His backbone kept tingling and his mental assembly played tricks with him. Mysterious Egypt was giving him a Trilby complex. He got off his course and went down to get a gander at the undulating desert. He lifted the Bristol again—and then he saw an oasis up ahead. Palm trees and lush green grass and a white tent or two. Phineas lowered the Bristol's nose.

The Major banged Phineas on the shoulder, yelled something at him. The Boonetown pilot yelled back. "Sure, I see it. Mehr-Raj! It is a swell drome, huh? Don't get so excited, Major. I have landed these things in a Frog pigpen without taking down any fence. Haw-w-w-w-w!"

"Y-you balmy? That's a mirage, Pinkham! Oh-h-h-h dash it all—oh-h-h-h-h-h!"

Phineas went down for a landing. Too late he saw the oasis dissolve in thin air. The wheels kicked up sand and the prop sucked up bucketfulls

of it and threw it back into their faces.

CRACK! CRACK!

"Arabs!" the British C.O. yelled. "You jolly well landed us almost in their bloomin' laps. Look, Leftenant—the camels are coming."

"Then we are safe, huh?" Phineas grinned. "Just sit tight an'—"

"Not that kind—not what you jolly well mean, Left—oh-h-h my—"

CRACK! PI-I-I-I-ING!

Phineas got a look at the Moslems riding the racing camels. He gave the Bristol the gun and it strained at the bit for several aggravating seconds. The wheels finally got down to business and the Bristol tore across the Libyan desert with Arab lead hammering in its slipstream.

Major Smythe-Brouthers hung on for dear life and spat out the stem of his pipe. An Arab slug had wiped away the ten dollars worth of Dunhill briar that had been attached to the stem. The lobe of his ear was in shreds, and he was telling Phineas what he was going to do to him.

"Oh, shut up!" Phineas yelled into the Major's face. "How is a bum to know what is a mirage out here? I wish you was one. Well, is that one down there now? You take the stick in back there and land. I will not be a sucker twice. Haw-w-w-w-w-w!"

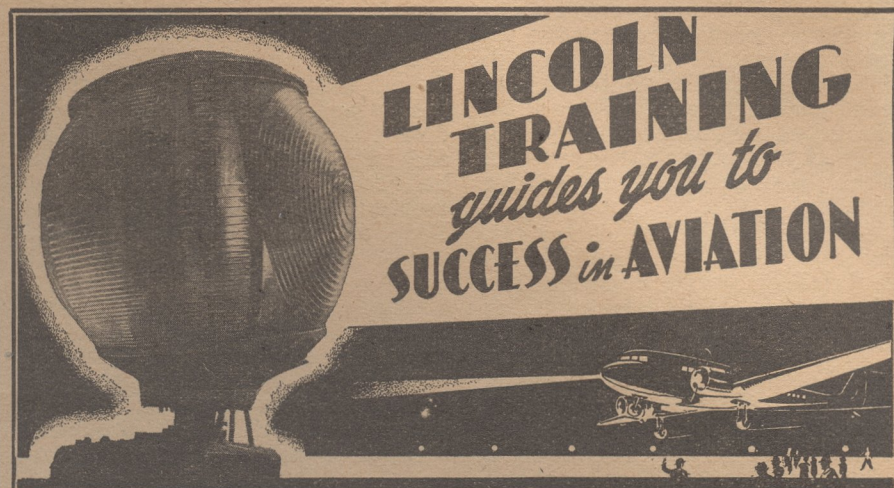
The British C.O. picked out the drome near the oasis of Mehr-Raj and put the Bristol down in a three point landing. But all points did not hit at once. "H-huh," Phineas said as he climbed out and looked around him. "I am glad this tarmac has a lot of sand on it." He looked at the R.A.F. Libyan layout—The sand-sagged Bessonau hangars and the pilots' tents. The Operations Office force sweltered under a marquee. Three man made Camels were out on the tarmac, and even they looked like they would wilt at any moment.

"Some circus," Phineas told the C.O. "All we need is a lion and a caliope. How do guys git this spot in the *guerre*, huh? Is that a mummy you picked up over there?"

"That is the Adjutant, Pinkham!" the Major growled. "If you stay here for a week or two, you won't laugh." He introduced Phineas all around. One Camel pusher eyed him askance. "That bloomin' nitwit—here? Remember me, Pinkham? Last year in Paree? You framed me with a Frog general's wife—and I had to fight a duel? Take a look at the scar on my noggin. Well, Africa is where you can murder a chap in a dozen ways. Scorpions, snakes, and poisonous plants. I'm warnin' you. How you ever got here—"

The Major spoke up: "Came to help track down the Mad Mullah. Chaumont thinks he might be working with *Herr Doktor Number Seven*." Then he got into the shade, called his batman, and asked him for a bottle of pop. He wanted to know if anything important had happened during his stay in Cairo.

"Interesting Mohammedan fellow here," a pilot said. "Fellow riding in



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an Avro. Big black beard, and all that, you know. Said he was a friend of the Allies. Left us a treat—pastries and no end of delicacies. You say Pinkham's after the Mad Mullah? Priceless!"

PHINEAS sat down in the shade of a marquee and rested his elbow on the top of a small table. He let the R.A.F. have a big laugh as he poked at a cigarette stub he found in an ash tray on the table. "You chaps would like to git the Mullah, huh? That's why you got a drome here? Why didn't you handcuff the bum when you jolly well had him?"

"Uh-er—I don't follow you, Leftenant," the Major said. "You talk in bloomin' riddles."

"He was *here*," Phineas grinned.

"It is a good thing I found you pip pips. Have you anythin' here I could try those gifts on he brought, huh? Boys, the Heinies wipe out dromes with bombs—but these Arabs! Ugh! They know more about poisons than the Borgias. Tell the mess monkey to bring me one o' them pastries."

"You will wait for mess along with every other chap here," the C.O. bridled.

"Haw-w-w-w-w! I am not hungry," Phineas said. "Who owns the white rat in that cage hangin' up in front of that tent over there? I would like to feed it a Moslem muffin."

A R.A.F. pilot drawled: "Mine, old custard. Take it, as the climate is killing it anyway. Quite!"

Phineas hailed a little mess attendant. "Bring me a pastry," he

said. The tid-bit was brought forth and Phineas walked over to the roddent's cage and dropped it through the wooden grill. The white rat gobbled the dessert greedily. For a while it looked at the R.A.F. pilots with a funny expression in its glimmers. Then it did a Brodie and pancaked for keeps.

"Fawncy!" the Major blurted out. Phineas sniffed. "The Mad Mullah is foiled. He plays tricks, huh? Then he is my meat. Did he say anything about the weather?"

"Why-er-yes. Said it was beastly hot, an' all that, Leftenant. Natural thing to say, what?"

"Not for a prayer-rug squatter," the Boonetown miracle man said. "Haw-w-w-w-w-w! Wonder where Jelai Bin gits his gas and oil. Caravan brings it to his drome, huh? How about lendin' me a Camel tonight?"

"Sorry, old chap," the Major growled and felt of his slug-kissed left ear-lobe. "Cawn't let just anyone fly our ships. No end of trouble getting Camels shipped here. Harumph—er—no night flying on this air-drome. Sorry, and all that."

"You would invite a sea captain to spend three weeks in a garage,

wouldn't you?" Phineas countered. "You are afraid I will git the Mad Mullah so you won't git medals, huh? Awright, I will show you bums!"

Phineas wandered about the Limey drome. He examined the mess tent and indulged in small talk with the little cockney who was preparing the evening meal. "Brewin' hot tea, huh? You cheerios would make ice cream if you was pitched near the North Pole."

The Major and his pilots seemed to enjoy their mess. The African night then appeared to be full of Svengalis giving the Englishmen the evil eye; for they began to nod their noggins. Major Smythe-Brouthers slumped down in his camp chair and began to dream of grouse in bonny Scotland. "Why-er—oh-h-h-h-h!" Phineas yelped. "That Arab loaded your tea, too! We are doomed! We—"

"Wha-a-a-a?" a heavy-eyed R.A.F. pilot grunted. "P-poisoned, w-what? Deucedly awkward—I say—er—goodbye, and all that."

Leftenant Phineas Pinkham got up, hurried to a hangar. He grabbed at two grease monkeys who had not been sipping tea. "Git me a Camel out and heat it up. The Mullah has

poisoned the officers, an'—well, I got to git help before the Arabs come, an'—Hurry up, you fatheads! I got to git to Abou-Kir or Cairo or London. An' you better hide in the sand after I take off, or you will git tortured by them bedsheet chaps—what?"

Phineas got his Camel. He took off from the drome near Mehr-Raj and winged out over the African linoleum. "Haw-w-w-w-w! They will wake up in a half hour as them pills o' mine don't work long."

The Egyptian night cast a spell over the flyer from Boonetown, Iowa. He seemed like somebody else. He felt as if he had ridden a Camel through Egypt more than once before.

He looked overside, spotted a dark blotch on the desert sands. "Huh, maybe a ruined city that has busted through, he muttered, then dropped down and made a landing. The hush that wrapped Egypt up like a blanket hit Phineas with the force of a sledge-hammer when the prop quieted down.

The Boonetown pilot went over to the thing that was bogged down in the sand. It was a big gas buggy with tractors instead of wheels. On the side of it was painted the letters REACHBOTTOM EXPEDITION. Phineas opened a little door and got his head and shoulders inside the desert jalopy. He found an old pipe, a musty topee with a scorpion curled up inside of it, and an old sheet of paper.

On the sheet of paper Phineas noticed some strange designs. And some lettering said:

Tunnel Leading to Temple from Pink-Ank-Amen's tomb. God Ra-Ra in Temple hollowed out in back. Appears to have been ingenious work of King Pink-Ank-Amen to scare subjects. Arrow points to mummy of Pink-Ank-Amen. Old boy well preserved.

PHINEAS scratched his head. Beads of worry dew glistened on his brow. Pink-Ank-Amen! No! A thousand times no! Four thousand years ago—

The Boonetowner shivered. "I wish I was in Bar-le-Duc. I can git a new knife anytime. H-huh? Knife? I d-didn't l-lose no knife. Why-er—I am gettin' nutty! I am gettin' out of here. I—" He looked at Reachbottom's work again. In the lower right hand corner were big letters that said—

LOST CITY OF EL-PILLAH
Near Oasis of Wadda-Youmien

Phineas got back into his Camel and got away from there. He swung north and had not flown two miles before a big bird swooped down out of the ozone and began pouring slugs into his Camel. Phineas put up his Vickers dukes and fought back, wondering how an Arab could learn so much about air fisticuffs.

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Once the hostile battle bus hung on its prop, spun like a whirling dervish, and dropped down on the Pinkham neck. "Uh—er—" Phineas gulped. "I only remember one b-bum w—who could ever do th-that trick. V-v-von-er—Blitzkrieg. But he is kaput—or is he? Heidelberg 1912. Read it in a m-magazine. P-professor of Egyptology, an'—why—why he could be a Heinie! *Herr Doktor Number Seven*. Jelai Bin! That squareheaded snooper from the Wilhemstrasse coulda knocked off the real Mad Mullah who had not really been mad at the infidels. I'll bet a Kraut's needling the Moslems and getting them ready to go out and slit a flock of throats!"

Lead kept poking at the Camel's torso. It looked like curtains for Phineas, who was not too well acquainted with the habits and moods of a Limey Camel. But then the Hand of Providence reached down, scooped up big handfuls of sand, threw them in the teeth of the wind. And the wind threw them into the glimmers of the hostile pilot and helped Phineas get his soul out of jeopardy.

Then something drove against the Camel and became wedged between a strut and a wire, and something else smacked the Iowan on the pan, bounced off the Camel's instrument board, and fell at the unbeliever's feet.

Major Rufus Garrity's stray flew until his gas gave out. Again the mysterious forces in which Egypt is said to be steeped took the initiative and set Phineas down in the Libyan desert just fifty yards from the Operations tent of another British air-drome. He got out of his office and shivered.

"I-er-don't git it. I-er—didn't land that crate myself," Phineas mumbled. "I smelled something, and it was not perfume, on the way down. Who told me there was another Limey outfit here? Well, I will git the knife some other time an'—wha-a-a-a? I hope I can find a dome specialist soon, as—"

"I say! Are you ther-r-r-r-reaw-w-w-w, old chap?"

"H-huh? Well, yes old turnip," Phineas called back. "I-er-hope." Something tickled Phineas' chin. He reached up and pulled something out of his collar. In the light of the Egyptian moon he saw that it was a feather. "Huh! I sideswiped a bird. That is what hit me." Phineas walked back to the Camel, climbed up on a wing, and removed a defunct fowl from the superstructure.

A long piece of dirty cloth dangled from its bill, and there was something tied to its leg. Sleepy-eyed Limey pilots then came to get a look at Phineas. They led him back to the main tent, staring at the thing he carried.

"Bon swat, old things," Phineas said. "Don't ask me too much, as I am not myself. This is a hoopoo bird. It carries messages to Garcia. Rigor mortis musta set into the bird quick, as it still has this long piece of cloth in its beak. Smells awful, this biddie,

and it has only been dead a little while, *oui*. That s-smell—it-it is like I smelled when my gas give out—an' how can I git the first train out of Egypt, huh? The knife can stay—Th—what knife?"

"Balmy, no end!" the Limey C.O. said, and tapped Phineas on the shoulder. "Fix you up, old chap. Just come with me. Ha! Ha!"

"I-I get it!" Phineas gulped. "This old rag was picked up in a tomb where there is a mummy. The hoopoo bird does not live in a pen but builds nests in trees. It was goin' to use some of the mummy cloth to line its own personal Nisson so it would be nice and soft."

"Now, now, Leftenant. You are among friends, quite!" a British pilot said. "Show you to a bunk what? Alf—just humor him until I get a sip of jolly old rum, right?"

"Oh, I am half-nutty, awright," Phineas admitted, his nerves still humming like plucked harp strings. "But I know what I know." He took a small wad of paper off the defunct fowl's undercarriage. There were hieroglyphics all over it. "Looks like a laundry check," Phineas sniffed. "Them Arab bums must have awful big washes. Let me lay down some place, as my dome is filled with butterflies. No wonder the Sphinx was scart dumb!"

An officer led Phineas to a tent and left him there in a hurry. The Boone-town miracle man tried to scoop up his marbles and get them in a neat pile. The picture was plain. The hoopoo bird had been flying between El-Pillah and Cairo, or other points north. The Arab brass hats were going to have a rendezvous there. They would get their signals all set in a huddle and then go out and jump on the unbelievers who thought that Mecca was just the name of a cigarette. Blood would flow in Africa, enough of it to irrigate the Sahara. And the Heinies would give the sheiks the double cross and come in and take over. Linden trees would be planted in Cairo and Alexandria and the Kaiser would build himself a winter home there. *Herr Doktor Number Seven* was wearing a turban and false spinach and his epidermis was stained with walnut juice. In Germany he was a blond, in Cairo he was an Egyptian, and in Somaliland a turbaned Mullah. A rat everywhere. Phineas revved his noggin prop, tried to stop his crockery from rattling out.

LET US now look in on the Headquarters of the Ninth Pursuit Squadron in Bar-le-Duc. In the big room adjoining the Operations Office, Major Garrity, Captain Howell, and Pilot Bump Gillis were chatting.

"I bet the crackpot has found Cleopatra's sparklers," the C. O. said.

"I hope he goes swimmin' in a pool where there is crocs as big as Heinie Gothas," said Howell, "A" Flight's boss.

"Imagine him in the Intelligence Corps," Bump Gillis snorted. "It is

SELLEY ACCESSORIES



BOMBS and TORPEDOES

13/16" 2 for 5c
1 1/4"5c

DEMOLITION BOMBS

15/16" 2 for 5c
1 3/8"5c

FRAGMENTATION BOMB

1 3/8"5c

TORPEDO

3"15c

Dummy Motors

1" 9 Cylinder 15c
1 1/2" 9 cylinder25c

Celluloid Motor Plate

1 1/2"9c.....5c
2"12c.....5c
2 1/2"14c.....5c
3"17c.....5c

Alum. Disc Rubber Tired Wheels

1/2" dia.5c ea.
3/4" dia.6c ea.
1" dia.7c ea.
1 1/4" dia.8c ea.
1 3/8" dia.9c ea.
1 1/2" dia.10c ea.

Treaded Tire Alum. Disc Wheels

1 3/16" dia. 30c pr.
1 1/2" dia.40c pr.
2" dia.50c pr.

AXLES—Threaded & fitted with washers, bushings and nuts.

Leth. 1/16 3/32 1/4"
2-3 1/2-5-6" .12 .10 .20
7-8-9" .14 .12 .23
10-11-12" .18 .15 .25

WHEELS

SEND 5c FOR CATALOG

PROPELLERS

DIE CAST

Standard

2 bladed 1 1/2" 3 bladed 1 1/2" 3 bladed 1 1/2"

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PURSUIT GUNS

3/4"2 for 5c
1"3c
1 1/2"5c

Browning Guns

3/4"2 for 5c
1 1/4"3c
1 3/8"5c
2"8c

LEWIS GUNS

3/4"2 for 5c
1 1/4"3c
1 3/8"5c
2"8c

Dummy Ratchet Gun

7/8" long5c

MARLIN GUNS

1 1/2"5c
2"10c

SPANDAUN GUN

1 1/2"5c

VICKERS GUN

1 1/4"5c

Anti Aircraft Gun

2"25c

Ring Mount Guns

1 1/4" Type B 20c
1 1/2" Type A 25c
Swivel Type C
2" d'ble action 8c

WING & TAIL LIGHTS

3 to 5c Set
Small9c
Medium12c
Large15c

Aluminum Disc Bal. Tired Wheels

1 1/2" dia.15c
1 3/4" dia.18c
2" dia.20c

Celluloid Balsa Wheels

3/4"5c pr. 4c pr.
1"7c pr. 5c pr.
1 1/4"10c pr. 7c pr.
1 3/8"14c pr. 10c pr.
1 1/2"30c pr. 13c pr.

Do-Nut Air Wheels

Sponge Rubber Tire

1" dia.10c pr.
1 1/4" dia.14c pr.
1 1/2" dia.18c pr.
1 3/8" dia.20c pr.
1 1/2" dia.50c pr.

Axle Fork & Swivel

1/2" to 5/8" wheel 10c
3/4" to 7/8" wheel 15c

PROPELLERS

DIE CAST

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Standard

like sending the village idiot to interview Einstein. Even so, I miss the crackpot."

And now we'll hop over to Italian Libya. We find Jelai Bin, the bogus Mad Mullah from Somaliland, talking with a turbanned big wig who had the Ouled Sidi sheiks under his dirty thumb. Jelai Bin talked Allah's language. "'Tis well, Wadi Youssez. At El-Pillah on the night of the half moon. My air caravan, oh, Sheik! One shall bring you there. Allah Be Praised! Allah il Allah."

"The infidels will fall like grain before the scythe, Mullah. My Tau-reggs sharpen their knives. It is well—at El-Pillah!"

MORNING. Phineas got his Camel gassed and otherwise serviced. He had his Vickers checked, bade the R. A. F. pilots adoo, and headed for the oasis known as Wadda-Youmien.

"It is lucky I knocked off the hoopoo bird," Phineas told himself as he flew southwest. "Well, I will pick up my knife—er—who said that? It is like a Jinny is inside of me!"

Leftenant Phineas Pinkham reached the diggings of Lord Chauncey Reachbottom three hours later. It was a crazy place. Struggling, half-blighted palms protruded out of spiny foliage. There was a small spring of water there. Phineas pushed his Spad close to the vegetation and spent another hour piling all kinds of desert flora atop the Camel, and by high noon the battle wagon was well camouflaged.

Then Phineas trekked toward a lot of old ruins that reared their heads above the sands not far away. He did not seem to have any say at all about what his undercarriage was doing. His feet led him down through a hole in the ground where an ancient, buried city was slumbering. Once he stopped and thrust his hand into a crevice and it came out holding a copper knife. Phineas sat down in front of a crumbling pillar and wiped his brow. It was a greenish metal knife and initials had been carved into the thing that served as a handle. They were "P. P."

"I don't believe it. But I *did* lose it. It was the day when they conscripted some natives in El-Pillah to help build the pyramids, an'—how do I know that?" His brow got clammy. "I must be crazy!"

Phineas pushed the knife into his pocket and went deeper into the ground. He tripped over a sarcophagus. Then he came to another lower level and took a small flashlight out of the little canvas sack he had slung over his shoulder. He snapped the beam on and played it around the dingy place. His spine began to wriggle like a hula dancer. The light beam struck an uncovered mummy full in the face. Wow!

It was a bony face and seemed covered with cracked parchment. On the dessicated epidermis there were dark spots. The mummy's teeth were still intact and they protruded from the old cadaver's thin lips. And the mum-

my's hair was the color of a rusty tin can.

"It is—it is *me* four thousand years from now," Phineas choked out. "I am dreamin' and will wake up in my Nisson for the orderly sayin' it is time for the dawn patrol. It is K-King Pink-Ank-Amen, an'—I got to git out of here. I—"

Phineas' undercarriage moved, but he was hardly aware of it. His shaky feet took him into a hole in the wall and led him up a narrow passage. A series of steps that ended in a small opening in a wall above the tomb. The opening was in the shape of a man. Phineas' frame fitted into it nicely. There was a funny contraption built into one side of the cramped space and Phineas reached up and yanked a lever.

There came a raucous grating sound like stone rubbing against stone. He let go of the lever and some heavy object outside fell back into place. Phineas, as clammy as something dug up out of an oyster bed, backed out of the place. He went down into the tomb and then made his exit from the buried Egyptian hamlet. He sat down on an old slab and tried to stop his teeth from chattering.

"I w-wish I was back in B-B-Barley Duck. Somebody wake me up. B-Bump! He-e-ey, Bump! Shake me—huh?" He got up and started moving around again. He walked toward another hole in the ground and stepped through it. He descended a score of cock-eyed stone steps and found himself in a temple. A great stone image looked at him. It was the God Ra-Ra. Its eyes were pools of black, and when Phineas stepped close to it, he felt air hit him in the face. He played his flashlight on the statue and noted it was equipped with a pair of stone wings. He sent the beam right through one of its eyes and squinted his own peeper along the light beam. The thing was hollow and Phineas tumbled to the fact that he had stood inside of this same stone image a few moments before.

"A gag, huh? Kiddin' the public. Pharaoh Pink-Ank-Amen was a kiddler. H-H-Haw-w-w-w-w-w! I am laughin! B-but it is no joke, as that stiff down there—"

Something drew Phineas away from the place and took him out into the hot sun again, then dragged him down into the tomb of Pink-Ank-Amen again. In one corner of the place was a lot of old rotting cloth. It was in strips. Phineas guessed that Lord Reachbottom had been unravelling the King to see what kind of spice he had been corned with.

Phineas sat in the dark and kept trying to keep his ticker out of his throat. Strangely enough, his think tank then began hitting on all cylinders. He munched on some chow he had bummed from the R. A. F. pilots and sat steeped in the spell of centuries. Up there in the temple he had seen the remains of a torch. And there had been a couple of cigarette stubs on the floor. Both had hardly been smoked—and they had been bent

into the form of a crescent! Phineas snapped on his flashlight and placed it on top of an over-turned mummy case. He took his bag of tricks and rummaged into it.

"Well, I will now go to work," Phineas said shakily. "I will try this harnessed lightnin' that cost me four bits. If—if you are any relation to me King Pinkie, you'll play ball with me."

The Boonetown magician left the tomb. He made his way to the temple again and there he chose an old piece of Egyptian china and filled it with spirits of camphor and wine. He touched a match to the stuff and waited until it was all consumed. Very little air penetrated the gloomy place and Phineas was covered with sweat when he finally got out of there. "It is for the Allies!" he cried.

THE DAY waned. Phineas crouched in the tomb. He went to sleep for a few hours and woke up with a faint roaring sound in his ears. He got up and went to the narrow opening in the side of the tomb, walked up the steps back of the God Ra-Ra. He peeked out through its hollow eyes—and then heard sounds that lifted his scalp up and down. Four grim figures entered the temple. One of them spoke in the language of Mohammed. A match flared. Then—

WHO-O-O-O-O-OSH! A blinding flash brought hoarse yells from Arab throats.

"*Bismullah!*" somebody said and a silence loaded with T.N.T. filled the temple. In the flash of light, Phineas had seen the four intruders. They were all garbed in the correct sartorial ensembles of Moslem brass hats. One of them was unloading a line of jittery lingo. Another seemed to be trying to kid him out of his fright.

After awhile another match was struck and applied to a torch that had been stuck into a crevice in the side of the temple. The Moslems still looked a little gaga. But they finally squatted down and began to lay the plans for the mass production throat slashing.

Phineas waited until the time was ripe. He pulled down the lever, and the grating sound rumbled through the silence. Phineas knew that Ra-Ra was lifting that big stone arm that had at its extremity the pointing finger. It seemed to take Ra-Ra half a century to lift that hand to the limit. Somebody then yelled, "*Ach-Gott! Himmel! Idt mooves, undt—!*"

Phineas knew he had not opened his mouth. But he must have—for out of his throat came a rumbling sound. It said: "Infidel!"

The three bona fide Allah supporters opened their mouths until Phineas could see their tonsils. Their nut-brown skin turned white for several seconds. Then three pairs of dark eyes swung toward the turbanned character who had exclaimed in a foreign tongue. One of them, a tall powerful Sheik, got up and drew a sword as long as a camel's leg. The fake Mad

Mullah did not choose to argue the matter. He drew a Luger from under his long Arab Mother Hubbard and started liquidating Moslems.

"Donnervetter! Somet'ing ist kaput!" the turbanned Heinie yelled as he threw lead. Phineas let go of the lever and hot-footed it back down into the tomb. "Well, there will be no Arab uprisin'," Phineas gulped out. "Ra-Ra did it! The statue King Pink-Ank-Amen rigged up! Boys, he fooled them bums. H-Haw-w-w-w-w-w!"

Phineas did not take any more time out to think. He knelt down in the corner of the dingy tomb and began wrapping strips of dirty cloth around his head, gluing them in place. He used up all the wrappings until he looked like a mummy from the shoulders up. Then he made his way up to the surface and looked the situation over.

Three Avro two-seaters were ticking not over fifty yards away, great crescents painted on their sides. Two Arab pilots were huddled together playing tick-tack-toe in the sand. *Herr Doktor Number Seven*, Phineas mused, must have piloted the third crate.

Phineas lifted himself a little, let loose a long moaning sound. Stained faces swung toward the blood curdling sound. In the pale Egyptian moonlight, Phineas must have been a terrible thing to look upon. The pilots yelled bloody murder and headed for the oasis. Phineas got into one Heinie bus and gunned it across the sands.

Out of the entrance to the ruined city of El-Pillah there now bolted the "Mad Mullah" throwing a barrage of rich Teuton oaths. He was in a battle wagon and was getting it off the ground before Phineas could get orientated in his own Avro's office.

"Well, I hope my old pals are still with me!" Phineas yipped, reaching for altitude and pointing the prop toward Tripoli. Baron von Blitzkrieg, alias *Herr Doktor Number Seven*, alias the Mad Mullah, burned up the ozone in his wake. Spandau slugs began chipping at the Pinkham tail-fin, kept working their way up in the world.

The Heinie kept on coming, and Phineas stopped making a race of it and guessed his luck had reached the end of its rope. His mummy wrappings had not scared von Blitzkrieg. In fact, a slug peeled some of the rotten fabric off the Pinkham neck. The pursuing Avro now got overhead for a dive, and Phineas prayed briefly and tried to duck the downward lunge of the bogus Mad Mullah.

Something went wrong with the Kraut's plans. His crate imitated one of Cleopatra's dancing girls and spun down toward the sandy terra firma. Von Blitzkrieg got the nose of the Avro up just before it smacked Egyptian real estate, but he did not put the Avro down like a man placing a baby back in its crib.

Phineas got downstairs and taxied toward the wreck of the Avro. The Von with the stained pan crawled

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away from it with his eyes bulging out and yelling bloody murder.

"Why, you are alive," Phineas hollered. "But what is scarin' you?" He got out of his own plane, approached the other Avro—then saw the thing. It was a snake. And not the kind Phineas used to carry to school in his pocket. It was an Egyptian cobra rearing its ugly head above the crash pad of von Blitzkrieg's ship.

"W-why—er—how did that get in that crate, huh? And why did you pick on the Mad Mullah's bus? It—it is doin' a dance. Somebody is playing a flute, an'—"

There was a flute playing as over the crest of a great swell in the desert sands there now came a caravan of camels. A driver was putting all he had into the flute he held in his long brown fingers. The cobra kept doing a shimmy. "Now you back into your basket, Antony," Phineas said. "I—er—how did I know your name was—?" Phineas' legs buckled under him and the dark sky broke up and fell down on top of him.

PHINEAS came to with the taste of cognac on his tongue. "Vive la Fraw-w-w-wnce!" Phineas yipped. "Oh, boys, am I glad to git back. Grab that Heinie! It is *Herr Doktor Number Seven*!"

"Everything ees fine, Lieutenant. I am named Yera So. I am Spahi, fir's class. I have cognac. I hear somewan talk Germany. We have man tied on mehara!"

"I want to git out of here," Phineas said. "I will meet Cleopatra if I don't. I will go back four thousand years, an' it is too far back. Haw-w-w-w-w! If you see my barge on the Nile, don't tell Antony, as—how much you want to build a pyramid? It is too much, Ptolemy. You are a gyp. I will make Ra-Ra put a curse on you. An' my great, great, great, ecetera, gran'pa, Pharaoh Pink-Ank-Amen, will—"

Yera So looked at his comrades. He tapped his noggin with a long index finger. "*Cafarde—ts-s-sk!* We take

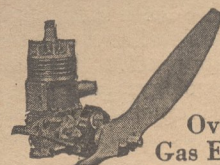
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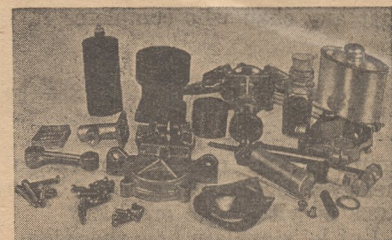
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sky Lieutenant to the Spahi tents."

The word finally hit Cairo. It skidded across the Mediterranean to Marseille and thence to Paree. Downing Street in London would not believe it until they received proof that von Blitzkrieg, alias *Herr Doktor etcetera*, was actually in a klink in Alexandria. He confessed to the murder of the real Jelai Bin and begged his captors to let him know the name of the man who had kicked over the Potsdam apple wagon in Africa.

"Leutnant Pinkham," he was told. "Too bad, *Herr Doktor*. If the *Leutnant* had not gone looking for a knife he had misplaced four thousand years ago—"

"Take me oudt of Egypt, *ja!* *Das* Pingham, he *ist* nodt human. I haff

him killed in Cairo, but he does nodt die. I see *der* blood—*ach du lieber!* How *ist* he know I am nodt *der* Muslim, *hein?*"

LET US now get the lowdown from Phineas in Bar-le-Duc. The Boonetown marvel sat in the farmhouse on the drome of the Ninth Pursuit Squadron surrounded by skeptics.

"Well, here is the knife if you don't believe it. Haw-w-w-w-w! It is made of copper and can anybody temper copper now, huh? Look at the initials. 'P. P.' Haw-w-w-w-w! My forefathers was kidders, too. Think of Pharaoh Pink-Ank-Amen fixin' up that gadget to scare dough out of his subjects. I guess we Pinkhams have always been kidders. I softened up the Allah prais-

ers with that flash of Thor's harnessed lightning. They was all set for Ra-Ra doin' his stuff. Look at this I picked up in the tomb. It is a stone ciger. It is shaped like one, huh?"

"Give me another drink, Glad Tidings," Garrity said in a scared voice.

"Wait'll I git back to Boonetown and see them snooty Joneses. Missus Jones always tells my ma her people come over in the Mayflower. Haw-w-w-w-w! I guess the Pinkhams quit Egypt when it started to git covered with sand. They sailed to the U. S. in a mummy case. Er—remind me to do somethin' when I get to the Nisson, Bump. I must pay three years back dues in The Knights of The Red Fez. I would not want to git kicked out of *that* lodge. Haw-w-w-w-w-w!"

Aero Book Reviews

(Continued from page 23)

interviewed and hired thousands of trained men—women, too—for all types of aircraft work. And he has selected and supervised the training of many additional thousands of inexperienced persons who were required to maintain a properly balanced organization. Here, then, is the man who through experience is competent to advise you on getting a job in aviation.

In his book, Mr. Mattoon has certainly gone to great lengths to explain how to go about getting a job in aviation. He digs into the subject in a series of highly interesting chapters which include details on commercial aviation, apprentice training, radio and meteorology, selecting a school, and salesmanship. He also considers the art of applying for a job.

The only frightening thing about the book is the inclusion of an application blank sent out by American Airlines to those who wish to apply for a position. To our way of thinking, filling out this application looks like a profession in itself. It's so elaborate that you can't help feeling that any chap who completes it, line

for line, deserves no less than a vice-presidency. But when your turn comes, the thing is to take it coolly. Don't let it throw you.

Meanwhile, the author helps you a lot. He gives names, addresses, references, and advice. And considering that this little book costs but \$1.50 a copy, it should be in the hands of every young man who's really interested in getting into the great old air game.

The book is published by Foster & Stewart, 77 Swan Street, Buffalo, N. Y. You can order it direct from them or obtain it through your local bookseller.

Now we come to *Elementary Airplane Structural Analysis By Graphic Methods*—which we admit may sound like pretty deep stuff to a lot of you. But again we say don't let it scare you.

As we said before, the author, James P. Eames, is an aero engineer, so what he offers is right out of the shop, as the saying goes. We might add that he is the writer of a slew of aviation magazine articles, a couple of which have been published in FLYING ACES. Moreover, he is a close

friend and collaborator of Willis L. Nye, another noted author of this type of book and the drafter of several F. A. model three-views.

Anyway, once you get into Eames' book, you will see the problems of aviation design and structure in a very clear light. Eames writes simply and explains thoroughly, the result being a very valuable volume. Graphic drawings, well-drafted and logically presented, offer a picture of aircraft construction that fills the bill for those who are out to learn.

The chapters include fuselage structural analysis, wing truss structural studies, stagger loads, general construction requirements, and wooden airplane members. The accompanying text offers plenty of clarified explanations to go with it.

We think this work should go especially well in the hands of advanced model builders as well as on the desks of those who intend to make aircraft work their profession. The publishers—The Aviation Press, 580 Market Street, San Francisco, Calif.—will forward the volume to you postpaid for \$3.00. Or your own bookseller will order it for you. Can we say more?

On the Light Plane Tarmac

(Continued from page 25)

jumped to 25 percent, instead of a measly 5 or 7 percent. And FLYING ACES is with them on that!

But let's explain how those 700 are getting their training: Through colleges in 70 communities (none of which are true metropolitan centers, by the way) a flock of candidates have entered on a ground course of 72 hours, paying approximately ten dollars each for fees, books, and the like. At the close of the ground training, which is running to completion in most of the locations as we go to press, just 10 of the highest rating students—nine men and one girl—will be chosen in each of the 70 communities to go on into the flight course, costing them each another \$30. Thirty-five to 50 hours of flight

training is called for.

How can you get in on that? Well, you must first write to the Director of the Civilian Pilot Training Program, CAA, Washington, D.C., and ask for full details. Please do not write to FLYING ACES—for it's Washington that has the literature on it for you.

In any event, you must realize that it'll be tough competing against so many for so few flight-course openings. The only real hope is a healthy boost in the non-collegian percentage.

RAY TRIES THE HARD WAY

THIS MONTH'S best letter is another of those uplift messages that reflects a lad's fine determination and brings a cheer to our lips. It's the old story of another young chap trying

to learn to fly—the hard way. And if our two bucks for his letter helps him out, we feel swell about doing him a little good. Sort of our Air Scout good deed for the month.

The letter comes from Ray McPherson. He lives in Washington, D.C., now—and to that point hangs part of the story. Anyway, here's Ray's narrative now, and if you don't think it's worth two bucks, you're welcome to chip in and try to do better—

Light Plane Editor:

In your March issue of FLYING ACES I read Bob Schmidt's account of his first taste of flying. Having had a similar experience, I thought perhaps my story would interest the

aviation gang that reads your mag.

Like Bob, the first time I went up was simply a joy ride. The plane was an Aeronca '39 with a Continental-65 in her nose. It was equipped with Edo floats and owned by Glenn V. Clark, of Charleston, W. Va.

Well, after flying around a while, the pilot started to glide down for a landing—and he leaned over to me and asked me if I would like to glide her for a short distance.

I was sort of dumbfounded, and for a minute all I could do was to stare at him. Finally, though, it dawned on me that I'd heard him right, so I took the controls gingerly and glided her. Maybe it was luck, but I did glide her straight, too.

After we landed, I sure had the bug. I piled out and tore home for more money. The next day I went up again, also the day after that. My folks couldn't understand what was the matter with me. Why, I actually

went out and got a job to earn what it took!

Then one Monday after school, I triumphantly marched onto the float and went up for twenty minutes of real instruction! And then it was a continual fight for money to fly.

However, before I got a chance to solo, disaster overtook me—we moved to Washington, D.C.! Now I haven't a job, and consequently there's no flying. But it always looks darkest just before the dawn—and before many more moons I'm going to solo or bust trying!

RAY MCPHERSON
Washington, D.C.

Well, as you say, Ray, it always looks darkest right before the old dawn. So our little check for two dollars is on its way to help add a splash of light somewhere. We hope it sparks you to another start again soon. Yes Sir!

Is the Red Air Menace Exploded?

(Continued from page 9)

worry very much about its chances against the Red Air Force at this time.

Indeed, nothing Stalin put up in the sky against Finland indicates that his air arm rates any better than eighth or ninth on this man's planet. And the poor quality of the Red aero personnel might put the rating even farther down the list. It is now evident that Stalin has been decidedly stronger in propaganda power than in air power. Too much of his sky strength has been on paper instead of on the runway.

Another payoff was the firing by Stalin of Mikhail Kaganovitch from his job as Commissar of Aviation. Things like that don't happen when everything is going smoothly. And we don't have to tell you that plenty of other Red aero leaders have long been missing from their usual Moscow and Leningrad haunts. And perhaps the most striking fact of all is that Russia's premier aircraft designer—the man who developed all the A.N.T. craft—is also reported by authoritative sources to be minus his job.

Yes, the terrifying winged bogey of the Soviet has lost its ability to

frighten the daylights out of everybody—and it was little Finland that pulled the white bed sheet off it and proved it to be 90 per cent bark instead of bite.

Going back to our cover painting, it may be pointed out that the Soviet Z.K.B.19 there depicted is termed Russia's best sky fighter. It carries a fixed 20 mm. air cannon plus four machine guns in the wings. It mounts, paradoxically, a French-type Hispano-Suiza engine enabling it to do about 300 m.p.h.

The Bristol Blenheim, from whose fuselage turret the Finn gunner is shown firing, is one of the lot supplied to Finland by Britain, and we believe this plane is now well known to our readers.

The Finnish aero insignia, by the way, is shown on the wing of the Blenheim up in the right corner. It is a light blue swastika on a white circle. Latvia also employs a swastika insignia, so you see this device is not monopolized by the Nazis. As a matter of fact, the swastika design may be traced back to ancient Persia, and our own American Indians likewise worked it into their tribal patterns.

Happy Landings

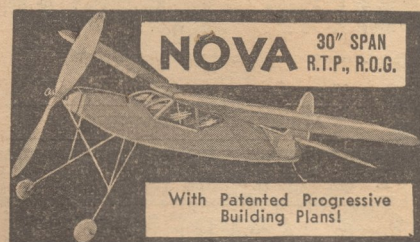
(Continued from page 23)

livered to the British. Most of them were pushed across the border into Canada. Only a handful have, at this writing, reached Britain proper. The same goes for the North American trainers. Meanwhile, France has a few Curtiss 75A's, several Douglas bombers, and one or two new Martins.

Now, however, we hear that the orders placed since the original Lookheed and N. A. orders were only optional orders. Not real orders at all. Late last December, the story goes, the Allied purchasing mission

laid out a tentative plan to standardize purchases of American planes, but the program failed to get the approval of the Allied Supreme War Council, and so the options have lapsed.

What we can't make out is whether the Allies are really buying a big flock of planes here—or whether all this talk about tremendous back-logs, gigantic orders, and vast shipments of planes is just so much oil, perhaps fuel for someone to make a stock market killing on trumped up sales which, like the proverbial little man, aren't



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actually there.

It may be all very well to make big claims about the superiority of American military planes and to ballyhoo to the effect that only through them will the Nazi air might be broken. But we'd like something more substantial to go on. The American public wants to know what it's all about if it is to invest further money in aircraft stocks on the big-military-order score.

Nor can you blame our American youths who are clamoring for aircraft factory work for wondering about all this, too. Whether they've got jobs or are working to get them, they naturally are interested in their future chances to be employed on these orders which so frequently are boiling down into unsure commitments.

Another slow-up is promised by

"Mike" Gas Model

(Continued from page 45)

the paper only to the edges, spray again, and apply two or three coats of dope. The fuselage is covered with silk, and this, as well as the exposed wood parts, is painted silver.

FLYING THE MODEL

IN ALL test flights with "Mike," a one bladed prop should be used. By clamping the prop to the crankshaft in the right position, it will be possible to get the weighted end pointing down when the engine stops. This prevents any damage to the engine in landings. A two bladed prop, however, may be used in contest flying.

To fly "Mike" have an assistant hold the plane while you start the en-

statements that the Allied purchase plan would first have to be studied thoroughly by the President's aviation committee headed by Secretary of the Treasury Morgenthau. This committee, consisting of Army, Navy, and Treasury representatives, would busy itself determining whether the plan would interfere with purchases for American military and civil needs and whether it would hinder the designing research on newer models. All that may be sensible—but it can too easily be protracted into cumbersome delays which will mean nobody will make anything out of the business.

No wonder the Allies are suddenly being very nice to Italy. If they need planes and engines, they can buy very good ones there and in big quantities. Without a lot of fooling around, either, we'll wager.

gine. When the plant starts, pull out the wheel and set the model on the ground with the engine still running. Set the timer for the desired motor run, and let the model take off, guiding it by the wing tip.

In landing, the protruding wheel takes the shock. Occasionally, in a more severe landing, the motor unit may pull out. This is okay, though, for it can be slipped into place again. The idea of holding the nose of the ship in with rubber bands reduces the chances of injury occurring to the engine, as well as allowing the separation of the motor from the rest of plane.

That's all. She's now yours, boys!

Plecan's "Paragon"

(Continued from page 37)

justing being made through offsetting the propeller. As more and more turns are given on successive flights, the craft may tend to bank to the right, starting a spiral dive. Do not do any more flying until the wing has been warped for a left bank. (When viewed from the rear, the right wing should have more incidence than the left.)

Now, under full winds, the "Paragon" should bank to the left when climbing in right hand circles. In any case, do not give the ship full winds immediately after warping the wing or tail surfaces.

Adjustments should always be followed by flights of few turns, gradually increased until full turns are "packed in" with a winder. The reason for this is that you don't know for sure how the model will behave under new adjustments—so it is best to work from scratch.

In some cases, the model may tend to stall under power, hanging on its propeller at a high angle and not gaining altitude as it should. This is best remedied by giving the airscrew a little right thrust, tightening up

the circle under power, and eliminating the stall.

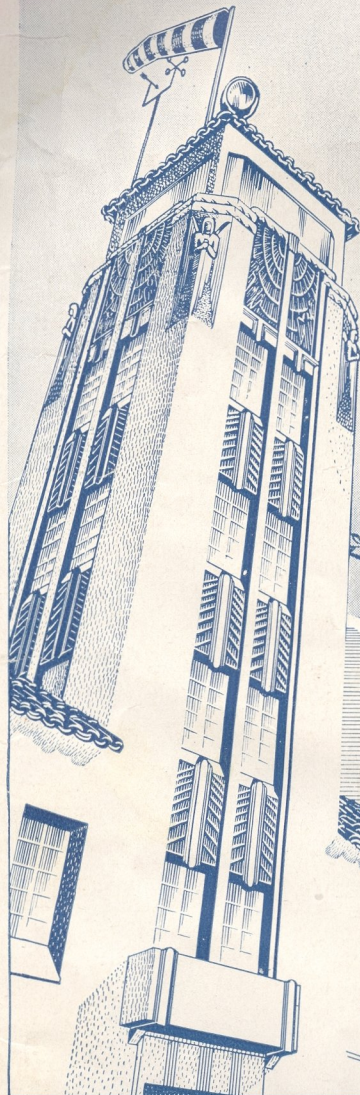
Under correct adjustments, the "Paragon" should perform as follows:

The climb should be fast, in a tight right-hand circle, with the model leaning to the left. As the motor unwinds, the climb should decrease until the model starts to cruise with a few turns left in the motor. The craft slows down when the propeller starts to free-wheel, and it should then glide without banking to either side.

The reason for the level attitude is: if the model banks to either side slightly in the glide, it is really in a side-slip that lasts during all the gliding time. As you know, a side-slip is used to lose altitude when a large ship comes in for a landing, so get a long distance away from your model while it is flying and see if it is leaning to either side.

Well, if your "Paragon" gets into an argument with a thermal, you had better hop onto your bike or into your car, and give chase. You know, she won't stay in sight very long if you stand there mouth agape!

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vided them with a profitable occupation and secure future since it trained them in advance for the highest position they could ever expect to occupy. It can do the same for you.

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The Flying Cloud 44" wingspan contest endurance model for Wakefield and Moffett international championship competition.

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Flying Cloud is now available to you after having been subjected to one of the most rigid tests. Twenty-three test models were built before the Flying Cloud, wonder of the air, was offered to you. Buy her, build her, wind her up, let her go! The rubber band motor pulls her graceful body straight up to new heights. When the rubber band motor unwinds the propeller retracts into the fuselage. This lessens air resistance giving you those valuable extra contest flying minutes in the air. No wonder she is hailed as the 1940 champion... the Flying Cloud is the result of five years consistent experiment, improvement and research on the same Wakefield design. At the 1939 National Contest Henry Struck turned in a seven minute time on the Flying Cloud's first flight, disappearing into the clouds... trials proved she could stay in the air for over one minute on a hand glide without any power. Now you can build this sensationally new model from the great and complete BERKELEY kit. And more startling is the fact that the Flying Cloud is so easy to build... build the Flying Cloud for your next contest early because she won't disappoint you but will bring home the prize with a true champion's performance. The Flying Cloud is the only complete endurance model on the market which includes these exclusive star features:

- Propeller retracts flush into fuselage slides.
- All propeller parts ready-made.
- Rubber tensioner, ready-made.
- All wire parts ready formed, including landing gear, rubber hooks and tail skid.
- Kit also includes: Illustrated plans, cement, clear dope and all wood parts ready-cut or printed out. Fly tomorrow's winner today!

\$1.00
PP.

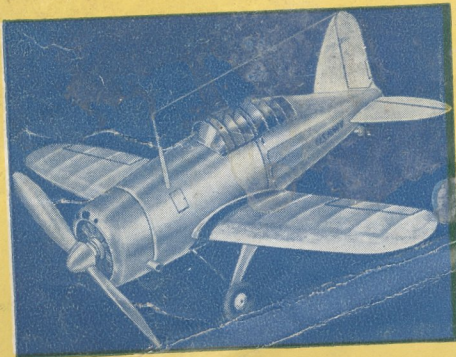
AMERICAN
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BREWSTER FIGHTER

24" WINGSPAN

Here it is! A great ship that is turning in a marvelous performance for our aircraft carriers. A real 462 m.p.h. fighter that is really one of the most deadly fighters in the air today. This kit includes a turned balsa cowl. Kit features cement, clear dope, colored dope, wire braced landing gear, both Finnish and American insignia and typical BERKELEY construction.

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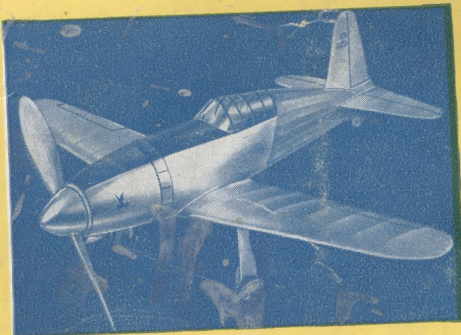


MESSERSCHMITT INTERCEPTER FIGHTER 27" WINGSPAN

No authority on international armament can overlook this ship that broke all existing land speed records at 392 m.p.h. The kit includes everything to build the model as pictured, with the exclusive features of balsa covered leading edges, "semi-planked" fuselage and wire reinforced landing gear. Color: Flaming Red. Complete Kit.

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MODELS
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VULTEE VANGUARD

28" WINGSPAN

The 400 m.p.h. interceptor fighter that will leave terror in the heart of any adversary. Powered by a new mystery 1600 H.P. radial engine the model is such a faithful replica of the original that you won't believe it possible in a dollar kit. Look at those sleek lines; that wide landing gear; that big spinner. Kit is 100% complete with cement, clear dope, colored dope, wire braced landing gear, detailed plans and instructions.

\$1.00
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U. S. ARMY CURTISS P-40

28" WINGSPAN

America's newest, most modern demon of the skies. Powered with a 1300 H.P. chemically cooled Motor and bristling with machine guns, this ship is capable of defending our shores from invaders in any form. The model has the sleek lines and beauty of her prototype. It is hardly possible to realize that such an exact copy could be so easily built. Berkeley's exclusive type of construction makes this possible. Balsa covered leading edges, "Gas model type" wire landing gear, and "semi-planked" fuselage make it a crash-proof model. Colors: Silver and Yellow. Complete Kit.

\$1.00
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