

"WE BUILT AN AIRWAY THE HARD WAY!" See Page 6

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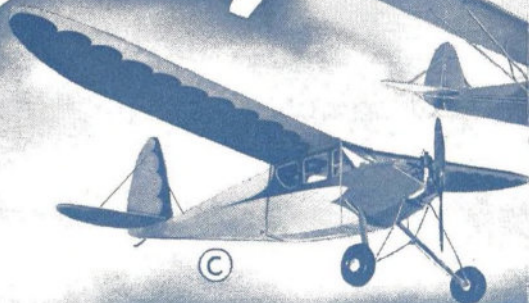
AUGUST SCHOMBURG

CONQUEST OF THE ATLANTIC!

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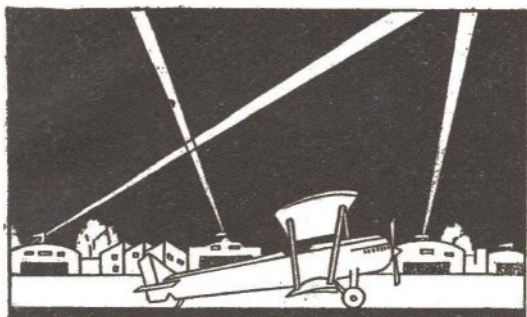
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It's on page 22

FLYING ACES

A. A. WYN, Publisher

HERB POWELL, Editor

VOLUME XXXII

MAY, 1939

NUMBER 2

ON OUR FACT AND FICTION RUNWAY

THE STAFFEL INVISIBLE	DONALD E. KEYHOE	2
That observer had been riddled in mid-air. Yet an empty sky mocked Philip Strange!		
"WE BUILT AN AIRWAY THE HARD WAY!"	MAJOR B. LAW	6
Corking revelations of skyway thrills—and laughs—below the Rio Grande.		
SPIN MONEY	JOE ARCHIBALD	10
Phineas trips over his future. Another rip-snortin' 9th Pursuit laugh fest.		
CONQUEST OF THE ATLANTIC!		13
How P.A.A. will hurtle passengers to Europe. The story of our cover.		
SCREWBALL SKYMANSHIP	J. LLOYD CONRICH	14
Yes, the ancients certainly had some hot-shot ideas about flying!		
BIRDMAN'S BOOTY	ARCH WHITEHOUSE	18
Those battles of wits and bullets led Kerry Keen to—a mere handful of pebbles!		
YOUTH AIR MOVEMENT NEWS	DAVID MARTIN	22
A flock of timely info about the Government's new flight training program.		

MODEL MAKERS' SECTION

WITH THE MODEL BUILDERS		33
BUILD THE "FLYING ACES PRONTO"	"SNOOKY" PAKULA	34
HERE'S THE DOUGLAS GLOBE-GIRDLER	HENRY STRUCK	38
THE SHIP ON OUR COVER—BOEING'S 314	J. DAVIDSON	43
FLY THIS "SNOONY SILHOUETTE"	REX HALL	44
MAKE A "SCRAPPY" GAS JOB	RAY HEIT	46
ANOTHER SCOOP—THE LOCKHEED XP-38	EDWARD OAKLEY	51
NEWS OF THE MODELERS		52
WHAT DO YOU SAY?		53
WORKBENCH TIPS		53

DEPARTMENTS AND FEATURES

THEY HAD WHAT IT TAKES	5	NOW WE'LL ASK YOU A FEW	24
SNAPSHOTS OF THE WAR	9	THE AIRMAIL PALS	25
THROUGH THE AERO LENS	17	ON THE LIGHT PLANE TARMAC	26
WISECRACK-UPS	21	MODERN PLANES ALBUM	28
HAPPY LANDINGS	23	FLYING ACES CLUB NEWS	30
AERO BOOK REVIEW	23	JOIN THE FLYING ACES CLUB	32
ALL QUESTIONS ANSWERED	24	IN OUR NEXT ISSUE	53

Cover Painting by August Schomburg

Published monthly by Magazine Publishers, Inc.; office of publication, 29 Worthington St., Springfield, Mass. A. A. Wyn, President. Editorial and executive offices, 67 W. 44th St., New York. Entered as second-class matter, Nov. 14, 1928, at Springfield, Mass., under Act of March 3, 1879. Title registered in U. S. Patent Office. Copyright, 1939 by Magazine Publishers, Inc. Nothing may be reprinted without permission of the publishers. Manuscripts will be handled with care, but this magazine assumes no responsibility for their safety. For advertising rates address FLYING ACES Magazine, 67 W. 44th St., New York City. Subscription rate: \$1.50 for twelve issues in the United States and possessions; \$2.00 in Canada; and \$2.50 in all other foreign countries. Single copies, fifteen cents.

The Staffel Invisible

By Donald E. Keyhoe

Author of "Trip-Six Trap," "Raid of the Wraith," etc.

Illustrated by Jon L. Blummer

CHAPTER I

THE BOCHE FROM NOWHERE

FOR THE THIRD time since taking off from his Vosges canyon hide-out, Captain Philip Strange chuckled to himself.

"Be ready for rôle as Second Lieutenant Archie Bye, unobtrusive, mousy character," the wireless code from Colonel Jordan had said. Strange wedged the control stick between his long legs and took out his make-up kit. A timid, pink-cheeked face looked back at him from the mirror, its only claim to obtrusiveness a wispy yellow mustache which struggled feebly on his upper lip. The G-2 ace grinned at his carefully made-up features.

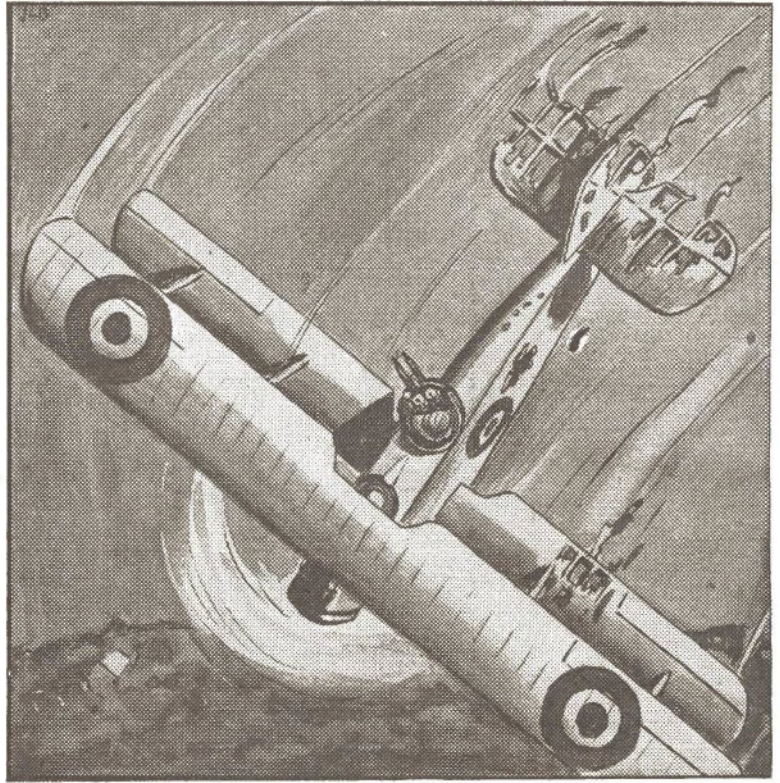
"Well, Archie, I hope you're 'mousy' enough to suit the Colonel. Wonder what he wants of a goofy bird like you?"

Archie smiled back apologetically from the glass. Strange then replaced the kit in his flying-coat and glanced over the cowl of the Spad. The field at Rondecourt lay ten miles ahead, with the Meuse River shining in the rays of the setting sun. He sent the fighter moaning down in a long power glide, his mind on the full message from the G-2 chief:

"Meet me at office 365th Observation, Rondecourt, soon as possible. Be ready for rôle as Second Lieutenant Archie Bye, unobtrusive, mousy character, reporting from G.H.Q. with routine dispatches—I. J."

Strange sobered as Rondecourt drew nearer. It was the headquarters for Fifth Corps, and he might run into old friends there, as he had on other missions since his death was officially announced. It was always difficult, after those lonely weeks in the Vosges, to keep from letting them know he was still alive. But he had told only the few whose aid had been required.

It was more than two months now since German spies had invaded his secret quarters in Chaumont, killed a dozen G-2 pilots assembled there, and left him for dead. To avoid further slaughter of Intelligence pilots because of German hatred for him, he had persuaded Colonel Jordan to go through with a false burial while he himself disappeared.



Later, with Jordan's help, he had established a secret base in a Vosges canyon, carrying on with such missions as the G-2 chief ordered. A Chinese cook and an Army Air Service sergeant were his only regular companions at the cavern, and it was with relief and a keen anticipation that he had received Jordan's summons to Rondecourt.

From the tone of the message, the affair seemed not too serious. Jordan would probably have called for one of his already-established rôles—such as Tex Kane, the flying cowboy, or Colonel Smythe, British Brass Hat—if there had been more to it.

Then abruptly a glimpse of wings against the sun broke in sharply on his thoughts. He shaded his eyes, relaxed when he saw it was only a D.H. Another two-seater now came twisting into the wind for a landing, and he surmised that they had been on an observation mission together. He was starting to circle, giving the D.H.'s the right-of-way, when to his surprise the observer in the nearer ship jumped to his feet, frantically snatched at his gun tourelle, and sent a burst of tracer smoking from his Lewises.

Strange spun around in his seat, expecting to see a Boche diving on the two-seater's tail.

But there was not a ship in sight!

THE G-2 ACE'S eyes jerked back to the observer. The man was firing madly, swerving his guns to right and left, up and down, while the pilot plunged the D.H. toward the field beside the river. Suddenly the observer stiffened, and the spade-grip fell from his grasp. He clawed wildly at the air for an instant, then crumpled over his guns.

Come as a "mousy Second Lieutenant." That had been Jordan's order. And since it bore promise of a simple, routine task, the disguised Philip Strange rejoiced as he brought his Spad over sunny Rondecourt. But suddenly his peace was shattered! For abruptly the observer of a nearby D.H. crumpled over his guns—dead! That man had been riddled in mid-air before the G-2 Ace's very eyes. Yet no enemy had appeared! There was only the mockery of a maddeningly empty sky!

The pilot stared back, his face white with terror. Abruptly, part of the left flipper tore off, and bits of fabric flew from the turtleback. The pilot flung his crippled plane into a steep forward slip, his blanched face still staring back over the tail. But then, as though by some horrible magic, that ashen face suddenly crimsoned into a dreadful bloody mask. The pilot's body tumbled



In the next instant, stark amazement drove thoughts of the doomed D.H. from Philip Strange's mind. For those tiny red blurs had abruptly spread into a large, dazzling ball of flame—and from out of that ball pitched the figure of a man!

down into the cockpit, and with Liberty wide open the D.H. pitched to the ground. It struck head-on and instantly burst into flames.

Strange swept the stick to his belt and zoomed with his thumb on the trips. Again, his tense gaze raced about the sky. But there was nothing to be seen. Not even a cloud to hide an enemy ship!

The second D.H. had pulled up, and both pilot and observer were fearfully searching the heavens. Strange ruddered in toward the two-seater, then kicked away in consternation. A tiny, weird red blur had appeared in mid-air, three hundred feet away, and simultaneously the Spad's tail shook under a vicious pounding.

Amazed, Strange saw four more of the tiny blurs appear, flickering, dancing across the sky. Hardly had they materialized before they were gone, to be replaced by still more of the queer red flashes, as though a dozen miniature shells were bursting in quick succession.

Another savage pounding shook the Spad, and fabric ripped from the secret agent's left wingtip. Strange zoomed into a chandelle, eyes slitted behind his goggles. There *had* to be a ship somewhere—perhaps hidden against the sun

Directly ahead, two more eerie red blurs appeared, like fireflies dancing across his path. Something lanced over his cowl, and splinters flew from a strut. With a muttered oath, he tripped the Vickers and stabbed a burst toward the blur on his right. It vanished—but two more weird blurs whirled in on the left, and a line of sinister holes streaked across his wing.

Something like an icy hand seemed to close around the heart of Philip Strange. Human foes he could fight, even against odds—but these deadly red fireflies

Wings swam across his sights as he whirled in a lightning turn. He clamped his trips together, but let up on them swiftly. It was the other D.H., twisting frenziedly, with its tail surfaces almost in tatters, and its rear-guns blazing into space.

With a wild turn, the D.H. pilot kicked away from the darting red blurs and dived into the glare of the sun. Three of the fireflies whirled after it, vanishing for a moment, reappearing hundreds of feet away. Strange fought back a desperate urge to flee, and pitched the Spad after the dancing red spots. The guns were thrashing on his cowl, belts half-empty, but he held the trips hard against the stick. If he could hit one of those

A SENSATIONAL PHILIP STRANGE WAR-SKY MYSTERY

damned things, he might learn the answer. But the fireflies moved too swiftly.

A groan came to his lips as he saw the D.H. plunge into a spin. But the next instant stark amazement drove all thought of the doomed men from his mind. In a split-second, one of the tiny red blurs spread into a large, dazzling ball of flame, and from out of that ball pitched the figure of a man!

STRANGE had a glimpse of a gray German uniform, of a tortured face as the man beat madly at his blazing hair. Then his tumbling figure dropped into the Meuse, a hundred feet from shore. The ball of flame whirled down a moment later, striking the surface farther out from the bank, and a huge cloud of steam arose, hiding the scene. Strange leveled off, glanced upward.

The fireflies had disappeared.

The second D.H. was now a twisted mass of wreckage in the middle of the field, and a crash-truck was racing out toward it, followed by a crowd of men and officers. Another group was dashing toward the bank, near the spot where the German had fallen.

Strange landed, let the Spad roll toward the line, and the ship had barely stopped when he saw the chunky figure of Colonel Ira Jordan hurrying toward him. The G-2 chief was followed by a pot-bellied little officer whom Strange recognized as Major Simon Blunk, Intelligence officer for 5th Corps.

Jordan shot a quick look at the number on the Spad, wheeled and gestured for Blunk to wait, out of earshot. He reached the ship just as Strange climbed out. For a second, he looked uncertainly at the G-2 ace's made-up features.

"It's all right, colonel," Strange said grimly. "This is your 'mousy' character."

"Strange!" Jordan said tensely. "What in Heaven's name were those things?"

"I don't know," muttered Strange. "If anybody else had told me about it, I'd never have believed it. I suppose this is why you sent for me?"

Jordan's bulldog face was pale as he answered.

"Yes—but I never dreamed it would happen here at Rondecourt. It's a miracle you're alive."

"I won't argue about that," said Strange. He gazed up into the sky, but there was no trace of the dancing fireflies.

Jordan turned, beckoned to Major Blunk. "Get over there to the river," he ordered. "If there's anything of importance found on that body, let me know at once. Also, see if they can find out what it was that dropped into the river just after he hit."

"Yes, sir," said Blunk, and trotted away. Strange searched Jordan's face as the colonel turned back.

"Where else has this happened?"

"At the 81st Pursuit, also the 193rd Bombardment," Jordan said dully. "Three Handley Pages crashed just before dawn, as they were starting on an early raid. And an entire flight of the 81st was wiped out an hour later. The same story—I didn't believe it at first—those queer red flashes, ships brought down in flames or with the pilots dead—and not another thing in sight!"

"No one has any explanation?"

"Blunk just told me that Chaumont has some crazy idea they're small magnet-controlled bombs dropped from a Zeppelin or a huge plane too high for us to see. They think the bombs explode at a low altitude and are attracted to ships because of the iron in the motors. But I think the idea is preposterous."

PHILIP STRANGE shook his head. "Too difficult to work out, Colonel—even if it explained the German who fell into the river after the second D.H. crashed."

Jordan looked puzzled. "But that's the only thing in favor of the idea. He must have fallen from pretty high. We didn't see any ship."

The G-2 ace stared at him.

"Then you didn't catch it?"

"What do you mean?" exclaimed the colonel.

"That Boche actually came from the center of that ball of fire—or else from nowhere, you might say. One second there wasn't a sign of him—the next second there he was!"

"But that's impossible," Jordan said hoarsely. "He couldn't have come out of that fire—he'd have been burned to death before he hit the water."

"Just the same, that's what happened. One of those 'fireflies' suddenly expanded into that mass of flame, and our German dropped out of it. And don't ask me how, because I agree with you—it couldn't happen."

Jordan's harassed glance shifted across the field, to the crumpled D.H., from which the crash squad was removing two limp forms.

"Poor devils," he said half under his breath. "I sent them out—the crews of both those ships. I hoped they'd discover some unusual activity on the other side—something to help explain this ghastly business. And now they're dead. Killed by the very thing they were trying to uncover."

"It's war, Colonel," Strange said gently. "You're not to blame—it's the fiends back of this thing."

Jordan's face darkened.

"You're right. And by the Eternal I'm going to find out who they are and even the score!"

"Well, I've a couple of vague ideas I'd like to discuss," said Strange. "Could we go inside?"

Jordan nodded. "I'd already set aside a room in squadron headquarters—we can talk there without being disturbed."

Jordan, with Strange following, walked away from the deadline silently and made his way toward the buildings in the background of the field.

THEY had almost reached the temporary building which served as squadron and also special Corps offices, when a motorcycle sidecar came sputtering up to the door. Blunk sprang out, importantly holding up a charred and dripping map.

"We found this on the body, Sir! True, it's scorched and pretty well soaked. But with care I think we'll be able to dry it so we can read it."

"Anything else on the German?" demanded Jordan.

"Nothing important, Sir. Impossible to identify—even if anyone here had by chance known him."

"What about the ball of fire or whatever it was? Did you find any trace of it?"

"They're trying to find out now, Sir. I hurried back with this in case it was important. They're going to drag the river. But it will take at least three hours to get equipment that will do the work."

Meanwhile, Strange was not forgetting his rôle of Archie Bye. He now put in a timid question:

"Begging the Major's pardon—but was there any special insignia on the German's uniform?"

Blunk gave him an impatient look.

"With all that mud on it, I didn't see. It's hardly important, anyhow."

"I—I just thought," said Strange, "that if he were an air force officer it would narrow down the identity problem."

"I already told you the man couldn't be identified!" roared Blunk. "And who are you, anyhow?"

"Second Lieutenant Archie Bye, Sir, reporting to Colonel Jordan with dispatches from G.H.Q." Strange answered, with an arm-jolting salute.

"Humph!" grunted the pot-bellied major. "Well, we can take care of G-2 here without any suggestions from—"

"Good Lord!" Jordan broke in dazedly. "Look out there on the field—the Spad!"

Strange whirled. He had a brief glimpse of a queer mirage-like effect which surrounded the fighter. Then in a flash the Spad was gone!

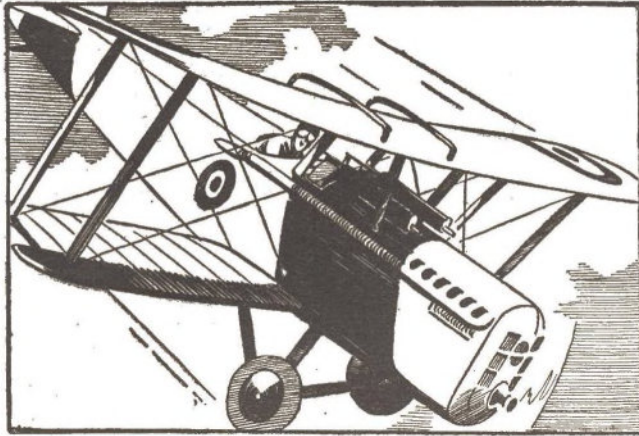
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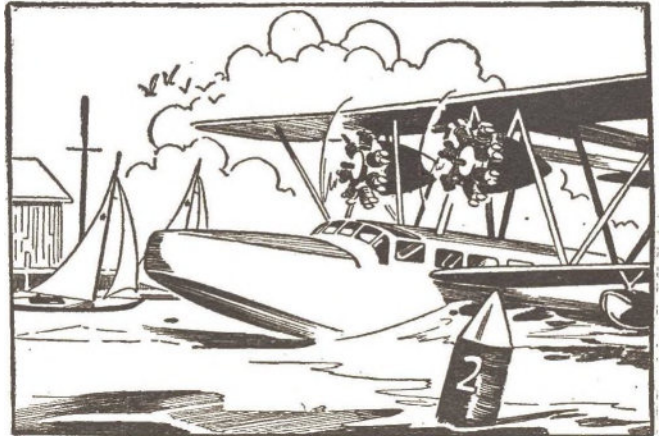
They Had What It Takes

XXVIII—ROSCOE TURNER—DASHING RACING ACE

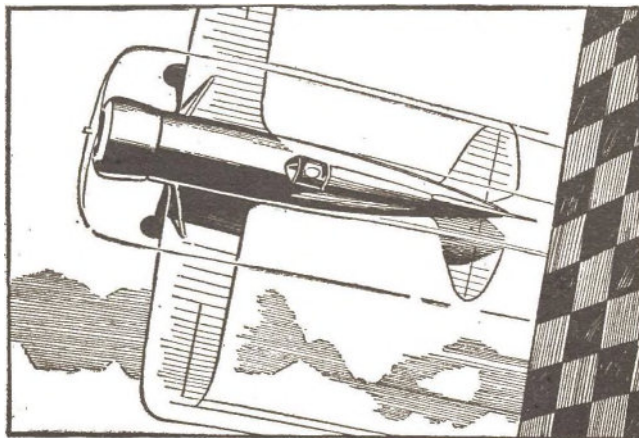
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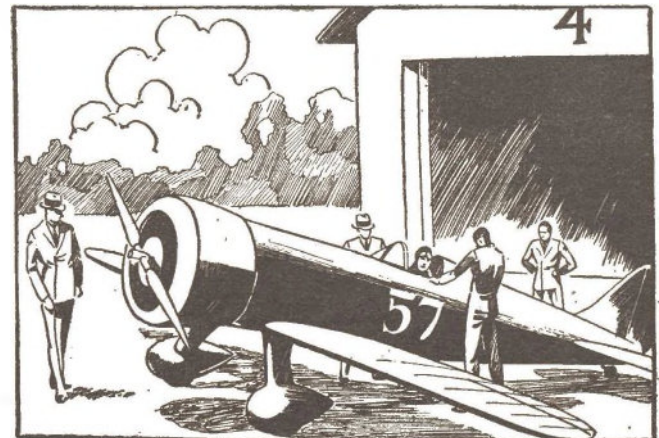
1—Born in Corinth, Miss., in '95, Roscoe Turner was 21 when the U. S. entered the War. He first joined the ambulance corps, then transferred to aviation and spent 10 months overseas. Initially, he was a 2nd Army instructor, and after the Armistice he was with the 3rd Army at Coblenz, Germany. He left the service in 1919 as a 1st Lieutenant.



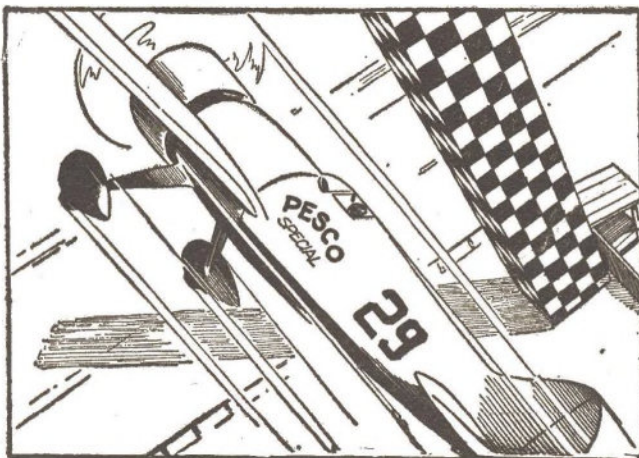
2—From 1925 to 1927, Turner served with the California National Guard. Here, he achieved a Captaincy, then he was commissioned a Colonel and made aide to Governor Rolph, for whom he acted as pilot. In 1927, this popular skyman finally "went commercial" when he assumed the chore of flying a Sikorsky amphibian for a chain cigar company.



3—Backed by more than 6500 flying hours, both wartime and commercial, Turner then expanded his aero activity. He became the first to lower a plane successfully by parachute, and he flew in that striking sky movie, *Hell's Angels*. Then air racing attracted his attention, and he piloted a Wedell-Williams speedster to victory in the 1933 Bendix Trophy Race.



4—But 1934 proved to be the Mississippian's biggest year! For he began it by establishing the best U. S. time for the gruelling London-to-Melbourne run, came back home to dash from Los Angeles to New York for a 10-hour record, then capped the climax by coping the Thompson Trophy Race in his Wedell-Williams "57" with a speed of 248 m.p.h. Some flying!

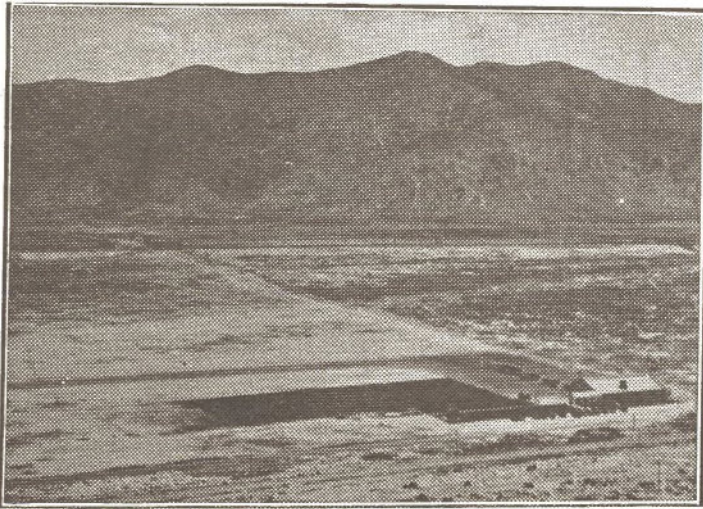


5—Failure to round one of the pylons cost Turner the Thompson event in 1937. But in 1938 he "didn't miss a stick"; indeed, his hurtling Laird-Turner "Pesoo Special" was never headed after the seventh lap, and he set a new record of 283 m.p.h. This won him the coveted Henderson Merit Award, as well as the satisfaction of having taken the Thompson twice.



6—And so we laud that most colorful, dashing, and handsome of sky racers—Colonel Roscoe Turner! Even though Bendix and Thompson victories are now behind him as he tends to aero duties for Gilmore Oil, the Colonel still "goes" for speed tournaments in a big way. Will he be on hand for the starter's gun this year? Well, fans, our bet is that he will!

"We Built an Airway



C.A.T.'s field at Torreon, Coahuila, Mexico. "It was no million dollar airport," says the author. "But it certainly looked like much more than that after we'd sky-skipped those treacherous Sierra Madre peaks seen in the background."

THOSE PERKY PILOTS who flew the planes of that feline skyline known as the C.A.T.—specifically the *Corporacion Aeronautica de Transportes*—were the real pioneer airmen of Mexico's golden land of *Mañana!* I ought to know because I was superintendent of Operations and Maintenance for the outfit. And I do know!

That was back in the late 1920's and early 1930's. And believe me, during those fitful nine years down there, Mexico certainly furnished us with countless thrills. A lot of laughs, too!

We figure that the Mexican natives always did everything backwards. And they, in turn, were sure we Yanks were funny-factory stupid. As a result, both us and the Mexies we had dealings with were in hot water most of the time.

Even before the old C.A.T. line really got going, our flyers experienced plenty of hectic hazards. Witness, for instance, the trial hop Lloyd Anderson made from Mazatlan, on Mexico's Pacific Coast, to our American base at Brownsville, Texas—

COMES THE REVOLUTION!

ANDY started off one morning on what should have been a routine flight. And after crossing the high Sierras, he landed at Torreon for gasoline. This was before we had turned Torreon into a thriving airport—before there was even a single landing field in the town. So Andy had to make the best landing he could on the widest street available, the one that ran along the West side of the town's military garrison.

As Andy's plane was the first one ever to land in Torreon, it wasn't long before a few thousand curious natives and soldiers surrounded it and began to inspect every inch of its surface and interior. To make matters worse, the crowd had the usual Mexican dislike for Gringos (Americans) and hence was anything but friendly.

Andy, not knowing Spanish, found it next to impossible to make the jeering mob understand his

Starting a skyway here in the U.S.A. and starting one in Mexico are two decidedly different propositions! Major Bernard Law found that out when he and his little band of hardy flyers launched the C.A.T. airline in that strange land below the Rio Grande. Anyhow, you'll find thrills and laughs aplenty in this article, wherein the Major reveals many of their corking experiences.



wants. All he could do was shout at the top of his lungs: "Me want gasoline!"—which only made the Mexicans jeer all the more.

After fifteen minutes of this hopeless holler, with Andy desperately wondering what to do next, a tall Mexican ambled up to him and said in a low voice: "I like Americans. I studied in Allen Military school in your country. I am your friend!" Pleased indeed to meet one friend, at least, Andy was more than surprised when the Mexican continued: "Be very careful! Three officers are coming from the garrison now. They will take you to see the General—who will ask you to remain here overnight. But make some excuse to get away from here right away—because the revolution is sure to start in a few hours!"

With these words, the tall Mexican swore aloud in Spanish, kicked the plane viciously, and walked away. This gesture was obviously made to give the crowd the idea that he, too, disliked the foreigner.

Andy, meanwhile, thanked him under his breath, and got ready to receive three uniformed officers who, sure enough, presently pushed their way to the plane. Then one officer informed him, in rather bad English, that their General wanted to see him "*muy pronto!*" In a few minutes, Andy found himself face to face with one of Mexico's great warriors—General Escobar.

Escobar, who was about to lead a great rebellion against the Mexican Government, was the snappiest dressed officer in the Mexican service. And one of the most polite. He told Anderson that he wanted to cooperate in every way in constructing a first-class airport in Torreon, because he realized the value of the air mail service and foresaw the part that aviation would play in giving Mexico its rightful place in the sun.

"You must realize," quoth the General, "that my country has been so unprogressive in the past, and our communication system is so out-of-date, that unless we quickly make some drastic improvements, we will be lost in the shuffle after the next major war is fought."

After they had talked awhile, Andy thanked the General for his offer to assist the airline. Then he extended his hand to say good-bye.

"Ah, no!" smiled Escobar politely. "You must remain here a day or so—since I want you to go with me and select a site for your airport."

"Ah, no!" smiled Andy right back at the General. "I would be delighted to stay, yes. But right now I have pressing business at Brownsville and must arrive there on schedule. Besides, just as soon as I let our officials there know everything is all right, they will let me return here



Here we meet (left to right) Garret Sullivan, Operations Assistant; The Author; Pilot Charley Baughan, famed as "Pistol Pete"; and Pilot Lloyd Anderson, who outwitted General Escobar. Certainly a cheerful group!

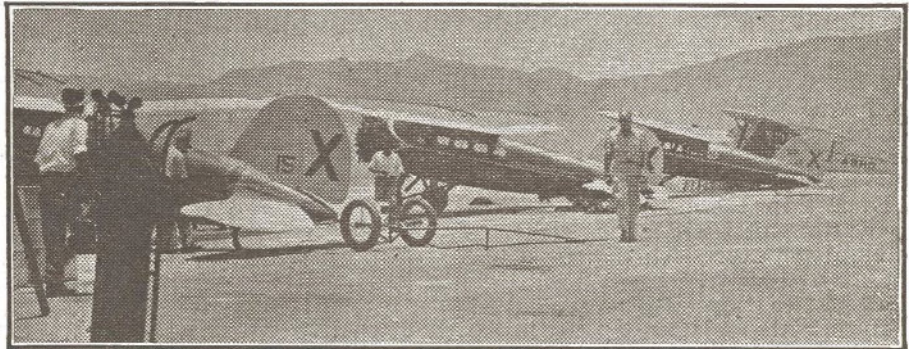
the Hard Way!"

Declares
Major Bernard Law

with eight new planes to start the airline—tomorrow morning early! Then we shall get to work on the airport."

General Escobar, figuring that eight planes were better than one, soon permitted him to leave for Texas.

The next morning, all the papers carried the story of the new Mexican revolution which, under Escobar's leadership, had broken out the night before. And when Andy showed up in Brownsville, we all had a hearty laugh with him over the way he had out-smarted the wily General.



Ships on the line at the Torreon port. The first three are Lockheed Vegas, while the one at the far end of the line is the Bellanca Airbus in which "Pistol Pete" flew the ton of silver, as related herein. The Vegas were flown without their N.A.C.A. cowlings—because in that climate and altitude they overheated the engines.

HOW ESCOBAR HIT THE JACKPOT

GENERAL ESCOBAR'S REVOLUTION, incidentally, was the only rebellion in the history of Mexico that was an absolute failure. It lasted only a brief three months, and it ended disastrously mainly because of the part that airplanes played in it.

With the use of aircraft, you see, revolution became an entirely different game in Mexico. For whereas in the past the rebels could always easily hide out in mountainous retreats and keep up an incessant guerilla warfare against the Government, in Escobar's show it was quickly shown that a few light bombs, dropped from Government planes on rebel strongholds, soon made the rebel cause too difficult.

It wasn't long before General Escobar made his last stand at Jimenez, on the edge of the Coahuila Desert. Then he gave up the cause of revolution forever.

The irony of the situation—as it is now generally admitted by well-informed Mexicans—is that if Escobar had stuck it out just a few more days, he undoubtedly would have succeeded with his rebellion.

But having sacked Torreon and Monterey to the tune of several million dollars in gold, he was content to load his loot into a fast plane and fly to Canada—where he now resides in luxury.

The General certainly knew how to make the most of the aircraft he did have at his disposal. A plane helped him hit the jackpot!

WILL ROGERS—"DUMB SEAT-MATE!"

WHEN the C.A.T. finally did get under way, we operated a daily schedule between the United States and many Mexican airports, flying both passengers and mail. Then our lives were one constant round of unusual and exciting events.

One of our best friends and boosters—as well as one of the best promoters of aviation in general—was the late beloved Will Rogers, who always used our line when visiting south of the Rio Grande. As long as I live, I shall remember Will's stay with us on his first trip to Torreon.

Will, at the time, was on his way to confer with our ambassador to Mexico, Dwight Morrow, and the president of Mexico, Plutarco Calles. Anyhow, while en route to

Mexico City, Will stopped in to spend the night with us. And all afternoon, evening, and the next morning that he was with us, Will kept us in fits of laughter. Yes, it was with deep regret that I got ready to see him off at noontime.

As it happened, we had more passengers than we could possibly handle that day, making it necessary to put on two extra Lockheed Vegas.

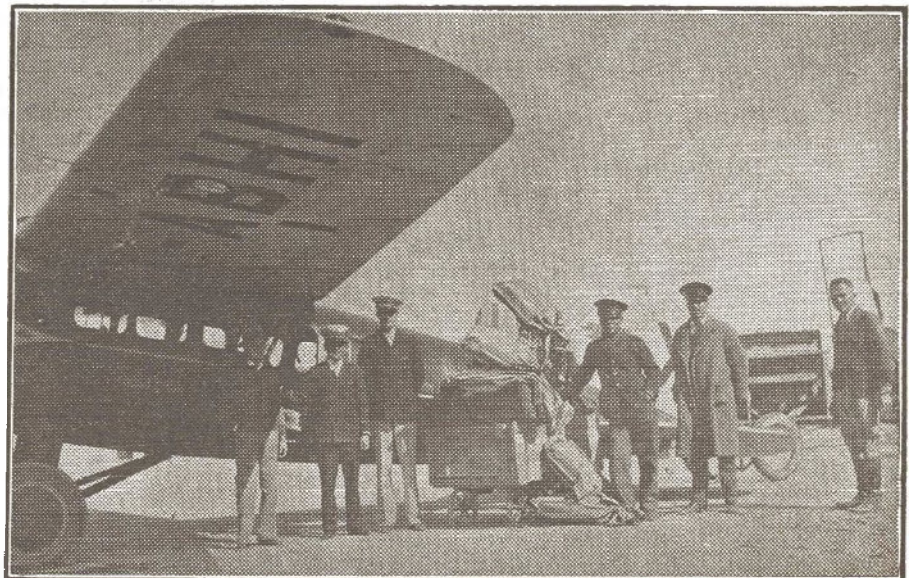
Well, wishing to make Will's trip as pleasant as possible, I asked him which seat he would like to occupy in the plane that was to take him to Mexico City. As I had expected, he laughingly replied that he didn't mind where he sat or with whom he sat. So I assigned him to a rear seat in the plane, which he would share with another passenger.

Then just before the take-off, my assistant, Garret Sullivan, rushed up and said there was an American newspaperman occupying that rear seat—a fellow who declared he didn't want to share it with anyone because he was writing a story for some Boston paper about Mexico. He "didn't want to be disturbed by some dumb seat-mate."

Hearing Garret tell me this, Will Rogers just laughed. "If that's the case," cracked the humorist, "I'll gladly sit on the floor so that he can finish his story in peace!"

"Not on your life, Will!" said I. Then I entered the plane and politely told the "important" reporter that as we were very crowded that day it would be necessary for him to share his seat.

"Say," he surlily replied, "I paid for this seat. And I don't see why—"



Right: Big loads in mail and air express were handled by C.A.T. Yes, that "go-cart" is piled plenty high! Major Law is seen here at the extreme right.

But before he had a chance to finish, I curtly told him that if he didn't move over immediately, I'd have him unceremoniously thrown off the plane. Then I walked back, got Rogers and boarded the plane again.

This time I asked the Hub writer his name. "I'm Byrnes, and I write for a Boston paper," he came back.

Then, with a grin, I turned to Rogers and queried: "What's your name, big boy? And whatinell do you do?" Will smiled, maneuvered his gum, and answered: "My name's Rogers, and I do chores for a hick newspaper."

Even then the busy Byrnes didn't "come to." But I still laugh whenever I think of the expression that must have appeared on his face when on the arrival at Mexico City he caught on to the fact that the milling thousands who were at the airport that day had come to cheer his "dumb seat-mate"—the only American other than Lindbergh who ever really captured the heart of every man, woman, and child in Mexico.

I'm told that Will's speech that day was a knock-out. He faced the huge Mexican crowd, dressed in a wrinkled blue serge suit, his hair looking as though it had never been combed, and his jaws pumping up and down on that inevitable piece of gum. Mixing badly pronounced Spanish, with American slang, he talked for several minutes. And though not one of the Mexicans in a thousand understood what he was saying, they cheered madly and threw their *sombreros* into the air when he concluded his oration with: "Adios, Amigos—Farewell, my friends!"

THE TALE OF A TON OF SILVER

A DAY I can't forget was the one when we were ordered by the Bank of Mexico to fly 1,500,000 silver pesos from Durango to Mazatlan. Never do I want to see its like again!

After we had figured out the weight of the silver, I dispatched a Bellanca Airbus to get it. In charge was Pilot Charles Baughan.

Charley, because he carried two guns instead of the usual one, had been nick-named "Pistol Pete"—or, as the Mexicans put it, "Pancho Pistolo." Having a liking for waxing his mustache, he also looked like a mighty



The late Will Rogers poses with the Major at Torreon. Their "brush" with the Boston newsman who didn't know his celebrities took place shortly after this photo was snapped.

tough *hombre* when he was all fitted out. Actually, though, he was as peaceful as a kitten.

Well, Charley B. staggered off the ground at Durango with a half ton of silver pesos. And upon his safe arrival at Mazatlan, he unloaded the silver with the help of only one weary-looking soldier. Then he flew back to Durango for the other half ton. After depositing that, too, at Mazatlan, he returned to report to me on the result of his trips.

"Well, Charley," I asked him. "where's the receipt for the pesos?"

Charley looked up at me and laughed: "Maj, they only had one dumb cluck of a soldier there to meet me. Since he couldn't write, I left the junk there and returned to Durango for my second load. Well, the same dumb soldier was there when I landed with that pile—and he still hadn't learned to write, so I got no receipt. Finally, I told him to go to hell and left him with all the money!"

Wow, what a bawling out I gave Charley! Then I hurriedly wired our Mazatlan agent asking about the money. What if that batch of spot cash with no strings to it had cured that "dumb" soldier's dumbness? Was I worried!

Hour after hour passed. Still, no answer! I aged ten years. But ultimately a report did come through—and the money was safe! Every last peso of it! Believe it or not!

FRIENDSHIP PLUS!

BUT all the Mexie army men weren't as innocuous as this "cluck" with whom Charley left the pesos. Certainly, the one I met near Sota la Marina wasn't!

This man, a tough, full-blooded Indian, was one of Mexico's greatest generals and military strategists. I met him one day during Escobar's revolution. I had been asked to fly him from Brownsville to Victoria.

Anyway, he took a liking to me. And to show it he said to me in Spanish one day: "Major, can I do any favor for you?"

I thanked him for his offer, but told him that I really couldn't think of anything I needed at the moment. At that, he looked at me through cold black eyes and said:

"Maybe someday you will want some one killed—and if you do, just tell me."

He wasn't fooling, either!

OH, FOR SOME OIL!

AFTER ESCOBAR'S revolution ended ingloriously, I went to Mexico City to see if the Government would make some settlement for three planes the rebels had stolen from us.

I found, after arriving at the Capital, that two of the planes had been completely wrecked, a couple of inexperienced rebel airmen having killed themselves attempting to fly the jobs. But the third ship—a Ryan Monoplane—was in pretty good order. I could have it just as soon as they overhauled its engine.

A month passed—the usual length of time it took the Mexicans to do a simple job. Then I was given the plane, together with a check for 17,000 pesos, in payment for the two wrecked ships.

Well, in taxiing the Ryan for a test hop I had such a time keeping it in a straight line on the ground, that I told one of the mechanics something was wrong with it. I was afraid to

(Continued on page 25)

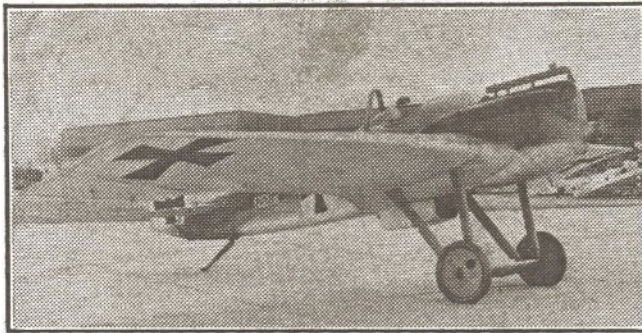


Left: "Every time I landed on a Mexican field," says the author. "I saw some of these strangely-garbed Indians looking on. They usually traveled in groups of four and were always on the go, walking single file all over the Republic of Mexico. We never did quite figure out which of them were men, and which women."

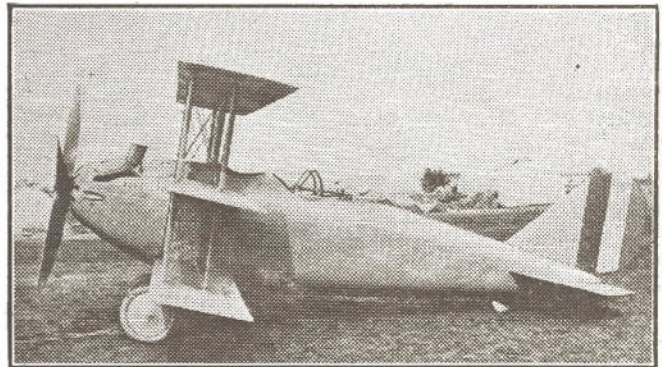
Snapshots of the War

These Photos are From the Collection of Joseph Nieto

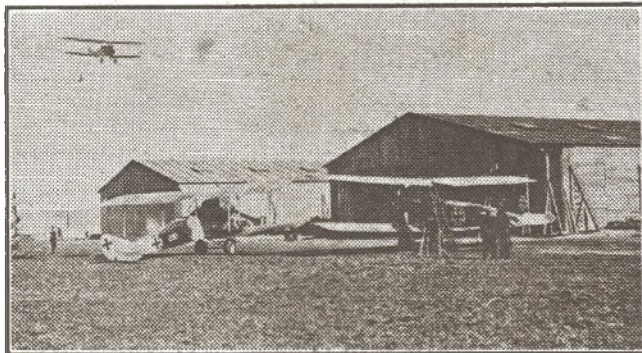
Below: Here's a wartime job that boasted fighting lines many years ahead of its time. Named the *Stahleindecker E-2*, Junkers put it out, and it was designed for what we'd now call attack missions. Note the "croquet-rocket" bumper mounted immediately behind the pilot's head—to save the cold head if the ship rolled over on its back. You're right, that's a 120-h.p. Mercedes grinding away up front.



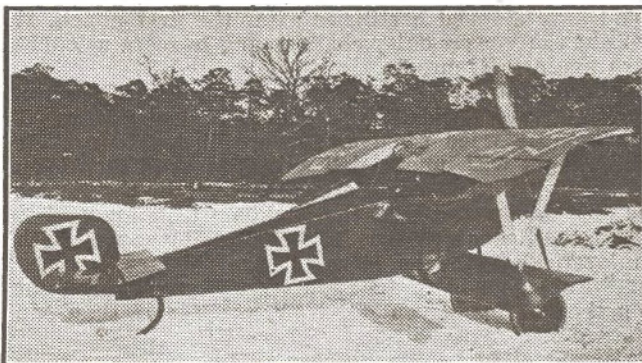
As neat a shot as we've ever run across of the time-honored *Jenny*—the Flight Cadet's nightmare! She had more than enough struts, angles, curves—and so many bracing wires that empty-umpty dollars musta gone into the jeans of wire cable manufacturers. But she filled the bill. They wouldn't even burden this baby—specifically a Hisso-powered Curtiss JN4-D2—with the extra weight of an insignia!



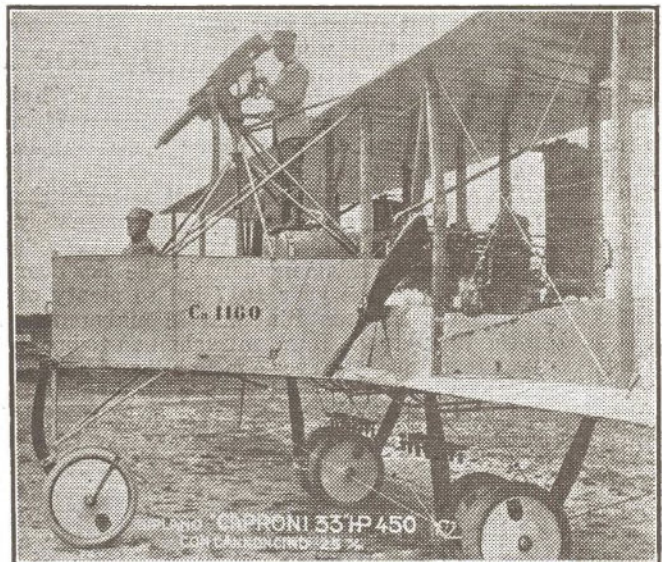
How's this for a crackerjack? She's the Hisso-engined Curtiss Kirkham Triplane Scout, a U.S. job built just in time to celebrate the Armistice. A four-bladed prop, high aspect ratio wings, slim fuselage, Spad struts, and a Scarf mounting were her features. That's a radiator fitted there between the lower and middle wing.



A German wartime flying field at Karlshorst in 1917. The Jerries used wooden hangars which could be knocked down and moved from drome in sections. That's a Rumpler C-1 circling up there. Another stands on the ground, and at the right is an Albatros C-10 with a working ladder leaning against it.



You've heard of Allied pilots who were killed because they mistook a Boche ship for a French Nieuport. Well, this is a good example of such design copying by the Germans—the Siemens D-1. She's a ringer for the famed French plane even to the Vee-struts, the fin-less rudder, and the general lines of the fuselage.



Don't hide, fellows—this is ONLY a picture! Yep, in this Italian Caproni 33, the pilot sat in the "wash-tub" up front—and hoped they wouldn't take off in THAT direction! And an acrobat was recruited from a nearby circus to stand on the gas-tank platform and fire the 25 mm. air cannon. Note the farmer's harrows fitted to the undercarriage. They were to cultivate the spinach in the garden of the Officers' Mess. Or could it be that they're bomb racks? Anyhow, it was quite a ship, huh?

BLA-A-A-A-A-AM! BO-O-O-O-ONG! KER-WHA-A-A-A-AM! Pieces of houses, coal-scuttle helmets, and bits of heavy trucks rained skyward!



Spin Money

EVERY LITTLE BIT added to what you've got makes just a little bit more. One word can lead to others and start a fight and finally a funeral. The gods of chance can see to it that a shoestring is run up into a shoe factory, and a snowball the size of a ping pong ball can be rolled down the side of a mountain until it assumes the mammoth proportions of an avalanche and ultimately washes out a whole Alpine village.

In similar fashion a trifling incident in the sky over Pont a Mousson late in the year 1917 led to plenty of grief for Lieutenant Phineas Pinkham in midsummer of 1918. Ask the Boonetown, Iowa, miracle man today if he believes that Mont Sec was once a mole hill and he will nod his now-graying rusty-topped head with emphasis.

But let us get on with the story: "A" Flight, with Captain Howell giving orders, took off from the drome of the Ninth Pursuit Squadron south of Bar-le-Duc one morning in the fall of 1917. Major Garrity's buzzards had had little experience in scraposphere mayhem at that early date. The Heinies who jumped them above Pont a Mousson, however, had been riding sky buggies for almost three years, and it was rumored around air-dromes that *Rittmeister* von Blintz, leader of that particular circus, had once rigged a seat on a kite, taken it up to a hundred and ten feet, and then landed it without cracking so much as a strut.

By Joe Archibald

Author of "Kaiser Biliious," "Don Patrol," etc.

With Illustrations by the Author

Anyhow, Howell was ready to believe anything when the fight got under way. And Phineas Pinkham wondered if the flying instructors at Issoudon had been Jerry spies dressed up in Frog suits; for everything he tried with the Spad proved to be just what his Kraut assailants wanted him

to do. He always ran into Jerry lead.

If a referee had been allowed in that air fight, he would have stopped hostilities after the first punch. It was like the Vassar daisy chain trying to score a touch-down against Minnesota.

Phineas, caught between two of von Blintz's aerial marvels, finally decided to forget all he had learned at Issoudon. He tried some maneuvers of his own after his Spad got well innoculated with lead. And then even von Blintz pulled a punch aimed at Captain Howell, he was *that* flabbergasted at the Pinkham technique.

Still, the Boonetown wonder wasn't doing so well with his joystick—so he let loose of it. "You are on your own," Phineas said to the Spad. "They have figured out everything I made you do. Now let's see if they can dope out what you will do by yourself."

A Kraut right behind Phineas let his Spandaus roar, figuring that he had the Spad pilot's next move timed to a split second. His burst went over the intrepid Yank's head and the Von got blasphemous. Phineas' Spad did an adagio dance and nearly sideswiped von Blintz, who

ANOTHER CRASH-ON-DELIVERY PHINEAS FEATURE

was chasing Bump Gillis around in a dizzy circle. In fact a wing tip sliced the *Rittmeister's* tail fin almost in half and the Tripe waddled down the sky lane like a duck that had backed into a porcupine.

Phineas finally grabbed the control stick again, and he was only about five hundred feet up when he finally convinced the gyrating crate that he was boss. But not for long. The upper wing began to wobble as if someone were sitting on each end playing seesaw.

When Phineas eventually landed the Spad, it was a monoplane. And when it stopped cavorting over the war-torn linoleum, it was as devoid of wings as a smelt.

LIEUTENANT PINKHAM jettisoned about a quart of oil from his mouth, lifted the Hisso out of his lap, and crawled out of the wreck like a new-born caterpillar leaving a cocoon. He looked upstairs and then took a full breath to see if he could still hold air.

"They all figured back home that I wasn't quite bright," he grunted. "And they was right. I had a chance to join the Navy—but now look at me! Well, I'll show them Heinie bums yet! Pinkhams always have a trick up their sleeves. I—er—where am I? If I am behind the Boche li—" His big ears fanned out a little to catch sounds. His bleached blue eyes bugged out and took a swift gander around. Then he heard the strains of a mouth organ—and the tune was *Who Threw the Overalls in Mrs. Murphy's Chowder?*

"Haw-w-w-w-w!" Phineas tossed out with bubbling relief when he saw the frowsy looking dough coming toward him. "Bong mattin, mawn-sewer."

The Yank looked at the wreck of the Spad, then at Phineas. He threw his shovel away. "I come out to bury ya," the dough explained. "I heard you smack this real estate, an' nothin' human could survive such a—"

"I am a officer. Have a care how you address me. What're you doin' here? A deserter, huh?"

The dough shook his big round head. "Nope. I got nicked by a bullet when we had a fight here a coupla days ago. The stretcher bearers forgot to pick me up. But I been doin' all right. I got me a rooster cookin' over in that Frog shack by them poplars there. It was the last to leave this town, I giss. It was so old it had gray feathers an' the gout. Why, I had t' pluck it with a pair of pliers. But if ya want some of the frica-see . . ."

Phineas swallowed his pride and accompanied the dough to the decrepit farmhouse. The aroma of *chanticleer de jour* tickled his ample proboscis. And he sat down and rested his bruised torso, even though he had to place it tenderly on the wooden chair.

"Funny," the dough said, "where that slug hit me. Right here along the shoulder, Lootenant, an' it washed a strawberry birt' mark right

It was all a matter of past, present, and future. As for his past, Phineas figured the least said the better. And as for insuring his future, the Boonetown Bam decided ten thousand bucks would keep him in coffee and cakes after the Big Fuss was over. But as for the present, Lloyds of London would have fallen over themselves underwriting six round-trip rocket hops to Saturn—before they'd give Carbuncle a thousand dollar policy on a nine hundred and ninety-nine dollar premium!

off. My name's Gribble—Orville Gribble from Elderberry, Kansas. I run away from home when I was eight. An' I says to myself when I seen my birt'mark was gone that now I'll allus remain a orphant. Ya see, I use ta figger that some day I would put a ad in the paper about my birt'mark, as maybe my parents got to be rich sincet and I—"

Phineas interrupted to ask the dough where he was hiding the cognac.

"Huh? What makes ya think I got any of that Frog firewater, Lootenant? If I could only git some, I'd—"

"Make believe I didn't say anything," Phineas replied. Then he asked how long the rooster had been cooking.

"Just thirty-six hours, Loot. I stuck a knife in one of the legs a hour ago an' it give a little before th' knife busted."

Phineas sighed. "Just give me a little of the broth, then," he said, "as I have got to *allez* to Barley Duck before it gets dark."

"Okay, Lootenant. But don't ya say nothin' about seein' me. It ain't my fault I got lost. Nice *guerre*, ain't it, huh?"

THE FLYER who had landed by force of gravity forgot all about his encounter with Orville Gribble an hour after he had left the dough. Little did he know, as he hooked a ride on a fourgon later, that the name of Gribble would leap out at him months hence and plunge him into an orgy of skullduggery.

The mule-drawn army wagon dropped Phineas Pinkham off about three miles from Major Rufus Garrity's drome.

"Is that as fast as them jassacks always go?" he asked as he handed the driver a pair of cigars in parting.

"They ain't never went no faster since I met 'em," the fourgon chauffeur replied. "Thanks fer the smokes, Lootenant."

Phineas stood alongside the road watching the fourgon creep away. A match flared. A puff of smoke drifted back from the army wagon. Then—BANG!

The mules let out twin hybrid yells and started to



"I always knew mules could run if they wanted to," grinned the Boonetown wizard.

accelerate. The fourgon disappeared down the road as if four fast ostriches were hitched to it. One wheel went flying off it and, as it topped the brow of a hill, something else parted company with it. Phineas was sure it was the driver.

The Iowan then trudged off toward Bar-le-Duc. "I knew mules could run if they wanted to," he grinned. "Haw-w-w!"

In Bar-le-Duc Phineas took a detour to see Babette. It was dusk, therefore, when he arrived at the Ninth Pursuit Squadron and the rest of the buzzards were at mess. Bump Gillis looked at his hutmate, drew a hand across his eyes and gulped: "S-say somethin', Car-buncle, or we'll bury you sure."

"I don't look in the pink, do I, bums?" the prodigal spoke. "Let me tell you, I could not live through it if I had to give a butterfly a transfusion. How did the rest of you guys get back? Boys, was we terrific!"

"We were outnumbered," Howell snorted. "Next time we'll take that incompetent bunch of Heinies!"

"Okay, then, you take 'em!" Phineas sighed, easing his torso into a chair. "I don't want none of 'em. Nor any of that slum you've got there on the table, either. Why don't we get some decent grub around here, huh? My uncle fed pigs better than we get fed in this Air Corpse. I know why you don't see any dogs an' cats around France. They've all been canned for the aviators. It's a disgrace, an' a insult to gentleman pilots."

"Shut your big face!" The voice came from the door of the Operations Office. "You homely baboon, I'll tell you why you don't get fillet mignon an' pheasant in this Air Force. To date you've cost the U.S. Government \$45,000 in Frog Spads. So they should send steaks over to you, huh? Can't you ever bring back anything you take off this drome?"

"Ten thousand bucks!" Phineas piped up. "That's me. I brought myself back, didn't I? Why, I'm worth another \$20,000 on the hoof, as that is what they say it cost the U.S. to build me up for a Frog graveyard. If those Spads cost 15,000 bucks, then you should be able to get a Rolls-Royce with fifty soap certificates. The wings of the Spad I just brought down was pasted on with spit. It's suicide!"

"Of all the fresh, insubordinate apes—leave the mess!" the Old Man roared.

"As if I'd touch any of it," Phineas yipped. "Haw-w-w! Even the flies zoom right up when they make a three-point landing on it. Bum swar, girls! I must be on my merry way to the dog-house."

WINTER came to Bar-le-Duc. And if it did, could spring be far behind? At any rate, by the time the birds came up from the south, Garrity's buzzards had become toughened to heavier-than-air brawling. Yes, the *Rittmeister* and his stable of fighters were battled to a draw by the Major's pugs when the April fight card was tacked up by the demon promoter, Mars. Captain Howell and his flight scored a kayo over the Meuse in May. And before the open season for brides rolled around, von Blintz and his Fokker maulers were taking to the bicycle.

Flushed with success, Garrity's flyers sat around the mess one night in May. Major Rufus Garrity held a kaffee klotch and waxed very paternal. "Well, the way we're going on the ground and in the air, we'll have

this *guerre* finished by August. Have any of you men decided what you're going to do when you get back home? Uniforms won't be anything then—no. You, Howell—what do you intend to do?"

"Oh, I've got a job waiting for me, Major. The old gent has a pretty good garage. I'll put in a salesroom and sell automobiles."

"I have nothin' to worry about, either," Bump Gillis bragged. "I'll be president of my uncle's bank in a couple of years."

The C. O. looked at Phineas Pinkham. The scion of the prominent Boonetown family sniffed. "None of us Pinkhams was ever born with a silver spoon in his mouth. We always fought up from the bottom. Well, I have my eye on a trick novelty business. I can get the factory for \$10,000. All I need is the money, but—er—say, Major, you said you was goin' to look for a good investment. Now this—"

Garrity got up and walked away.

"Awright," Phineas sniffed. "That is a pal for you. Fair weather friends, huh! Well, I will get the *argent* I need, somehow."

He picked up a copy of *The Stars and Stripes*. A list of casualties drew his attention. One of the names under "Missing in action" stirred his mental assembly. It read: *Pvt. Orville Gribble*. Phineas knew he had heard of some one by that name, but he did not upset his memory figuring out the owner. His thoughts were of the future, and at the moment his future looked as bleak as a piece

of arctic real estate.

The very next day the Jerries started moving on the ground. They picked up six miles of Allied holdings. And the Kaiser's birdmen made a comeback upstairs, too. Three flights of them were up all day raising merry hell with the Yank and Frog cloud skimmers.

So the Ninth Pursuit knew that they still had a war on their hands after a whole day of taking it on the chin. Old Man Garrity sent two buzzards to the hospital, marked off another Spad rider who had called for a fair catch behind the Jerry lines, and called on the pool to send him some fresh fish.

Phineas Pinkham, feeling the need of a snort or two after having ducked kayos from Kid Bones all day, got on an old bicycle he kept behind his hut and pedaled to Bar-le-duc. He entered an oasis dubbed *Le Cafe Aux Poissons d'or*, picked himself a table in a dark corner, and ordered cognac.

While he was sipping the Frog nitro, he contemplated

once more the Pinkham future. Garrity was right. The *guerre* could not last forever. Now if he could only borrow 10,000 skins, why—

Abruptly, voices drifted in through the window near where the thinker sat. He turned his head, saw the smartly visored lids of a couple of Yankee brass hats who had paused to exchange pleasantries or otherwise.

"Yes, Colonel, I've been stuck up at Chaumont for five months. No action. Gad, it gripes me! Got a letter from my law partner back in Ypsilanti a week ago. He wants me to combine business and pleasure. He calls this war pleasure! Do you get that? Anyway, he wants me to find a man named Gribble. You've heard of Gribble Grits, the breakfast food? Well, Orville Gribble is the man I want. Joined the army, they say. Huh, I've found the names of forty Gribbles in the records—but this one has

(Continued on page 74)



"If any of you bums takes a step toward me," the resourceful Yank said loftily, "I'll drop it!"

Conquest of the Atlantic!

THE GRIPPING STORY BEHIND OUR COVER PAINTING

WOULD you be interested in having breakfast in New York, lunch somewhere east of Newfoundland, and a late after-theatre dinner in London? "Impossible!" would have been the outburst to that a few years ago. But now the "impossible" is about to come true!

The Atlantic was first spanned in 1919 in some 16 hours with only 750 h.p. So a modern flying boat with approximately 5,000-h.p. should have little trouble in flying from New York to London in the same length of time.

Yes, we have the planes, the routes are wide open, and Pan American or Imperial Airways will take us—if we have the price of a ticket—in very short order now. There is every reason to believe that scheduled runs, twice each way, will be carried out this summer between the United States and Europe. Whether these flights will be normal passenger-carrying trips, or simply continuations of the test flights that were carried out last summer, remains to be seen. In all probability a few select passengers will be carried immediately at a \$400-for-passage rate.

Practically every commercial air power has been considering an Atlantic run. The United States, Great Britain, Germany, France, and Italy have tried test trips over possible routes. Pan American and Imperial Airways have experimented with the northern or summer route on several occasions and they have satisfied themselves that the trans-Atlantic skyway has worthy commercial possibilities.

The French have tried the trip with their *Lieutenant de Vaisseau Paris*, a giant flying boat, covering the route from France to the Azores and on to North America. The Germans have, with rare success, tried their giant Dorniers and their Blohm & Voss seaplanes from catapult "mother ships." The Italians made one mass flight with their Savoia-Marchettis years ago and have since been concentrating on routes across the South Atlantic to South America. And there is still a possibility that Germany may attempt further trips with their new Zeppelin, if they get helium from the United States or produce some safer methods of handling hydrogen.

But at the present time the first grip on the trans-Atlantic run appears to be held by Pan American Airways, because they appear to have got their equipment ready and pilots trained first. Imperial Airways, with a healthy history of long-distance runs over Empire routes, will no doubt get into the swing of things some time later this coming summer.

Pan American has had years of successful flying in South America and more recently on the Pacific trips, where long over-water trips have been carried out for some three years. The real problem of the Atlantic run, however, is the matter of weather, for the routes at certain points are nearly 3,000 miles farther north than those involved on the Pacific run. And when you go north, you encounter ice, fog, and unpleasant landing

conditions. Such things, admittedly, aren't so good.

The planned routes to Europe offer several alternatives. The first, starting from New York City, takes on a 601-mile run to Botwood, Newfoundland. From Botwood, the route may be along the Great Circle to the tip of Greenland, with a stop at Reykjavik, Iceland. Then it would continue on to northern Scotland or northern European ports. This route can only be attempted, of course, in the middle of summer.

Another run, which will most likely be used by both Pan American and Imperial Airways, includes the New York-to-Botwood portion of the route, then swerves to cross the Atlantic to Foynes on the west coast of Ireland, a distance of 1,994 miles over the main chartered sea lanes. From Foynes it is but 350 miles to Southampton, which would be the main British Isles stop.

When wintry blasts blow, the route will be shifted south, in all probability to involve the 2,397-mile run to the Azores, pick up again and head for Lisbon, Portugal, then turn north-east for Southampton, Paris, or Berlin. To break up the long New York-Azores run, it is possible that the route might be directed first to Bermuda (773 miles) then on to the Azores (2067 miles) and thence through the Lisbon portion of the trip. On this journey an extreme total of 4,940 miles would be covered between New York and Southampton—but it would be the safest proposition during the months of winter weather.

Imperial Airways has long considered a run to Montreal, and several check flights with experimental Short flying boats were made last summer. It is well known that they are only waiting for equipment suitable for regular runs—ships that offer a worthy pay load.

PAN AMERICAN is ready. They have the new Boeing "314" (see our cover painting) the largest flying boat ever built in the United States. It weighs 82,500 lbs. with full load, will take 5,000 lbs of cargo and about 40 passengers, and boasts cabins that are ultra-modern in convenience. It's

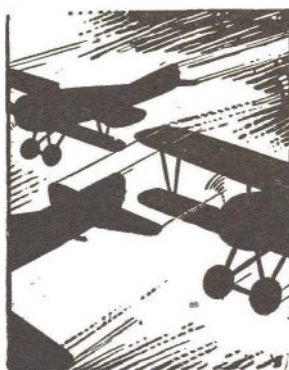
evident that these craft are capable of pay loads worthy of the effort. The maiden-voyage ship has been called the *Yankee Clipper*.

The "314" uses four 1,000-h.p. Cyclone engines, has a maximum speed of 200 m.p.h., cruises at 175, and lands at 70. The accommodations for passengers are carried on two decks. As a normal day-time ship she will carry 72 passengers and a crew of eight including two stewards. As a sleeper plane with berth accommodations she will be limited to 40 passengers.

There is a special dining saloon, a galley, separate dressing rooms and lavatories for men and women, and a private drawing room aboard. The crew's accommodations, of course, include the control cockpit, avigation room, engineer's deck, and a very complete radio cabin. Every safety device known to man will be carried. And there is no reason why—if the traffic demand is there—Pan American should not be operating at least four

(Continued on page 74)

All hail the striking Boeing 314! With this huge, 74-passenger sky Clipper groomed for the eastward take-off, Pan American Airways is now ready to speed passengers to Europe on the fastest trans-Atlantic travel schedule in history!



Screwball Skymanship

YOU'VE read plenty of wacky doings in connection with real flying. But, brothers, you really "ain't heard nothin' yet" in the line

of screwball skymanship until you delve into the days before the Montgolfiers—those first humans to be blessed with success in defying the law of gravity!

History, we're here to tell you, records the fact that countless previous attempts were made to develop a machine that would take to the air in the manner of a bird. And therein lies the details of the goofy aero goings on I'm about to relate here.

As far back as the dawn of written records, we find that men dreamt of flying. Thus it is that Greek mythology lived through the years to reveal the legend of Pegasus—the winged horse upon whose back Bellerophon flew to destroy the Chimaera and other enemies. Then there is the well known fable of Icarus, the mortal who sought to reach the heavens by attaching wings to his shoulders with wax, which unhappily melted when he flew too close to the sun.

Almost as well known, is the story of Plato's contemporary, Archytus (no relation to Bronchitis) who was supposed to have invented a flying dove—an artificial bird that depended for its lifting power upon a mysterious gas secreted within its body. Anyhow, mention of this contraption is the earliest known account we have of a gas-supported apparatus. Today it is regarded as the real progenitor and inspiration of all later developments along these lines.

There have also been discovered various allusions to the art of flying in the hieroglyphics of ancient Egypt, some dating back as early as thirty centuries before the Christian Era.

The ancients, however, confined themselves almost exclusively to *dreams* about flying, having become thoroughly convinced that the actual power of flitting about through space was to be enjoyed only by the most powerful of the gods. This power was considered secondary in importance only to Jupiter's ability to create light-

ning and toss thunder bolts hither and yon.

By J. Lloyd Conrich

With Illustrations by Joe Archibald

It was not until the Middle Ages, that men began to give these aeronautic matters any thought of the "no-foolin'-now" variety. Even so, the history of this period of development, while extremely interesting, is little better than a series of impossible falsehoods and monstrous tales invented by power-seeking "magicians" or out-and-out imposters. Compared with these boys, Baron Munchausen was a sissy.

For example, we find even such eminent physicists as Albertus Magnus, who lived in the first part of the Thirteenth Century, propounding the following recipe as a means of combating Ol' Man Gravity:

"Take one pound of sulphur, two pounds of willow carbon, six pounds of rock salt ground very fine in a marble mortar; place, when you please, in a covering made of flying papyrus to produce thunder. The covering, in order to ascend and float away, should be long, graceful, and well filled with this powder; but to produce thunder, the covering should be short, thick and half full."

You might try that some Sunday morning! Anyhow, that "flying papyrus" would make a swell covering for your next rubber model, wouldn't it? The thunder it produces would make you think you had a gas job!

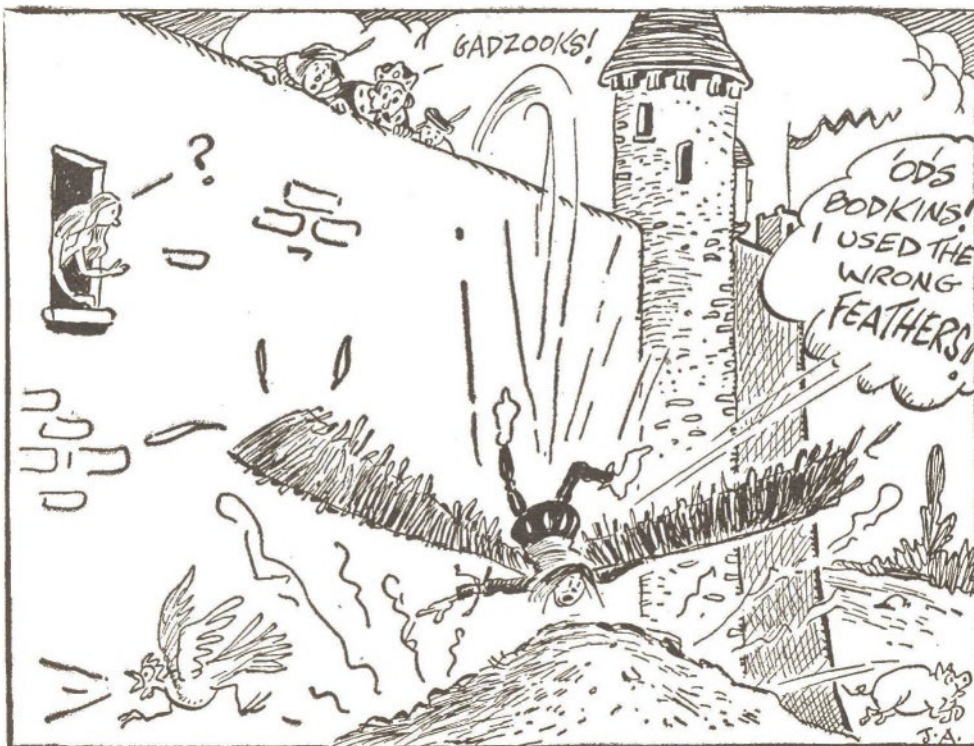
At any rate Magnus' statement is typical of hundreds of alleged scientific formulas issued during this particular period of history to expound the little-known theories of aerostatics.

As a matter of fact, it appears that practically every well known physicist of that age dug into the sky science at one time or another. As another instance, there is a story told of Regiomontanus—the first real mathematician and astronomer who appeared at the dawn of the revival of learning—in which it is stated that, like Archytus, he invented a mechanical flying dove that depended upon a mysterious gas contained within the body. This plane-like pigeon was supposed to have been flown before the Emperor Charles V upon his official entry into the city of Nuremberg.

Unfortunately, however, records reveal that Regiomontanus died some twenty-four years previous to the birth of Charles!

This slight inaccuracy of a quarter of a century merely reflects the hankering for hooey in that particular age. Incidentally, some "historians," happily forgetful that poor Regie was dead, claimed that it was a mechanical eagle, not a dove. Well, maybe it was a whiffle bird.

The greater number of these experiments, generally speaking, were performed by a rather inferior class of fakery who united a small amount of ingenuity with a great deal



Left: Dusty 16th Century records tell us that an Italian alchemist staged an untactful take-off for King James IV. Headed in the general direction of France, he hopped from the walls of Stirling castle—and nose-dived into a steaming pile of m-n-re! What caused his downfall? Well, he simply made the mistake of using "feathers of fowl, rather than feathers of eagles."

Right: A real brain-teaser was faced by Casper Scott, the artful Jesuit thinker-upper of the Middle Ages. Dilemmas similar to his are expressed today in that liling phrase which goes: "If we had ham, we'd have ham and eggs—if we had eggs!"

of what you and I call the good old twaddle.

AS a specific case of this brand of ballyhoo, harken to the experience, during the early part of the Sixteenth Century, of a certain Italian alchemist, whose name has unfortunately been lost to posterity. He was making experiments in Scotland at the Abbey of Tungland, under the patronage of no less a personage than the enlightened King James IV. Having constructed "a pair of wings composed of the feathers of various and sundry barnyard fowl," he took off from the walls of Stirling Castle in the general direction of the coast of France, and—

—was assisted to his feet some few seconds later at the bottom of the walls of Stirling Castle, where he had unfortunately landed in a pile of steaming barnyard manure!

Of course, some sort of explanation was considered in order from the gentleman, as a pile of steaming barnyard manure was hardly deemed the proper place for anyone to land, much less an alchemist. (Alchemists, it might be explained, held very much the same position in England in those days as stock brokers held in America prior to Wall Street's 9-G dive in 1929.)

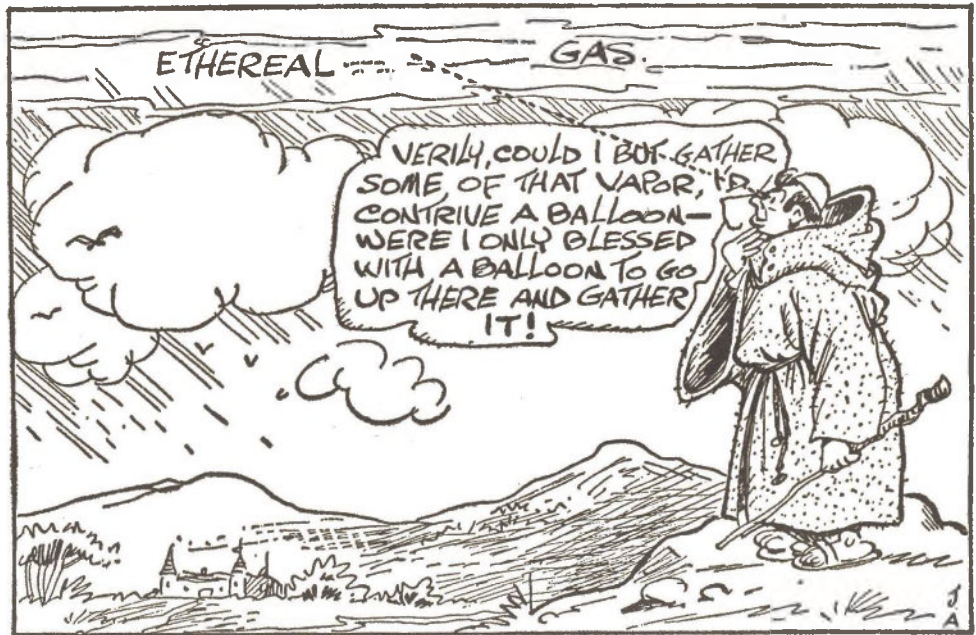
Well, sir, the would-be flyer, rubbing his thigh bone which was later found to be broken, laughed off the failure of his project, very naively explaining to his audience that his error lay in the use of fowl feathers, said fowl feathers having, it appears, an "affinity" for barnyards and thus steaming manure piles, thereby causing his downfall.

On the other hand, he further explained, had he used eagle feathers—which have an "affinity" for soaring to great heights—the mishap would never have occurred!

We have to admit that the history of that case doesn't state whether or not our air-minded alchemist repeated the experiment using eagle feathers.

Some few years later, a man named Fleyden, rector of the grammar school at Tubingen, took it upon himself to publish a treatise on the art of flying. In theory, his ideas may possibly have been excellent, but in practice they were not so good—since a certain unfortunate monk preceded to bump himself off in attempting to fly from instructions gleaned from the professor's booklet. It's suspected that an error must have crept into the gentleman's calculations.

Then take John Wilkins, an English Bishop who, being no piker, ambitiously proposed a flight to the moon in 1640. He wrote a book, entitled *Mathematical Magick*, in which he outlined the efforts of man to conquer the air. He tells there of one Simon Magus, who, having challenged St. Peter to "do miracles with him" at Rome, tried



to fly from the crown of Capitol Hill to the crown of Aventine Hill.

Sad to say, however, St. Peter's prayers "did overcome his sorceries". That caused him to fall to the ground, thereby "breaking divers bones and limbs." And Wilkins goes on to relate that "within a while he did die."

Bishop Wilkins also mentions a certain monk called Elmerus (probably the first Elmer) "about the Confessor's time", who flew by wings for more than a furlong, starting from a tower in Spain. He also tells of a supposedly successful flight being made from the towers of St. Mark's in Venice, as well as one in Nuremburg. Likewise, he quotes Busbquius, "an authority", to the effect that an ambitious Turk attempted something of a similar nature from one of the minarets of the Mosque of St. Sophia in Constantinople.

Sky-hopping was common long before most of you fellows were born. So the idea of buzzing through the air probably doesn't astound you at all. But we'll bet our last wind sock that the ideas the ancients had about buzzing through the air WILL astound you. If you don't believe us, just read this peppy feature. And if you DO believe us—well, read it anyhow!

QUITE NATURALLY, there were many sincere persons who claimed that man would never fly. Indeed, these arguments continued even after the day in 1783 when the Montgolfier brothers performed their first practical experiment, since that big news took a long time to sink in.

It had always been thought that if man ever really expected to overcome the forces of gravity, the only method of attaining that end would be by the faithful imitation of birds—that is, by attachment of wings to his arms and legs. Borelli, an Italian physicist who lived just prior to the success of the M. brothers, published a work in which pointed out the impossibility of man ever attaining this end because of the comparative weakness of his limbs.

Yes, Borelli was a good deal closer to the actual truth of the situation than many others who preceded him, although in satisfying himself that the object in mind was hopeless, he could not, of course, foresee the invention of gasoline engines. The use of heated air or lighter-than-air gases was beyond him, too.

Among the very few legitimate scientists of the Middle Ages who made a conscientious study of the subject was Albert of Saxony, an Augustine Monk. Following the

FLYING FOOLISHNESS FROM HILARIOUS HISTORY

laws of nature outlined by his distant predecessor, Aristotle, he considered (although in a rather obscure manner) that as fire rises in air, it therefore must be true that a globe filled with fire should rise and remain suspended in the air.

Theoretically, the idea is sound, poor Al's only trouble being that he was never able to get a container light enough to rise and yet that wouldn't burn up when he put the fire in it. And of course he was never able to keep a flame going in a closed, air tight chamber. Yet, little did he realize how close he came to inventing the fire balloon.

Years later, Casper Scott, a Jesuit priest, attempted to develop this theory further, his variation being that he proposed replacing the fire with a very light "ethereal gas" which he believed floated above the layer of atmosphere that surrounds the earth.

At any rate, Casper's problem comes down to us today in the form of that lilting phrase which goes. "If we had ham, we'd have ham and eggs—if we had eggs." For, you see, Casper's puzzle lay, not in performing the actual experiment, but in first procuring some of that mysterious "ethereal substance." Without the balloon, it was impossible for him to go up and gather the gas—and without the gas, it was impossible to make the balloon!

Upon the discovery, in the early part of the Eighteenth Century, that hydrogen was lighter than air, it was thought that a real solution had at last been reached. The great task now lay in finding a container light enough to rise when filled with the gas. This was no cinch, either. For such eminent minds as Black and Cavendish worked on the problem without success.

Professor Cavallo, however, did succeed in filling soap bubbles with the gas which, to his great elation, rose to the ceiling where they broke against the roof beams. Then more than a quarter of a century elapsed before the Montgolfiers and M. Charles finally completed the experiment by developing the silk, gum-treated bag.

Anyhow, here's the way Joseph and Etienne Montgolfier finally did get away with it:

First, they made a sample balloon—one like the hot air type later popular in July 4th celebrations. Straw,

burning on a framework beneath, filled the bag with warm fumes, and a successful send-up was staged in June of the year 1783.

Now then, did anybody wanta fly a duck? Well, it seems that Joe and Etie did—for in September they completed a flight using a larger balloon and with a duck, a lamb, and a rooster as passengers!

A young gallant named De Rozier then showed up. "What," he asked, "have ducks, lambs, and roosters got that I haven't got? *Mon Dieu!* I'll try it myself!"

At that, King Louis XVI kicked up a fuss. Declaring the idea was screwy, he told the intrepid Frenchman to lay off. But De Rozier was adamant. He went right ahead, accompanied by his friend, D'Arlandes, and made the world's first manned balloon voyage by drifting triumphantly over Paris in one of these hot air buggies! That red letter day was November 21, 1783.

Leonardi da Vinci, the Edison of the middle ages, who seems to have dabbled in a little of everything, also had a hand in aeronautics. His notebooks, preserved to this very day, contain sketches for arm and leg wings.

Francis Bacon likewise found time to give the matter some thought. His notes also contain several references to the art of flying, the following being one of his more interesting—though more or less vague—reflections:

"Certainly, many birds of good wing, such as kite-birds and the like, would bear up good weight as they fly; and spreading feathers thin and close and in great breadth will likewise bear up good weight, being laid even, without tilting up at the sides. Farther experimentation of this nature might be thought upon."

Deciding that Friend Bacon "had something there," others of his time came to believe that by capturing a number of eagles and chaining them to a light framework, a machine might be constructed that would be capable of bearing men and cargo through the air! Yes, and one of the very early English patents covered this idea.

Roger Bacon (1214—1294) conceived the idea of using a light metal ball filled with liquid fire or with some of that very popular "ethereal gas". Some years later, another physicist worked further along this tack. His idea was to use four metal balls which were to be pumped clear of air, thereby creating a vacuum within. It was assumed that if the balls were lighter than the air they displaced, they would rise in a manner similar to that of a ball rising through water.

This fellow then went to a lot of trouble figuring out the size of the balls and the thickness of their walls necessary to support the weight equal to that of one man. The answer was a diameter of twenty-five feet and a wall thickness of 1/225 of an inch!

The problem as to just how he was going to prevent these huge balls from collapsing under the strain of the outside atmospheric pressure he very wisely side-stepped—by letting the whole matter drop right there. But you have to give him credit for working out that math!

A NOTHER "MAGICIAN" conceived the idea of filling swan's eggs with nitre or mercury and setting them in the sun. As the heat of the sun's rays evaporated the nitre or mercury, the eggs were supposed to rise. All that was necessary was to get enough eggs together to support the desired payload. This try at sky climbing went haywire, however, due to the extreme scarcity of swan's eggs, which made the experiment more or less impracticable.

Still another "magician" evolved the idea of filling hens' eggs—which of course were more plentiful—with dew and exposing them to the sun in similar fashion. It was pointed out that dew was "shed by the stars" and "attracted by the sun." Obviously, when the sun rose, the eggs would ascend into the air! Right?

Just why the experiment never worked is not clearly explained. The inventor of this theory got ahead of himself and wound up his treatise with an extremely novel (?) explanation on how to descend when the noon whistle—or whatever they had then—blew for lunch. All that was necessary was to break the eggs! Gravity was expected to take care of the rest.

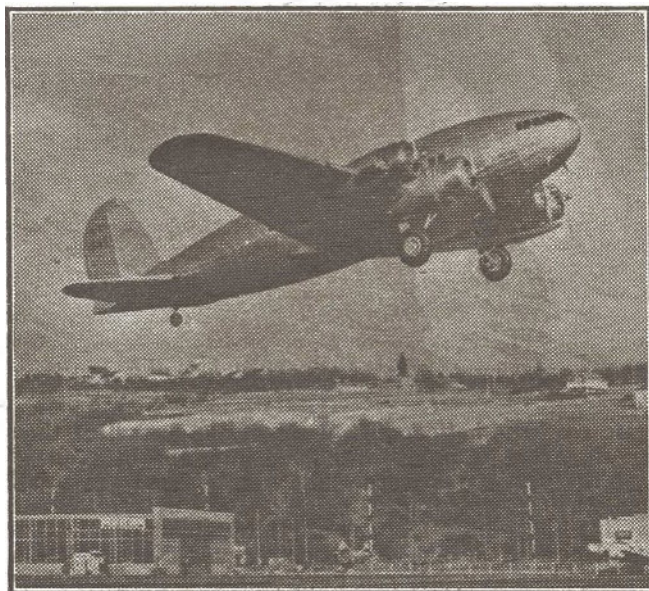
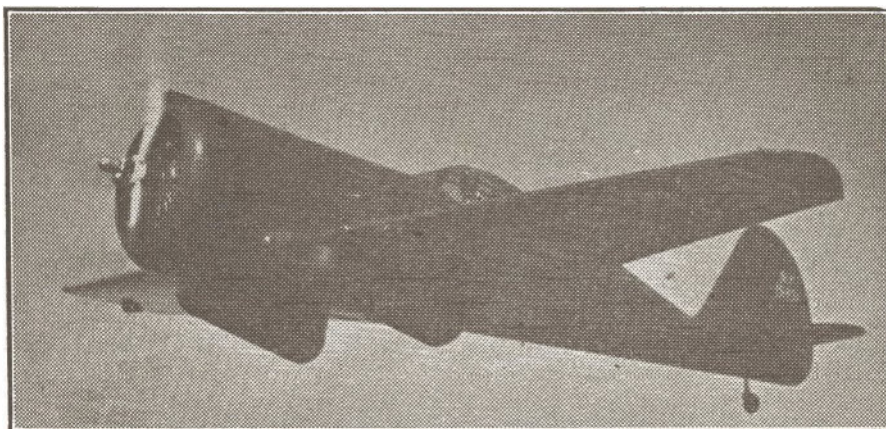
Eggscuse me—I must fly!



Another magician figured that flying was only a matter of filling swan's eggs with nitre or mercury and setting them in the sun. All of which was a swell idea—until he ran out of swan's eggs!

Through the Aero Lens

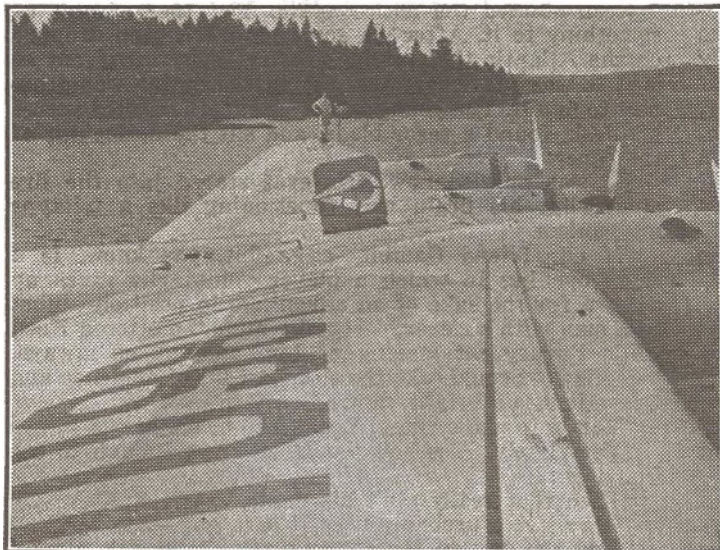
Right: Here's a ship that's supposed to be the fastest climbing military plane ever produced in the United States—the new Curtiss CW-21 Interceptor! We understand this job will be exported to countries where such sky-rocketing craft have more use than they do here. These buggies, you know, would not be much use for pursuit work. Mostly engine and only carrying enough fuel for about 15 min. flying time, they're used to nip enemy raids in the bud on a moment's notice. This is the first ship of its type built by an American company, but France and England have been experimenting with them for years. Details of this speedster will be found in our "Modern Planes Album" department.



The Boeing 307-S "Stratoliner" taking off at what we call a REAL high angle! This "shot" was snapped when the new plane was undergoing 15,000-pound load tests for her A.T.C. At a speed of over 241 m.p.h., this newest Boeing will carry 33 passengers in sealed cabins at an altitude of 20,000 feet.



This is the most recent picture of the Bellanca 28-90 Special. Originally ordered by Alex Papania for that trans-Atlantic race, that went by the boards, it's now flown by Frank Cordova. And he just flew it from the Bellanca plant, at New Castle, Del., to Cleveland, Ohio, at an average speed of 275 m.p.h. And only using two of his three engines! It's powered by a pair of Menascos and one Ranger. One of the Menascos was replaced on this trip with "lead pigs" to balance the craft.



You saw the striking painting of the Boeing S14 on our cover. And now here's a close-up of the ship that gives you some idea of its astounding span. The open hatch in the center of the wing is used by the aviator for taking celestial observations during flight. See that fellow on the other end of the wing? Looks like a midget from here, huh? This plane is powered by the only twin-row Cyclones in use—four of 'em.



This modest gentleman is known to the Navy pilots as "Hot Papa." He is a regular feature on every aircraft carrier, and his work is to break into any plane that crashes on the deck and get the pilot out. The suit he's wearing, you see, is NOT made of old flour sacks. That white stuff is thick, heat resisting asbestos.

Birdman's Booty

By Arch Whitehouse

Author of "The Clue of the Breda Brood,"
"Vultee Vortex," etc.

Illustrated by Alden McWilliams

IT WAS the usual sort of "agony column" item. And it had appeared now for three days—

PEBBLES—Deposited, as ordered, on Atlantic. Check current since Saturday and report. Cutter not available after 15th. Make effort immediately.

GAMBIT.

Barney O'Dare always read the "Personal Notices" columns in the morning newspapers. He was forever amazed to find how many "Samuels" bought space to declare they'd no longer be responsible for the debts incurred by the "Annies" who were their wives. Marriage, he decided, was a very doubtful state of existence, according to reports gleaned from the "Personal" columns.

The Mick continued to suck reflectively on the neck of a bottle of O'Doul's Dew. Then he looked up from his paper.

"What's P-E-B-B-L-E-S spell?" he inquired across the breadth of the fireplace to his boss, Kerry Keen, who was reclining, legs outstretched, staring into the dancing flames of the fireplace.

"It spells 'pebbles'—you know, those round shiny things you find on the beach, the things you throw at tin cans, or fill your mouth with to try to talk like Socrates, or some Greek bozo like that. Anyhow, what's the idea?" asked Keen in a tone indicating he wasn't really interested in the slightest.

"Oh, it's nothing much," the Mick replied dumbly. "Only I was just wondering how a guy expected pebbles to float on water so that a cutter could pick them up."

"What in heaven's name are you talking about? Pebbles won't float."

"No, but this guy, named Gambit, 'deposited' some on the Atlantic. And now he's squawking about checking a current. What does *that* mean?"

"You're not reading upside down again, are you?" spoke up Keen. The O'Dare had a sad faculty of getting things twisted, especially when he strained his intellect by reading.

"Aw, read it yourself, then. It's appeared for a couple of days now." And he handed Keen the paper and pointed out the notice.

"Do you always read this column?" inquired Keen studying the Mick's mug. "Can't you keep your fingers out of other people's private lives?"



He read the notice, disinterestedly at first. But then the signature "Gambit" intrigued him, and he realized that the notice was worded differently from the usual run—that it stood out.

"But it doesn't really say anything about pebbles being deposited on the Atlantic," argued Keen. "It's a message to a guy they call Pebbles, and it just tells him that something was dropped on the Atlantic for him. He is probably aboard a cutter of some kind and is expected to look for it."

"Sure, and they're gonner make another effort right away," the Mick prodded.

Keen studied the notice again. Yes, there might be something to it. After all, something had been dropped on the Atlantic that might be affected by a current so that it was not where the guy in the cutter would expect to find it. The young ballistics expert reached across his desk, found a razor blade, and slit the notice out of the paper.

He was puzzled now. His eyes stared into the fire again, but his brain was functioning like a teletype mechanism.

"If our friend Gambit—a gambit, you know, is a chess opening in which a player voluntarily gives up a pawn for the sake of an advantage in position—must be a man with a clever, designing mind," muttered Keen while Barney sat staring at him amazed, as always, how his boss could take the slimmest bit of evidence and weave it into a bright, figured pattern.

"This guy plays chess, Boss?" he broke in.

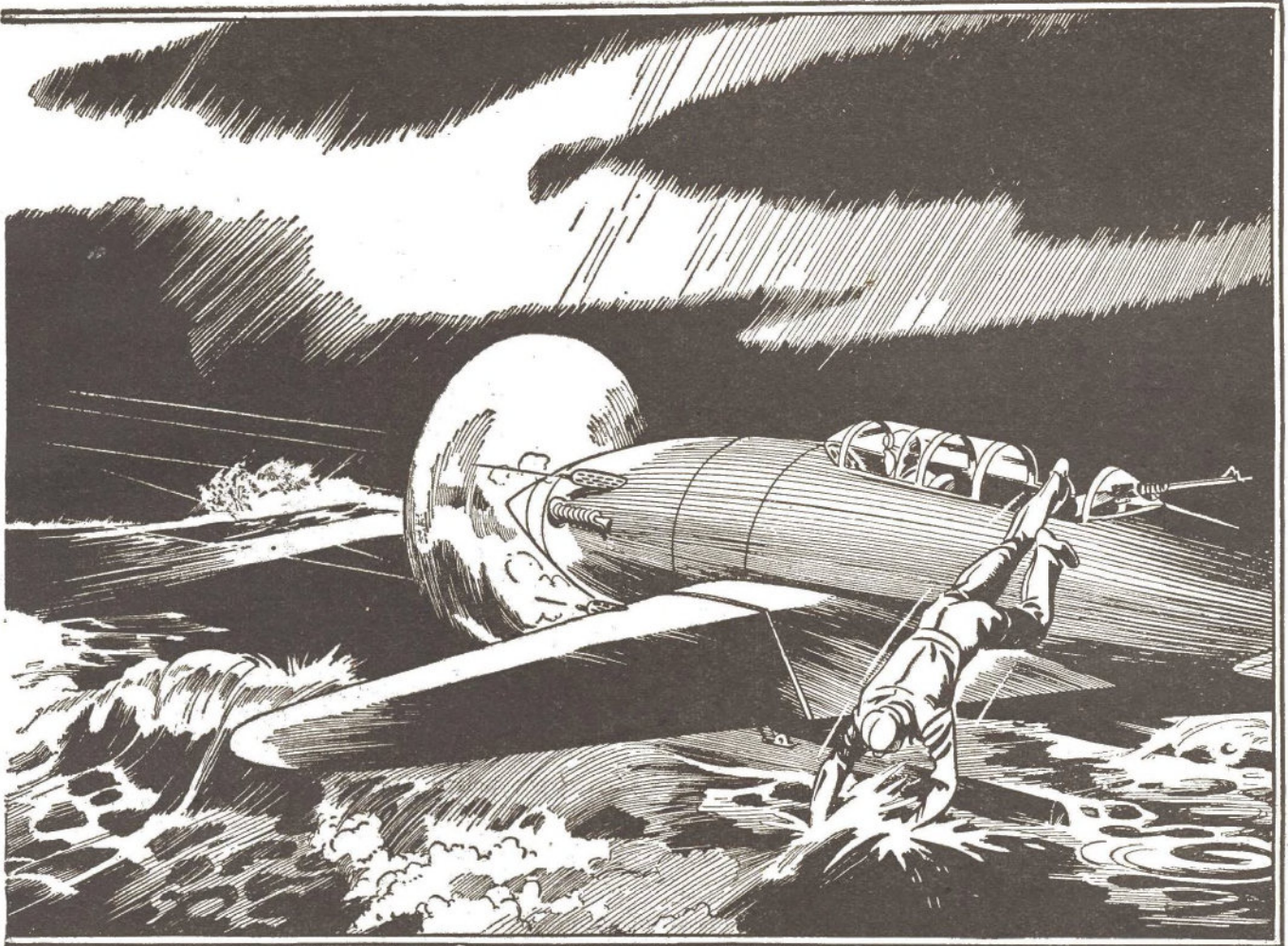
"Very likely. Else how would he know enough to use that term?"

"Then that really ain't his name, eh?"

"Hardly. He probably uses it as a gag—a cover."

"And the guy on the cutter plays chess with him? I

DRAMATIC NEW KERRY KEEN AIR ADVENTURE



Already Keen was spanging out screeching bursts from his Darns and Chatelleraults. So Barney didn't hesitate. He took a splashing header toward the buoy-like thing that now bobbed about not a dozen yards away.

heard about that once. They did it wid post cards. These guys must have dough, eh, playing their game through the Personal columns? That cost money, don't it?"

"There's money mixed up in this somewhere, Barney. Now then, this bird Gambit dropped something on the ocean for the guy in the Cutter to pick up. And what does that indicate, Barney?"

"Heck, Boss, I don't know. But the thing must float." "Well, it means that whatever it was, Gambit didn't want to bring it into a port because it was dangerous. So he drops it overboard from something—and the bird on the Cutter is supposed to know roughly where to find it."

"That's a hell of a game of chess, if you ask me," the Mick muttered. "But maybe they work it a new way, marking the ocean up somehow and playing it that way."

Keen blinked, sat up, and grinned. One could never figure when O'Dare would have a brain wave. This time he had simply outreached himself.

"Help yourself to a drink, Barney. That's one for the old volume."

"You think I got somethin' there, Boss?" beamed the Mick hoisting the O'Doul's bottle. "I told you there was somethin' in that notice."

"You've got an idea, Barney," agreed Keen. But let's figure it further. If Gambit puts the notice in the New York papers it's reasonable to assume that the person it was intended for is

somewhere near the city if not actually in it. Let's say he's within 100 miles where he can get the paper soon after it comes out. He must be able to get it regularly. But if he's aboard, say, a Coast Guard Cutter, he wouldn't always be ashore to get the paper, so maybe Gambit's not referring to a ship at all when he says 'cutter.'

"Maybe he means a chopper-guy—like these gangsters talk about in the movies, huh, Chief?"

Keen ignored that and went on: "Then if the guy it was intended for is within 100 miles of New York City, the bird who inserted it in the paper deposited this business on the water somewhere near New York. It's buck-shot to bucks he was aboard a liner coming in from somewhere abroad."

"A smuggler, maybe?" beamed Barney, reaching for the bottle again on the strength of that suggestion.

"Possibly. Let's see, dope, silks, jewelry, precious stones—or even some important information which he couldn't risk bringing through Customs."

Keen reached for the paper again and turned to the shipping page.

"You say these notices have been in since when?" he asked.

"This is the third. That would make it Monday they started."

"Okay! The German liner *Dortmund* got in Saturday noon," he said, figuring the shipping news from the an-

A common newspaper ad! And a Coast Guard Grumman on a routine flight! Perhaps neither meant anything out of the ordinary. Yet they lured Kerry Keen, noted ballistics expert, to roar over the sea in search of—he knew not what! Into the bargain, they had Drury Lang, grumpy G-Man, insisting that the dread, red-masked "Griffon" was—a girl! And finally they caused battles of wits and of lead which blazed a dark sky trail to—a mere handful of pebbles!

nouncements of the arrivals. "She lay outside quarantine Friday night, and it is possible that 'thing' was thrown overboard a few hours before midnight on Friday. The guy who was supposed to pick it up had not reported by Sunday, so Gambit starts putting these notices in the paper."

"Say, the thing may be somewhere off Long Island here! And listen! There goes that bozo again . . . !"

Keen stiffened. A plane was roaring over Graylands headed out to sea!

With Barney following, Keen darted to the front door and peered up into the dull sky. It was almost dark now, but he could identify the outline of a Grumman J2F-1 general-purpose amphibian. And the glare from the exhaust betrayed Coast Guard insignia on the sleek, aluminum-colored fuselage.

"There's our guy, Barney," snapped Keen. "That's three nights in a row he has slammed over here and headed out in that same direction. That jibes with the insertion of the notices, too."

"When do we start?" the Mick grinned, heading back for the open door.

"What are we waiting for?" Keen replied, hurrying after him.

THEY changed into their black flying kits in less than three minutes. In five their hidden amphibian was being wheeled out of the secret hangar beneath the rock garden, and in seven Keen was trundling the Black Bullet down the turf and across the surf-washed sands to let her settle on the pontoons. Then they were away and in the clear, heading for the shipping lane of the North Atlantic, hot on the trail of the gleaming Grumman amphibian.

Keen was wearing his scarlet mask, and he smiled as he contemplated how a simple insertion in a New York newspaper could transform him from the dapper young man-about-town—highly respected in law-abiding circles as an expert on ballistics—to the amazing character of the "Griffon," hunted from one end of the country to the other. He smiled, too, as he thought of all the amazing risks he had taken to elude the police, particularly his pet Secret Service dead-fall, Drury Lang.

His life was a continual maze of strange activity, as he carried out his rôle as an authority on guns and ballistics—to aid Justice, on the one hand, and dipping deep into the funds of the underworld, both national and international, to maintain his own particular standard of living, on the other. As the Griffon, he was able to absorb large and luscious chunks of currency out of the activity of the criminal organizations which he so deftly outwitted and then steered carefully into the clutching mawlers of Drury Lang—after they had been carefully and painstakingly plucked.

But this Personal column adventure promised something unusual. Just what, Keen had no idea, but his imagination was as sharp as his name, and somehow he sensed he was starting on a new junket that would pay smart dividends in cash, excitement, narrow squeaks, and possibly a mental joust with Lang. There was every reason to believe that the octopus behind this affair had wide-spread tentacles.

"Queer," he pondered, "how Barney should stumble into a thing like this. Queer, too, that that Grumman amphibian should have taken the same route out to sea every night, and that we should decide that this 'Pebbles' business should have something to do with it all. Queer, very queer!"

They were at about 4,000 feet now. Keen had the big Avia motor throttled down and the Skoda mufflers cut in so that outside of the low wail of the slipstream and the prop, they were skudding along almost in silence, as compared to the thunderous boom the 775-h.p. Cyclone was making in the J2F-1 somewhere ahead.

"We should have caught up to 'em by now," muttered Barney over Keen's shoulder. "You'd better circle some."

"No need to. There they are now. Down there, flying

low. Look. That beam of light. They're using a wide-beamed searchlight."

They watched, circling high with riding lights doused as the Grumman below moved up and down in careful lines. The fan-shaped beam of light Keen had noticed was streaking out ahead as they obviously scoured the surface of the sea.

"There's dough connected with this, somewhere," Keen observed.

"Yeah, and they seem to have enough to get to these Coast Guard guys," the Mick added. "Look, they're turning!"

Keen nodded, lowered the retractable pontoons, made another adjustment on the prop blades, and gave Barney an authoritative look over his shoulder.

The Mick knew what Keen had planned, so he kicked off his heavy jumper. Keen nodded, peered over the edge of the combing again, and suddenly nosed down.

The Grumman was circling tight now. It was obvious they had spotted something. The blade of the beam appeared to be acting as a pivot for their turning and it was on this point that Keen headed the Black Bullet.

The Grumman was almost down now. The sea was reasonably calm, though there were a few capped rollers.

The Black Bullet screamed, burst full into the circle. Keen yanked out as his pontoons almost forked toward the water. A short burst of M.G. fire then crackled from the rear hatch of the Grumman and Barney answered it from his twin-Brownings.

"Take it easy!" bawled Keen, pushing back his mask to see better. "Not too much damage for a starter."

The Bullet was hoiked up, allowed to practically stall. Then Keen ruddered her into a sideslip so that the lower wingtip was poised directly at the fang of the beam. She went down sickeningly, then Keen brought her around, dabbed his floats at a roller, and let her slide onto the surface of the water with a toboggan landing.

The Grumman guys were about sixty yards away now and shooting wildly. Barney spattered a short converging double burst at the motor and grimly watched sparks bounce off the steel cylinders.

"There it is! Overboard with you, O'Dare. I'll cover you!"

Keen let the Bullet float gently. Then swishing her around by blasting his rudder, he brought his fixed guns into a bead on the Grumman.

He spanged two screeching bursts at the C.G. ship. Then he heard a splash.

That was the Mick taking a header over the side and splashing toward a small, buoy-like thing that bobbed about, not a dozen yards away.

"Keep well under!" yelled Keen. "I'll cover you!"

Short jolting bursts were released from the Bullet's Darn and Chatellerault guns and the Grumman eased off. But the opposing gunner continued to fire wildly, and a few of his slugs spanged off the metal sides of the Bullet.

Keen could see they had somehow launched an inflated rubber boat. It was bobbing about now, a few yards from the Grumman amphibian, and there was a man in it floundering about with a short paddle. He seemed uncertain as to what move to make next, though his original idea must have been to get the bobbing object.

But Keen's short crackling bursts, fired as the Bullet pitched and rolled, kept the Grumman away. And now, with a last frantic splash of gunfire, the Coast Guard plane suddenly roared, nosed up, took to the step, and boomed away, leaving the lone oarsman bobbing about helpless in the rubber boat.

"The heels!" hissed Keen.

Then he shoved his hatch back and turned to watch Barney return with the strange, wooden buoy under one arm. The Mick climbed dripping to the float, handed the wooden thing over to Keen, then with understandable growling sloshed over the edge and dropped into

(Continued on page 59)





WISECRACK-UPS



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

✱ ✱ ✱

CALL IT A DRAW

Two businessmen—one who was always bragging about his excellent eyesight and the other who complimented himself on his sharp sense of hearing—were conversing on a passenger transport.

As they passed over a small village, at an altitude of 5,000 feet, the first said to the other: "Do you see that fly walking on the roof of that barn down there?"

"I can't say that I do," replied the other. "But I can hear the shingles rattle as he walks along!"

HEIGHT OF RESILIENCY

Phineas Pinkham was staggering away from his wrecked Spad after a crack-up in Bar-le-Duc.

Astounded bystander: Lieutenant, I can't understand how you ever lived through that crash!

Phineas: Guess I wouldn't have—if that cement telephone pole over there hadn't broken my fall.

FOLLOWED ORDERS

Foreman: Where the heck have you been all afternoon—and who are these three tramps you have with you?

Rookie mechanic: Why, you told me to get three lugs, Sir. And I had to go clear down to the waterfront to find them.



"Yep, the editor told me to get your picture NOW."

NO ALTERNATIVE

First aero stude: What? You flunked the course again?

Second ditto: Could I help it? They gave me the same test!

BROKEN DREAM

Boss: In delivering this package you'll pass the field where the air races are being held.

Messenger boy (expectantly): Yes?

Boss: Well, be sure you *do* pass it.

Dumb Dora thinks a detailed model is one without a tail.

EPITAPH

It was an awful crash, my lads,
So here lies Pilot Cook;
It happened when he lost his place
In his instruction book!

DISCREET

Barnstorming pilot (cautiously): Say, brother, can you fly a plane?

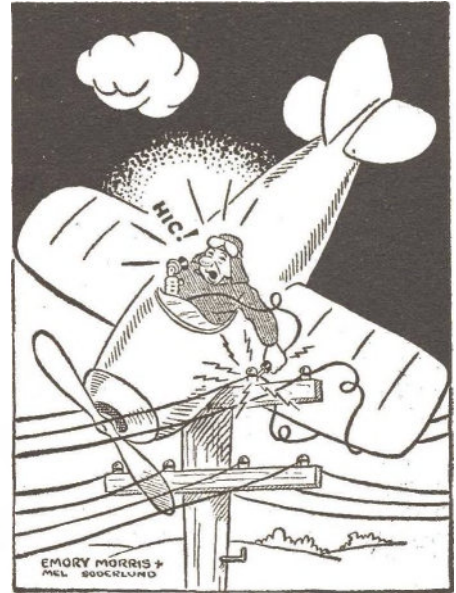
Bystander: Why, no.

Pilot: Fine! Then watch my ship for me while I get a bite to eat.

IRONED OUT

First mechanic (looking at plane's smashed undercarriage): Pilot Jones certainly put a crease in his pants!

Second greaseball: And how! He crashed into the Flatiron Building!



"Thash you, Newark? Well, I'm reporting my new position!"

TRAGEDY

'Twas quite a blow to Pilot Moe,
Who's now in heaven, or down below;
For flying along in a driving snow,
He held on—but his wings let go!

AVERTED MURDER

Instructor (excited): Hey, are you crazy? Put down that pistol!

Dopey stude: Well, you told me to kill the motor.



"Certainly I can explain it, Sir. There was a hole in the blue print."

Youth Air Movement News

Here's our bright new 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. Above all, this is your page. So if you've applied to be one of the 20,000, let us hear how you're making out.

Arnold Speaks Up

Major-General Henry H. Arnold, Chief of the Army Air Service, has stated that the problem of training pilots and mechanics for the planned increase of air power in this country has been taken care of by fourteen accredited civilian schools in this country. While the General did not state which schools have been selected, it is now known that many of the older schools have already been placed on something of a "war" footing. Few of these schools today are accepting students through the usual channels, since their facilities will be tuned to the training of short-service civilian pilots.

A.Y.A. Officers

Air Youth of America has announced its new officers. They are: Winthrop Rockefeller, Major E. E. Aldrin, Jacqueline Cochran, William R. Enyart, Lester D. Gardner, and Grover Loening.

War Planes Idle?

It has been revealed that more than one third of the 5,500 war planes available to the Army by 1941 will be idle because of the lack of pilots—unless the plans of the Government to train 20,000 civilian flyers for emergency squadrons are carried out on schedule.

550 Pilots a Year

The Government's program to train civilians for Air Corps cockpits progresses daily. A total of \$62,000,000 will be asked to provide new air bases, barracks, and mess halls. Civilians selected for the new plan will get primary training at one of the fourteen selected schools, and from there they'll proceed to basic military training at San Antonio. It is believed that at least 550 new pilots

Conducted by David Martin

can be turned out every year by this training method.

British Civilians Progress

Official reports from the British Air Ministry on the progress of their Civil Air Guard discloses some interesting figures for American readers. In four months, some 5,500 applicants for *Civil Air Guard* posts passed their medical examinations. More than 1,380 members now hold the "A" license—which roughly corresponds to our Private license. At the present time, about 3,550 members of the Civil Air Guard are actually being taught to fly at 60 light plane clubs located all over the country. A total of 330 aircraft are being used for instruction. The commissioners are negotiating for increased training facilities at seven other centers.

Now Germany Tries It

Germany, which is supposed to have 10,000 fighting planes and more than 30,000 trained military pilots, has taken the American tip and gone in for a civilian form of training. It will be known as the National Socialist Flying Corps and will take over the training of those who wish to serve in some capacity in the German Air Force. Flying schools for this purpose have been established at Koenigsberg, Hamburg, Bielefeld, and Karlsruhe.

Canada Widens Defense

Canada is not to be left behind in pilot training. A sum of \$50,000,000 will probably be raised to provide new equipment and larger training centers. This offers facilities to Great Britain for the training of Royal Air Force pilots and observers.

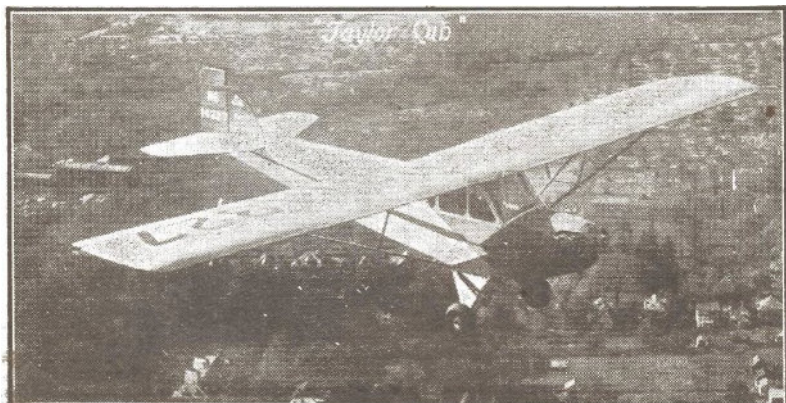
22,983 Pilots Available

According to figures released by the Civil Aeronautics Authority, there are now 22,983 licensed pilots in the United States. Of these, about half are holders of private licenses. President Roosevelt wants to train 20,000 pilots under the Government plan, and one of the problems that will probably arise is how many of the present holders of tickets will be given a chance to take more advanced training. This point is already creating much discussion.

Tandem or Side-by-Side?

Another argument that has been heard on the various tarmacs concerns the type of light plane that will be most used. The instructors in many cases prefer the side-by-side arrangement, but it is believed that the Army or Government officials will demand tandem cockpits which are widely used on military fields. The manufacturers of light planes would like to know which way the favor will swing so that they can concentrate on the preferred type.
(Continued on page 73)

The type of training-plane seating which will be favored by the Civilian Air Training chiefs is a much mooted question, as we go to press. Will the side-by-side "settlin'" arrangement—as provided in the Aeronca, shown in the top photo on the left—get the call? Or will it be the tandem kind of seating, such as is found in the Taylor Cub, depicted in the bottom print on the left? Army instructors, it is believed, would give the nod to the latter; whereas many civil teachers are known to like the former.



HAPPY LANDINGS

BY ARCH WHITEHOUSE



Let's Weed Out Complexity!

★ ★ ★

TO provide defense against attacks by an enemy—whether the attack is directed from the ground, the sea, or from the air—is the purpose of a military airplane, a weapon that can be used through three dimensions. And it is an important arm of defense, whether it is being used alone or in co-operation with the Army or the Navy.

So far, we have many types of fighting planes, each presumably designed for a particular purpose. We have pursuits—or fighters—for attacking enemy air fleets. We have observation—or reconnaissance—planes for co-operation with forces on the ground. And we have bombers designed to attack and destroy enemy strong points, enemy cities, or enemy concentration points.

But owing to the comparative newness of military aviation, we have too many different types. And the sooner we step up the move to eliminate several unnecessary categories, the sooner we shall provide the nation with an efficient air force.

But just what should a military airplane comprise?

As a result of the over-emphasis on high speed airplanes, we instinctively credit the fast craft with all the attributes of a first-class aerial weapon. This may be true in peace time when military planes provide air races and news reel spectacles, both of which do their part in selling the Air Services to the public and to encourage enlistments.

Under actual war conditions, however, when fully one third of the available personnel and equipment are accounted for in the first month of battle, these costly and very complicated pieces of high speed aerial machinery may become a handicap rather than an asset! They most certainly demand extra servicing, and replacement of damaged parts are costly and take considerable time.

Elaborate all-metal construction will provide special service problems if the action takes place any distance from permanent bases. High speed landings are not conducive to efficient maintenance on war-time fields, and the side that wins the war in the air will be the one that is fighting nearer its base and has the most efficient ground personnel.

During the World War, when planes were mostly built of spruce, linen, and metal plates, a whole wing could be replaced in an hour or so. Minor structural repairs could be made by ordinary carpenters and cabinet makers. Motors could be taken out and replaced within a few hours because of the simplicity of construction and the fact that the cockpits were not cluttered up with such a slew of instruments

and gadgets are found on our modern sky fighters.

Gun mountings were comparatively simple. Controls consisted mainly of a few bell-crank levers, pulleys, and lengths of stranded cable. Cockpits were simply wicker or metal bucket seats in front of which was a narrow board that mounted a few primary instruments. Undercarriages consisted of two Vee-struts, a hollow tube axle, and a few yards of rubber shock-absorber cable.

Anyhow, it is my opinion that the modern military airplane is too complex a weapon to play an efficient part in modern warfare. And unless the designers get together and simplify the general trend, I believe we shall find that our beautiful modern fighting airplane will become something of a military millstone rather than a weapon that will be available at all times!

If we carefully read the details of the sea action at Jutland, we find that the elaborately designed turrets aboard the British battleships that took part were not of much use during the action. Complex gun-sighting equipment went wacky, and during the greater part of the engagement they had to resort to manual methods of gun loading.

In other words, the system was too technical and elaborate for active service conditions! The gadgets worked well in peace-time war-games—but they were not designed for the thud and battering of actual service conditions.

I HAVE READ details of air fighting in Spain and China and have discovered that the most complex high speed planes were the ones that gave the most trouble and provided the least air-hours. Requiring over-much servicing, they were "temporarily out of action" for more time than they were available for the fighting.

These are disturbing and distressing facts to us who love and admire the modern high speed military plane. But they are facts nevertheless. Now then, I'm not proposing that we go back to World War simplicity. I'm simply saying something *must* be done to relieve the mechanical tie-up that will come if we send overly complicated military units into battle.

At the present time, there are still far too many types in use by both the Army and the Navy. No one seems to have considered the possibility of building a modern plane in which many of the structural parts are interchangeable. Motor simplicity for active service conditions is a question, too. Meanwhile, the very famous and efficient Wright "Cyclone"
(Continued on page 71)

Aero Book Review

"THAT'S MY STORY"

DOUg CORRIGAN'S book, titled *That's My Story*, is a grand yarn. It will give hope to many a youngster who wants to learn to fly, and it will also entertain many more who have no intention of ever taking to the air. It is merely a simply-told story of many ordinary events. But they are woven into such a charming pattern that one finds it very hard to put the book down without finishing it. Doug's yarn is available at all book-stores for \$1.50 and is published by E. P. Dutton Co., 300 Fourth Avenue, New York City.

That's My Story carries many interesting pictures and shots of Doug in unconventional poses. The book tells of a boy who had no idea he was destined for fame and for-
(Continued on page 71)

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.

Alonzo Pruter, Bremerton, Wash.:—Yes, the Curtiss P-40 is powered with a new 24-cylinder in-line engine rated well over 2,200 h.p. I do not have any performance figures on the ship. The P-37 is considered a better plane than the P-36 because it is using the 1,000-h.p. Allison in-line engine rather than the 1,100 Pratt and Whitney radial which has such a wide frontal area. The Seversky P-35 is said to do 335 m.p.h.

Abraham Auerbach, Bradbury Heights, Md.:—The light planes you saw bearing the letters CF-BGE and CF-BIU were Canadian planes obviously on the way to, or from, the Miami light plane rally.

Charles Van Dyke, Baltimore, Md.:—I believe any battery suitable for use in a model plane and used to illuminate riding, landing, and tail lights might be pretty heavy, even for a four-foot model. But you might try it out. So you liked the lady in the last Crash Carringer story, eh? Well, we try to get away with putting a gal in now and again, and we like to find out whether our readers like it, too. Buzz Benson has been on a long vacation and we have no idea when he will be back. We know of no form of balsa wood that is as hard as you seem to desire.

Francis Peck, Cortland, N. Y.:—The plane in the clipping you sent in to me appears to be one of the many types of Ago seaplanes used about that time. I do not recognize the striped wing-tips as any form of insignia, but they might be some sort of squadron marking.

E. S. Fitzgerald, Mathis, Texas:—The requirements for entrance into Chanute Field, Rantoul, Ill., are the same as for any ordinary enlistment. If you take mathematics, history, mechanical drawing, and chemistry in high school you will be well on your way for an entry.

Othmar J. Lenze, St. Mary's Pa.:—I am sure North American Aircraft Corp., will be delighted to know that they can turn out 43 finished planes a day. That's a good one! As far as I know, the best the most boastful German factory has done is 40 finished ships per month. I do not know Diesel engines to the extent that you wish me to comment on, and if you quote me in any publication, you do so at your own risk, my lad.

John C. Huff, Ladysmith, Wis.:—I'm afraid your reference book on air aces is the early edition, which had many errors. The most recent figures now available at the British Air Ministry show that No. 56 is credited with 423

victories, as I stated. Also, Little was a New Zealander, not an American. Lothar von Richthofen was the Bloody Baron's brother.

Eugene Hurd, Seattle, Wash.:—Sorry, but we cannot answer special question lists put out by organizations. In fact, because of the great number of letters received by this department, we prefer our readers to give us short questions, and no more than a couple at the most. This is in order that everyone will get a "break." I believe all those things you ask can be checked in your local library, fellow.

John T. B. Haffey, Royal Canadian Air Force, Toronto, Canada:—I feel much flattered that you should present those 78 questions to me, considering that you are a member of the R.C.A.F. But please take pity on me, fellow. I honestly believe it would require *weeks* to unearth all the answers you require. Your best bet is to get books from your library up there at Toronto. I am more than willing to work with readers and

And Now We'll Ask You a Few

- 1—Name the two new British two-seat fighters.
- 2—What is an H-engine?
- 3—May a military airman, escaping from a plane with a parachute, be legally fired on?
- 4—What is a Harmattan?
- 5—Define horsepower.
- 6—What is brake-horsepower?
- 7—What is a mock-up?
- 8—What is a nacelle?
- 9—What is an aircraft tender?
- 10—Who is Alex Henshaw?

(Answers on page 68)

answer one or two questions per person. For that's the idea of this department. But when one reader hands me 78! Wow! To cover 'em, I'd have to forget the other letters—and that wouldn't be fair to our readers. You understand, I'm sure.

Jack Scharpf, Charleston, S. C.:—In answer to you—and all the other fans who wrote me concerning the new Curtiss-Wright fighter diving at something well over 500 m.p.h.—I can say I only know what I have read. I have not seen the plane. Moreover, I cannot for the life of me see why this specific performance was played up so widely. I believe many fighters undergoing tests have been flown "off the indicator," as the saying goes. But frankly I can see no reason for it, beyond a normal dive-test

to check the structural details of the plane. It means little with reference to its normal flying speed. Yes, I know Major Al Williams thinks the Messerschmitt is the finest fighter in the world, and his opinion is to be respected, since he has flown that type. But I do not believe he has yet flown many of the other modern fighters, such as used in this country and in Britain.

Lou Wolfe, Seattle, Wash.:—The Taube, you must understand, means "dove" and no particular make of plane. The Fokker D-1, or Eindecker, was a Taube type plane, and the window you mention was for vision downward. This job was fitted with an early form of the Spandau gun. I have no record of any particular insignia being used on Immelman's plane, but his ship was powered with an early form of the Oberursel rotary.

J. U. Luversee, Minneapolis, Minn.:—I suggest that you get in touch with B. H. Pietsenpol of Eugene, Oregon, who has done much good work in the matter of converting Ford "A" motors for aeronautical use. I am quite sure this address will reach him.

Roland Brassard, Pawtucket, R. I.:—If you will write to the Civil Aeronautics Authority and request a copy of their Bulletin No. 19 on Aviation Training, I am sure you will get more sound information and answers to your questions than I could give you here in this department. The booklet is sent free to all who request it.

Bob Dorling, Toronto:—I suggest that you go to your nearest bookseller in Toronto and get Howard Leigh's, *Aircraft Modeller's Guide, Book No. 1*, which contains plans for most of the war-time models. It contains both the Gotha and the Handley Page, and I am sure any Toronto bookseller can get it for you. It is published in London by John Hamilton, Ltd.

James Strack, Sidney, Mont.:—There is no way of judging the *exact* cost of a large plane like the Flying Fortress, since they are built and sold under contract prices. I doubt seriously whether you could build one for \$100,000, however.

Bradley W. Vaughn, Woodland, Calif.:—The Lafayette Escadrille was located at Luxeuil in the Vosges. The initials S.P.A.D. refer to the firm, Societe pour Aviation et Derives, the original firm that made them.

By ARCH WHITEHOUSE

The Airmail Pals

WR-U-U-M! E-E-E-AW! The mail plane just landed on top of our office-hangar and Sammy's totin' the mail sacks this way. Here it is! He's just dumped letters all over the R.H.P.D.'s desk, and we're ready to zoom into this month's batch with our throttle jammed against the back-stop.

The first letter in the pile is from Herb Nussbaum, Box 42, Sheepshead Bay, N. Y. "It's been nigh on a month since I've heard from my Pal," says Herb. "So I wish you'd ask Bill Freeman, of Auburn, Wash., to get in touch with me."

What do you say, Bill? How's about letting Herb know what the delay has been, huh?

Ken Jeavons, of Leeds, England, collects magazines on aviation, plays a guitar, takes airplane photos, and has a swell scrapbook. (What? Looks like he left out match-books and stamps!) On top of all that, Ken is one of the firm followers of American swing music. He's got a bale of records of the latest songs, he says. And the Ol' Professor, Kay Kyser, is his favorite.

Well, we just put 2 and 2 together and decided that Leland Price, of Oakland, Ohio, could fill Ken's bill nicely. We shot Ken's letter to Leland, of course—so all the rest of you joystick jitterbugs are out of the running.

R.A.F. No. 621590—Bill Quigley, of Cranwell, England, to you—wrote in looking for a chap who could write *really* long letters in an interesting style. Well, we put his letter to one side for a spell until the right fellow showed up. And that right fellow was Stan Jordon, an old-type missive maker of Chicago.

Here's a letter from just about the tallest Palster that we've ever listed on the pages of F.A.—Ernest Ferguson. He's a mere babe in arms we'd say (oh, yeah?), measuring a fraction over six feet four. And he's looking for a Pal about his own size!

Tough thing about it was that we couldn't find anyone

with a frame like that, off hand. But we teamed him up anyhow with Bill Duke, of N. Z. And maybe by the time the letter gets all the way down there in the South Pacific, Bill will have grown a few inches.

Oh, oh! The "sunset special" just roared over our office, winging its way to Boston. That makes it just about 5:30. And 5:30 means it's time—you know, fellows—go home for the day. See ya next month.

—THE RIGHT HONORABLE PAL DISTRIBUTOR

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 R.H.P.D. 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 FLYING ACES' foreign circulation is only in English-speaking countries (specifically, Great Britain, Australia, New Zealand, and Canada). Therefore we cannot undertake to supply you with pen pals in Germany, France, China, etc.

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.

"We Built an Airway the Hard Way!"

(Continued from page 8)

take it into the air. A fast landing at the Capital Airport, which is more than 7,000 feet above sea level, might prove disastrous.

It couldn't be that the axle was out of line, said the greaseball, since "I straightened it myself by heating it and then bending it into place!" I knew the cause of the trouble then: As soon as any real weight was placed on the axle, it would naturally bend again.

But, rather than wait any longer, I decided to hop off the next morning and head straight for Brownsville by way of the Gulf Coast, so as to avoid any forced landings in high mountainous country.

Bright and early next day, I was at the field to take advantage of the heavy morning air for my take-off. Ignoring the punk axle, I got her off by using every inch of the field. But then, after I had punched up through a few layers of straggling clouds, I discovered that my compass was as dead as last year's Easter lilies. So there I was, 14,000 ft. above sea level, and crossing over several rugged peaks which were just piercing the clouds a few hundred feet below me. Was I flying in the right direction? What a guessing game!

Yet, knowing I'd hit the coast eventually, I began to relax—only suddenly to find that my oil-pressure had dropped

to almost zero! I should have had 60 pounds! Before leaving Mexico City my tank was full, so simply figuring that the oil gauge was shot like the two-bit compass the Mexicans had installed in my plane, I paid little attention to the foreboding sign of low pressure. But this time I was wrong—for my engine began slowing up, instilling me with the fear of losing it. It would surely go to pieces without oil.

Within a few seconds, which seemed like an eternity, I fortunately spotted a hole in the clouds, throttled my engine, and spiralled down. Despite the haywire axle I landed safely near the Panuco River, checked my oil, and discovered that my tank was almost empty! But taking my fate in my hands, I quickly took off with the little lubricant I still had left and headed for the Pan American base at Tampico. And I was forced to land twice more before getting there!

Then, continuing on, I was forced to make no less than five more forced set-downs before reaching Brownsville, all because of low oil pressure. I got through safely only because I was fortunate enough to spot an old farm tractor from the air, a hundred miles from the border. I landed near the rural gadget and appropriated some oil I found in its crank case!

At Brownsville, my own mechanic looked over the engine next day—and he soon discovered the cause of all the trouble. The Mexicans had installed the oil rings on the pistons upside down!

But I couldn't get very angry. I was too thankful over the fact that I had got away with my life. After all, it was little happenings like this that made aero life in Mexico interesting. Most interesting!

ONE DAY, in order to make some extra money, I volunteered to carry some Mexicans from Brownsville to Victoria, two hundred miles South of the border. A big *fiesta* was in progress there, and, at five *pesos* a head, I could net a few hundred dollars on short hauls.

Arriving at the *fiesta* city, I circled a dozen times trying to locate a decent field. Finally, my patience exhausted, I landed on the outskirts of the community in a very small and rough field which abutted the nearby mountain range.

I wasn't on the ground more than fifteen minutes, when I attracted every man, woman, and child in the village—including all the soldiers that were stationed at the garrison! When this howl-

(Continued on page 72)

On the Light Plane Tarmac

THE LATEST headache for us is the number of new light plane organizations that are cropping up like mushrooms, all having a "plan" and all hoping to cash in on the civil aeronautical training program. They naturally hope to sell equipment or flying time.

We are now being bombarded by publicity agents asking for our assistance in putting over their particular idea. To be frank, most of the plans and organizations are basically sound with sensible ideas behind them. We have outlined several of them in detail and have given whole-hearted support to many of them. But now we find that they are becoming a bit over-abundant for us.

These organizations in most cases have honest backers and sincere goals, but there are too many of them. Most of them announce that they are founded with the main idea of building up the national defense. They point out that what the country needs is more pilots, and they themselves hope to provide these pilots at so much an hour of flying time; or they hope to sell so many light planes on which to train these pilots.

But these organizations are overlapping already. We could fill twenty pages this month on the plans and promises of these outfits, all keen and sincere in their efforts. We repeat, there are too many of them. Something must be done soon to pare out a lot of the dead wood.

Practically every plan presented so far is identical. They all seem to have the same goal and they all project the same means of attaining that goal. They offer group programs of flight training at cheap rates; they have plans to petition Congress to back bills that will provide them with money to build new hangars, schools, and pay for tuition; they want the older instructors protected; they want to make sure that such-and-such good light planes are accepted as trainers; and they want to make certain that the man who has paid out good money for his flight training—who's still hanging onto his ticket by buying the necessary solo time whenever he can get a dollar or so—will get the same treatment as the newcomer who perhaps has been holding back expecting to be able to get his flight training free.

All these are sane and important points and naturally we're for them, on the whole. But what is wrong with

the picture—and we say it for the sixth time—is that there are too many of these worthy organizations. They should get together, talk their individual schemes over, and pool their ideas and opinions. It is no wonder that the CAA is running around in circles trying to please all. In running around, of course, the CAA is getting nowhere fast—like the six-day bicycle racers.

The President's training program has been publicized now for some months. And as far as we can see, it has spent all of its time trying to explain its stand to this group and that group. Everyone has his own row to hoe, so the CAA has been bounced from pillar to post, trying to assure each outfit that its particular need will be considered; or it has been burning up good time denying statements made by newspapermen who too frequently know nothing at all about the questions involved.

What our patriotic flight training organizations must do, then, is make a concerted effort to get together and boil their demands and requirements down to a minimum. We believe the CAA, hounded as it is, can work out a way to suit all concerned—if it is only presented with a sound *unified* program of requirements by the organizations interested.

ANOTHER SAD SITUATION

GROWTH of the light plane game as a sport has been a healthy thing during the past few years, mainly through the co-operation of aeronautical magazines which have given much space to the activities and the advancement of the light plane industry as a whole.

We of FLYING ACES have been sincere in our efforts to build up the game. We have no axe to grind, we do not gain high-priced advertisements through playing up sport craft, and we do not charge one cent for publicity on any club or organization.

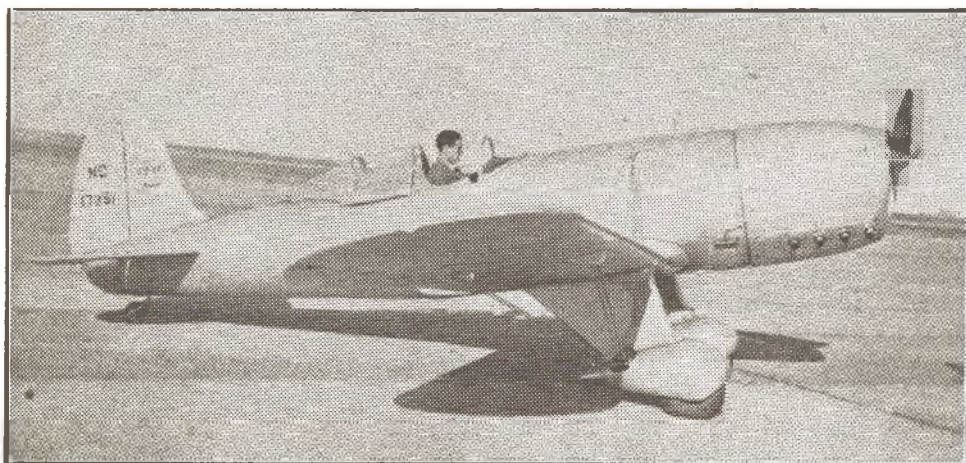
The light plane manufacturing firms, for some reasons best known to themselves, do not buy advertising space in magazines of our type, although we have many more readers than the technical or semi-technical journals that only cover a limited field.

But with the advent of nationalized training to be carried out on a wide scale, we will surely receive even more publicity on this, that, and the other light plane.

Our advertising department has approached practically all the manufacturers of light planes with little or no return. We actually buy photos of these firms' sport planes, pay for costly engravings, and give space free in order that our readers may know how much such and such a plane costs, what performance it boasts, and where it can be bought. And we have even worked out the details of time payments, insurance, and methods of starting light plane clubs. This specific department, you know, has been running since November 1935.

Meanwhile, many of the so-called "quality" magazines do

Too Many "Plans"
Another Sad Situation
Do Collegians Want
It?
Gravity versus Hicks



Left: Nifty in itself is the Ryan Sportster. But the owner of this one went even further with the streamlining by fitting a neat sliding hatch over his open cockpit. That should make flying very comfortable in the still-chilly skies of early Spring.

get those advertisements. These ads bring in splendid returns for those publishers, to say nothing of the 25c or 35c they get for the magazines themselves.

In the case of the light plane makers, we face two distinct situations. When things are bad, they have no money for advertising; and when they are good, there's the argument that they don't have to purchase ad space because they are already selling all the planes they can produce. So with a sparse advertising money chest, they put the ads they do turn out before the older people (who have more jack to spend) via the "quality" magazines.

We present these facts to our readers, who have written in wondering why we haven't got light plane ads and also why we can't give more space, more pictures, and more details on the sport plane business. Well, we already give gratis more in actual cash value and time than all the "quality" mags put together!

Without considering our own publishing interests, we can say emphatically that it's sad such ads and such extra coverage aren't available to you fellows through your own mag. You are the great army of lads now taking up the flag of aviation. You're going to do something about it. You're going to fly. In fact, thousands of you now fly. What's more, you're a swell educational and promotional market for the plane makers.

But those plane makers are deaf to you, as well as to us.

DO COLLEGIANS WANT IT?

THERE has been a lot of heated controversy over the reported statements that the CAA training plan would be limited either to college graduates or third and fourth year college students only. There never was any basis for this statement. It might be well if we considered the matter fully:

If the Government hopes completely to fill the CAA flight training ranks with college men, it has another large think coming. The college crowd is more interested in going to aeronautical schools and learning aero engineering. Frankly we don't believe enough of them desire to learn simply fundamental flying and let it go at that.

We have been talking the matter over with a few college men. They were on the whole representative of the group the CAA would like to gather in. But here are a few of the statements made, and they throw cold water on the idea of getting thousands of candidates from the ivied walls of our universities:

"Why should I take flight training under the Government—and then be snatched up and shoved into a bomber cockpit when a war breaks out? My father is spending a lot of money for my education and I have no desire to throw it away for a 2nd Lieutenant's job in the Army," said one.

"Not for me. I'll design 'em and *you* can fly 'em. The Army offers too little future," said a second.

"I can make more, and a lot easier, as a country doctor," said a third.

"For three hundred bucks, I can learn to fly on my own time and when I like. Why should I sign up for that—and have the Army tell me when and how to fly?" said a fourth.

"Patriotism has nothing to do with it. My family has been connected with the defense of the country since the Revolution. If a war breaks out, I want to make a choice of service. I don't want to be yanked out of school before I graduate. My father did that in the last war—and look what happened to him. He never got back to finish and he has been working like mad for twenty years to catch up. If a war breaks out, they can have me. But they'll have to let me choose where I want to fight," said a fifth.

Right: Here's what the ground looks like when you're gliding one of those new Luscombe 50's down for a landing. Thrilling, huh? The three dials on that instrument board register five different instrument readings—one of the fine features of the 50, which is an ideal ship for the sportsman pilot.



Another fellow who went in for a sliding hatch was the owner of this Consolidated Fleet. And he very much needed such protection for his wintry flying, which, as you see, also called for skis. The hatch slides all the way up under the wing, there. Yes, it does look a bit strange on this job—but it keeps the weather out.

"Let the fellows who can't go to college get this free training. They can use it. Perhaps it offers them a future," said a sixth.

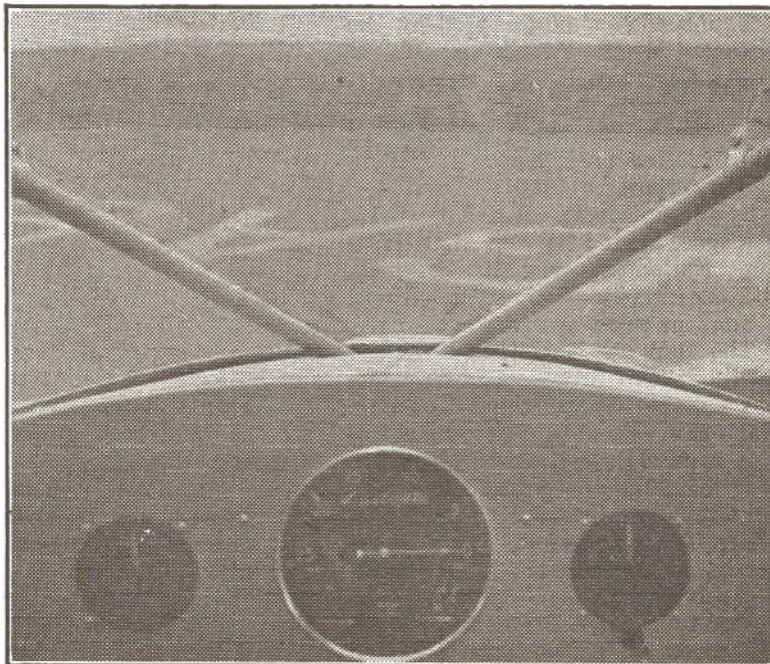
These may seem strange statements coming from young Americans—fellows who certainly are not slackers in any sense of the word. But your college men are generally lads who have "breaks" for a good future already. They would be in there wholeheartedly should the war occasion arise, but their viewpoints are different and represent a better-set strata of the population. After all, not everyone wants to become a pursuit pilot. Not everyone relishes the chance to do a dive-bomber job or carry explosives hundreds of miles to be dropped on defenseless cities or enemy surface ships. You either like the idea, or you don't. It is probably just as well we do not all want to become service pilots, or where would the Navy get off? Where would the Tank companies get their recruits? Where would the artillery get its gunners?

So don't worry about the college men grabbing off all this free training. Plenty of them don't want it. Our belief is that there'll be openings, before this thing goes much further, for you airminded fellows who haven't had college put your way.

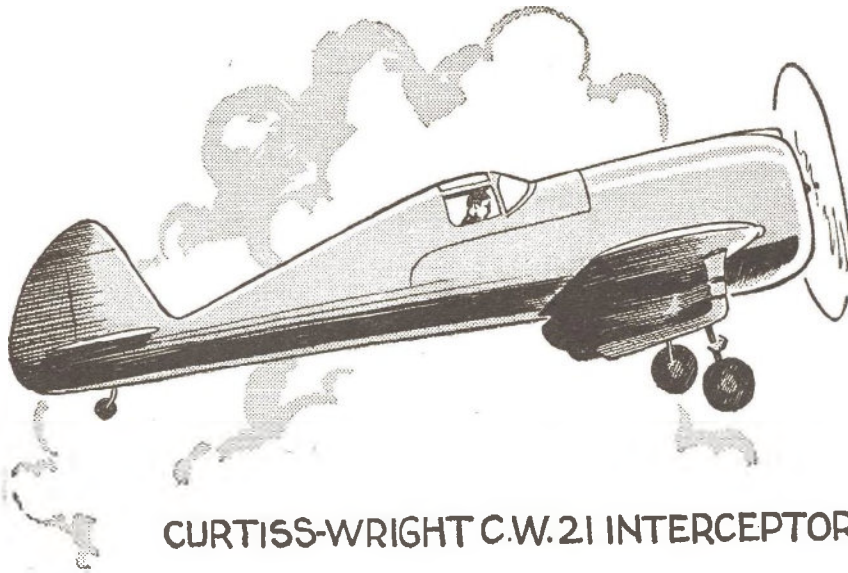
GRAVITY versus HICKS

OUR monthly letter on personal aero experiences comes from Weldon S. Hicks, of Fillmore, Ill., and it brings out a point that every one of you light plane birds should remember. They used to tell us that there was no danger in flying until you had about 500 hours—when you tended to get forgetful, whereupon

(Continued on page 79)



Modern Planes Album



CURTISS-WRIGHT C.W. 21 INTERCEPTOR

CURTISS C-W 21 INTERCEPTOR

AT LAST the lid is off! We're building interceptors on this side of the Atlantic! Granted, this job is reputed to be for export—but at least we can now mention the word "interceptor" in the United States without having our sanity doubted.

The Curtiss-Wright Company, of Buffalo, is the builder of this new plane, and it is now undergoing tests.

Prior to this American experts

seemed to consider an interceptor as some mysterious single-seater that carried only a quart of gasoline, a teaspoonful of oil, and a box of .22-short caliber bullets. In other words, it was a ship designed for climbing in which everything movable was thrown overboard, thus accounting for its remarkable speed and climb. It was never an accepted item in the American way of looking at things. But maybe it will be, now.

GOTHA GO. 149 TRAINER

SINCE we have included a British-American trainer in this feature, it might be well to first consider a new "educator" craft that has been accepted by the German Air Force.

This model, manufactured by the Gothaer Waggonfabrik A. G. of Gotha, Germany, is listed as a single-seat acrobatic trainer. It's a low-wing monoplane using a cantilever wing, slotted flaps, and a retracting undercarriage.

The cockpit has a covered hatch, also a space behind the seat where military equipment may be installed, such as interior bomb racks, camera fittings, or two-way radio equipment.

The ship has fine lines from the cowling—which covers a 240-h.p. Argus motor—back to the neat monoplane tail assembly. The Argus engine is an eight-cylindered air-cooled inverted 90-degree motor. It is fitted with a two-bladed fixed-pitch propeller. Top speed of the plane is 214 m.p.h., and it cruises at 199. Its stalling speed is 59 m.p.h. Range is reported to be 615 miles on three-quarter throttle, and with normal fuel

tanks the craft will stay in the air for a little more than three hours.

The wings, built of wood, use a single spar and have stressed plywood covering. The fuselage, of all-metal monocoque type, has an elliptical cross-section and is covered with a smooth metal, stressed-skin covering. The wings are bolted to small stubs built integral with the fuselage and they taper in chord and thickness. Slotted flaps are set between the ail-

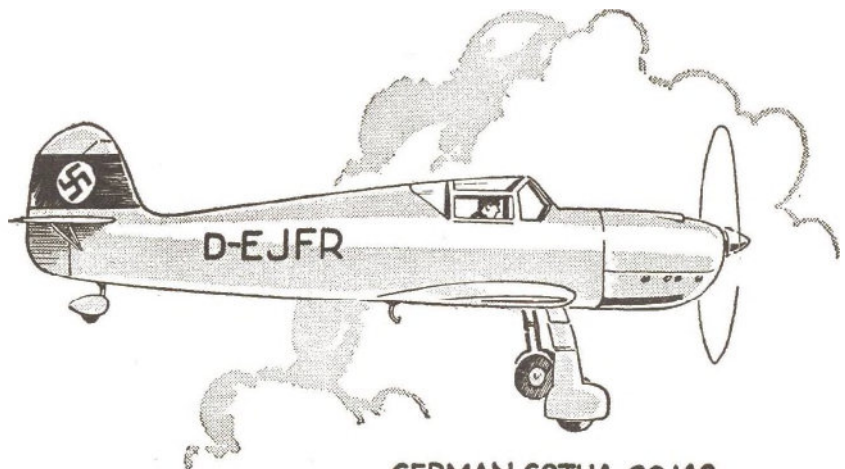
Details on this particular plane are vague, but they tell us that it has done better than one statute mile in its first full-throttle minute of climb—exactly 5,280 feet in 60 seconds of full power.

The plane (see sketch) is powered with a Wright R-1820 G5 motor rated at 1,000 h.p. on the take-off. At 17,000 feet it has a top speed of more than 300 m.p.h., it cruises at 270 at 17,000 feet, and it boasts a service ceiling of 35,000 feet. This ship is not to be confused with the Curtiss 500-m.p.h.-in-a-dive job that grabbed all the headlines a few weeks ago.

The armament consists of one .30-caliber and one .50-caliber Browning gun, and the pilot is to be protected with a sheet of armor plate placed behind his back in case his enemy gets on his tail *a la Dawn Patrol*.

Everything has been fitted with "an eye on the scale." Hence, the C-W 21 weighs but 3,050 lbs. empty. (The Curtiss Hawk 75 weighs 3,404 lbs. empty by way of comparison.) The G-5 engine alone accounts for 1,183 lbs. of the C-W 21—so they have done a pretty fair job on the first American interceptor.

As for the wheels on this ship, they retract into special casings set under the wings.



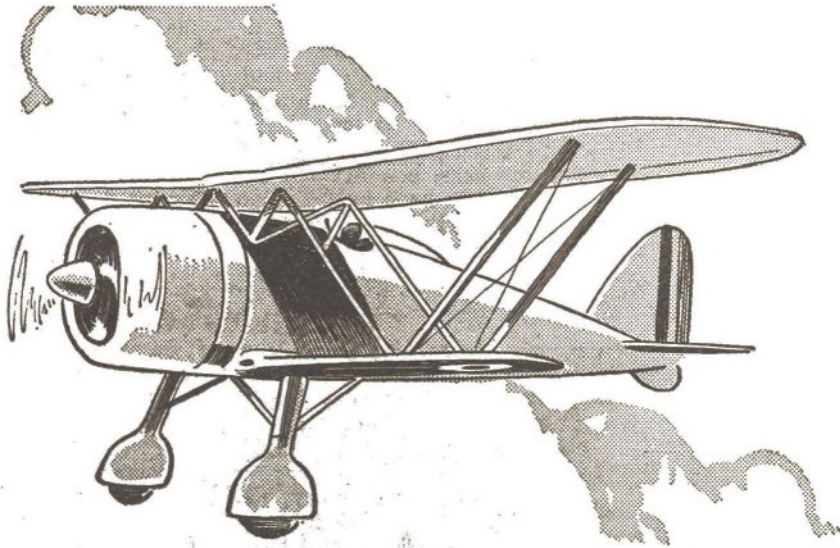
GERMAN GOTHA GO. 149

erons and the fuselage on this ship.

The fin is built integral with the fuselage, the tail-plane is adjustable from the seat, and the elevators and rudder are constructed of wood. The undercarriage retracts upward and inward, and the apertures are closed by fairing plates attached to the legs and the wheel axle. Two single legs built in cantilever style, with shock-absorber struts using steel coils and oil-damper units, comprise the gear.

TWO NEW FIGHTERS—AND TWO NEW TRAINERS

Four nations are represented on our graphic military ship menu this month—America, Britain, Germany, and Italy. And we lead off the quartette of skysters with Curtiss-Wright's striking new C-W 21 Interceptor.



ITALIAN FIAT BIPLANE FIGHTER

NEW FIAT FIGHTER

THIS ship, a product of the famous Fiat Aeronautica D'Italia, of Turin, Italy, is so new there are no photographs of it available as yet. Our drawings were taken from information offered by the Fiat offices. So it is quite possible that the plane will not be seen in the air for some time.

However, the general lines of the craft are very interesting, and we

learn from good authority that the biplane is actually a model designed from the famous C.R.32 Warren-strutted biplane fighter flown in Spain with considerable success. A close study of our drawing will disclose that the same Warren struts have been retained but that the center-section struts are shorter, which brings the top plane lower—into a position where the pilot can look over

BRITAIN'S HARVARD TRAINER

IT SEEMS as though the English have gone collegiate on us. They have called the new N.A. BT-9—the basic trainer purchased in this country—the *Harvard*! Already a number of them have been delivered and are now undergoing British flight tests at the No. 12 Flight Training School at Grantham.

The ship has been revamped to a certain extent for British requirements and has been fitted with a very commendable retractable landing gear. This plane also has the new Army Air Corps leading-edge slots—or eye-brows, as the lads at Randolph Field call 'em—and it also uses the 530 P. & W. Wasp engine.

Frankly, the British like the N. A. trainer. They have said so in recent articles printed about it in the aeronautical journals over there. Dubbing it *The Harvard* is probably their way of paying a return compliment to the United States.

Under the new modifications, *The Harvard* now does 210 top, cruises at 190, and has a cruising range of 750 miles. It has a service ceiling of 23,500 feet and will climb to 10,000

feet in 116 minutes. A neat job for any training organization!

It will be used by pilots who are to "pass-out" for first line fighters.

And Britain's *Flight* magazine says that any pilot who is passed out as thoroughly conversant with *The Harvard* and its equipment, should be ready to cope with any British service type. Very nicely put, too.

An interesting feature of the re-

tracting undercarriage is that it can

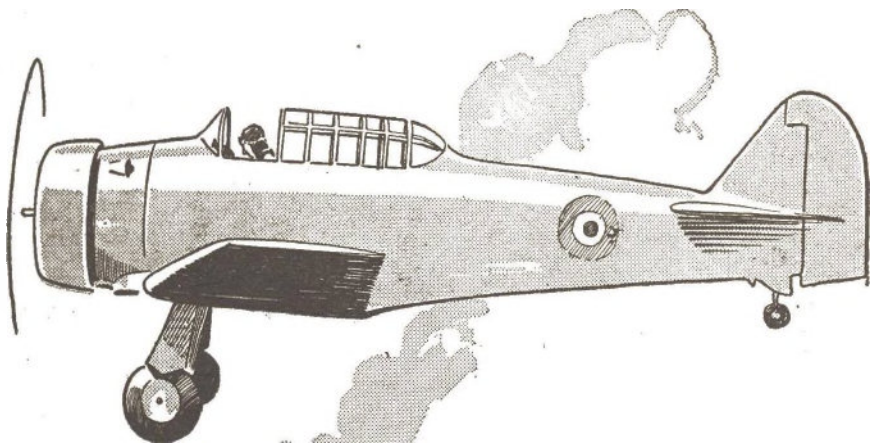
be raised or lowered three ways. The first is the normal hydraulic system; then there is a hand-pump system; and finally, a lever which acts directly on the mechanism.

The hydraulic system is actuated by a push button, and an electric horn sounds when the engine hits lower than 1,000 r.p.m. while the wheels are up.

or under the wing without discomfort. The wings are the same as in the C.R.32 in that the lower airfoil is much smaller than the upper plane. This gives good view all around and gives the ship a smaller turning radius. Much steel alloy is used in this plane. The fuselage is oval in form, but covered with fabric. The tail is of the monoplane type, built up on a metal framework and also covered with fabric.

In this biplane, the undercarriage is more simple than that used on the C.R.32, but it does not retract into the body or wings. The greatest change, of course, is in the installation of the two-row Fiat engine, which is rated at 840 h.p. And considering everything, this ship should have a speed near 300. The armament is striking, for the plane is to carry two fixed Chatellerault guns under the cowling, and there is space and brackets for heavier caliber guns, either Darns or Breda-Safats, at the lower wing roots. Some reports inferred that Vickers guns would be used under the cowling.

Special racks designed to carry light fragmentation or incendiary bombs are available for outer wing mounting.



A.M. Williams

BRITISH HARVARD

Flying Aces Club News

* * *

HOWDY THAR, Clubsters! Reckon y'all will be a-wonderin' why yoar N.A. is a-tawkin in this heah way, huh?

Wal, yuh see, fellers, Yers Truly is just gittin' over a bad case of throat-itis. An' th' way he's cawfin, it seems like he's just about to "go west." Which means he has to start pickin' up the lingo right now so he won't be called a tenderfoot if the time does come. But don't worry, we figger it'll all come out in the wash.

And to take matters from the ice-box and put them in the electric refrigerator, Ross Smyth, of Toronto, Canada, tells us that his dictionary says an adjutant is "a gigantic Indian stork"! Well, that sure takes the wind out of our sails. But even though your honorable Adjutant *does* fly, he's quite sure that it's not by flapping his wings!

Let's settle back now and take it easy, because here come some interesting tid-bits from your fellow Clubsters from all points of the compass—

ACE JACK TINKER, member of Lieut. "Zack" Reed's New London, Conn., Squadron, is well on his way in the FLYING ACES Club. Jack receives honorable mention from us for his valuable organizing work. Yep, he not only helped to arrange a display for that swell movie, *Dawn Patrol*, but also got five new members to join the F.A.C. They are Joe Sullivan, Ed Dahl, Ken Anderson, Ed Dayton, and Frank Dymerski. Welcome, boys!

Lieutenant Reed, aside from his regular work of keeping the Squadron in ship-shape order, has also enrolled a new member. He's Mike Malliton, likewise of New London.

From the little old city of New York, Thanos Vaxevanides tells us that he had no idea that there were so many important Honorary Members in the F.A.C. Thanos has been reading F.A. for about a year and only seriously considered the "Join The Flying Aces Club" page recently. Well, we're glad to have you as a member, Thanos. And may you continue to be a loyal Clubster. Hope you get to the top, too.

Did our article "I'm an Aero Snapshot Fiend" (March, 1939, F.A.) attract attention? We'll say it did! And Darrell Fiefield, Jr., of Des Moines, Iowa, thought that Hank Clark's hobby was such an interesting one that he's decided to try it himself.

We're sure that many more of you fellows got the same "bug", so why don't you contact Roger Perrault, of Lyndonville, Vt.? Roger is organizing a photo-exchange club, and your letter would be welcome.

Flight 1, of Erlanger, Ky., intends to conduct their F.A. organization on a strictly military basis. Dan Capi-to, Keeper of the Log, writes us:

"Joe Anderson, Flight Commander, managed to get

By Clint Randall

National Adjutant, Flying Aces Club



Here's Aurelio Vasquez, one of our most faithful New York Clubsters. Aurelio has just returned from a trip to Puerto Rico, where he boosted the old spirit of flying by demonstrating models of various types. And say, Aury, why don't you get in touch with us? The last letter Clint sent you came back with "Address unknown" stamped on the envelope.

Frank Doty, an ex-Navy man—who has had quite a bit to do with arranging charts for the sea-arm pilots during maneuvers—as instructor for our group. We intend to have drill practice every two weeks, conduct our meetings on a military standard, and to have uniforms in the near future."

That'll be swell, fellows. And be sure to go in for trips to airports, prizes for contests, and for dressing-up your club room with aviation articles.

THE DOUG CORRIGAN Squadron of St. Marys, Pa., recently had an election for new officers. They are: Walt Bickmire, Squadron Leader; George Finfinger, Squadron Officer; John Meyer, Treasurer; and Othmar Lenze, Secretary. The newly organized "B" Flight is also composed of swell Clubsters: Charley Lion, Alan Wygant, Bob Schatz, George Krieg, Earl Luberson, and Bob Lion. Othmar Lenze, Secretary, didn't give us the names of the fellows in "C" Flight, but he did tell us that Henry Meyer is Flight Leader.

Harry McDuff—the "Flying Phalanger"—of Victoria, Australia, sends us some interesting clippings from "Down-Under," newspapers. Yep, those Aussies are just like their British cousins. "Why?" you ask. Well, fellows, they've given their North American NA-33 type ship the name of "Wirraway"! This American plane, you know, is being built in Australia for the Aussie Air Force under a special contract from the American company.

But the real blow-out came when Harry said: "Of course, we've altered the NA's to meet the Australian needs. And we've also improved them!"

Well, that's open to discussion, huh, boys? What do you think?

Wow! F.A.C. Flight 1 of the Bronx is really going to town in a big way! Charley Glock, Flight Leader, tells us that the lads in his outfit have built a wind-tunnel to test their models in.

"The tunnel," says he, "is supposed to give us a good idea of what our ships will do in the air. And the darn thing really works, too!"

On top of that, the chaps in the Bronx Flight intend to put out a little magazine dealing with local doings and doers in aviation. Well, Charley, here's luck on your venture!

Ace Tom Satyshur, of Erie, Pa., has a new idea. (Perhaps you remember his "Phantom Ace" plan we told you about a few months ago.) Says Tom:

"I'm going to start an F.A.C. unit here in Erie that I hope will be different from any FLYING ACES group in the world. You see, it's going to work like this: All of the fellows that I got to join the Club when I became

Cut your guns for a few minutes, fellows, and come in for a landing on the ol' F.A. tarmac for a gab-fest with Clint Randall. Yes, sir, once again your N.A. has picked out all the "cherce" items of interest from his many big stacks of letters. Gather around on the deadline, now, and let's see what's what.

an Ace are going to get *their* Aces stars just as soon as possible. Then they will be Flight Commanders of the boys they get to join, and I will be *their* Commander. In other words, I'll be Commander of the Commanders who command their bunch! And after we get organized, we want to be known as the Aces of the City of Erie. For short, A.C.E."

Whew! You've got Clint's gray matter runnin' around in circles, Tom. But it really sounds like a swell scheme. How's about lettin' us know how you make out when you get organized?

PERSONAL to Ted Vieira, of Moscow, Idaho: Yes, lad, you can get every honor that FLYING ACES gives to its Clubsters even though you might be a "Lone Eagle." But, you know, Ted, aviation is what it is today only because of the co-operation of the men in the game. It's all well and good to be on your own, but Clint thinks you'd get heaps more enjoyment out of the F.A.C. if you joined or organized a Flight or Squadron up in your district.

Here's a Clubster who's opened his own model Shop—Gordon Nelson, of Duluth, Minn. He tells us that he's using the basement of his home as a store. Once a week Gordy holds meetings and instructs all the chaps in his neighborhood how to build models. He says:

"I get a great kick out of it, Clint. And I also learn the other kids' viewpoints of aeronautical fundamentals. Besides that, I think I'm helping aviation a lot by instructing the fellows who would otherwise have to learn by the 'do and pray method'."

Gordy, that idea is tops! Yes, sir, it shows the old co-operation spirit. And you can be sure that we're going to credit you with a suitable number of points on your Escadrille card right now! Keep up the good work, lad.

We are also happy to give you fellows this bit of news from our San Juan, Puerto Rico, Squadron. Says the Keeper of the Log:

"We recently held our first meeting. Those present were: Felix Montañez-Mathéu, José Perez, Rafael Diaz, Mario González, Eduard Ernouf, Manuel Correas, Ramon Perez, Victor González, Rafel Portela, Valentine Olmo, Miguel Manzano, José Torres, Lriel Ramos, Leopoldo Lugo, and Ernesto Perez.

"The officers that were elected to head our Squadron are: Felix Montañez-Mathéu, Commander; José Perez, Keeper of the Log; and Mario González, Sergeant at Arms."

This Puerto Rico Squadron of ours also warns—or promises—that they intend to be the most active aviation group in the Antilles. And from their report, it sounds like the boys are in earnest.

REMEMBER Marcel Marier? Well, this lad from Montreal, Canada, has launched his Club-mates on an undertaking the like of which Clint has never heard of before in the F.A.C. Marcel, we understand, has designed a two-place flying boat which his group is going to build. Marcel's Unk has promised to donate all of the wood they will need, and a Naval officer has offered to instruct the fellows in flying after the plane is completed. Moreover, the Canadian group is going to get all of its oil and gas at *cost price* from a petroleum concern up their way. Sounds good, huh?

Get all the expert advice on your ship you can, Marcel. You know, there's more to building a plane than just designing it. Several years are sometimes spent in working the "bugs" out of a light plane. So it's always a darn good idea to be cautious—*very cautious* with your brain-child, Marcel.



J. C. King, of Petone, New Zealand, is the chap on the left in this photo. J. C. has been a reader of FLYING ACES for many years, he tells us, but he only just got around to joining our Club. The other two buzzards in this "shot" are his two older brothers—both of whom are also very much interested in aviation.

Don't any of you American chaps try the same thing though. That is, don't until you've checked all your home-state laws and first sent a stress analysis of the proposed ship to the C.A.A. And believe me, those analysis charts are worse to figure out than *any* income tax blank! Anyhow, it's best down here to buy your plane.

Personal to Harry Weiner, Brooklyn, N. Y.: Sorry, Harry, no can do. You see, fellow, I can't send you the membership cards you asked for without applications—and I'm sure you wouldn't want 'em that way. You see, Harry, it really means something to belong to the F.A.C.—ask *any* member—and the lads you wanted the cards for wouldn't be full-fledged, certified members unless they joined in the usual manner. And I'm quite sure *they* wouldn't want that. Think it over, and I'm sure you'll agree.

Did any of you Clubsters ever think that you didn't get everything out of aviation that you wanted? Sure you have. But here's a fellow that *really* has something to complain about. Yet he just accepts his fate without a whimper.

Yep, Russ Maruk, of Coleville, in Saskatchewan, Canada, tells us:

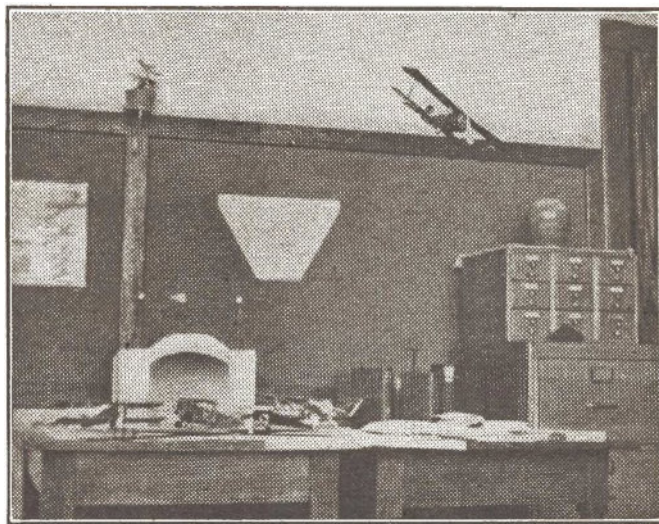
"We see very few planes in this section of Canada. The last one I saw was an Aeronca—belonging to the Saskatoon Aero Club—on New Year's day. Previously, I had seen a Trans-Canada Airways Lockheed 'Electra' flying overhead. The sound of its two engines sent a big thrill running through my spine."

There you are, boys. Practically no planes to look at! How'd you like to be in his boots? Do you think you could bear it and still grin?

SID HOLLANDER just dropped in to see Clint and the G.H.Q. staff. Sid, who hails from New York, is on his way to Louisiana to drive a TNT truck! They're going to pay him \$125 a week for his work—but we don't envy him. There's too good a chance that he'll be flying sooner than he expects—without a plane under him!

The next letter in the pile is from Viggo Lundsgaard-Kjaer, of Copenhagen, Denmark. Says this Clubster:

(Continued on page 79)



Have you wondered how you could win points in the Escadrille? Well, here's one way of doing it. The above display was arranged by Clinton Burhans in the Skaneateles (N.Y.) High School. Clint spent many hours in preparing the scene, too. Look closely, boys, and you'll see models of the Grumman "Gulphawk," Waco "Military," Fokker D-8, and Nieuport Scout. The Nieuport is the ship that is circling for a landing up there. Nice work and good photography, huh?

JOIN THE FLYING ACES CLUB

Honorary Members

President and Mrs. Franklin D. Roosevelt
 Vice Pgs. John Nance Garner
 Casey Jones Rear-Admiral Byrd
 Wallace Beery Capt. Eddie Rickenbacker
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 Major Fred Lord Mrs. Charles S. Bayliss
 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.



Gold finish Actual size

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.



Silver finish Actual size

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). [59]

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

We also have a new supply of swell embroidered wing insignia for cap or sweater made up in colorful blue and gold, they're available at 25c each.

(Overseas prices: Stationery, 100 sheets for 2/-; pennants, 20 for 2/-; wing insignia, 1/6.

May 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.

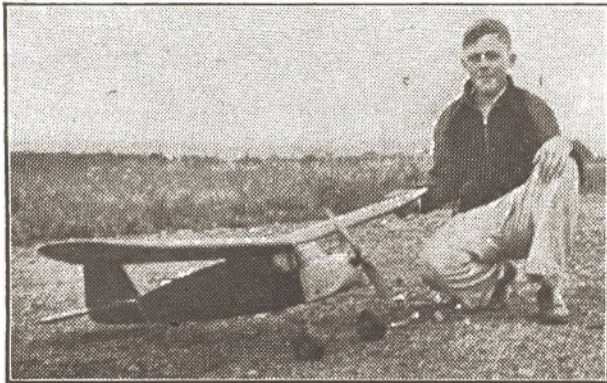
My name is
 Age [59]
 Street
 City State

Do you build airplane models?.....

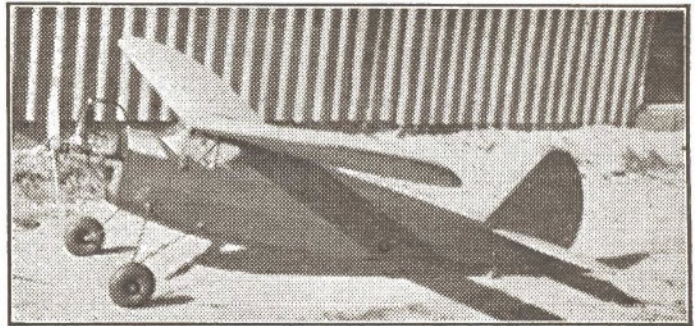
Mail this application, enclosing a self-addressed, stamped envelope. Canadian and overseas readers send the application, self-addressed envelope, and an International Reply Coupon worth 5c, secured at the Post Office.

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

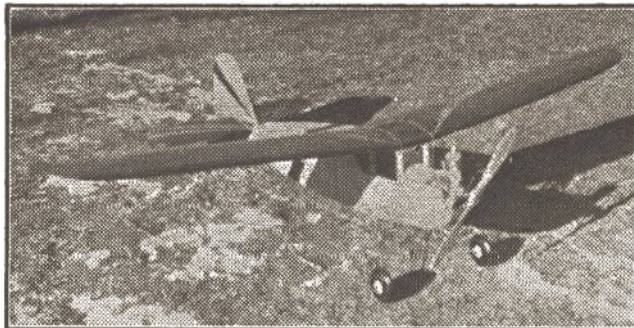
With the Model Builders



Above: This smiling lad—Bob Randolph, of Kenmore, N. Y.—has a right to be happy. "Why?" you ask. Well, wouldn't you have a grin spread across your pan if your FIRST gas job placed second in the Nationals? Yep, Bob says that his pylon polisher—the ship he's holding so tenderly—scouted to second score in the Junior Division at the 1933 Detroit event with the time of 1 min., 23 sec.



Jack Ellis, of Highland, Calif., tells us that this corking "Coupe" is only his second gas buggy. Weighing 3 pounds, 13 ozs., this Brown powered job turns in average flights of 2 min., 15 sec., on 40 sec. motor runs. "So far," Jack says, "my 'Coupe' has had two arguments with a nearby mountain. Result—only two broken props!"—Pretty fair average, we'd say.

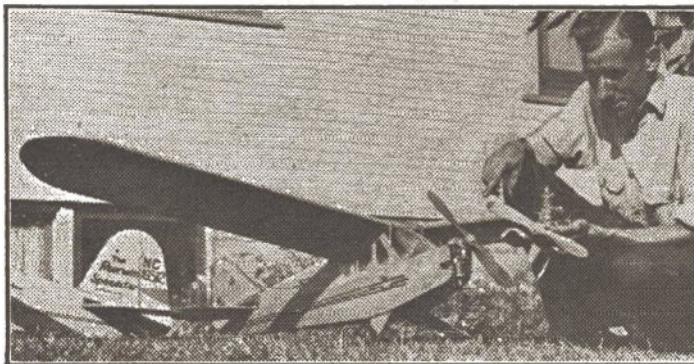


Left: A 2 pound, 12 ounce cloud comber is this miniature by Drexal Sibbersen, of Omaha, Nebr. She has a 5-foot wing-spread that has covered many a mile of prairie. And from those splotches on the ground, it looks as though Drexal's home tarmac is just about "Gone with the Wind," too!

Gas Jobs Galore!

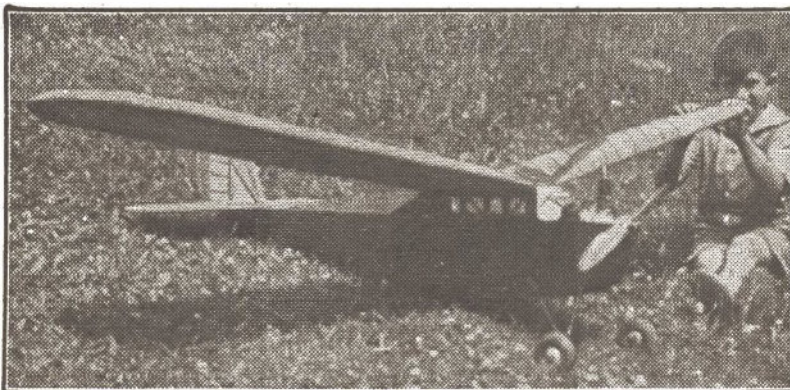
We've rounded up a bale of petrol-powered models on this page, fans, to show you what swell "big field" jobs our readers are turning out.

And don't forget, modelers—this is *your* page. So send the Model Editor your ace-high shots—rubber busses, gas jobs, "solid" models, gliders, miniature scenes, or whatever—and we'll try to squeeze 'em in here for you.



Above: This "Model of the Month" is a neat Cub "Coupe." This ship, built by Glen Courtwright, the chap in the photo, is one of the sleekest scale jobs we've ever seen. Glen built both the Cub and the Rearwin—the camera-shy ship that tried to run away from the photographer. Glen hails from Lincoln, Ill., and is an old timer in the modeling game. He specializes in fine finishes.

Below: Jack Harte, of 293 Hill Ave., Glen Ellyn, Ill., is the artisan who turned out this powered pretty, Johnny says that he hasn't been able to fly 'er yet because of the bad weather in his section. But he's just waitin' for a chance to let her chew on a hunk of ozone. Incidentally, Johnny'd like other modelers in his vicinity to get in touch with him.



Above: The FLYING ACES "Trenton Terror" is here in person! "On its third flight," says Ken Coleman, of Elkland, Pa., "it flew over a hill and out of sight. I found it the next morning after searching the landscape in a friend's Cub!" No, that's not Ken in the photo—it's his 9-year-old brother, Douglas. And Doug is a great model fan, too. Right: Bill King and Max Peterson are trying to locate the trouble in Max's stick-type gas job here. Maybe something froze up—look at the ear-muffs the boys are wearing! Bill King is the guy who's scratching his cranium.



Build the

“Flying Aces Pronto”

There's nothing more thrilling than a neat high-winger. And one that has plenty of speed and maneuverability always brings an “I wish that model was mine” from all passers-by. Well, modelers, here's a ship that'll fill that bill to a “T”! Yep, our parasol “Pronto” is just that kind of a job! And after your own sleek little skyster is finished, you'll see that it's tagged “Pronto” because she always delivers swell flights in lightning quick order!

FANS, this month we present the **By “Snooky” Pakula** cockpit cowling is cut to shape from *F.A. Pronto*, latest member of model family. And she's a very welcome one, too! For this baby really lives up to her name with every rev of her prop. Of rugged design and construction, our parasol model possesses all the speed and punch that can possibly be packed within twelve inches of framework. Its sturdily mounted high wing, tall rudder, and generous tail surfaces provide perfect stability. That's the low down, laddies. So now hop to it—and you'll end with a sweet model that'll give you heaps of fun.

FUSELAGE CONSTRUCTION

THE FIRST step is to enlarge to full scale the drawings of the fuselage—Plate 1. This may be done very easily with the aid of a pair of dividers or scale rule. One side of the body is laid down at a time. Of the conventional box-type fuselage, it is built up throughout of 1/16" sq. hard balsa.

All upright and diagonal members should be cut carefully to insure perfect joints against top and bottom longerons. The extreme end of the body is joined to an upright member cut from 1/16" sq. hard balsa.

The next step is to cement a hard balsa rear plug in place as indicated in the side view fuselage plan. The rear hook, which may be shaped from .038 wire, is placed in position before the plug is attached to the framework, however. The wire tail skid is cemented securely to the plug after the stringers are arranged.

All fuselage formers, which are shown in full scale, are cut from 1/16" balsa sheet. Carefully remove the wood where stringer notches are indicated, checking each one against the other for stringer alignment.

The stringers, which are varied lengths of 1/16" sq. balsa, are cemented in their proper positions only after the top and bottom formers have been glued fast. The

cockpit cowling is cut to shape from 1/32" sheet and cemented in place, as shown. Small model-making pins may be used to retain the curved shape of the fuselage until the cement dries.

A balsa headrest shaped in the manner shown is cemented in the position indicated. Celluloid is used for the windshield and is held in place with a couple of small pins and cement. Later, the pins are removed. But for the time being, lay the body aside and work on the—

RUDDER AND STABILIZER

BOTH the rudder and stabilizer are completely built up with 1/16" thick soft balsa. On the stabilizer, the leading and trailing edges are 1/16" by 1/8"—the 1/8" dimension lying flat. The ribs and spar, on the other hand, use the 1/8" dimension vertically which gives the stabilizer depth and strength. The rudder spar and ribs are made up in like manner. The outer shapes are cut from 1/16" flat.

Cement all joints carefully and keep them flat to prevent possible warping while the cement is drying.

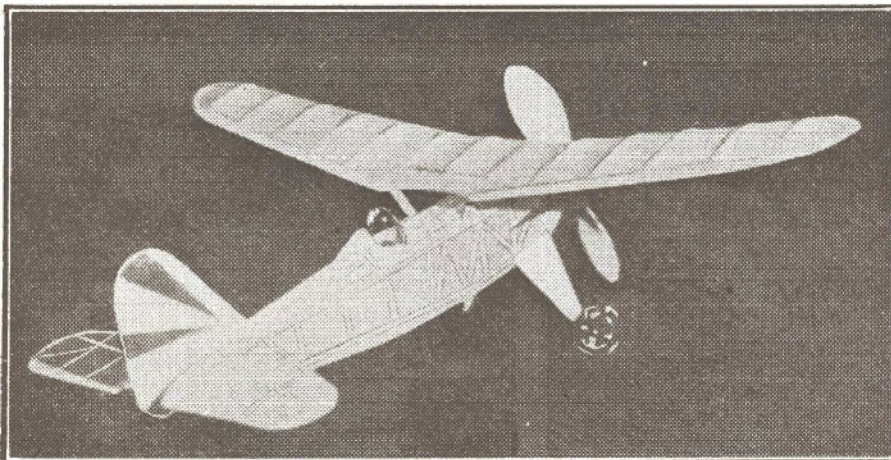
WING STRUCTURE

LAY OUT a full-scale plan of the wing with the position of each rib clearly marked. The first step is to cut the center spar to its proper size and pin it onto the plan. Then the entire set of ribs are carefully cemented into their respective positions. And the trailing-edge spar is cemented into place *after* the ribs are firmly set. A tapered effect may be obtained by sanding the spar until it becomes a part of the airfoil section, as indicated by rib number 4.

The center-section panel is shaped from a piece of soft balsa measuring 1/4" by 3/4" by 2 3/4". This panel butts directly against rib number 1 and to the inner sides of rib number 2 on both sides of the center-rib. Apply cement *generously* to all joints. And remember, the trailing-edge of the panel should taper to the same degree as the trailing-edge spar.

After the leading edge-spar is properly cut, it is cemented against the ribs. Not until it has dried securely in place, however, is it to be shaped to complete the airfoil section (example shown on rib number 4). The extreme ends of the leading-edge taper slightly upward as shown in the front view drawing.

The wing-tips are now cut to shape from 1/16" sheet balsa and glued in place. At the wing-tip, the leading, center, and trailing-edge spars taper gradually to form a streamlined section. The dihedral angle is obtained by making very slight cuts with a razor-edge-knife on the undersides of the leading and main wing spar which are indicated by the arrows on the top view drawing of the wing. Now crack the wing lightly and



A hot-shot hurricane is this sweet little “Pronto”! And note that gentle dihedral angle to the wing. There'll be no air spilling here! Dashing, those color markings on the tail, huh? Anyhow, consult our photos, frequently when building your “Pronto”—for that kind of checking helps heaps.

See Plans For This Model On the Following Pages

raise the wing-tips to the necessary dihedral angle. Apply cement generously at these cracks, and then place small prop-blocks under the wing tip edges to assist in keeping the dihedral angle constant until the cement hardens permanently.

NOSE COWL AND PLUG

MAKE the nose-cowl in halves. From a piece of cardboard or stiff paper template, trace the side view drawing of the cowl onto each half block. Then, one at a time, carefully cut the blocks to shape. The inner sides are hollowed out to the thickness as indicated by dotted lines on the plan. And the front of the nose-cowl is left thicker to add necessary weight to balance the model.

An opening for the plug is cut from each half of the cowl. This is shown by the cross section in the side view drawing of the nose-plug itself as attached to the nose-cowl.

After the nose-cowl has been shaped so that it accommodates the plug snugly, cement the halves together securely.

The nose-plug, which is removable, may be made either of one piece, which would combine the rear and front ends of the plug, or of two parts—in which case, the rear end is attached with cement. In any event, the plug must be made so that it fits snugly, but not too tightly, into its place in the nose-cowl, as mentioned above. Sand the plug to shape so that a fine tapering effect is obtained to coincide with the nose-cowl (see top and side view plans).

Lastly, cement the nose-cowl flush to the front of the open end of the fuselage as shown on Plate 2.

PROPELLER

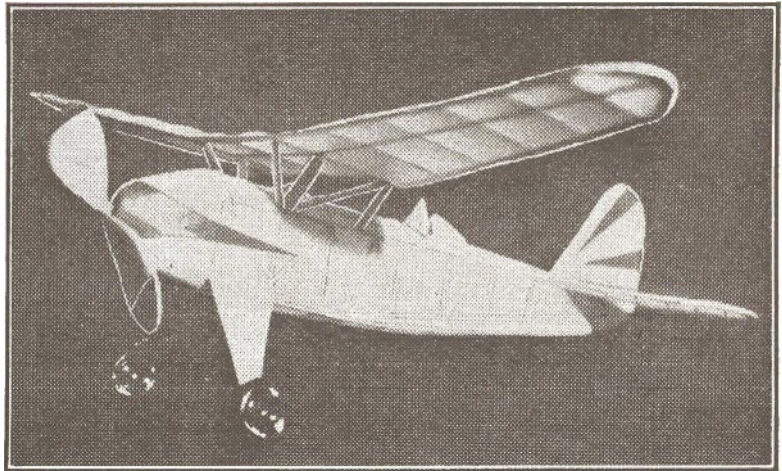
CARVE the propeller to a "spoon bladed" design from a block of hard balsa (see Plate I). This design, I believe, has time and again manifested itself as the most efficient of all flying scale propeller designs. The blades taper inward towards the hub from both front and rear. When the prop has been shaped balance it carefully after adding a hole to the hub's center.

The spinner cap is carved to shape as shown. The rear of the cap is notched $\frac{1}{4}$ " deep. The cap is then fitted over the tapered hub of the prop and cemented securely—but only *after* the prop has been equipped with a shaft bent from .038 wire. The rear of the prop-shaft is not curved until it is slipped through the nose-plug. Two copper washers may be added to the shaft between the prop and nose plug to make for less friction.

LANDING GEAR DETAILS

NOW cut the landing gear legs to shape from pieces of balsa, measuring $\frac{3}{16}$ " by $1\frac{11}{16}$ " by $2\frac{7}{8}$ ". Sand them to a streamline section.

The wire axle, as indicated on Plate 2, is bent as



In this "shot" many fine details may be seen. Six ribs to each panel is what "Pronto" sports. Count 'em! And since she has only one spar, this parasol is easy for any beginner to build. What's more, you old time builders should take advantage of her simplicity, too. How to win contests and influence judges? Well, just flip this page and you'll find "Pronto" in person. She's your answer!

shown and is cemented flush against the inner sides of the legs. The axle is in one piece and extends across the width of the fuselage and down each leg.

The front view drawing clearly shows how the axle rests upon a cross member of the body and the inner sides of the landing gear legs (see perspective sketch, Plate 2). Use cement generously when attaching the axle fitting.

Wheels of the required size are slipped into position. A drop of cement applied at the outer ends of the axles will prevent the wheels from slipping off. The landing gear legs themselves are cemented rigidly to the fuselage frame.

COVERING AND ASSEMBLY

USE the best Japanese tissue available for covering the various units. The rudder and stabilizer parts are covered on both sides—using banana oil for the adhesive. The fuselage and wings should be carefully covered in sections. A coat of water, sprayed with the aid of an atomizer, over all the covered surfaces will shrink the tissue nicely. It will not be necessary to dope the ship. However, this is left entirely up to the builder.

Inasmuch as paper comes in a variety of colors, you may use any combinations to give the ship a sportier appearance. A yellow wing and tail surfaces and a blue body with thin, orange stripes will make the model more eye-appealing, though.

The stabilizer parts are cemented to each side of the fuselage. Each half rests directly against the upper fuselage longeron as indicated on the side view drawing.

(Continued on page 80)

BILL OF MATERIALS

(All wood is hard balsa except where otherwise specified)

Four strips $\frac{1}{16}$ " sq. by 36" for fuselage framework and stringers;
Three pieces soft balsa $\frac{1}{16}$ " by 3" by 18" for formers, ribs, and tail surfaces;
Two pieces $\frac{3}{16}$ " by $1\frac{11}{16}$ " by $2\frac{7}{8}$ " for landing gear legs;
Two blocks soft balsa $\frac{3}{4}$ " by $2\frac{1}{2}$ " by $1\frac{3}{4}$ " for nose-cowl;
One piece soft balsa $\frac{1}{4}$ " by $\frac{3}{4}$ " by $2\frac{3}{4}$ " for wing center section panel;
One piece $\frac{1}{8}$ " by $\frac{3}{8}$ " by $\frac{3}{4}$ " for rear plug;
One piece soft balsa $\frac{9}{16}$ " by $1\frac{3}{8}$ " by $\frac{9}{16}$ " for nose-plug;
One block soft balsa $\frac{1}{2}$ " by $\frac{1}{2}$ " by $\frac{9}{16}$ " for prop-spinner cap;
One piece soft balsa $\frac{1}{32}$ " by 2" by $1\frac{3}{8}$ " for cockpit cowl;

One block 1" by $1\frac{1}{2}$ " by $7\frac{1}{4}$ " for prop;
One block soft balsa $\frac{1}{4}$ " by $\frac{1}{4}$ " by $1\frac{3}{8}$ " for headrest;
One piece $\frac{1}{8}$ " by $\frac{1}{4}$ " by $3\frac{1}{2}$ " for main center section strut;
One strip $\frac{1}{8}$ " sq. by 18" for center section struts;
One strip $\frac{3}{16}$ " by $\frac{1}{4}$ " by 20" for leading edge spar;
One strip $\frac{1}{8}$ " by $\frac{1}{4}$ " by 20" for center spar;
One strip $\frac{1}{8}$ " by $\frac{1}{4}$ " by 18" for trailing edge;
One piece celluloid for windshield;
One pair $1\frac{1}{4}$ " diameter wheels, cement, two sheets of Jap tissue, banana oil, model-making pins, copper washers, brass eyelet bearing, three feet of $\frac{1}{8}$ " flat rubber, and piano wire.

Here's the

Douglas Globe-Girdler

ON APRIL 6, 1924, one of the most ambitious undertakings in the history of aviation was begun. For on that date, four heavily laden Douglas airplanes took off from Seattle, Washington, in an attempt to circle the earth for the first time.

Months had been spent in preparation for the flight and a world-wide chain of supply depots awaited the flyers. The permission of the twenty-two countries over which the flight expected to pass had been obtained. The personnel of the flight under the command of Major Frederick L. Martin had been selected by their outstanding records in the Army Air Service and by competitive exams. The men finally picked were "tops."

In the *Seattle* with Major Martin was Sergeant Alva Harvey. In the *Chicago* were Lieutenants Lowell H. Smith and Leslie Arnold. Lieutenant Leigh Wade and Sergeant Ogden in the *Boston*, and Lieutenants Erik Nelson and Jack Harding were the crew of the *New Orleans*.

The ships in this first globe girdling attempt were designed by Donald Douglas—whose airliners and military craft are world famous today. In general, the Douglas W.C. (the initials meant "World Cruiser") greatly resembled the torpedo plane then in regular use by the Navy. Rugged and capable of carrying a heavy load, it was an ideal airplane for almost every type of military duty.

Complete sets of the latest instruments—including the newly developed earth inductor compass—were mounted in the roomy cockpits afforded by the large fuselage. The wheel gear could be quickly replaced by pontoons for over water flying. And an improved version of the old reliable Liberty motor, weighing only two pounds for each of the 450 horse power it delivered, powered the plane.

Still, in spite of such thorough planning and splendid equipment, anything could happen along the thousands of miles ahead. When the planes were scarcely under way, snow and rain plagued the Douglases all the way up the coast to Sitka, Alaska.

Martin and Harvey, crew of the *Seattle*, had to install a new motor in order to continue. After being snow bound for several days they took off to join the other planes which had in the meantime progressed to Dutch

By Henry Struck

The 176-day 'round-the-world sky journey of the Douglas "World Cruisers" in 1924 was a slow proposition compared to Wiley Post's 1933 seven-day hop. But those W.C.'s were the first ships in the history of aviation to make such an astounding flight! So our hats are off to globe-circling Major Frederick L. Martin and his crew. Yes, this flying-model "Trail Blazer" will be a very worthy addition to your tar-mac of history-making planes.

Harbor in the Aleutian Islands.

Encountering a heavy fog, Martin and Harvey became lost and crashed into a mountain. They miraculously escaped serious injury and managed to fight their way through the snow and over mountains. And after nine days of struggling, they stumbled into Port Moller.

WITH the *Seattle* lost, Lowell Smith was placed in command of the flight and the *Chicago* became the new flagship. The three ships proceeded to Attu, the last of the Aleutian Islands and the jumping off place for the 870-mile hop to Japan.

Bad weather forced the ships down in the Russian held Komandorski Islands. And, as there were no diplomatic relations between Soviet Russia and the United States at this time, the aviators were not allowed to remain on the islands. However, by the time this word had been radioed from Moscow, the flyers were all set to take off again as the weather had suddenly cleared.

Visibility was excellent for the first time since the start, and the first crossing of the Pacific was completed uneventfully at Paramushiru on May 17.

The Japanese government, which had at first protested against allowing any American planes to land, welcomed them warmly. In Tokio, Nelson

amazed a Japanese officer who was taking notes of the design of the World Cruiser by presenting him with a complete set of detailed plans.

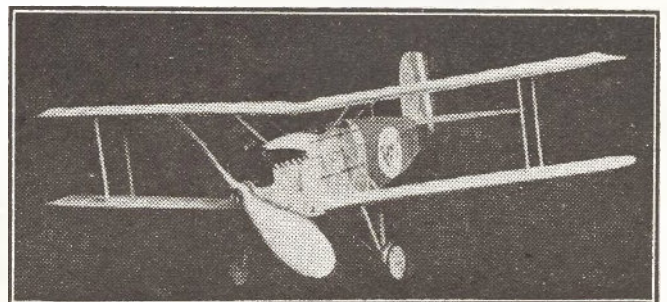
After having replaced their engines, the trio of ships left Tokio and made stops at Kushimoto and Kagoshima. When they reached Calcutta, India, the motors were again replaced. From Calcutta they hopped by short stages to Constantinople over deserts and mountains, and battled through terrific heat and sand storms on the way.

CROSSING Europe, the globe girdlers visited the capitals of the countries on their course—arriving in London on July 16. From there they went to Brough, where the World Cruisers were completely overhauled, and a third set of engines were installed. This done, the flight continued to Kirkwall in the Orkneys.

Finally, on August 2nd, they took off. However, the fog grew so thick that the planes lost sight of each other. Smith and Wade turned back but Nelson kept



A mighty neat miniature! And nope, those aren't Navy markings on the tail—they're the old style Army stripes. As a matter of fact, we'd like to go on and tell you that by virtue of their famed 'round-the-planet hop the Army Douglases flew over more water in the memorable year 1924 than did all our Navy planes put together! But we're afraid some of the sea-branch boys may be listening.



How do you like this striking three-quarter front shot of Hank's original model? You can make your ship just as sweet if you follow the plans and instructions carefully. You said it, modelers—she's a honey!

HERE'S NO. 13 OF OUR "TRAIL BLAZERS OF THE AIR"

going. After several hours of blind flying, the *New Orleans* broke through into clear sky. Upon sighting a destroyer, Nelson and Harding circled and dropped notes asking for verification of their course. Reassured, they flew on, soon entering another fog bank that held until they reached their goal—the little town of Hornafjord.

The next day, Smith and Wade again tried to make the flight to Hornafjord. All went well until the oil pressure of Wade's motor dropped. He had to make a forced landing on the rough sea. Wade and Ogden were rescued, but the *Boston* sank as the destroyer *Raleigh* tried to hoist the plane aboard.

Smith and Nelson took off on the 830-mile trip to Greenland in the two remaining planes. En route, they passed over the *Barry*, the steamship bearing the dejected crew of the *Boston* to Nova Scotia. And although the *Barry* signalled bad weather ahead, the flyers decided to continue. Soon they encountered a combination of heavy fog and high wind that drove them to within a few feet of the waves and set them to dodging numerous, towering icebergs.

At last they got through, and landed at Fredricksdal, Greenland. On August 31, they flew to Nova Scotia completing the first crossing of the North Atlantic by aircraft! Here, Wade and Ogden received another plane and the little formation was re-stored for the return to the United States.

From their first stop in Boston, the progress of the globe girdlers was a tour of triumph. In Washington, the flyers were greeted by President Coolidge, who had waited for hours in one of those typical rain storms that seemed to "dog" the flight around the world.

On September 28, 1924, the World Cruise ended in Seattle where it had begun five months and twenty-two days before. The actual time spent in the air, covering the 26,345 mile course, totalled 363 hours and 7 minutes. While these figures set no new record for globe girdling, there had never been any such intention by the Army Air Corps when the project was organized. The goal of the flight had been achieved. And to prove to the world that the airplane could operate under any conditions to be found was the main objective of the flight!

BUILDING THE WORLD CRUISER

THE FINE flying qualities of the Douglas World Cruiser are retained almost in full by our model, which is built to the $\frac{1}{2}$ " to 1' scale, that used in the "Trail Blazers of the Air" series. The assembled model is shown one half actual size on the three view plan, Plate 1, and its parts are given full size on the layout pages, Plates 2 and 3.

Pin the longerons of $\frac{1}{8}$ " sq. balsa on the full size drawing of the fuselage side, obtained by joining Plates 2 and 3. The uprights, likewise of $\frac{1}{8}$ " sq. balsa, are then fitted in place. Both sides are made at the same time—

one on top of the other—to assure their being identical in size. When dry, the sides are removed from the plan and connected by formers ("F1" and "F4") of $\frac{1}{16}$ " sheet and the corresponding bottom cross-pieces.

Draw the rear ends of the fuselage together and insert the remaining formers and cross-pieces in their proper stations. Install the rear hook support of $\frac{3}{8}$ " sheet and brace it with a couple of $\frac{1}{8}$ " sq. diagonals. Form the one piece rear hook and tail skid from .028 piano wire and attach it to the bulkhead with plenty of cement.

Cover the cowl with $\frac{1}{16}$ " sheet balsa, using a separate section between each former. Cut out the cockpits and cement the stringers of $\frac{1}{16}$ " sq. very hard balsa in place. The center stringer on one side is cut away opposite the rear hook to permit the rubber motor to be installed.

The nose consists of three pieces of soft balsa (two pieces $\frac{3}{4}$ " by $\frac{3}{4}$ " and one piece $1\frac{3}{8}$ " by 2"—all $\frac{3}{8}$ " long) glued together to form a channelled block. Carve the block to its approximate shape and cement it to the fuselage before finishing. In this way, the curves of the nose can be blended perfectly into the fuselage lines.

The nose cowling of $\frac{1}{16}$ " sheet balsa is fitted in place, and a triangular section is cut from each side through which the motor projects (see plans). Make twelve cylinders from $\frac{3}{8}$ " diameter balsa dowel and glue them to the slanted surface of the nose block. Scraps of wire and small squares of balsa simulate the cam system. And short lengths of aluminum tubing, flattened slightly, represent the exhaust pipes (see Plate 3).

To make the nose plug, glue a piece of $\frac{5}{16}$ " sheet—cut to fit snugly into the nose—to a dummy radiator also carved from $\frac{5}{16}$ " sheet. Washers with bushings are inserted and glued to either side of the plug to serve as bearings.

THE WINGS AND TAIL

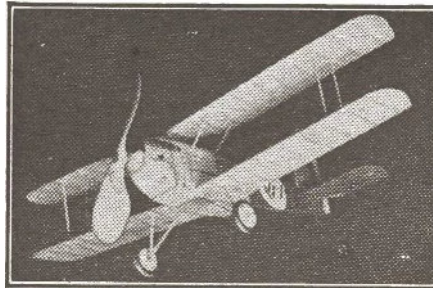
ALTHOUGH 54 ribs are required, it is simple to make them all at once. Pin 48 slats of $\frac{1}{16}$ " and six of $\frac{1}{8}$ " sheet together to form a block. Then shape the block to the proper airfoil section with knife and sandpaper. The notches for the leading edge and spar are cut before the ribs are separated.

The wings are assembled in the usual manner. Pin the trailing and leading edges to a full size drawing and cement the end ribs in place. Then glue the remaining ribs in place.

Crack the wings slightly at rib "R-4." Re-cement the break, raising each wing tip $\frac{3}{8}$ " for dihedral.

Construct the tail group in exactly the same manner as the wings. Of course, however, the tail contains no dihedral. Build up as shown on Plate 3. The leading and trailing edges should be rounded to form a section of the airfoil after the cement has been allowed to harden.

(Continued on page 73)



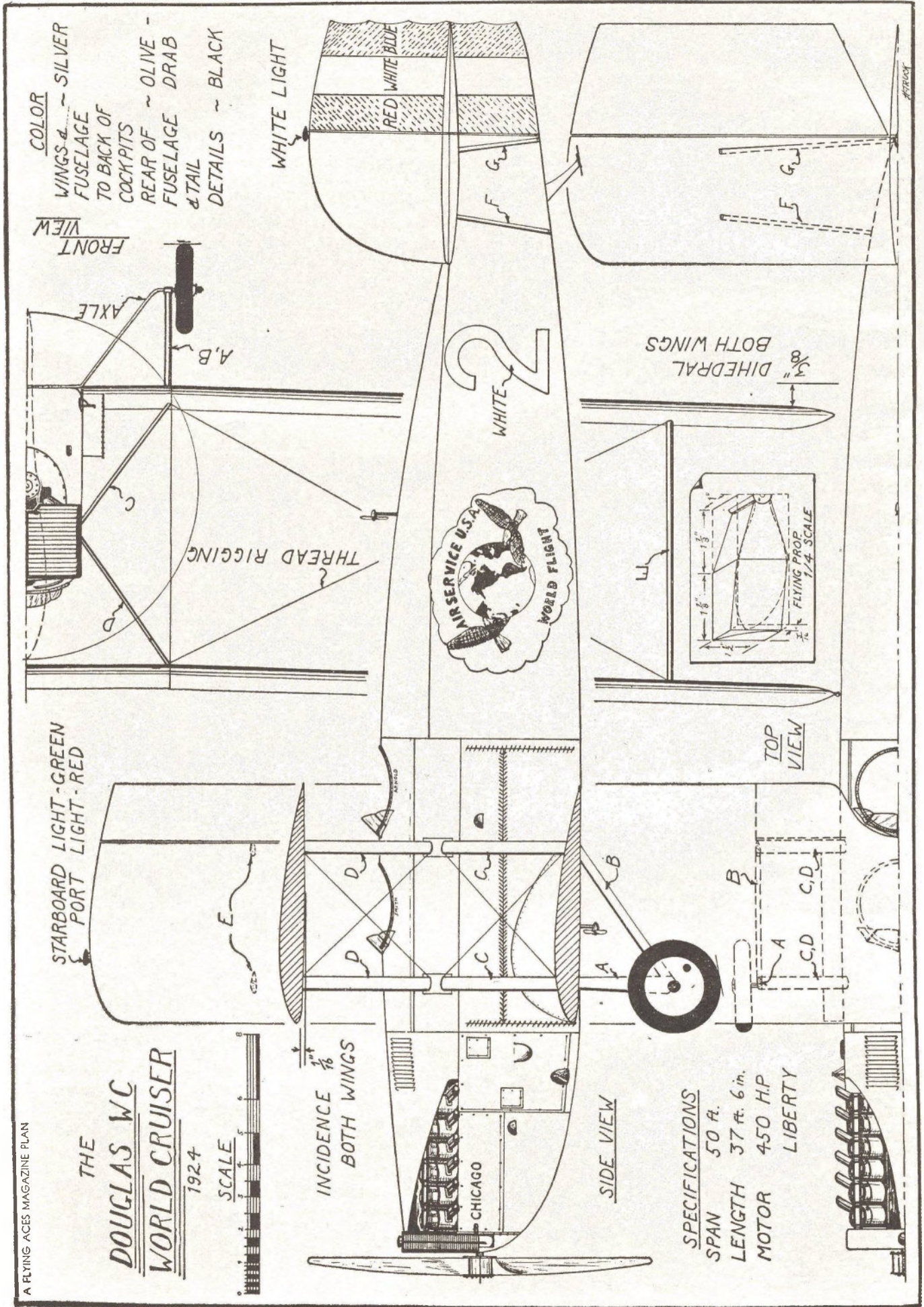
'Way back in '24, thousands of people flocked to some '73 airports to take a gander at the real Douglaeses gliding in for landings. But now, without even turning the clock back, you can watch your own W.C. sweep in—as shown above—as many times as you like.

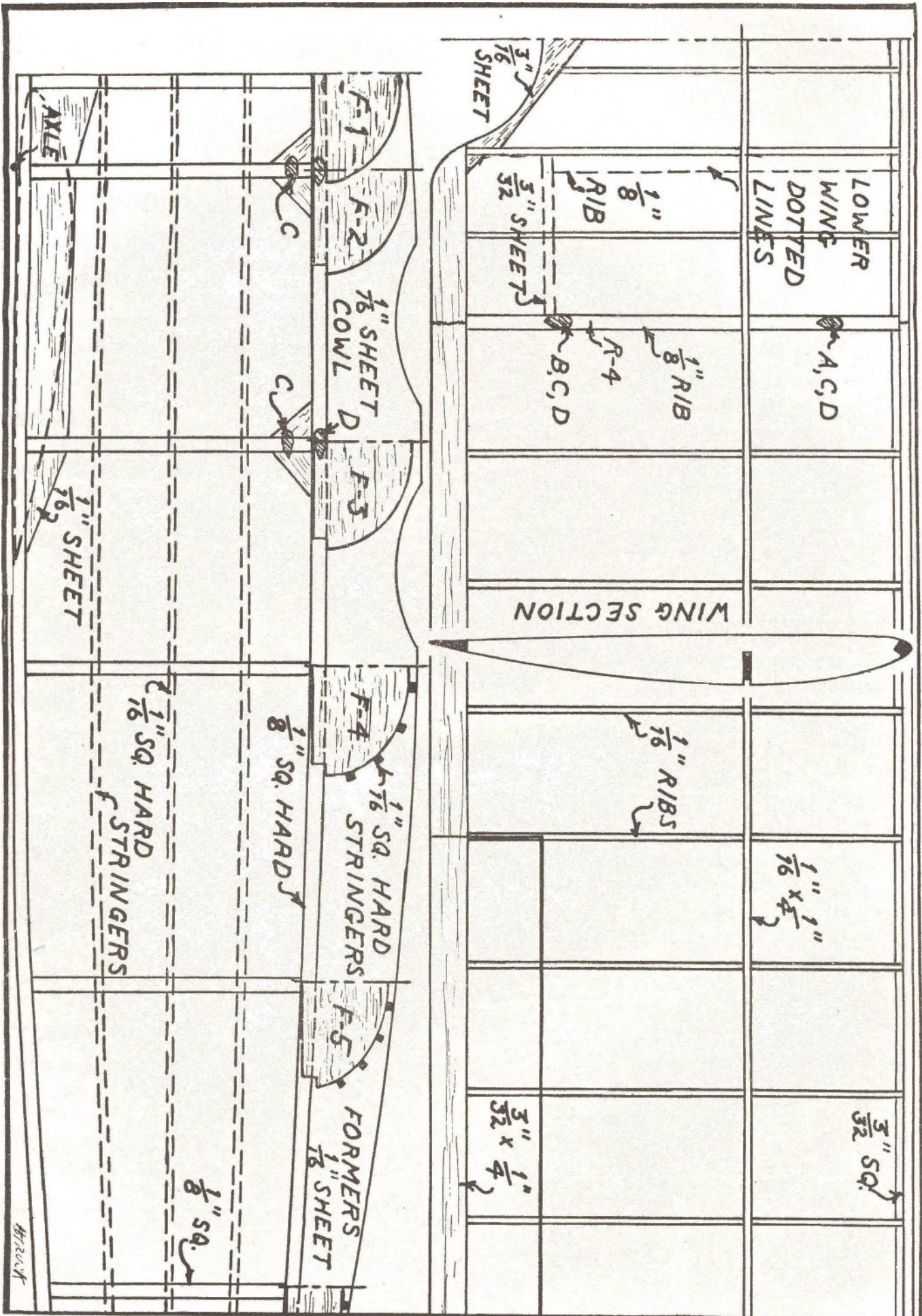
Bill of Materials

(All wood is soft balsa except where otherwise specified)

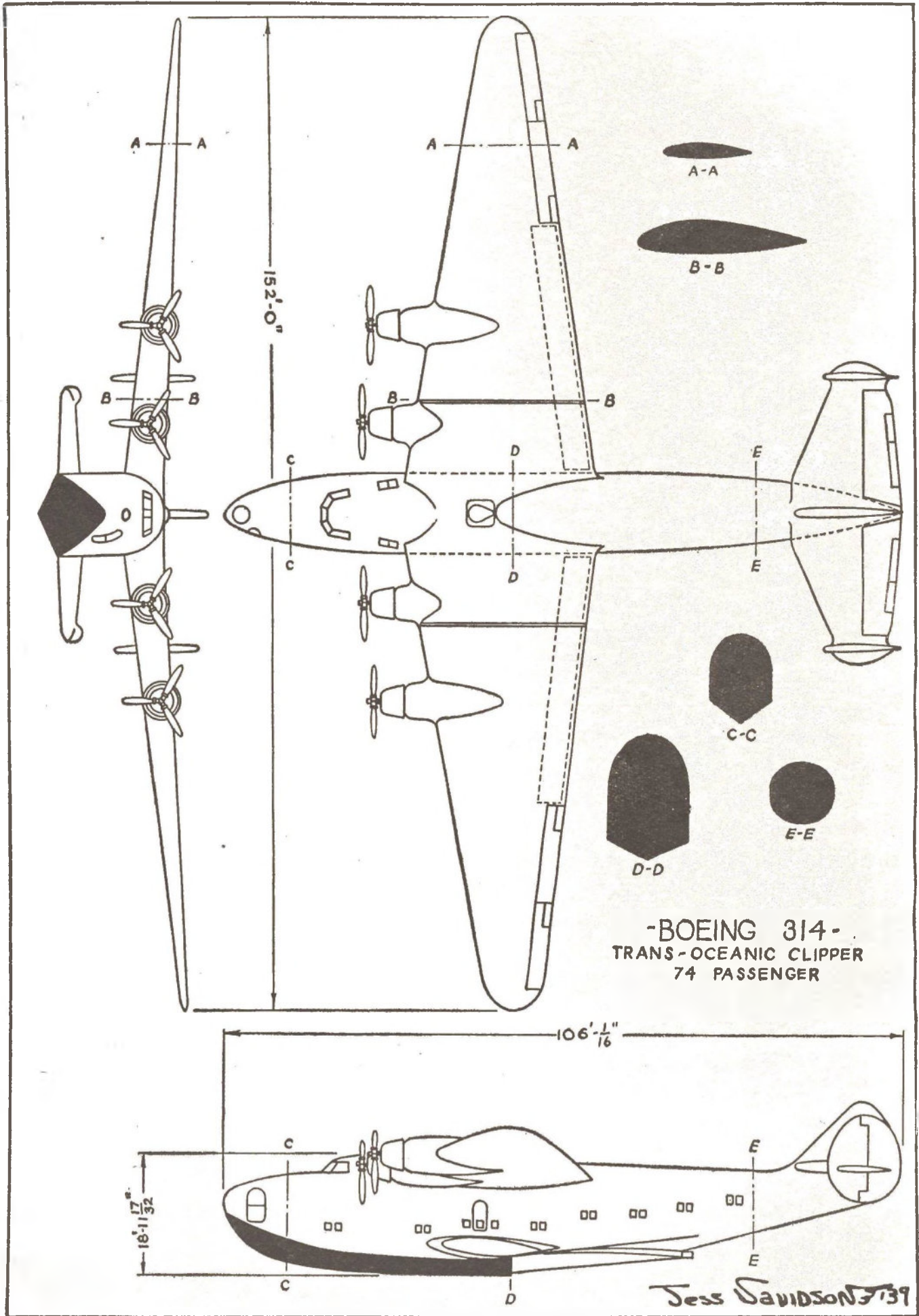
Twelve strips $\frac{1}{16}$ " by $\frac{1}{16}$ " by 18" very hard balsa;
Six strips $\frac{1}{8}$ " by $\frac{1}{8}$ " by 18" hard balsa;
Five sheets $\frac{1}{16}$ " by 2" by 18";
Three strips $\frac{1}{16}$ " by $\frac{1}{4}$ " bamboo;
Two blocks $\frac{3}{4}$ " by $\frac{3}{4}$ " by $3\frac{3}{8}$ ";
Three strips $\frac{3}{32}$ " by $\frac{3}{32}$ " by 24" hard balsa;
One sheet $\frac{3}{32}$ " by 2" by 18";
One sheet $\frac{1}{8}$ " by 2" by 6";
One sheet $\frac{5}{16}$ " (or $\frac{3}{8}$ ") by 2" by 3";
One block $1\frac{3}{8}$ " by 2" by $3\frac{1}{8}$ ";

One block 1" by $1\frac{1}{2}$ " by $7\frac{1}{2}$ ";
One foot Number .028 piano wire;
One sheet silver tissue;
One sheet green tissue;
Ten feet $\frac{1}{8}$ " flat brown rubber;
One pair $1\frac{1}{2}$ " balsa wheels;
Two ounces of cement, two ounces of dope, six copper washers, two small bushings, Number 60 grey thread, scraps of celluloid, red and blue tissue, and straight pins.





THE SHIP ON OUR COVER—P.A.A.'S BOEING 314



Fly this

“Snoony Silhouette”

Are you looking for a real zip-zip skyster, fellows? One that's just the job to start the “Season of Flowers” off right? Well, you needn't look any farther. We got 'er right here for you. Yep, and we guarantee that this crackerjack stick-typer'll cure your Spring fever!

WELL, fellows, here's the story of a little profile pretty that'll fly like a bat. Yep, *Snoony's* here one minute—and gone the next! And when you wind her up and let her go, anything may happen! Point her nose up, and that's the way she'll fly until the prop stops.

No kidding, buddies, *Snoony* will give you as much fun as ships at least three times her size. And you'll be able to build her as simple as all get-out, too. The only tools you'll need are a razor blade, pliers, and sandpaper!

And now before we go into the actual construction, here's the bill of materials:

One sheet of 1/20" by 2 1/4" by 12" hard balsa for the wing; one sheet of 1/64" by 2" by 6" hard balsa for the tail surfaces; one piece of 1/8" by 1" by 8" hard balsa for the fuselage; one block of 3 5/8" by 5/8" by 3/8" medium balsa for prop; one foot of No. 8 piano wire; a pair of 3/4" diameter hardwood wheels; one foot of 1/8" flat rubber; one hardwood nose plug, washers, cement, and sandpaper. That completes our list, fellows, so let's start the model with the—

WING CONSTRUCTION

LAY the wing pattern on a sheet of 1/20" hard balsa. Cut the wing to shape with a razor blade. Then make it nice and smooth by rubbing with a piece of fine sand paper.

Cut the wing in half directly in the center. Then cement it back together—adding the correct amount of dihedral to each tip. Put the wing aside to allow the cement to harden and then go on with the rest of the building.

FUSELAGE

THE fuselage is made of 1/8" hard balsa sheet. Lay the body down on your board and cut out the center for the rubber motor. Sand the inside edges of the fuselage to a smooth finish. Then cut the profile view of the fuselage to shape. Again wield your balsa knife—or razor blade—and cut out the section in the lower part of the fuselage to hold the wing. Glue the wing in place.

The nose is made of six small pieces of 1/8" scraps. Cement these bits of balsa in position as shown. And after they have dried thoroughly, cut them to shape and sand.

The nose-plug is a standard hardwood plug with the sides slightly rounded to match the contour of the nose. However, it's not necessary to buy a new plug for this

By Rex Hall

purpose—just strip one off your old model.

Make two clips from No. 8 piano wire. Cement them to the side of the fuselage

around the center cut out for the rubber motor. Then make the rear hook—also from No. 8 wire—and cement it in place. Wrap the rear hook tightly with wire thread to insure a lasting fit.

TAIL AND LANDING GEAR

MAKE the tail surfaces from 1/64" sheet balsa. Take great care when cutting out the rudder to eliminate the chances of splitting the wood. The stabilizer is made in two halves which are cemented to the sides of the fuselage. Be doubly sure that the tail surfaces are lined-up perfectly when you attach 'em as they have much to do with the flying qualities of the model.

The landing gear is made of No. 8 piano wire. Bend the wire to shape with a pair of pliers, and then cement the unit in place as specified on the plans. Hardwood wheels of 3/4" diameter are used. Either solder washers onto the ends of the axle or put a drop of cement on the ends of the protruding wire to hold the wheels in place.

TO FLY THE MODEL

AFTER the two strands of 1/8" flat rubber are in place, wind the prop a few turns and hand-launch the model. Watch its flight carefully. If *Snoony* tends to pull to the right because of its torque, correct by warping the trailing edge of the rudder to the left. And if she pulls to the left, bend the rudder to the right.

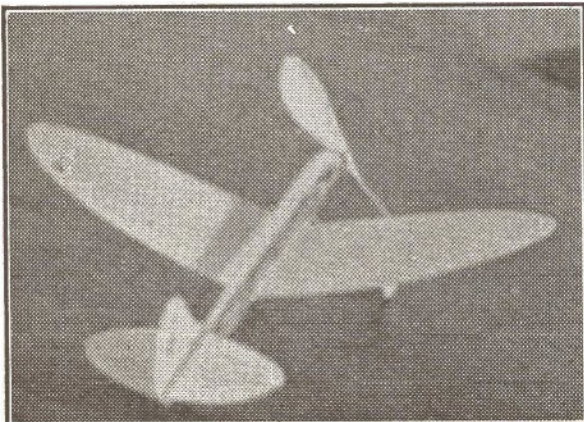
If *Snoony* shows any tendency to either dive or stall, it may be corrected by warping the stabilizer either up or down.

Now “crank” about 50 turns into the rubber and let the model taxi along the ground.

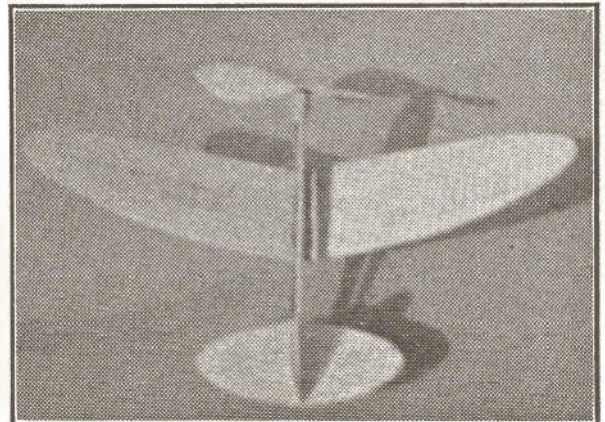
If your tarmac is unusually bumpy, you might try making the tail skid just a little longer to absorb the shocks.

On a job like *Snoony* it is quite possible that one wing might have a little more dihedral than the other. And if one wing drops in flight, you might correct this fault by sticking pins in the leading edge of the opposite wing.

After all final adjustments have been made, wind her up to capacity. But when our smooth silhouette takes off you'd better start running! In fact, it might be a good idea to get out your roller skates—then you'll have a better chance of catching this speedy *Snoony*!

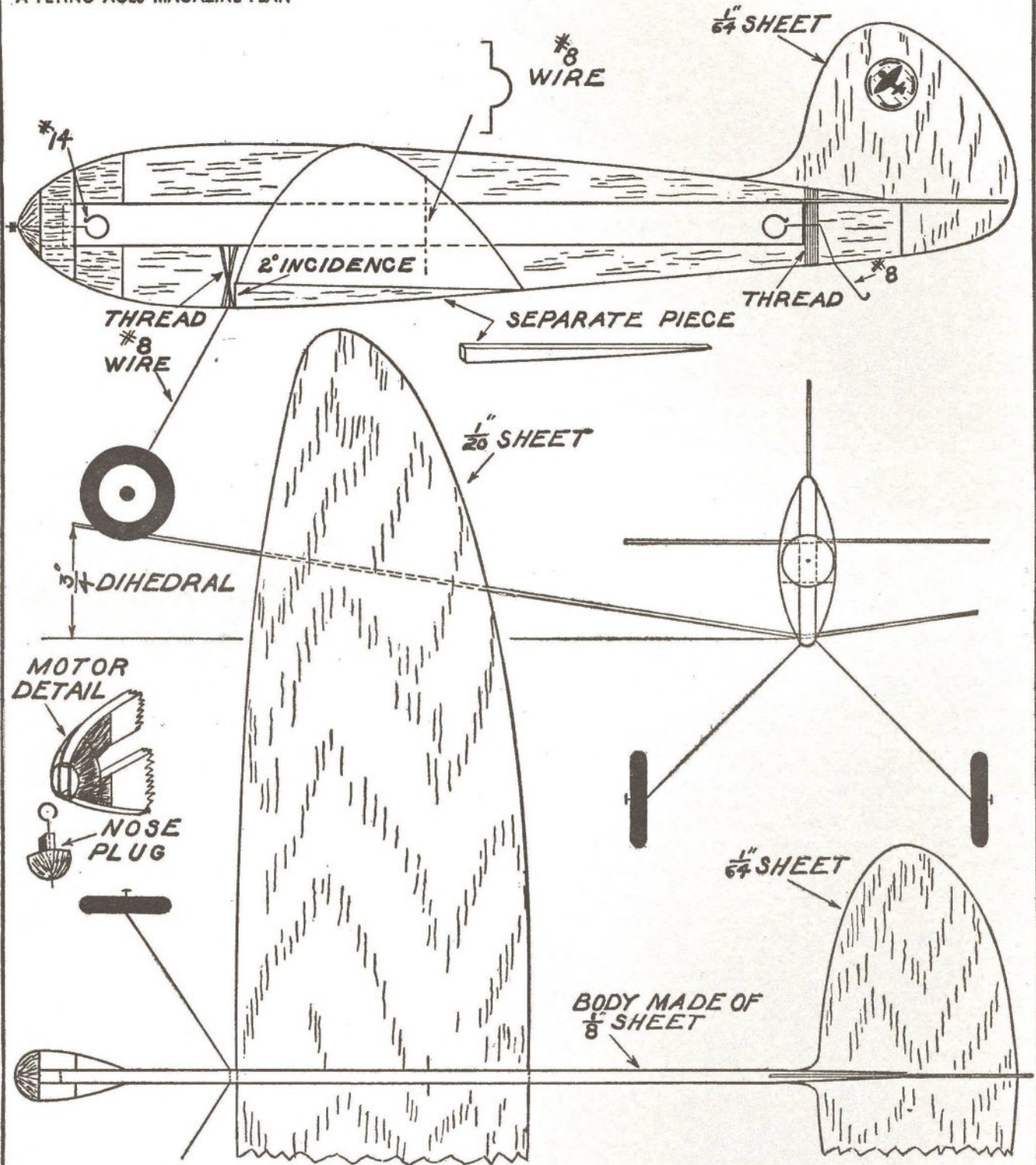


These two shots show “Snoony” posin’ purty to have her pitchur took. And this neat little stick typer is just what you’ll want for your home tarmac, too. But when you fly her, you’ll sure have to let out an extra loud whistle if you expect to coax this balsa baby back to earth!

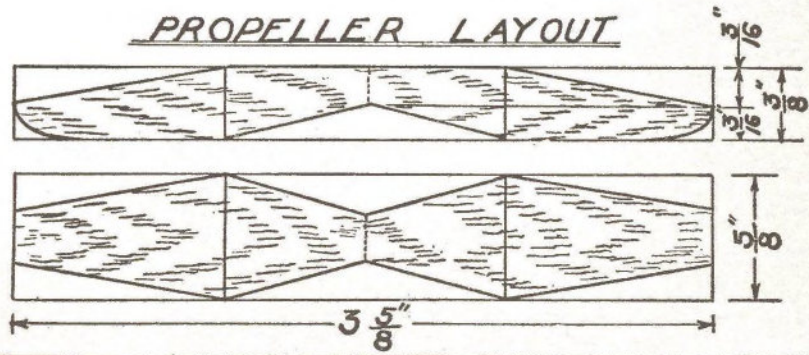


HERE'S THE PLAN FOR REX HALL'S "SNOONY"

A FLYING ACES MAGAZINE PLAN

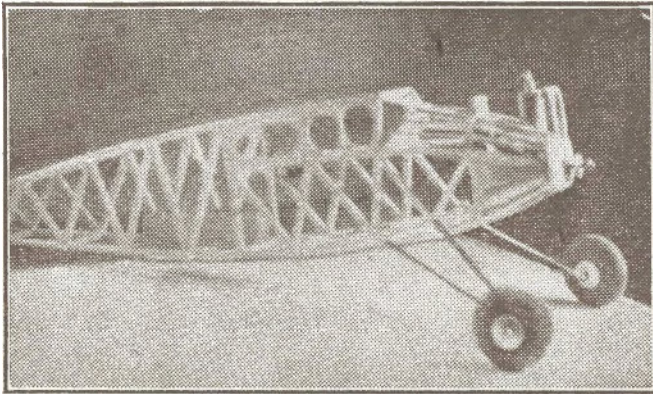


PROPELLER LAYOUT



BY REX HALL

One quick glance at this photo is all you need to tell that "Scrappy" has got "it." For this "skeleton" shot of Ray Heit's petrol buggy clearly shows that the model was designed for Streamlining, Stamina, and Speed—all with capital "S's"!



Make a

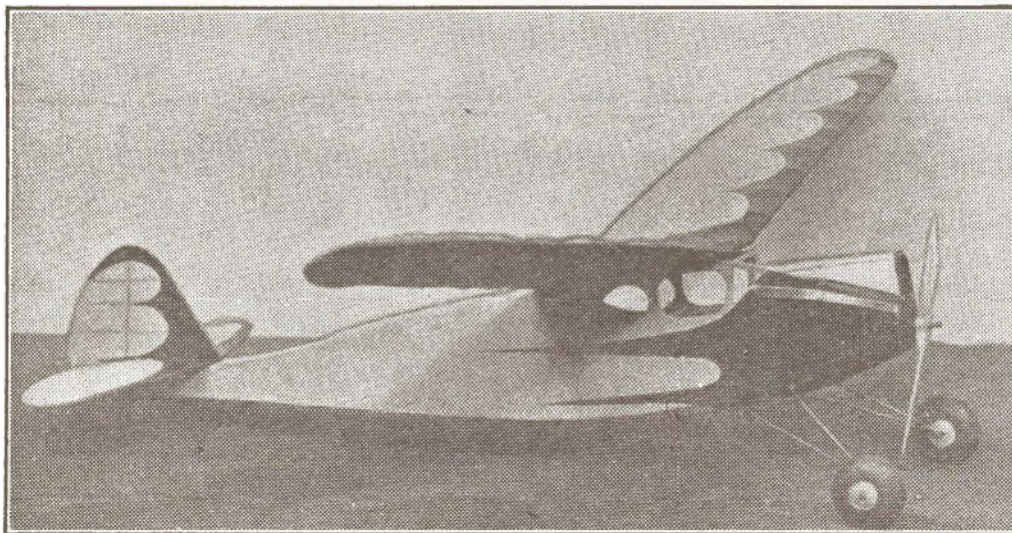
"Scrappy" Gas Job

By Ray Heit

HERE SHE IS, fellows! Just the happy-go-lucky type of model you have always wished for. Yep, *Scrappy* was designed primarily for service, durability, and stability. She has many noteworthy features combined to produce a model capable of great results. And to give you an idea of how efficient a flyer *Scrappy* is, she led us a swell chase and turned in a four minute flight with only a thirty-second motor run at a recent contest.

Scrappy is well stressed and will give you supreme service, even after hard handling. Although designed for any motor of the one-fifth horsepower variety, the model has been flown with less than one-tenth horsepower! However, for best results it is advisable to use the former motor—one fifth horsepower.

One of the ship's best features is a sleek, unique motor cowling. It permits the power plant to be entirely enclosed. And yet, with a flip of your wrist, the motor is laid bare for examination or operation! One might say it is a "dream cowling" for it aids immensely in streamlining, combines *everything* that could be wished for in a model builder's dream!



Boy, oh boy! What a beaut! You're dern tootin' she is! Ray, now studying aeronautical engineering, wrapped all of his experience as a modeler builder into his job, too. Yep, everything from a simple, wide tread landing gear to a corking paint job. What's more, "Scrappy's" a cinch to build and a pleasure to fly!

A NIFTY FIVE-FOOT SHIP

Once again, Ace Modeler Ray Heit, has designed a gas buggy that's really a honey. This five-footer is not only simple to build, but it also boasts a unique cowling that makes for easy engine accessibility! So get your tools together, look over the bill of materials, and get set to—

To construct this *Scrappy* gas job lay out all parts of the plane, full size, by enlarging from the assembly drawing, making use of all the dimensions as given. (See plans for scale.)

Begin the model by first constructing the fuselage. Build two side frames from one-quarter inch square medium balsa. Use hard balsa for all longerons and braces. Lay out the longerons in a jig composed of wire-head nails alternately spaced at the maximum bends of the longerons. Glue all upright members and braces in. But do not be stingy with your cement—remember, you want a *strong* model.

After assembling one side of the fuselage, let it dry for a few hours before repeating your operations to produce the other half. After the two halves are finished, assemble them by cementing the two tail-posts together, then work toward the nose by filling in the cross members at their proper positions.

Using Plate 3, which shows the different formers and ribs, trace the formers required for the fuselage onto balsa sheet—including the firewall which is cut from one-quarter inch plywood. Glue the formers in place.

But before attaching the stringers, it is advisable to fasten the landing gear wire in place by wrapping the wires to the fuselage with thread. Then coat the thread generously with cement. After the landing gear has been completed, the stringers will fit into the slots provided for them in the formers.

MOTOR MOUNT

MAKE the motor mount from one-half inch dural angle material. Rivet the pieces together with three-sixteenth-head rivets. And bolt the motor mount to the firewall. Then make two straps long enough to accommodate the placing of the coil against the firewall. Bolt the coil in

Bill of Materials

(All wood is medium balsa except where otherwise specified)

Six strips $\frac{1}{4}$ " by $\frac{1}{4}$ " by 4' hard balsa for longerons;
One sheet $\frac{1}{8}$ " by 2" by 18" for formers;
Five strips $\frac{1}{8}$ " by $\frac{1}{4}$ " by 36" hard balsa for stringers;
One sheet 6" by 6" by $\frac{1}{4}$ " plywood for firewall;
Four sheets $\frac{1}{16}$ " by 2" by 36" for wing ribs;
Three strips $\frac{1}{4}$ " by $\frac{1}{2}$ " by 36" for main spar;
Three strips $\frac{1}{4}$ " by $\frac{1}{8}$ " by 36" for auxiliary spar;
Three strips $\frac{1}{2}$ " by $\frac{1}{16}$ " by 36" for trailing edge;

Three strips $\frac{1}{4}$ " by $\frac{1}{4}$ " by 36" for leading edge;
One strip 4' by $\frac{3}{16}$ " by $\frac{1}{4}$ " reed for wing tips;
Six strips $\frac{1}{8}$ " by $\frac{1}{2}$ " by 36" for tail ribs and spars;
Two strips $\frac{3}{16}$ " by $\frac{3}{16}$ " by 18" for leading edge;
One strip $\frac{1}{8}$ " by 2" by 18" for trailing edge;
Four sheets of bamboo paper, six feet of $\frac{1}{8}$ " landing gear wire, $\frac{1}{2}$ pint of glue, $1\frac{1}{2}$ feet of dural angle, and celluloid for cockpit covering.

place. Finally, make the battery-box as shown on the plan. Cement and pin in place permanently directly under the center of gravity.

Now cut the pattern of the cowling out of aluminum and bend the end over for the hinge. Push the two prongs of the hinge into former "A." It is not advisable, incidentally, to cover the fuselage before placing the motor upon its bearers.

WING CONSTRUCTION

THE WING is very simple to construct so pay close heed to the following instructions in order to produce an exact replica in the easiest manner:

Cut the ribs out as a whole by having them pinned together during the carving. Sand them as one unit. Slot the ribs carefully for spars, leading and trailing edges. This slot will automatically line up the wing if cut correctly.

Splice the main spar as shown on the plans, but be sure to include the necessary five inches of dihedral. Lay one half of the spar down on the plan and glue the ribs for half a wing panel in place. Cement the auxiliary spar in the spot provided for it in the ribs.

Attach the leading and trailing edges, trim the three tip ribs to size, and bend the reed edge around them. To form the other wing panel, lay the other half of the spar down on the plan and proceed with the same operation.

After the two wing halves have been completed, insert your center section ribs—two in number—to the spar and fill in with the leading edge, trailing edge, and auxiliary spar. (To make the model stronger, you might try covering the center section of *Scrappy's* neat wing with sheet balsa.) Glue the gussets for the wing tips in place so that the reed will not warp.

TAIL ASSEMBLY

BOTH the rudder and stabilizer are constructed in the same manner—so we'll describe the construction in general of both.

Lay the one-eighth by one-half inch spar on the plan. Cut out the trailing edge and tip from one-eighth sheet. Pin the tail units to the plan. Then pin the leading edge in place. Now, it is necessary to raise the leading and trailing edges slightly off the plan in order to place the ribs in their exact center. Raise the leading edge about thirty-five seconds of an inch off the plan and lift the trailing edge approximately three-sixteenths of an inch.

Cut the ribs out as rectangular pieces and cement them between the spar and the leading and trailing edges.

After completing these operations, the tail sections should be left to dry for several hours. After they have set thoroughly,

sand the ribs to a symmetrical shape with heavy sandpaper. Finish off with light paper.

COVERING

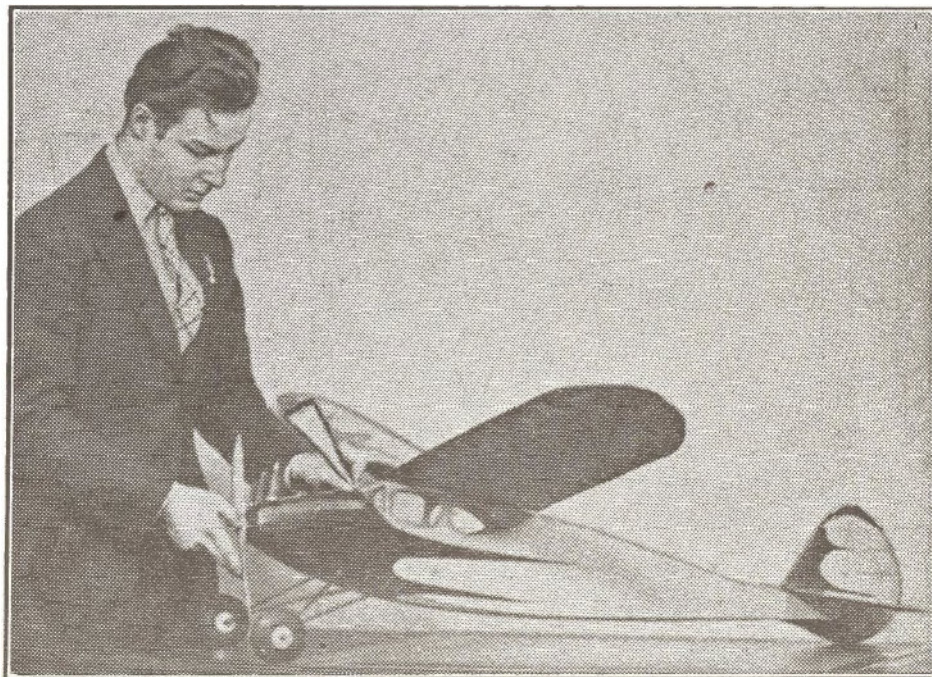
EITHER SILK or bamboo paper may be used for covering. However, bamboo paper will produce a much lighter model and is therefore preferable. If you have not had any previous experience with either of these two materials, it is advisable to start your covering with the rudder and stabilizer. The tail surfaces are fairly simple to cover because of their flat surfaces.

Dope is usually a bit too thin for attaching the covering, but a half-and-half mixture of heavy cement and dope is easy to work with and it holds the covering in place admirably. Spray the entire plane with at least two coats of water. After it has dried thoroughly, apply two coats of dope.

There is one precaution, however, that you should observe in the wing covering, and that is—glue the covering material to each under part of the wing *thoroughly*. This will produce the under camber of the rib in its required form and will make for much better flying qualities in your finished model.

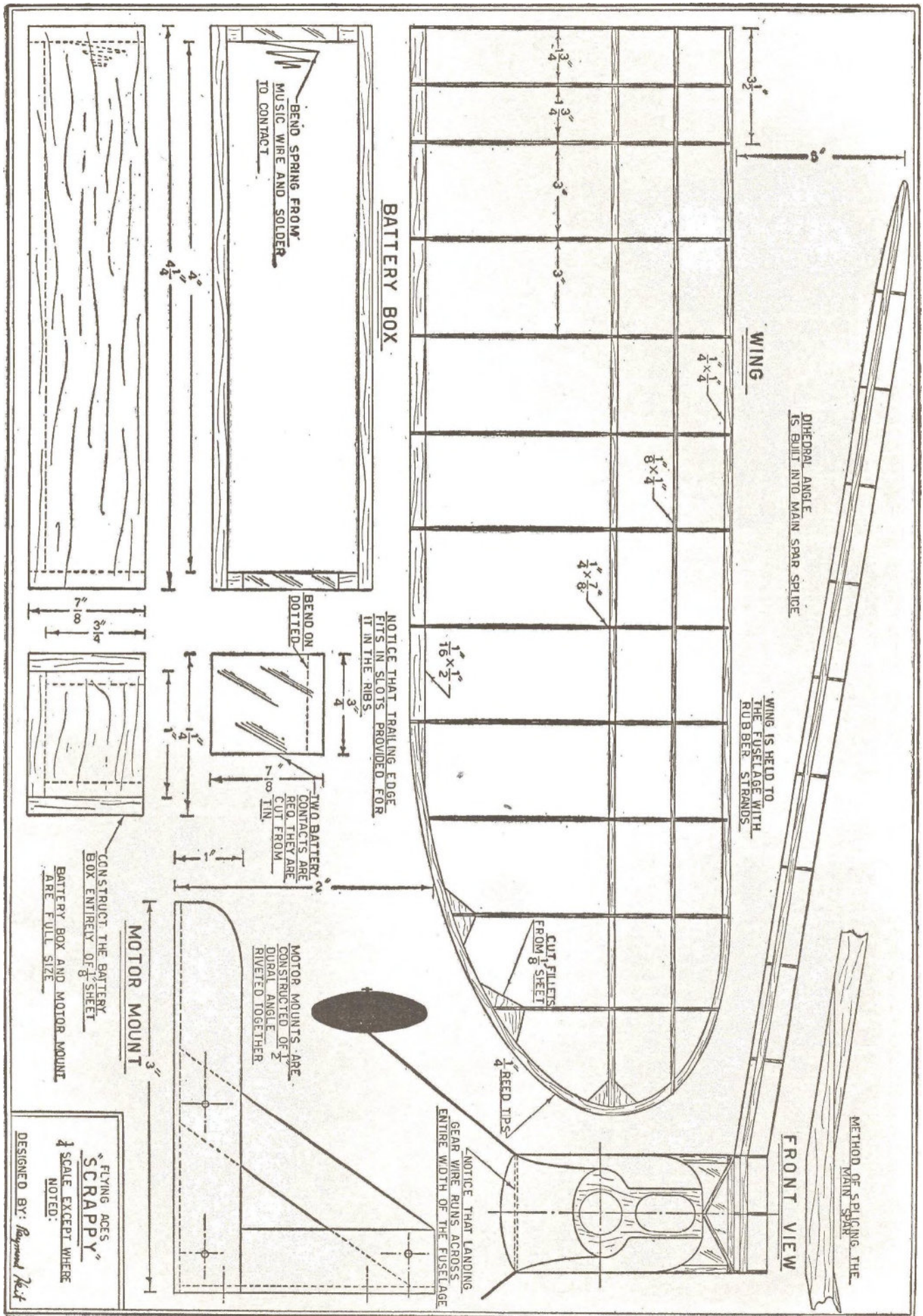
Any color scheme may be used and the number of coats is up to the builder. However, we'd suggest that you use bright red and yellow. For then, if your model gets caught in a thermal, you'll be able to see these two colors much easier when *Scrappy* flies into the distance. Not only that, but red and yellow are two colors that will make this sleek little gas job even *more* attractive. Yep, we'd suggest that you use 'em by all means. It's only a hint, but it's also a worthwhile suggestion.

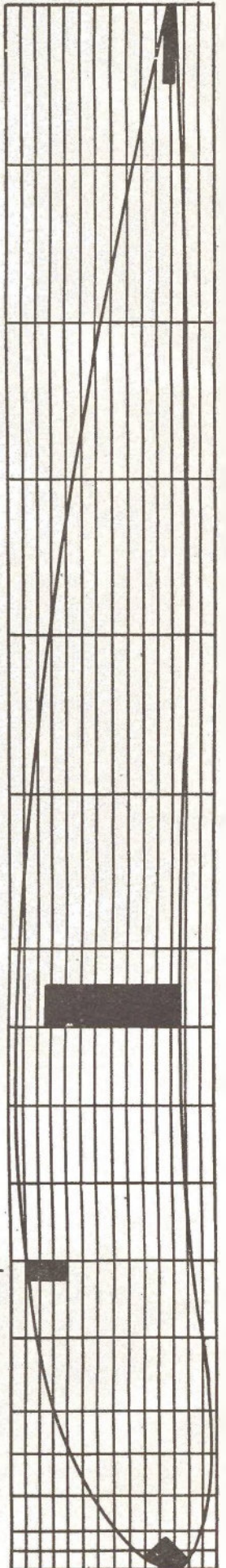
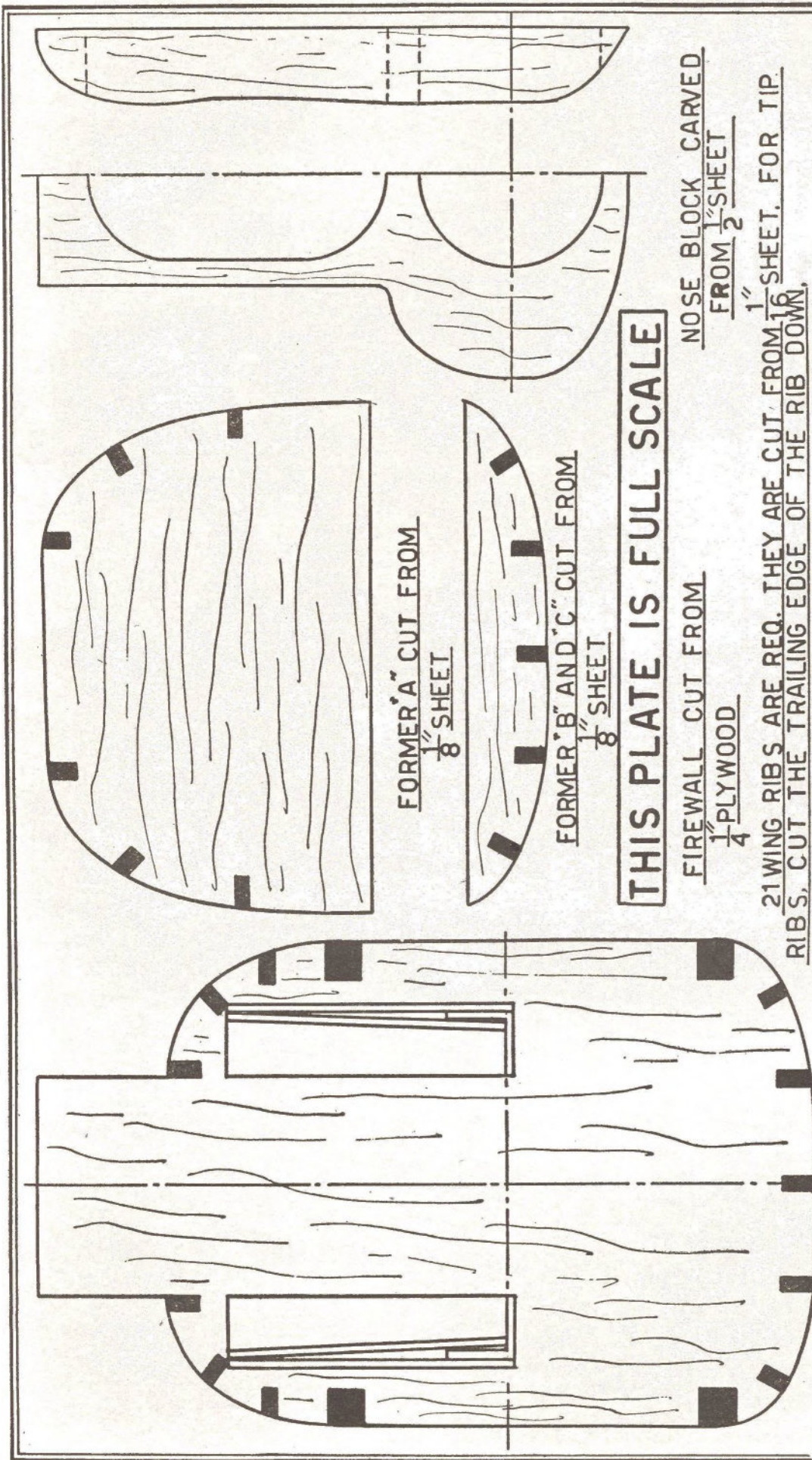
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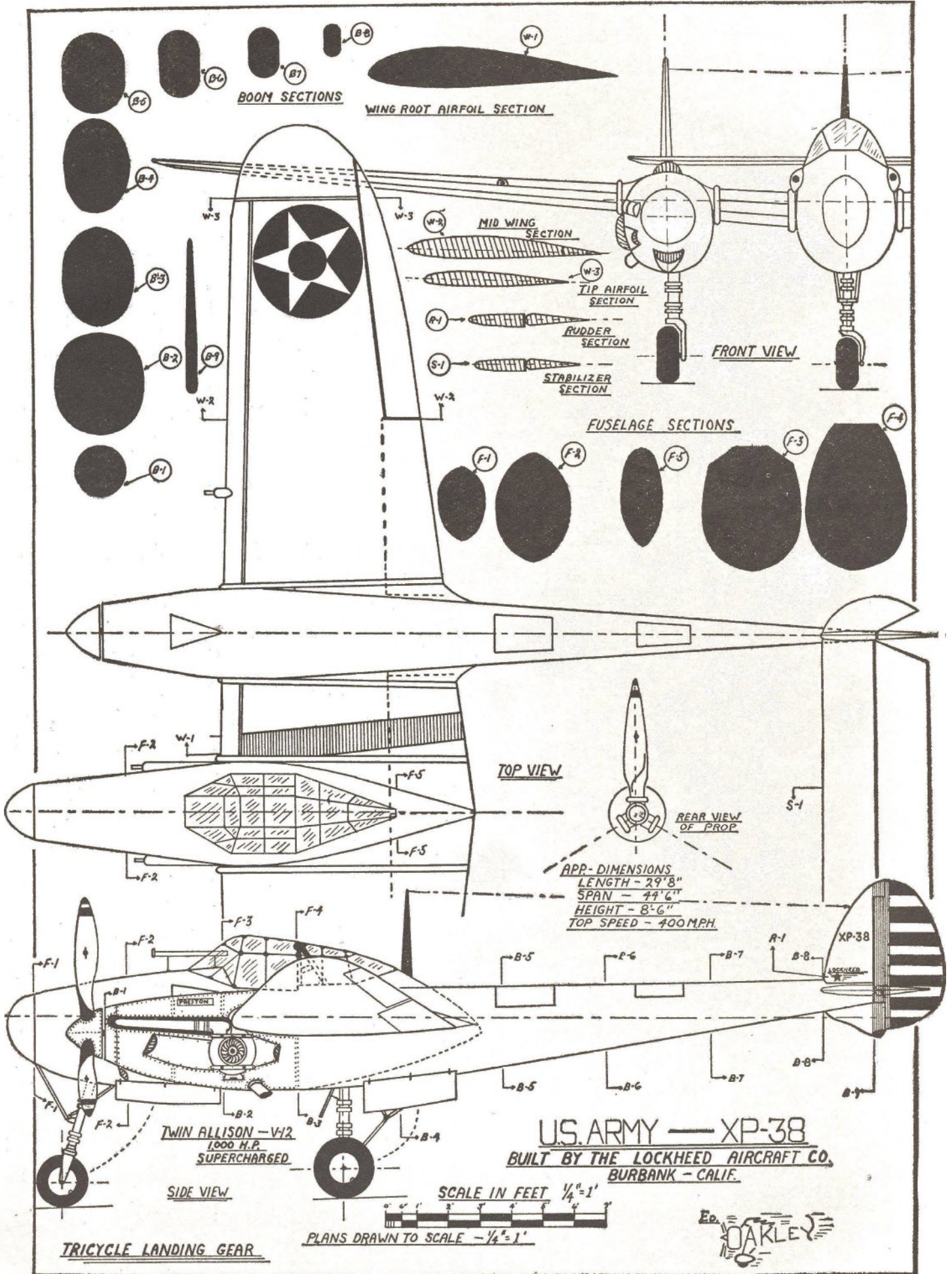
Here's Mr. Heit in pussion, fellows! That wedge-shaped thingamajig Ray's holding with his left hand is a convenient, hinged cowling top that will enable you to get to your motor for adjustments in no time at all. To make your model just as well as this one, just follow the plans carefully. Now hop to it!

MAKE A "SCRAPPY" GAS JOB—Plate 2





ANOTHER SCOOP—THE LOCKHEED XP-38



News of the Modelers

★ ★ ★

M.M.A.C. GAS RESULTS

WITH an entry list of more than 100, the New York City Metropolitan Model Airplane Council held its first NAA sanctioned outdoor gas model meet of 1939 on February 12 at Creedmore Field, Long Island.

The large-motor event drew the most entries and after preliminary test flights it soon developed into a duel between Sal Taibi, of the Sky-Scrapers Club, and "Trail Blazer" Henry Struck, of the Queens Model Airplane Club. Struck, flying a ship of his own design—a six-footer with inverted motor and single wheel landing gear—got off first to a flight 3 min., 18 sec. Taibi launched his seven-footer a few moments later and it turned in 3 min., 29 sec.

On the second flight, Struck's craft did 5 min., 4 sec.,—but unfortunately was washed out for the day after landing in a tree. Taibi's second flight, the longest of the afternoon, was timed at 6 min., 4 sec.

Due to unfavorable wind conditions, few flyers completed three flights. John Tourville, of the Kee Wee Club, had three flights with his Heath Monarch. His longest flight was 3 min., 5 sec., and his total time of 4 min., 19 sec., gave him third place. Other prize winners in the large-motor event were Magnus Anderson, Tony Bocchi, Edward Beshar, Frank Leghorn, Irving Pearlman, and G. Grathwohl.

Joe Raspante, of the Majestic Model Club, took first place in the small-motor event with a total time of 4 min., 48 sec. J. F. Condon, of the Kresge Aero Club, of Newark, took second place with a total flight time of 2 min., 17 sec. Gilbert Rose placed third; Leon Shulman, fourth; and Phil Sagona's ship took fifth.

As first prize winner, Sal Taibi received a Council Trophy and a \$5.00

cash voucher donated by Beshar Models. Hank Struck, popular F.A. Model author, was presented with a special M.M.A.C. Trophy and a \$2.50 voucher. The other place winners were also awarded prizes.

According to Irwin S. Polk, President of the M.M.A.C. and director of the tourney, the wind conditions prevented the ships from making their best showing during the meet.

Nearly every club in the Greater New York area which is associated with M.M.A.C. was represented at the contest. The Council has made tentative plans for additional meets in the near future.

CORRIGAN WATCHES TUNNEL TEST

DURING his visit to the Jordan-Marsh Boston (Mass.) Traveler Junior Aviation League, Doug Corrigan had an opportunity to see the 18-ft. J.A.L. low-speed wind tunnel in action.

Wilbur Tyler conducted the tests, and the transatlantic "Wrong Way" flyer expressed much interest in the model wind-tunnel.

After the tests, Tyler flew his Canadian open-class stick job, which holds the Dominion record. Corrigan expressed astonishment at the model's low flying speed and its extreme lightness.

Corrigan had flown up from New York in a Fairchild 24.

MILWAUKEE ELECTION

THE Milwaukee (Wis.) Gas Model Chapter of the NAA held a general election of officers recently. The results were as follows:

Charley Higgins was elected President; Howard Carlson, Vice President; Kurt Meyser, Secretary; Bill Lundy, Treasurer; Ken Lane, Elmer Riemer, Ed Freitag, Karl Girten, and Walt Rauch, Directors.

All Wisconsin modelers interested in entering the state-wide championship

meet to be in the early part of summer are urged to contact Kurt Meyser, at 2842 N. 10 St., Milwaukee, Wis.

NEW JERSEY MEET ANNOUNCED

NEW JERSEY'S first state-wide rubber meet will be held on May 30 opposite the General Motors plant on route 25 in Linden, N. J. The jousts will see Senior class "C" fuselage models, stick jobs, and class "B" hand-launched gliders in action. There will also be a Junior event, in which featherweight models will be eligible.

The meet will be sanctioned by the NAA. Entry is by mail only. The entrance fee will be 25c for the Senior event and 10c for the Junior event. Entry blanks may be obtained from the Linden Model Aircraft Club, Old City Hall, Linden, N. J. The contest will be open for out-of-state builders as well as New Jersey residents.

HAMILTON CLUB SLATES CONTEST

THE Hamilton Gas Model Club, of Hamilton, Ontario, Canada, will hold the first contest of its four-months old career in the latter part of March—an indoor meet in conjunction with the Y.M.C.A. Further, the Y.M.C.A. has aided the Club by allowing the members to carry on their activities in the gymnasium and lecture hall twice a month.

The British American Petroleum Corporation is donating a cup which will be used as first prize for the H.G.M.C. monthly meets this summer. But only members of the club will be able to participate for this award and the cup will remain as property of the club.

All are welcome to attend any of these scheduled meets. And constructive suggestions will be appreciated.

"WINGS" FOR S.M.A.C.

UNDER the new NAA membership program, the Syracuse Model Airplane Club has opened its membership to district and neighborhood groups of model builders in and around Syracuse, N.Y. In this manner, several local Wings of the S.M.A.C. will be formed.

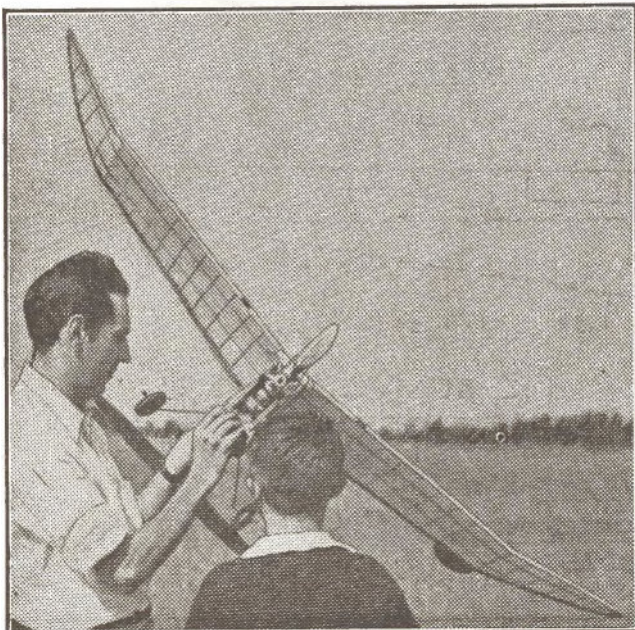
These Wings will elect their own officers, consisting of a Captain and a Secretary, whose respective duties will include representation in Club activities and recording of the various aero work.

Each Wing will conduct its own regular weekly meetings for the purpose of model building, instruction, and discussions. Business meetings of the senior advisory committee, together with the officers of the local Wings, will be held once a month at Headquarters.

The S.M.A.C. urges every model maker in the vicinity of Syracuse to contact Headquarters and get tips on joining or organizing a Wing.

ANNUAL TOURNEY FOR BEGINNERS

DETROIT'S recent first city-wide R.O.G. meet was restricted to boys under 16 years of age. And it was so
(Continued on page 70)



Left: You fellows are all acquainted with that "unexcelled modeler" phrase that we use in FLYING ACES from time to time. Well, boys, here's our newest candidate for the top-notch list! Yep, Bob Roberts—the chap holding the sleek petrol buggy—takes the title this month! Just run your glimmers over his Comet "Clipper," which took second place at the 1938 Northern Indiana Gas Model Championship Meet held at Gary, Ind., and you'll see why he rates the honor. We don't know what that black gadget on the left wing panel is, but we guess it's some sort of a balance to keep the ship flying in easy left banks. Nope, we don't know who Bob's young admirer is, either. But we figure he's the kid brother—or maybe just a contest looker-on-er.

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.

LIKES "FLIGHT TRAINER"

Model Editor, FLYING ACES:

I built one of those *Midget Flight Trainers* (Feb. 1939 F. A.) and it turned out swell. I wish you would have more models like it in the future.

KEN LAW,
Chicago, Ill.

CHART POSITION FOR G. H. Q. MOTOR
Model Editor, FLYING ACES:

I have a G.H.Q. gas engine. And she's in hot-shot trim, ready-to-rev. But when I looked over your article "How to Select the Correct Engine," by Zecchitella and Shereshaw (April 1939 F. A.) I failed to find the G.H.Q. motor listed on the chart.

You see, I'm all set to build a gas job to take my engine. But I don't want to start until I know what chart classification my engine comes under. Hence, I'd appreciate it if you'd let me know as soon as possible.

FRANK WATKINS,
New York, N. Y.

Editor's Note: The G.H.Q. engine falls in Class "C" of Shereshaw's engine chart. Through an oversight, it was left out of the table on the drawing. Sorry. Take a pencil, all you G.H.Q. engineers, and jot it into the nomogram.

PRAISES OUR MODELS

Model Editor, FLYING ACES:

I have recently finished building my tenth plane from FLYING ACES plans, and all have flown quite well. I think you have the best model section I've ever seen. The plans are not only very

detailed, but the copy is written in a flashy, snappy style that holds my interest just as much as your swell articles do. Here's hoping that you never change your style.

BRUCE M. LEAD
Feilding, N. Z.

"SCRAM" MODELER

Model Editor, FLYING ACES:

I am sending you a photograph of my model, which was built from the July, 1938, issue of FLYING ACES. The plane is Ray Heit's *Scram*. She's powered with a Brown Jr. model "D" and is a swell flyer. I would appreciate it if you would put this photograph in the next issue.

WALT GRABOWSKI, JR.,
Philadelphia, Pa.

Editor's Note: Sorry, your photo is not quite good enough to reproduce, Walt. So how's about sending us a larger and clearer shot? We are always glad to have pictures—but they must show the model image more strongly to reproduce well.

"BUZZARD" BUILDER

Model Editor, FLYING ACES:

In your October, 1938, issue of FLYING ACES, I saw an article on how to build the *Match-Box Buzzard*. I was immediately attracted to it, and decided to make the model. The flights that my *Buzzard* turned in were nothing short of miraculous. She's really a honey!

PAUL WENSTRUP,
Kenton Hills, Ky.

ONE-STRAND WONDER

Model Editor, FLYING ACES:

Talk about fast planes? Well you can. But let me talk about a slow one! Having recently finished your *Pegleg Ike* (F. A. June 1938), I went to the park to fly it. I used a two-loop motor with about 1½" slack. And after several nice flights, I wound the motor up and one loop snapped.

(Continued on page 70)

Workbench Tips

SOLID MODEL TIPS

RUBBER-TIRED wheels add much to the appearance of a model. And when you can't get "store wheels," here's a simple method of making them that gives good results:

First, cut two wheel-rims from ¼" sheet balsa—1/32" smaller than are called for on the plans. Then procure a length of ¼" rubber tubing and fit it around the rims. Cut the tubing off at the meeting point and cement it around the wheel. Do this carefully, and the tire will look very realistic.

An atomizer may be used to dust small solid scale models—without water, of course. The air pressure blows the dust out between wings and other small places you wouldn't be able to reach with a dust cloth.

—TOM PUGSLEY

BAMBOO BENDER

ALTHOUGH the curved bamboo wing tips and tail pieces have been generally discarded in favor of the more easily made curved balsa ones, there are still builders who cling to the stronger and sometimes neater bamboo construction methods. And most every one who has tried to shape bamboo has found out that it cannot be accurately bent over a candle flame—a curved piece of hot metal is needed. But here's a simple way to make a good balsa bender:

The base for your bender should be about 4" by 6" and the upright standard with curved top should be about 6" high. The tapered top piece of curved, heavy sheet metal can be about 5" long and 2" across at the base. It is fastened to an upright with several nails. And the upright is set into the base to make a strong joint.

The source of heat is a small alcohol
(Continued on page 70)

ALL TUNED UP

for the

Next Great FLYING ACES



FACT—As war threatens to run riot abroad, just how do the great European powers really compare in air strength? Don't miss David Martin's sensational new photo-packed feature.

"Vernon Castle Didn't Have to Die!" The startling, inside story of the famed war flyer's last flight.

Now you can sketch your way "From Ovals to Airplanes"! Ray Gill, crackerjack aero cartoonist shows you how.

FICTION—A smashing Franco-Italian sky intrigue, featuring Dick Knight, the fugitive air agent. "Flight Headed"—latest of our rib-cracking Phineas Pinkham mirthquakes.

Tug Hardwick and Beansie Bishop in an ace-high Oriental adventure.

MODEL BUILDING—Our "F. A. Kaydet"—a top-notch, high-wing cabin flyer.

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How to build a record-holding glider.

Plus a slew of other fine features.

In June FLYING ACES

On Sale April 27th (Canada One Week Later)

The Staffel Invisible

(Continued from page 4)

CHAPTER II

DEAD MAN'S MASQUERADE

FOR a moment, all three men stood gaping at the spot where the Spad had been.

"The ship—it's vanished!" moaned Blunk.

"Any fool can see that!" rasped Jordan.

"Come on," Strange said swiftly. He started to run toward the point where he had left the fighter, then halted in complete stupefaction. For a fraction of a second, a man's head and shoulders had appeared, seemingly suspended a few feet above the ground where the missing Spad should have been. But these, too, vanished as quickly as they had come.

A whirl of dust and another mirage-like blur followed—then the Spad reappeared exactly where it had been!

Blunk tottered back, his eyes bulging from his head, and even Jordan's pugnacious features had a sickly pallor as Strange turned to stare at him.

"You—you saw it too—the head?" the G-2 chief whispered.

Strange nodded silently, trying to master the primitive fear of the unknown which had come over him. Then cautiously, with Jordan close at his elbow, he started toward the ship. The crash-truck rumbled past, followed by the ambulance with the two airmen's bodies. Strange motioned to an orderly who had been apparently watching the dead men taken from the wreck.

"Corporal, did you see anything peculiar here just a moment ago?"

The non-com looked at him blankly.

"Peculiar? Why, no, Sir—I don't get what you mean."

Three mechanics straggling back from the wreck halted, overhearing the orderly's words.

"Never mind, men," Blunk said curtly. "We wish to question Corporal Pritchard alone."

Reluctantly, the ackemmas went on. Jordan confronted the corporal.

"You're sure you didn't notice a sort of mirage—or a man's head—here by the Spad?"

"Let me answer for him, *meine Herren*," said a flat, guttural voice from directly behind the three officers. Strange jerked around with the others—then stood paralyzed.

A German *Rittmeister* in full uniform stood there, a Luger in his raised hand.

"The map, *Herr Major*, if you please," he said in the same odd, flat voice. The ghost of a smile crossed his saturnine face as he viewed the stupefied men. "I hope my sudden appearance has not frightened you—but I *must* have that map."

Blunk, knees knocking together, held out the chart with a trembling hand. The German reached out for it, his deep-set eyes warily shifting from face to face. The soggy paper was just in his grasp when a shout went up from the three mechanics who had passed by. The

German jumped back, tearing part of the map from Blunk's hand. The three ackemmas were dashing back toward the Boche, yelling as they ran.

Flame spurted from the Luger, and the foremost mechanic fell. As the pistol swerved, Strange whipped his hand down to the .45 at his hip. The German whirled, but the .45 roared before he could fire. The Luger went spinning to the ground, shot cleanly from the *Rittmeister's* fingers.

"Grab him!" shouted Blunk, and the two mechanics threw themselves onto the Boche. With a furious lunge, he hurled one of them aside and raised the bit of soggy paper to his mouth. Before anyone could stop him, he had gulped it down. Purple with rage, Blunk snatched up the Luger, aimed it pointblank at the German. But Strange knocked it out of his hand.

"You young whelp — I'll have you court-martialed for that!" howled the fat Staff officer.

By an effort, Strange held his temper and remembered the timid rôle he had been ordered to play.

"S-sorry, Major," he stammered. "But if you had killed him we couldn't get any information from him."

"Lieutenant Bye is right," Jordan said gruffly. "Major Blunk, I'll take the rest of that map. And suppose you and the Corporal see to getting that wounded man into the first-aid shack. We'll take care of the prisoner."

Crestfallen, Blunk obeyed. At a surreptitious nod from Strange, Colonel Jordan turned to the two mechanics, who had angrily seized the German.

"We can handle him, men. Help them carry that chap to the dispensary."

In a moment, only Strange and the G-2 chief remained with the *Rittmeister*. The prisoner stared down at the blood that dripped from his right forefinger, where the trigger guard of the Luger had scraped it as it was shot from his hand. Then he looked up bitterly at Strange.

"Never again will I trust my judgment of a face. Your features belie you, *Herr Leutnant*."

"I am not interested in compliments," Strange said coldly. "Especially from *Rittmeister* von Kull."

The German started violently.

"*Du Lieber Gott!* Who are you? I have never seen you before."

Colonel Jordan stared at the prisoner.

"You mean this is Paul von Kull, leader of the 55th *Jagdstaffel*?" he demanded of Strange.

"Precisely. But we'd better get him inside where we can question him privately before a crowd gathers."

THE SUN had been down for several minutes and the lights were on when they reached the administration building. Ignoring the questions of startled officers, Jordan led the way to a room at one end of a narrow hall.

"And now, *Herr Rittmeister*," he said as he closed the door, "you can save

yourself a lot of trouble by talking—and talking fast."

Von Kull eyed him with a dour amusement.

"You would perhaps like to know how your pilots were killed—and how I came to be on your field?"

"Don't try to be funny!" grated Jordan. "I'll find a way to learn that, my smart Boche!"

"Like most colonels," von Kull said acidly, "you are filled with your own importance. I may as well warn you that you are wasting your time."

The cords swelled in Jordan's throat, and a look came into his bulldog face which Strange had never seen before.

"Listen to me, von Kull!" he rasped. "I've never authorized the torture of a prisoner to make him talk. But what happened out there today isn't war! Either we get the answer to that diabolical business—or I'll turn you over to the mates of that man you shot."

"The killing of a prisoner-of-war will be hard to explain," retorted von Kull evenly. But some of the color had gone out of his face.

"The shooting of a prisoner who 'tries to escape' will be quite simple to explain," Jordan said grimly. "Especially when the Chief of Intelligence is the one who makes that report."

Von Kull's gloomy face froze with sudden defiance.

"Very well, *Herr Oberst*, bring on your *verdammte* assassins."

"I will!" fumed Jordan. He whirled toward the door, but Strange caught his arm.

"Wait, Colonel, there may be a better way. Even if he talks, he will only lie to you."

"Well, then what else can we do?" growled Jordan.

"We might look at that map. It's barely possible that von Kull's appetite wasn't sufficiently large."

Jordan spread the map on a desk, while Strange watched the prisoner.

"It's a Boche sector-map, covering the Luneville-Rondecourt area on this side and part of their trenches across from here," the G-2 chief reported. "Here's a pencil line drawn from Rondecourt to somewhere in Germany. But that's the part this blasted Hun swallowed."

"We *could* use a stomach-pump," said Strange. "But the line probably wouldn't be legible. Can you see any other marks?"

"No, but the 55th Staffel isn't in the section torn from the map, if that's what you're thinking. They're farther north."

"Can you get an accurate bearing on Rondecourt from that pencil line?" asked Strange.

"It's on a bearing of 157 degrees from Rondecourt to the place where the map's torn," Jordan announced after a minute. "Why?"

"Because I'm going to fly back along that course," replied Strange. "Now, *Herr Rittmeister*, if you'll kindly remove that uniform—"

"I refuse!" snarled von Kull.

"A little tap on the head with this .45 ought to take care of that," Strange said calmly. "I'll give you five seconds to make up your mind."

Von Kull glared at him, but under the cold regard of the G-2 ace he lost some of his belligerent manner. Sullenly, he began to take off his tunic.

Zum Teufel!" he muttered. "I cannot understand it—you talk like a lion, and—"

"—and look like a mouse," Strange finished drily. He glanced sidewise at Jordan. "Colonel, if you'll cover our guest for a few minutes, the mouse will make a slight transformation."

Jordan took the gun, and Strange quickly removed his boots and his uniform. As he donned the prisoner's clothes, von Kull laughed scornfully.

"Simpleton! You will give yourself away ten seconds after you land in Germany."

"I think not," said Strange. He took the make-up kit from his flying-coat, gestured for the half-clad German to sit down across the desk, then seated himself before the propped-up kit. Jordan watched nervously.

"Think what this means," he said in an undertone. "He'll know the truth about you."

"I know," said Strange. "And I'm afraid we'll have to hold him incommunicado for the rest of the war—but a little solitary confinement may do him some good."

VON KULL watched with puzzled, hostile eyes as Strange prepared to remove the make-up. Moistening a small sponge with a special solution, the G-2 ace rubbed it across his face. The greaseless paint disappeared, and with swift-moving fingers he plucked the tufts of scanty yellow hair from his upper lip. Straightening up from behind the kit, he smiled ironically at von Kull. The German leaped to his feet, eyes dilated as though he saw a ghost. "Gott in Himmel!" he whispered. "The Brain-Devil!"

Strange inclined his head mockingly. "The mouse has staged a vanishing act. You see, *mein Freund*, you are not the only magician—even though I cannot make a Spad disappear."

"The fools!" raged von Kull. "They told us you were dead and buried!"

"And so," said Strange, "this becomes a dead man's masquerade." He set out a row of paints and lining pencils, and in a few seconds the fierce, gloomy features of *Rittmeister* von Kull began to take shape against the background of his own face. His whimsical expression quickly faded, became hard and forbidding as his nose lengthened and his lips assumed a thin, pinched look. Bits of black crepe hair, affixed at the bridge of his nose with spirit gum, joined his scowling brows just as von Kull's met across his nose.

"You still will not fool them!" snarled the prisoner.

Strange's head jerked up from the mirror.

"Silence, swine!" he rasped, in such a perfect imitation of von Kull's expression and voice that the German's

jaw dropped. With a soft laugh, Strange got to his feet. He closed the make-up kit, buttoned the tunic, and took the .45 from Colonel Jordan.

"We'll have to wait a little while, until most of the men are at mess. I don't want to stage this 'escape' with guns blazing around my head."

"What's your plan?" Jordan said brusquely.

"I'll use the Spad. You might phone word in a few minutes for one of the men to fuel it up and start the motor. By that time, mess call will have sounded—even an ugly affair like this won't keep men from eating. Then when the way is clear, I'll go out the side door and take off as quickly as possible. As soon as I'm in the air, give the alarm that the prisoner has escaped. You'll have to keep von Kull in here, out of sight, until you can sneak him away in a car late tonight. It means taking Major Blunk partly into the scheme—but you can simply tell him that 'Lieutenant Bye' is working with you on a special plan. He won't have to know who 'Bye' really is."

"But why the need for giving the alarm about your escape?" interposed Jordan.

"To fool any Boche spies who might be on this field. And I've a hunch there are some, from the way von Kull got here so easily."

"*Dumkopf*—you are a million miles from the truth!" von Kull flared up. "Right under your nose is—" he clamped his teeth together, gave the two men a sneering smile. "But go ahead, *Herr* Strange—don't let me interfere with your pretty little scheme."

"I'll try not to," replied Strange. He glanced at Jordan. "It might be a good idea to have a 'Plan Two' order flashed to three or four squadrons."

Von Kull shot a shrewd look from Strange to Jordan.

"Ach! A concentration of air force, *nein*? Don't bother yourself, *Herr Oberst*, this 'dead man' of yours will



bring back no information to warrant a raid. This time he will stay dead!"

TWENTY MINUTES LATER, von Kull's words came back to Strange as he stole across the deserted field to the idling Spad. There had been a gloating note in the German's voice, as though he visualized something beyond their knowledge. But Strange put that grim prediction out of his mind and climbed into the waiting ship, after pulling the chocks aside. Then sliding the make-up kit into special clips under the seat, he fastened his belt and opened the throttle.

The afterglow was fading, but the

field was still far from dark. He taxied out only a few yards, quickly swung into the wind, then opened the ship wide. The Spad darted forward, gave a sharp lurch, then straightened under hard rudder. Strange stared back, but there was no obstacle to be seen, nothing to explain that sudden jerk to the side.

He climbed steeply, following a course of 157. A minute passed, and back on the field A-A guns abruptly cut loose with a vain barrage. Colonel Jordan had timed the alarm perfectly. With the Hispano almost full out, Strange held an altitude of five thousand feet until he was nearing the Front. Here he began to climb again, gliding down into the dusk as soon as he was out of range of the front-line batteries.

In a few minutes more he was flying over hilly and wooded terrain where, because of the nature of the ground, the Germans had never established any flying-fields. He sat back, mechanically keeping his eyes open for dusk patrols, meantime going over in his mind the salient points of the mystery.

It was obvious now that the crews of the two D.H.'s had not seen whatever it was that had sent them down, at least no more than he had. The observers had simply been firing at random, hoping to hit the source of the invisible doom that struck at them. And those holes in the Spad's tail and wings—they had certainly looked like bullet-holes. If bullets had made those holes, then they could only have come from the dancing red fireflies—and that seemed impossible, until the sudden expansion of the tiny red blur into that vast ball of flame from which the German had fallen.

There was only one answer, if he were still to credit his senses with having seen that bizarre occurrence. By some scientific trick, the Germans had managed to achieve—

T-t-t-t-t-t-t-t! Strange jumped, hurled the Spad into an Immelmann. For the second time that day bullets from nowhere were hammering into his wings!

CHAPTER III

DEVILS' DROME

ON TWO SIDES, the now familiar red fireflies whisked up after him. In the dusk, they were brighter than before, and their weird, flickering dance was like the flash of fire from machine-gun muzzles—like Spandaus winking in the gloom

Strange's pulses leaped. That was the answer! Those darting fireflies were the muzzles of chattering guns, somehow rendered invisible except for their tips.

"And Spandaus don't fly by themselves!" he flung savagely into the slipstream. Where there were machine-guns in the air, there had to be ships. And even an invisible plane could be hit by Vickers slugs!

Forgetting his first plan for the moment, he whipped around and tripped a burst back of the nearest flickering blur. The blur vanished, but another one swiftly came into sight above and to the left. Strange gave a shout of triumph.

He was right! That unseen devil had

pulled into a steep chandelle and was diving back at the Spad. With a tight vertical turn, he rolled inside of the tracerless burst which was gouging at his tail. The red blur shot past, disappeared. In a twinkling, Strange kicked back to align his guns on the invisible ship. If he had gauged it right, this time he could not miss.

The Vickers throbbed eagerly at his touch. A long burst smoked from the guns before he remembered the scheme he had outlined to Jordan—his impersonation of von Kull. He jerked his hand from the trips, zoomed with the Hisso wide open. Even now it might not be too late. He would still have an excuse if they demanded one

Two crimson blurs now appeared below him, moving swiftly upward. Either he had missed—or it was another of the invisible ships. He snatched at a flare-release, rolled to one side as the light blazed up. In the brilliant glare, the muzzle flames of the unseen guns were lost. He cast a tense look back of him, then plunged beneath the flare. It was a desperate chance, and if the plan failed he was doomed. But one of those invisible devils would probably get him, anyway, if he tried to escape.

Two hundred feet beneath the flare, he brought the stick back and banked into a circle. Leaning out, half-blinded, he pointed frantically to his face. A drumming of bullets into the Spad's right wing answered him—then the pounding abruptly ceased. Hardly daring to hope, he spiraled down in the glow, still gesturing to his made-up features. He had an uncomfortable feeling of sharp eyes staring at him, and once he felt the ship sway as though it were in the slipstream of some unseen plane passing close by.

The Spad was down to three thousand feet when a motion of something at the same level caught his eye. He turned his head, and barely repressed a violent start. Less than a hundred yards away, a man's head and shoulders had appeared—exactly as he had seen them for an instant back at the 365th. They seemed to be floating downward at the same angle as the Spad, and as he ruddered closer he saw the man raise his right hand in some sort of signal.

It was then that he saw the rim of a cockpit encircling the half-visible figure. Over the man's shoulders he glimpsed a large glass screen above the center of an ordinary-looking instrument board such as might be found in a Fokker D-7. He could even see the top of the control stick in the hands of that mysterious figure, but of the plane itself there was not the slightest trace.

Apparently some kind of hood which had made the entire cockpit invisible had been slid back. Strange noticed a queer shininess at the top of the cockpit rim, like mirrored glass, and directly under it was a misty blur that added even more to the fantastic appearance of the floating cockpit. But he had no time to scrutinize the pit more closely, for the *Feldgrau*-clad pilot was pointing down and watching him inquiringly.

Strange nodded, hoping that his disguised features hid the tension he felt.

If the German suspected him for an instant he would simply close off his cockpit again and vanish for another attack.

The mysterious cockpit tilted slightly, angling away from under the flare. Strange followed, keeping parallel, but ready for a hasty swerve back of the invisible ship if the occasion should demand it. The Boche bent over his controls, touched something on the instrument board, and two streams of luminous smoke poured from where Strange judged the invisible wingtips to be. Evidently the pilot intended these as a guide, for he at once swung in ahead of the Spad, gliding at a sharp angle.

One burst, and Strange could have riddled the man in the cockpit. But it would not have solved the problem. He followed carefully, a hundred feet behind the invisible ship, until the flattened angle of the cockpit showed that the pilot was leveling out.

In dismay he saw that there were only trees below and ahead. The ships were down in a valley, with trees on both sides and a dark *cul-de-sac* beyond. He was about to open the throttle and zoom to a safer height when to his astonishment the Spad's wheels touched a flat, solid surface and he found himself rolling along above the tops of the trees.

"Glass!" he exclaimed. "It's a glass runway!"

HE HURRIEDLY CLOSED the throttle, for the cockpit of the invisible ship was slipping back toward him. Then, at taxiing speed, he slowly followed the other man, keeping in between the two streams of luminous smoke. It was possible that the smoke-streams were intended for the purpose of lighting the runway, though he still could not see the shiny surface he had expected. Either that, or they were used at night to warn the pilots of other invisible ships if they came too close in the air.

He had taxied about two hundred yards when the man in the floating cockpit lifted his hand in a signal to stop. Strange throttled his motor, with the grim realization that the die was cast. Even if he wished, he could not turn and escape now. With an odd fascination, he watched the German stand up in the cockpit, his legs suddenly appearing as if from nowhere. The pilot jumped down, motioned to some one in the darkness ahead.

Two gigantic tarpaulins on which trees had been painted slid apart at his signal, and Strange could dimly see an enormous platform which had evidently been erected on piles. Faint blue lights bobbed through the gloom, and a dozen men hurried forward. Six of them went to the rear of the invisible ship, feeling their way to wingtips and tail. As they pushed it ahead, the other men ran back to the Spad and shoved it into the secret base. With a silent prayer that it was not forever, Strange switched off the Hispano.

The tarpaulins closed behind him, and the blue lights brightened, revealing methodically arranged cubicles along one side and also at the rear of the platform, apparently quarters for officers

and men. The rest of the base appeared to be unoccupied, but with a sudden thrill that was half consternation Strange caught sight of a huge motor and part of a wing section seemingly suspended in mid-air. Then he knew that a giant ship, invisible like the fighter, filled that space, one engine-cover evidently lifted for repair work—the only proof that the space was not empty.

Leaning against the wall were several sections of peculiar-looking glass, two of them curved like the fuselage of a Fokker. But instead of showing the wall directly beyond, a cubicle doorway was eerily reflected, although the cubicle itself was at least sixty feet distant. Strange took a second quick glance, and the secret of the invisible ships began to dawn upon him.

The Germans had evidently developed some new type of glass, with the property of bending light rays at sharp angles or curving them so that lines of vision would be sharply deflected instead of going through to what lay beyond. In addition, the glass seemed to be opaque on the inside surface, so that no light would show through and whatever it covered would be hidden, and from its use as a runway Strange knew it must also possess prodigious strength.

With molded glass propellers, and panels covering wings, fuselage, control rods, the motor and seemingly even the guns, the ships could only be seen by some one wearing glasses of the opposite refraction. Otherwise, all lines of vision from outside would be led off or curved so that, in mid-air, only the empty sky would be seen, except by some rare accident when another ship in a battle might be aligned with the bent rays. In such a case, the other plane would appear to shift position suddenly, or if blanketed at a certain angle, would seem to vanish.

This was precisely what had happened to the Spad, back at Rondecourt, and with that realization Strange knew how von Kull had been able to land unseen. The *Rittmeister* had simply been flying one of the invisible ships, and, seeing one of his pilots shot down, had landed to be sure no clue was found. His glass-enclosed ship had momentarily stopped before the Spad, as he prepared to climb out. Seeing he was observed as he slid back the glass cockpit-enclosure, he had closed it and taxied away from the Spad, then emerged again when no one was watching. It was undoubtedly the wingtip of the invisible ship which the Spad had grazed in taking off. In short, von Kull's ship was still on the field at Rondecourt!

A dozen other details surged into Strange's mind, half-cleared by the discovery of the mysterious glass. But he had no time to consider them, for the pilot who had guided him down was hurrying back to the Spad, followed by another German in the uniform of an *Ober-Leutnant* of the Imperial Air Force. The first Boche was small and dapper, but the senior lieutenant was a hulking German, with a round, red face that just now held an angry look.

"*Herr Rittmeister!*" exclaimed the dapper pilot, as Strange climbed from

the Spad. "What happened? We thought you were a prisoner."

"I was, but I tricked the *verdammt* Yankees!" grated Strange.

"Is that any reason for trying to shoot me down?" broke in the *Ober-Leutnant* fiercely.

"*Leutnant* Janner, don't forget this is *der Rittmeister!*" exclaimed the other pilot.

"I'm aware of that," Janner said harshly. "But I'm not offering my body on the altar, *Rittmeister* or no *Rittmeister.*"

STRANGE saw the faces of the assembled men, and he knew it was time to take care of Janner before he got completely out of hand. He took a quick step and drawing back his glove slapped it smartly across the German's face.

"Next time, *Schwein*, think twice before you address your commanding officer in that tone!"

A tense silence fell, and for a moment all eyes were on Janner and the white mark the glove had left on his face. Strange stood glaring into the other man's eyes.

"If you had stayed to see what happened, you would have seen me escape, and there would have been no mistake. It was your own fault!"

"If you had signaled, I would not have attacked," mumbled Janner.

"And what was I to signal with?" Strange said sarcastically. "I was lucky to escape with my life, without stopping to ask for a rocket-pistol."

The other man lapsed into a glowering silence. Strange turned to the staring mechanics.

"Get back to your posts," he snarled. He waited until they had scurried away, then turned back to Janner. "The score is even—you fired on me, too. But neither of us is hurt, so the matter can be forgotten. Besides, there is more important work at hand."

"What about your plane, *Herr Rittmeister?*" said the dapper Boche anxiously. "Has it fallen into the enemy's hands?"

Strange seized on the opportunity thus provided.

"Not yet, but they may discover it at any moment. I was unable to reach it when I broke away, and this Spad was the only ship that was started. The plane must be destroyed at once before they can learn the secret."

"Let me go," said the little German eagerly. "I would like another chance at those *Nuenglander* pigs."

Strange shook his head.

"This mission calls for a larger ship."

"*Mein Gott!*" Janner broke in. "You would risk the Gotha on such an errand?"

"Let me finish!" snapped Strange. "It so happens they are concentrating five squadrons at the old bombing-depot field west of Rondecourt. If we move fast, we can destroy them within an hour."

Janner's expression became a trifle less sullen.

"Five squadrons! *Ach*, it should get each of us the *Pour le Merite*—and furloughs in Berlin!"

"There is no time to waste," Strange

said tartly. "How soon can the Gotha be ready?"

"As soon as the bombs are loaded, and that panel closed on the starboard motor," replied the big *Ober-Leutnant*.

"Start the crew to work, at once," Strange ordered. "I'll give you the detailed instructions afterward."

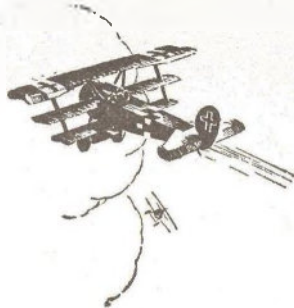
"Very well," grunted Janner. "I will see you in the operations office."

Strange turned to the other Boche as Janner stalked away.

"Has anything important happened while I was gone?"

"*Ja, Herr Rittmeister*—a message of approval from the High Command. Full details of the first two attacks were sent to them by separate observers, and the Field Marshal is greatly pleased with these first tests. He has ordered a full flight of pilots here, as you requested, from your old '*Staffel*'. They will arrive before morning. And the High Command also agrees to your keeping all commercial rights to the Kullglass, if you will turn over the formula to Army chemists for mass production."

Strange hid his surprise at the last statement. He had not known that von



Kull was other than the usual Prussian officer. If he were the inventor of the invisible glass-shielding, then Jordan had a more important captive than he had thought.

"We had better go back to the office," he said shortly.

"But, *Herr Rittmeister*, if I am to have my plane refueled and ready—" the dapper pilot looked at him with puzzled eyes.

"*Jawohl*, go ahead," muttered Strange. "But meet me at the office as soon as possible."

The German hastened toward his ship, of which only the opened cockpit still was visible. Strange looked around quickly, started along the row of cubicles. The office would probably be the largest. And if he knew anything about von Kull, that office would contain some highly important maps, perhaps even some operations orders of vital interest to Chaumont. If he could include these also in his wild scheme . . .

"*Was ist*, where are you going?" a harsh voice spoke up from his left. He wheeled, saw Janner in front of a door with a blue light over it.

"I was thinking of something else," Strange answered curtly. He opened the door, jerking his head for the big German to follow. "I didn't realize I'd gone past the—"

HE stopped short, for the room was furnished as sleeping quarters instead of the office he had expected. Jan-

ner had come in behind him and was staring at him intently. Aware that the bright light was shining straight on his face, Strange took a step to one side.

"Wait!" Janner said tensely. "Why were you going that way—when the office is back by the entrance?"

"Where I go is my business!" rasped Strange.

"Not if you are trying to cheat me out of my share in the Kullglass formula," Janner said fiercely. "I half believe you were trying to get rid of me tonight."

"Don't be a fool," Strange retorted. "How could I tell whose plane it was?"

"It was an even chance that it was mine," Janner flung back harshly. His eyes had a furious look. "If I were sure—"

"Get out of my way," snapped Strange.

The blood rushed into Janner's face, and with an oath he lunged at the G-2 ace. Strange jerked back, and Janner's fist struck only a glancing blow across his face. The infuriated German rushed in again, like an angry bear. Strange sidestepped, drove a left hook to the *Ober-Leutnant's* jaw. It rocked Janner's head, but failed to stop him. Strange snatched at his .45, to cover the Boche before the struggle brought others to the scene. But with another bear-like lunge, Janner struck against his gunhand and he dropped the weapon. Before he could reach it, the *Ober-Leutnant* whipped out his Luger.

"So! You *would* kill me!" he panted. Then a look of astonishment came into his eyes. He stared at the bridge of Strange's nose, then down at his own knuckles, and with dismay Strange saw bits of crepe hair sticking to the German's hand.

"*Lieber Himmel!*" Janner said in a stunned voice. "You are not von Kull!"

Strange waited, motionless, aware that the slightest move would bring a shot from Janner's gun. The German's eyes bored into his made-up features as though he would pierce the disguise and see what lay beneath.

"Who are you?" he said tensely. "What have you done with von Kull?"

Strange made no answer. Janner backed toward a table beside his cot, picked up a telephone with his left hand.

"Send *Leutnant* Braun here—and the guard-sergeant—quick! Something has happened to von Kull!"

Strange groaned and closed his eyes for an instant, as though he had given up hope. Then in a desperate flying-tackle he dived headlong at Janner's knees.

CHAPTER IV

INVISIBLE DOOM

THE LUGER BLAZED just above his head, and the report echoed thunderously in the cubicle. Knocked off balance, Janner went crashing to the floor. Strange landed a fierce blow under his ear, and the *Ober-Leutnant* collapsed limply. Excited voices sounded from out in the base. Strange hastily pulled part of the tufted crepe hair from the

back of Janner's hand, pressed it to the vacant spot between his eyebrows. He had barely finished when two round-hatted German mechanics burst into the room. They halted, staring slack-mouthed at the inert figure on the floor.

Strange coolly picked up the .45 and the Luger and rose to his feet. The dapper *Leutnant* came running into the cubicle, followed by an armed guard-sergeant half a dozen *Heinies*. Strange gestured to the unconscious Janner.

"Sergeant, tie up the *Herr Offizier* before he recovers his senses and tries another murderous attack."

The non-com knelt beside Janner. Strange turned to the undersized lieutenant and held out the Luger.

"Smell the muzzle, *Leutnant Braun*. You will note that the gun has just been fired. The empty shell is there on the floor."

"Ja, *Herr Rittmeister*," said Braun breathlessly. "It is so. But I—"

"The gun is *Leutnant Janner's*," Strange went on tersely. "You will find the bullet-hole there in the door, proof that he fired at me. I am telling you this so you will be ready to testify at the court-martial, later."

"But why did he try to kill you, *Herr Rittmeister*?" exclaimed Braun. "They told me that he phoned that something had happened to you."

"I think he intended to make it seem an accident—but I was too quick for him. He called me in here and caught me off guard. But while he was telephoning, I managed to retrieve this pistol which I stole back at *Rondecourt*. Janner made the error of putting it a trifle too close to me after he disarmed me. I hurled it into his face just as he fired at me."

"I knew he hated you," said Braun, then reddened in confusion. "Your pardon, *Herr—*"

"It is of no importance," Strange interrupted. "But now we have other things to do. Is the *Gotha* ready?"

"It will be in another minute. *Unter-Leutnant Schwartz* is ready to start the motors when you give the word."

"Tell him to start them at once," Strange ordered. "I will take the plane Janner flew, if it is in condition."

"Ja, your bullets—the ones you fired by accident," Braun hastily amended his sentence, "only chipped the *Kullglass* on the cowl. I have had the tanks filled and the guns re-loaded."

"*Sehr gut*," Strange said crisply. "Have the plane ready to take off after the *Gotha*, and you will follow me. Tell *Schwartz* to circle at two thousand feet until we are at his altitude. We will approach *Rondecourt* at ten thousand and begin gliding to bring us in at a thousand feet. You and I will take care of any Allied planes in the air, while *Schwartz* goes low enough to destroy the fighter I had to leave on the field. After that, we will raid the concentration field to the west. Is that clear?"

"Yes, *Herr Rittmeister*—it is an excellent plan," said Braun, with a fawning smile. "I will tell *Schwartz* at once."

He hastened out. Strange turned to the guard-sergeant, who had tied Janner to the bed with a rope brought by one of the men.

"That will be all. The prisoner will not need a guard—at least until after we have taken off. Go out and help clear the way for the *Gotha*—that *Spad* will have to be moved."

The sergeant and the other *Heinies* shuffled out, Strange gave a long sigh of relief, for Janner's eyes were starting to twitch. He tore off part of the German's shirt and gagged him securely. Janner was glaring up at him as he finished.

"*Auf Wiedersehen*," Strange said ironically, "unless your superiors decide to shoot you for bungling."

He took both the .45 and the Luger, went out the door, and glanced swiftly around the base. From the position of a gangway-ladder near the entrance, he could tell where the invisible *Gotha* stood. Its unseen motors were rumbling, but after a moment the sound died to a faint drone as silencers were cut in. Over to one side, the opened cockpit of an invisible fighter seemed to float in the air, as before. The blue lights had been dimmed again, but after a few seconds he was able to locate Braun's ship, which like Janner's had its *Kullglass* hood slid back, exposing the empty cockpit.

The *Spad's* motor had been started, and an *Unteroffizier* stood beside it, fastening on helmet and goggles. Strange looked around, then he saw the reason for the motor's having been started. The *Spad* had been placed so that the *Gotha* could take off, but in the limited space remaining the two invisible fighters would have to be jockeyed carefully to get around it. Braun or one of the others had evidently decided to have the *Spad* flown to some regular field, to clear the way for the two fighters when the *Gotha* had taken off.

THE HUGE TARPAULINS were already opening. Strange hurried across to the cockpit of the first *Kullglass* ship, his nerves suddenly taut. If



he slipped up now, his plan to get rid of the invisible ships would boomerang with frightful results. Disaster would again strike *Rondecourt*, and even though he had given a false location for the squadron concentration, those devils in the *Gotha* would certainly unload the bombs within that glass hull before they returned.

He could feel the slipstream from the *Gotha's* motors and from the *Spad*, but the engine of Janner's fighter had not been started. He felt his way along the trailing edge of the wing, stooping to look closely at the *Kullglass* surface. Even a foot from the wing, he failed to detect the glass itself. But its bent rays picked up the side of the wall, creating an eerie effect.

The *Gotha's* invisible motors now speeded up, sending a gale whistling back into the base. Strange clutched the

rim of the cockpit, hastily scrutinized its interior. Except for the glass screen mounted above the instrument board, it looked like the usual cockpit. But when he peered through the frosted glass he saw the final explanation of the ease with which von Kull's pilots had handled their unseen ships.

The screen, obviously made with the opposite refraction from the rest of the fighter's glass panels, neutralized the bending effect, so that it was like looking through a window-pane, though the screen was ten times thicker.

Strange climbed into the cockpit, made a quick examination of the guns. They seemed to be *Spandaus*, but he could not be sure, for a heavy sleeve of the *Kullglass* covered all but the breeches, which extended back into the hooded space. He watched through the glass screen, and was electrified to see the ponderous shape of the *Gotha* appear as it taxied out onto the ramp. Through the frosted glass, it looked like an ordinary bomber completely covered with ice even to the strut wires, which ran through narrow glass sleeves. But when he looked outside the cockpit, the *Gotha* vanished.

He watched it begin its take-off, then stood up in the pit and shouted for a mechanic. *Leutnant Braun* came running, with two helpers at his heels.

"The *Gotha* will be off in a minute, *Herr Rittmeister*. Our motors are still warm, so they will start at once."

"Start them now!" Strange barked. He set the switch as one of the men signalled, and the motor under the glass-shielded hood came to life with a hissing sound.

Braun had darted back to the other fighter, and the man in the idling *Spad* was about to taxi onto the ramp, when a bell jangled loudly from up at the entrance.

Strange thrust his head out the side of the cockpit. The men at the entrance were scattering hurriedly, and in a second he was startled to see two plumes of luminous smoke appear. He took a swift look through the glass screen, and went rigid as the outlines of another invisible fighter suddenly were revealed.

The ship whirled in a tight ground-loop, just missing the *Spad* and stopping in the space where the *Gotha* had been. Then the cockpit hood slammed back, and a disheveled figure leaped out.

It was von Kull!

A chorus of shouts went up, and Strange saw the guard-sergeant push through the crowd of mechanics. He jerked his own cockpit hood almost shut, leaving only a crack through which to see. Von Kull's furious voice abruptly silenced the rest of the Germans.

"*Stille*, you blockheads! Get *Leutnant Janner* here!"

"But, *Mein Herr*," faltered the guard-sergeant, "you had him tied up—you were here—"

"*Grosser Gott!*" roared von Kull. "Do you mean that swine of a Yankee has been here?"

Strange saw Braun sprint past, his face pale with consternation.

"*Herr Rittmeister!*" he moaned. "I don't understand! 'You were here—how

did you get out there in that ship?"

"You blundering *Ochs!*" stormed von Kull. "I just escaped from Rondecourt. But for our agent, Pritchard, I'd have been finished."

"B-but I saw you, *Excellenz!*" groaned Braun.

"You saw that *verdamm!* American they called the Brain-Devil—Captain Strange! The report of his death was false. He made up to pass for me after I was captured—and now you fools have let him escape with the secret!"

"But he hasn't escaped!" shrilled Braun. "He is still here—he's in Janner's ship!"

"What?" howled von Kull. "Then what are you waiting for? After him, you *Dumkopf!*"

Braun whirled, drawing his pistol, then a helpless look came into his face.

"He's closed the hood! I can't tell where the ship is!"

Von Kull spun around to the group of mechanics.

"Spread out! Form a line and find that plane—it's got to be over there in the rear space."

STRANGE had shut the hood completely as Braun drew his gun, but through the frosted screen he saw the mechanics hastily link hands. He cast a desperate look toward the entrance. The Spad and von Kull's fighter blocked his chance of taking off, but if he could reach von Kull's ship . . .

Jerking the Kullglass hood partly back, he thrust his .45 outside and blasted two shots over the heads of the advancing Germans, and with wild yells they broke and ran. Braun's pistol blazed, and a bullet ricocheted from the cowl shielding. Strange pumped a shot at him, and the Boche slumped to the floor. Von Kull seized the fallen man's gun but before he could fire, Strange pulled the hood shut and cracked the fighter's throttle. The ship lurched forward with a muffled drone of its glassed propeller. He snapped the throttle shut, emptied the .45 into the frosted screen and ramméd the hood open.

Von Kull gave a shout as he leaped from the opened cockpit. One shot spurted from his gun, then Strange was hidden as he ran along behind the moving invisible ship, with the bending rays of the Kullglass shielding him.

Strange now took a quick glance at the cockpit, saw that the plane was slowing down. Ducking to avoid bumping the unseen wing, he raced toward von Kull's ship, still marked by its open cockpit.

"There he goes!" bawled a furious voice. Janner, released by the guard-sergeant, was charging toward Strange like an enraged bull, and the G-2 agent's heart surged when he saw he could just reach the cockpit in time to escape. He

spun around, with bullets whistling past his head, then vaulted onto the wing of the Spad. A slug crashed the compass-bowl, flooding broken glass and alcohol back onto him. But he made the pit and shoved the throttle open.

Von Kull bellowed for the tarpaulin-curtains to be closed, but the Spad roared through and plunged down the glass runway.

The abrupt change from light to darkness almost blinded Strange. He leaned out, straining his eyes to see. He expected at any second to plunge off into the trees.

The Spad's rudder jumped under a sudden pounding at the tail. One of the invisible fighters was racing down the runway directly behind him!

With a flash of inspiration, he pulled the toggle of his remaining flare. A welcome, brilliant light leaped up behind him, and just in time he ruddered away from the outflung branch of a tree. The next second the Spad's wheels lifted, and the ship thundered up from the valley.

Strange flung a glance below, saw the flare tossed violently from the runway. Hardly had it struck the trees when, a hundred feet beyond, limbs and branches broke from a sudden impact. Dazzled by the glare, the pilot of the pursuing invisible ship had veered from the runway and crashed.

Fire was spreading through the tree-tops, where the flare had been hurled. As Strange pulled up in a steep climb he saw the flames blown back sharply for a moment, and he knew that one of the other invisible ships had passed by safely. In a few moments more that ship would be on his tail!

He looked up tensely into the sky, hoping against hope that there would be some unshielded spot on the Gotha. But the empty sky mocked him.

Throttle against the peg, he sent the Spad up in a fast spiral, knowing that somewhere above him invisible doom was circling. If they opened fire without waiting for point-blank range, he might have a beggar's chance. With icy fingers taut on the trips, he kept on climbing.

AND THEN it came! A vicious, battering hail that riddled the upper right wing before he could move the controls. He rolled madly to the left, eyes probing the night. There they were—two flickering red eyes, the muzzles of a twin-mount tilted down from the unseen Gotha!

Bow-guns—or rear tourelle? There was no way to tell. He whirled the Spad in a tight reversement, stabbed a burst back of the deadly red blurs. The flickering spots vanished, but two more appeared just back of where they

had been. Strange sent the Spad screaming up into an Immelmann.

Now he knew! Those first blurs had been from the bow-guns. The ship was headed west, and he was almost above it. Another burst spouted from his guns, and with a shout of triumph he saw the tracers end abruptly in space. He had hit the invisible ship. Now if he could only find a vital point . . .

Something flashed against the light from the burning trees beneath. He whirled, saw two more crimson spots darting in at the Spad. But this time no unseen ship hid the source of those deadly fireflies. The hood was open, and crouched in that weirdly plunging cockpit was *Rittmeister* Paul von Kull!

It was Janner, then, who had seized von Kull's ship and had crashed from the runway in his headlong pursuit. And von Kull, leaping into the ship Strange had left, had failed until too late to see the bullet-shattered screen. Helpless, he had been forced to open the hood.

Mad with fury, the *Rittmeister* charged in at the Spad. Strange spun the ship on its wingtips, swiftly nosed down. The Gotha's guns had gone dark, but the crimson blurs frantically burst forth again as he dived. With those flaming muzzles not a hundred feet from his prop, he hauled the stick to his belt.

Too late, von Kull saw those deadly red spots which the diving Spad had kept hidden from him. There was a grinding roar, and the *Rittmeister's* ship crashed into the unseen Gotha.

Flame gushed from mid-air, swept back at the horrified German. For one dreadful moment, Strange saw him claw at his belt in a frenzied attempt to jump. Then the rushing flames engulfed him, and the two invisible ships, locked in a fiery embrace, went whirling down the sky.

THE BLAZING WRECKAGE struck in the heart of the valley, and with a terrific explosion the bombs went off. Trees and bits of flaming, shimmering glass spouted up in all directions, and when the air had cleared a wall of fire blocked the entrance to the base. Strange shivered, for he knew no living thing would be left when the fire was through. Von Kull was gone—and with him the secret Philip Strange had so craftily guarded—the secret that he was alive.

Banking toward the Front, Strange took the make-up kit from under his seat. Back at Rondecourt, Colonel Jordan would still be waiting for "Second Lieutenant Archie Bye" to report.

A grim smile touched the lips of the G-2 ace. Von Kull's savage prediction of his doom had almost come true. But not quite. For the "dead man" was coming back—alive.

Birdman's Booty

(Continued from page 20)

the rear pit of the Bullet.

"It's always *me* who has to get wet," Barney muttered, shivering from the cold water. Then he spotted the rub-

ber boat bobbing a few yards off. "But say, what's that out there?"

"It's something new in J-class racing, I believe," answered Keen jazzing

the throttle and rudder. "All the comforts of home by Goodyear—as long as the swordfish don't start playing games with your air pressure. Let's go over

and offer him a tow."

Barney wriggled into his jumper again, covered his mug with a masked helmet, and took over the guns as Keen, now also again masked, worked the Bullet closer to the bobbing boat.

The wooden buoy had been dropped to the floor of the cockpit and forgotten by the time they were within hailing distance of the boat and its occupant.

"Faith, an' look at it," wailed Barney. "Now we are in for it!"

The occupant of the tiny boat was a girl!

FOR a few moments, Keen was so stupefied that he almost ran the small rubber boat down. He had approached fully expecting to find a grim-visaged gangster, loaded with armament and sporting a growth of heavy black beard. Instead, here was a girl—a frankly beautiful one. Her helmet now removed, her hair was tousled with the wind. She wore a cream colored reefer jacket of fashionable cut, pale blue slacks, and rubber-soled shoes. She sat on the cross-webbing seat of the boat with the air of a princess.

Keen didn't exactly know what to do. This was a new kind of situation, one that never before had confronted him.

But finally he moved the Bullet over skillfully, so that it nudged the boat, and then he leaned over the edge of the cockpit, resting his chin on his folded arms.

"Hello, Pebbles," he beamed, smiling behind his red mask. "Now don't tell me you're deep-sea fishing? You know there's nothing out here but empty bottles from Coney Island!"

"Now, now, boss," warned Barney. "You'd better let me dunk her first to take the opposition outa her. She looks like trouble."

The girl stared up at them still dipping the paddle gently.

"Where did you come from?" she demanded, with a hint of a smile at the corner of her mouth.

"Just out riding. Want a lift?" the Griffon character said, admiring her poise. "Or would you prefer to stay out here and catch the next boat?"

"I'm quite all right. But how did you find out about all this—the Pebbles business?" she asked calmly.

"From Pulski, my assistant, here. He reads the papers. Low and uncouth habit, isn't it? But you'd be surprised what strange things can be found in the papers—if you know where to look."

"You'd better let me dunk her, boss," argued Barney.

"Never, Pulski! Where's your chivalry?"

The girl smiled, "I'll bet you're—the Griffon! Yes, I'm sure you are!"

"She's gonner be a nuisance, Chief," the Mick moaned.

Keen ignored him. "That's right. I'm the Griffon. And of course you must be Pebbles—the lady they drop things in the Atlantic for. More fun, eh?"

"Not for you, if you get caught."

"Well, that's an idea. Your boy friends with the Grumman may be back if they summon up the courage again. But can't we give you a lift, Pebbles?"

"That's not my name," the girl said, "but it will do, I guess it's as straight as that 'Pulski' business. Yes, you could drop me off at the Wall Street ramp. I have a car there."

Barney, frowned. "Wall Street ramp! You'll get nabbed there as sure as shooting. This is a gag!"

"It might be, at that. But we'll fool the boys and drop her at the East River uptown ramp. Come aboard, Pebbles—and bring your Goodyear gondola with you."

The girl clambered aboard the float and eased along the wing. Barney climbed out, lashed the boat to the pontoon struts, then helped their visitor into the cockpit.

"Quite a layout," the girl said, glancing over the interior. "Where do I sit?"

"On Pulski's lap for the present. He gets all the breaks in this racket."

"She can take my seat. I'm soaking," the Mick growled. "I'll stand up in between."

"Boy meets girl," grinned Keen.

"Boy gets rid of girl," the young lady answered.

"Girl will be a damn nuisance," added the Mick.

Keen pushed the throttle, hoisted the Bullet up on her step, and zoomed off a roller.

"Well?" he asked when they were well in the air and headed back west, "what's it all about, Pebbles? What's in the buoy we were all so eager about?"

The girl was silent for a time. She studied the back of Keen's helmet before she answered.

"You mean to say you don't know what you came after?" she finally asked.

"No. We're just out for a lark. Or maybe we're in the aerial taxi business. This is a funny world, eh?"

"But why do you call me 'Pebbles'?"

"That's who the notice in the papers was directed to, wasn't it?"

The girl burst into a glorious peal of laughter, whereupon Keen turned around and looked questioningly at her.

"This is awfully funny, now," she finally said. "So you think I'm the Pebbles the notice mentioned?"

"Well, aren't you? You came out to get whatever it was the guy named Gambit dropped onto the Atlantic from the *Dortmund*, didn't you?"

Barney, scotching his rump on top of the radio set bolted to the side of the fuselage, was staring down at the thing they had picked up out of the water. It was composed of rounded sections of four-inch pine boards that somehow had been fitted over a large tin container. The lid had been carefully soldered on, and the whole contrivance had been so constructed and balanced that it would float upright when thrown into the water.

The girl tapped it gently with her shoe, whereupon Barney shoved her foot away.

"What's in there?" he growled at her.

"Pebbles!" the girl replied. "Rattle it and you'll see."

She laughed again and Barney and Keen exchanged glances. Somehow they felt they had been tricked. The Mick picked the thing up, shook it—and the

unmistakable rattle of stones jangling about in the tin was the only response they got. Barney chucked it back on the floor with a muffled curse.

The girl laughed uproariously this time.

"Go ahead and laugh," Keen said over his shoulder. "You're still Pebbles to us. There's more there than that."

"Romantic people do things like that," the girl said suddenly.

"Like what?"

"Well, it was my boy friend's idea. He just sent me a note in that can, loaded with pebbles. And I got my brother to go out and pick it up for me. Now can I have it, or has chivalry completely died out?"

Keen sensed now that he was up against a smart girl. But he also knew that she was not going to get the contents of the gadget—not while he was in charge, at any rate.

"I can see that the quicker we get rid of you, young lady, the better off we shall be," Keen said over his shoulder. "Sure, you can have the dingus—once we have taken the pebbles out. You see, my sweet, we have a little aquarium at home—and for years we've been collecting pebbles from all over the world to line it with. Just a little hobby of ours. These pebbles could have come from some foreign country, couldn't they?"

The girl was silent at that and sat biting her upper lip.

Poor Barney, all this time, was not able to comprehend the verbal thrusts, and he sat there blinking in his discomfort. The business about an aquarium in which they collected pebbles from all over the world! What sort of a story was that Keen was pulling? They didn't collect pebbles.

"I should like to see that aquarium one of these days," the girl said.

"Perhaps you will. One never knows. We have the strangest visitors at times—when they get around to finding us," the Griffon said over his shoulder. "But we're getting close to Manhattan, now. Can you be ready for a quick shove-off just outside the pierhead, Pebbles? Sorry, but I won't be able to make it any closer than that."

"I suppose so," the girl said with a wry smile. Then her humor returned and she added: "But I shall certainly create a sensation walking into 'The 55 Club' with a rubber boat under my arm."

"You'll make every newspaper in town, if you do," explained Keen. "And now, be ready."

KEEN steadied the Black Bullet, then nosed it down for the East River. He knew there was plenty of traffic to worry about, but he was more concerned with the possibility of a Police cutter being handy near the uptown seaplane ramp. The Bullet slid down the skyway, curled around into the wind, then Keen dropped her a few yards out from the pilings near the jetty.

They worked fast then, with Barney scurrying over the side to unlash the boat. The girl tapped Keen's back and whispered into his ear.

"Thanks for the lift, Griffon. I hope you get away with it, but I'm afraid

you won't. We bucked into too big an organization, laddie. But don't think too harshly of me. There's two sides to every story."

Then, before Keen could question her further, she dropped down on the pontoon and lowered herself into the bobbing boat. Abruptly, a glare burst out from the end of the jetty. Then a siren screeched and voices rasped out over the night air.

They were caught in the blinding glare of a searchlight! The Black Bullet stood out like something thrown on a massive silver screen!

Barney yelled, then swore. He gave the rubber boat a shove with his foot and clambered back to the wing. A below at Keen and he dived into the cockpit, whipped out his guns, and directed a short blast of fire directly at the searchlight.

There was a clatter of metal and the hoarse bark of orders as the light went out. Then something with a green light on it came chugging out of the shadows beyond and a gun opened fire at them. Keen jazzed the rudder, rammed the throttle forward, and zig-zagged away. Fog horns blasted, and sirens continued to screech. But by now the Black Bullet had thumped her floats off the water and zoomed into the sable sky again, to head down the river at breakneck speed.

A gun fanged at them from anti-aircraft batteries on Governor's Island. But it was too late. The Black Bullet had escaped across the Upper Bay.

"Whew! There was one for your whiskers," growled Keen. "I hope you only took out that light, Barney. I'd hate to think we hit some of those river cops."

"Well, the point was to get rid of that jane. And it's lucky we did. She's bad medicine, if you ask me."

"Strange. I was under the impression there was a certain fascination about her. Rather a sweet kid to be mixed up in a mess like this—if she is mixed up in it."

"Of course she's in it. Otherwise what was she doing out there with that Gruman gang?"

"Looking for a bunch of pebbles."

"Yeh, and between you and me, that's all we picked up, too. There don't seem to be anything else in that buoy, Boss."

"No? Well, hang on to it, anyhow. There might be several cases of O'Doul's Dew in there somewhere."

"There'd better be! You know you ain't got enough left in the bank to keep going much longer."

"Thanks for the warning. Now we shall have to make sure about those pebbles, huh?"

"I wish I knew what the devil you're talking about," moaned the puzzled Mick. "But how about going home?"

"Good idea—after we go out to sea a bit first to put the bloodhounds off the scent. Besides, we might find something else."

And with that possibility Keen banked, followed a Douglas airliner north for a few miles, then cut back across Long Island Sound toward the beam of Montauk Light.

"Now what?" growled Barney who

was still wet and uncomfortable.

"Just a hunch. Wrap up and keep warm. I have an idea there may be some one else out there looking for these pebbles."

For another half hour Keen hummed the plane east, scouring the water below for a sign of anything that would indicate that the strange buoy-like thing was still being sought.

Finally, his eyes drew to narrow slits as he spotted another light fanning out from something moving slowly below.

"Just as I thought," he muttered. "Look, Barney! There's another mob looking for it."

"A motor boat this time!"

"Right! Let's go down and tell them we have it—so they might as well go home."

"You're likely to, the state of mind you're in tonight, Boss," the Mick muttered in his damp gloom.

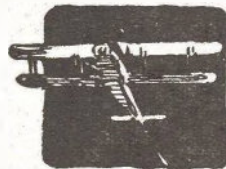
Keen shut everything off, lowered the pontoons again, and circled. But they had already been spotted. The light below was blipped off and the motorboat swung over sharply, doused its riding lights, and skudded for the Long Island shore.

Still, Keen was not satisfied. He continued on down at the roaring craft that was now well up on its step. He had a purpose in mind, too. So in spite of the fact that several flashes of flame spat up—indicating that some one was shooting at them—he took a long chance by speeding so low that their pontoons almost grazed the rear pit of the speedboat.

But he got the information he wanted before hoiking back up.

"Her name is 'Gambit'," he shouted over his shoulder. And her registry number is K-5689. Try to remember that, or else jot it down on something. Damn them!" he broke off as a heavy fusillade of shots came up and splintered something aboard the Bullet.

But the Avia continued to tick over. So Keen set the prop again for a fast



climb, drew in the pontoons, climbed out of range, and headed back for Graylands.

"You weren't interested in the numbers on that guy's watch, were you?" mooned Barney who was losing interest fast.

"You said something about needing money, didn't you?" Keen cried back. "We've got to cover on every angle—now that we have the pebbles."

"Sure! But what are we gonner do with 'em? Fire 'em outa slingshots?"

"I just like pebbles from foreign countries," replied Keen, his mask covering an enigmatic smile.

THEY managed to get back to Graylands without further incident. Keen ran the Black Bullet up on the sands quietly and into the hidden hangar with

the motor well muffled. Barney inspected the damage and reflected that he would have a fair morning's work ahead of him, patching her up. But he was more than satisfied that no serious damage had been done that would involve some major mechanical operations. Keen thereupon took the strange buoy thing and carried it into the laboratory-shop at the back of the hangar.

Barney came up just in time to watch Keen cut the lid off. And it was just as he had expected: The tin contained nothing but pebbles! Pebbles tied up in what appeared to be a heavy salt bag!

"April Fool!" the Mick grunted. "Now you gotter buy an aquarium!"

Keen smiled as he poured a few of the pebbles out in his palm. They were strange in color—something between a dusty fudge and wine tone. And they had a slight sheen in the gleam from the hanging bulb as Keen palmed them with interest.

He smiled again and returned them to the bag. Then he nodded to the still-puzzled Barney and said: "They'll do, I think."

"Okay," the Mick said, following him out through the metal panel that connected the hangar with the wine cellar. "but what are they? I'll bite."

"If you do, you'll break every molar in your mug," replied Keen taking a bottle of Mumm's champagne from the shelf as he made his way toward the stairs. "Besides, this is a branch of aquarium building I am not very well up on. That's right, help yourself to a bottle, Barney. You'll need it after that ducking."

"All for a bag of pebbles, too!" And the Mick growled for the sixtieth time that night.

As Barney wandered off to change into something dry, Keen threw a couple of logs on the fire, for there was still a Spring chill in the air. Then he removed the wire from his bottle, thumbed the cork expertly, and let the "bubbly" foam.

He poured the light colored wine into a long-stemmed glass, studied its head before the light, sipped lightly, then sat down in his deep club chair.

"Many thanks, Pebbles," he muttered, staring as though he saw the girl's image in the fire. "That little pile of marbles will put us over for several months—if we can get rid of them."

He sipped again and reflected on the events of the evening.

"But it was a dirty trick at that," he agreed, remembering the disappointment in her voice when she realized that he sensed the value of the pebbles. She had tried hard to minimize their worth, and only some quick thinking on his part forestalled her game effort to recover them.

"Yes. We played a dirty trick on her," he agreed again, lighting a cigarette and studying the flames of the fire once more. "But how did she know about them? And how was she able to go out there in a Government Gruman belonging to the Coast Guard to find them? What's the tie-up?"

There were plenty of angles to it all, but outside of the bag of brown pebbles nothing made much sense. A Coast

Guard Grumman, a strange notice in the newspaper, a costly motor boat called the *Gambit*, and a girl who should have been a member in good standing in the Junior League. All these—and a set of pebbles that might be worth half a million dollars!

Barney came in, togged out in flannel pajamas, carpet slippers, a heavy woolen bathrobe—and armed with a corkscrew that would have been capable of taking the top off a submarine.

"Sa wonder I don't catch me death o' cold barging about on these sky shows with you," he grunted, reaching for his bottle, ramming it between his knees, and inserting the point of the corkscrew.

The cork came out with a promising pop, and the Mick, ignoring such useless items as glasses or soda water, placed the bottle to his lips, upended it, and let the forces of gravity carry out their specific duties, as formally outlined by Sir Isaac Newton.

Keen watched the eccentric piston movement of Barney's Adam's Apple with the interest of an engineer. The display was really worth watching. At last the bottle was withdrawn with a dull pop of suction and the Mick went: "Whoosh!"

"Don't breathe toward the fire," warned Keen. "You're likely to cause a flash-back that will blow us both into the hall."

Barney studied the bottle with a wary eye, sniffed, and marked the line of the remaining liquor on the label with his thumb nail.

"The other night I did it all the way down to where it says 'Bottled in Auchtermuchty,'" he explained with no small degree of pride.

"You're slipping. Still, I should think that with a little well selected training you could get down to 'Imported by Cohen and McWhorters, Inc', if you really put your mind to it," observed Keen sitting in official judgment.

"You gotter be in condition to really drink like that," the Mick stated with due consideration for his hobby.

"The only thing I worry about," Keen said, again filling his glass with champagne, "is that in one of these experiments of yours you are going to set up such a suction on that bottle we're going to have to resort to a major operation to remove it."

"Well, if that ever happens, boss, make sure the bottle is really empty before they go to work, will yer?"

And with that Barney made a fine adjustment on his lips, placed the mouth of the bottle to his mug again, and with a you-watch-me glance at Keen went to work on the remainder. Keen counted seven gulps, then came the tell-tale hiss that indicated complete consumption.

The bottle was removed with the same authoritative blop. Then the Mick wiped his mouth with the back of his hands, drew in a deep breath, and stuck out his lower lip with the air of a dictator.

"It's amazing," Keen said, waiting for Barney to fall on his face. "You keep that up, my lad, and you'll be seeing things."

The Mick looked up—then stiffened

and let the bottle drop to the thick hearth rug.

"I am, Boss," he gulped, "I—I am right now!"

Then to the amazement of Keen, Barney raised his hands high above his head. He was staring with blinking eyes at something on the other side of the room.

"I—I—" the Mick began again. "There must—must be two of 'em there!"

For a second Keen couldn't figure what had hit the Mick. Then a cold clammy something formed in the pit of his stomach—like one of those balls of tin-foil Boy Scouts collect to donate to hospitals. It was that heavy and uncomfortable.

Finally, sensing that something should be done, he aroused himself, still holding his glass, and stood up—to stare solidly into the open muzzle of an automatic Mauser 7.63 mm. machine pistol!

"Pebbles!" he exclaimed, unable to believe his own eyes.

"I told y-you we should have dunked her, Boss. You can't tr-trust these women!" contributed the Mick.

"I now know just what I want to know," the girl broke in, a haunting smile etching the lower portion of her face. "I see that you *are* the Griffon—Mr. Kerry Keen!"

THAT BLOW was a beaut! It caught

Keen just under the floating ribs and he had to gulp hard and take another drink before he could answer. This meant that the whole simple but effective organization he had so carefully built in the past few years was crumbling before his very eyes. Crumbling before a blue-black weapon held in the tanned hand of a beautiful girl! They had played their hand out and this was the end. Well, it had been a great time while it lasted!

"Don't do anything foolish," he said sternly to Barney. "She's got us and we might as well take it. That gun is too much of a persuader for us to try to argue against. And now, do you mind if I have another drink, Pebbles?" Keen picked up the champagne bottle.

"No. But don't try any tricks or I'll see how many of your vest buttons I can pick off without missing," the girl said quietly.

She was in complete command of the situation now, and Keen knew it.

"And when you have poured yours," she went on, "you can pour one for me. No, I'll use your glass, if you don't mind."

Keen filled it and shoved it across the table.

"Ladies first," he said with a slight bow.

"A swell lady," grumbled Barney, "going around in rubber boats and carrying things like that!"

The girl took the drink, sipped it carefully until it was finished, then said: "Thanks, I needed that!"

"What about Pulski's hands?" asked Keen. "May he put them down? I can assure you he's harmless at that distance—for he has nothing more terrifying than a corkscrew in his possession."

"All right," the girl agreed. "But if he makes a bad move, I'll charge it to your account—your vest buttons. Is that clear?"

"Absolutely. Now, let's be pals. How did you get here?"

"Played your game. Said to drop me at Wall Street when I really wanted to go to the uptown ramp. You decided I wanted to go to Wall Street—and landed me exactly where I wished to go."

"The lady has ideas, Bar—Pulski," said Keen with sincere admiration. "I'm glad we didn't dunk her now."

"You needn't bother with that Pulski business any more," the girl retorted. "That lad has a mug that could have only been kissed by the Blarney Stone. I'll bet his name is Burke or McFadden." And she laughed dulcetly.

"I'm an O'Dare!" the Mick argued. "Not a Burke or a McFadden."

"Ah, then you tripped over the Blarney Stone when you tried to kiss it!"

This girl was a pippin, there was no questioning that, mused Keen. "Okay, Pebbles," he repeated. "How did you find us?"

"Very simple. You conveniently left a letter with a bill in it, in the cockpit of your plane. I pocketed it while we were talking things over—and there sure enough was your address on the envelope. Simple, eh?"

She threw the envelope on the table and Keen stared at it. Yes, there was his name and the Graylands address in clear typing! This "give-away" must have slipped out of either his or Barney's pocket when they worked on the plane earlier in the day.

"It's all very interesting, of course," smiled Keen. "But I still don't know how you got here."

"Don't try to talk your way out of this, Mr. Keen. You were flying that black plane, you picked me up in a rubber boat, and later you let me off at the uptown ramp. After that the fireworks began, but thanks to *Herr O'Dare* here . . ."

Barney almost choked at that, but Keen steadied him.

"She means well, Barney. Take it easy. Remember my vest buttons."

"*Señor O'Dare*," the girl continued tauntingly, "simply blew out the searchlight and little Pebbles was able to skull her way around the right side of the pilings, canter up on the jetty, and find her dear little Cadillac!"

"Then you stepped on the Sunoco, drove eastwardly with your portable armory—and here you are," cracked Keen. "But what for?"

"Very simple," the girl said, putting the bead on Keen's third button from the bottom. "Very simple. You see, I, too, collect pebbles from all over the world."

And with that she advanced directly to the table and picked up the mysterious bag, which Keen had deposited there on coming up from the cellar.

The young ballistics expert watched the long slim fingers take the bag—but he also saw another long slim finger tighten on the trigger of the Mauser, telling him it would be suicide to attempt to stop her. The bag was dropped into a large patch-pocket of the cream

jacket and the girl backed away again.

"So, there's your bedtime story, Mr. Keen," she said. "But don't worry. I won't give you away—unless you become obnoxious. As a matter of fact, I rather admire your little 'Griffon' game. I have an idea you mean well. You must stop reading things in Personal columns that do not concern you, however."

"Blame that on Barney. Since he's started learning to read, you have no idea what messes he gets me into. Still, the Personal columns are interesting—and handy at times, eh?"

"That's an idea," she agreed with a knowing glance. "I'll advertise for you in the 'Personals'—sometime when I'm short a fourth at bridge."

"Thanks," Keen said gravely, his mind racing at trip-hammer speed. "But you're not going now, are you? We have a lot more champagne, and you really should stay and see Barney put on his suction act with a bottle of O'Doul's Dew."

"Sorry, but I *must* go. Thanks, though, for being a perfect host. Perhaps we'll meet again sometime. Now if you'll both stand still for a few minutes, I'll leave. Don't bother to call the butler—he might not like what I did to your door locks. Good night, Griffon—and happy landings!"

Then, before they could get around the table, she was gone—gone as swiftly and as quietly as she had come.

"Quite a gal," agreed Keen, filling his glass again. He, too, needed a drink.

"I told you we should have dunked her," the Mick said with a low moan. "Now we got to shoot her—or marry her!"

"Good Lord!" gasped Keen. "Where the devil do you get such terrific ideas?"

Then somewhere off in the dim distance they heard a car's high-powered engine roar and they knew the girl they had called Pebbles had escaped.

Barney got another bottle and did things to it with the corkscrew. But he was off form now, utterly upset, his pipes being clogged with emotional carbon. He only managed to reach the line, "Every Drop Purest Nectar" before he had to choke off.

"Hey, Boss," the Mick asked when he got his breath. "What was in that bag, anyway?"

"Diamonds! Diamonds, my boy! Real diamonds in the rough! When they're cut and polished, they should be worth half a million, or so—if I know my Tiffany windows."

"Diamonds? *Them* things? Why, Chief, they's a billion of 'em like that down on the beach!"

"That's what you think. I tell you they were *real* diamonds, Barney. And now I know what they meant in saying the cutter would not be available after the 15th. 'Cutter' refers to a guy who can cut and polish diamonds in the rough."

The brain-fagged Mick allowed some time to let all that penetrate his osseous matter. Then he finally got it: "That gag was smuggling, eh, Boss? And what do you think of them tramps, trying to do the Government out of the duty?"

"I never knew there were such peo-

ple in the world," Keen said solemnly. But he was again seeing a pretty face in the flames—a face that taunted him with a honey smile.

When he came out of it, Barney was sound asleep on the rug in front of the fire. Keen threw an overcoat over him, put the fire screen in front of the blaze, and sauntered off to bed.

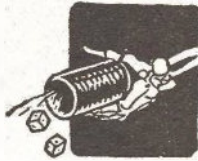
THE MICK was silent and morose when he served Keen's breakfast the next morning. They exchanged glances over the hot toast, then the Mick growled:

"She was a gem, all right! She sure put it over us. When are we clearing out?"

"Clearing out? What for?"

"Are you going to sit here and wait for old Lang to come and clamp the nippers on us?"

"Why nippers? She won't talk. How can she? She's in this up to her neck



herself. How can she squeal?" argued Keen.

"I don't think so," Barney said gulping his coffee. "She don't seem to be that sort. I'm beginning to like the skirt, now."

"Thanks. That's what I think, too. But after all, she has in her possession uncut diamonds that have not been declared. She's in a spot. How'll she get rid of them? Some one will have to cut and polish them before she can do much with them."

Barney absorbed all that slowly as he munched on a slab of crisp bacon.

"She has a tie-up with some one in the Coast Guard," Keen went on, reaching for a hot roll. "Then she has a Cadillac and probably lives somewhere uptown, or in Westchester or Long Island. But one thing is certain, Barney. She *knew* those stones were to be dropped overboard. She either checked—the same way we did through the notice in the Personal column—or she actually saw 'em thrown overboard."

"Saw 'em?" gasped the Mick. "Then she was aboard—all the time?"

"Possibly. Possibly aboard the *Dortmund* on the way over."

"Maybe they were her stones in the first place, Boss," Barney said quietly, like a child reciting a short lesson.

"Perhaps, Barney. She may have been bringing them over herself for some one in this country. We ought to check with the Customs House and see if anyone aboard the *Dortmund* had planned to declare them. They have to, you know; for our Customs men work closely with foreign diamond dealers, and as soon as stones are brought for delivery to this country, the Customs people are advised and they're on the lookout for them. We shall have to check that item."

"Maybe through old Lang, eh?"

"Perhaps. But with care. Don't men-

tion it; leave it to me."

"You can have it, Boss. I don't want any part of that blood-hound."

BARNEY had hardly finished his line when the telephone bell rang. They both smiled.

"Speak o' the Devil!" muttered the Mick.

"Old Flatfoot, himself, eh?" Keen added, reaching languidly for the phone. Then he spoke in a louder tone so that his words could be heard on the other end of the wire: "Why can't you let other people alone at this unearthly time of the day?"

"*You lazy hound!*" the harsh penetrating voice of Drury Lang rasped over the receiver. "*What do you mean, 'unearthly time of the day'? I've been up most of the night.*"

"Oh, well, you night club playboys," Keen parried back. And he winked across the table at the Mick, who had a mug no war-weary gorilla would own.

Lang spluttered like a leaky air hose: "Why you—"

"Never mind—I know the rest of it. The chorus goes—"

"*You get down here somehow today, early—that is, before noon, if it won't give you a physical breakdown. We got a new slant on this 'Griffon' guy.*" Lang paused. Then he blurted: "*Did you know that the Griffon was a girl?*"

Keen almost fell over backward into the fireplace. "Will you say that again?" he finally asked. "Say it slower so that I can take it in small doses."

Meanwhile, the Mick's face was undergoing another plastic transformation. He looked like a guy being strapped into an electric chair now.

"*That's right!*" Lang boomed back. "*She made a landing at the uptown aero ramp last night from that black plane we have heard so much about. She was seen getting out into a small rubber boat. But then some one aboard the plane shot the searchlight out and she escaped into the darkness. Can you come down here and talk it over with us? There's a lot of queer angles to it.*"

"No bullets to all this?" asked Keen, winking at the Mick again to reassure him.

"*Yeah. Lots of 'em. But they're all from a .30 caliber American Browning. You may have some ideas, eh?*"

"Sure. You get me the passenger list of the *S. S. Dortmund* that got in last Saturday, will you?"

"*What the hell does that have to do with it?*"

"Also the personnel list of all Coast Guard men stationed with flying units between Cape Cod and Cape May," added Keen.

"*That's queer! The rubber boat was one taken from a Coast Guard plane. How did you think of that?*"

"Some one had to. But how do you know it was a girl who got out of this—er—black plane? You didn't capture her. That might have been Barney on his way to a Hibernian fancy dress ball."

There was a series of gurgles, choked grunts, and other strange noises from the other end that gave evidence to the fact that Lang was suffering some

serious form of emotional strangulation.

Keen went on: "You take three aspirin tablets, put your feet in a hot mustard bath, suck on three lemons, one at a time, and take it easy—or you'll blow a gasket. Anyhow, I'll be down about noon—in time for you to take me to lunch. S'long, Lang."

He hung up, laughed aloud, and poured himself another cup of coffee.

"They found out about that jane?" husked the Mick.

"Sure. They have a swell mystery on their hands, now. Lang thinks she's the Griffon—this week."

"You know," mused the Mick. "Me old Granny McShane—the real one, not the fake who showed up a while back—has a fine little cottage in Ireland. I think we'd better buzz off there until some one starts a war and gives this mess a chance to blow over."

Keen laughed again: "You and I in a jaunting car, eh, Barney? 'The Killers of Killarney'—or 'Who Stole Mickey MacGuire's Pigs'?"

"It ain't funny, Boss. We gotter do something!"

"Don't worry, I intend to. You stay here today and go to work on the Bullet. Keep your eye opened for anyone moping about and be ready for a quick get-away—in any direction."

"Granny McShane, here we come!" the Mick mooned into his coffee.

KEEN togged himself out in a neat gray worsted suit, lightweight tan shoes, a raglan camel-hair polo coat, and a light felt Vagabond hat. Then he slipped behind the wheel of his new Packard roadster, crunched around the driveway, swung into the country road, and let her purr toward the Highway No. 27. He drove slowly at first pondering on the events of the night before, His mind's eye picturing a Cadillac of the ultra-expensive type racing away into the night, a slim smiling girl at the wheel with half a million dollars worth of diamonds in her jacket pocket.

He was rolling along contentedly, planning his approach to Lang and his consideration of the facts available—when suddenly his eye caught the tire marks of a car that had been driven off the road. At this point, the road was none too wide, and it was banked on either side with a thin carpet of gorse and grass.

He stopped his car, got out, and wandered over to the tire marks. From his vest pocket he took a small celluloid ruler and measured the width of the tread. Then he studied the pattern of the tire and decided that it was of an expensive make, used on costly cars, and that the car had been somehow forced off the road, only the application of the brakes in the last few yards preventing it from winding up in the ditch.

He paced back from the point where the car had switched off the highway and discovered that a narrow road came out from some fields on the left. This road would be shielded at night, owing to a fairly heavy patch of brush. Here he found more tire marks, of another kind. A car had been backed in. And had stood there for time, for there were

four heavy depressions in the sandy soil. Then it had been driven out, so Keen following the tracks of the tread, deciding that it had forced the other car off the road and probably caused it to stop.

He searched about carefully now and discovered a number of footmarks. Most of them were made by men's shoes—but a few left traces of a small rubber-soled shoe. There were many of these at one point near the front end of the car that had been stopped.

Keen smiled, then said to himself: "Well, there goes our 'marbles'. So they got you, eh, Pebbles? Yes, this gets more interesting all the time!"

He was certain, as he climbed back behind his own wheel, that the girl on leaving Graylands had been held up and in all probability robbed of the bag of diamonds.

"If Barney knew this," smiled Keen, "he'd be in a rowboat by now heading for Ireland."

He lit a cigarette, started his motor again, and let the Packard have her head. For the rest of the way into New York City, he pondered deeply on the whole situation. There were no real answers to any of it as yet. But perhaps there would be when he had glanced over the two lists he had asked Lang to obtain for him.

Time flew and it was well after the noon hour when he pulled up in the crosstown street where Lang and John Scott, Chief of the New York Division Department of Justice, had their dingy office.

He made his way up the worn, dusty steps of the old building, found the door that carried a very misleading business name, pushed a hidden button that would warn the occupants of his arrival and identify him as a friend, and shoved the door open. He passed through



a small reception room where a white-faced clerk was pecking away at a dingy typewriter.

"Are the bloodhounds in?" he asked cheerfully.

"Both of 'em," the clerk admitted without looking up. "And you'd better treat 'em gently. They're not fit to speak to."

"Thanks for the tip."

Keen went on through to find both Lang and Scott half sprawled across their desks staring into space. Papers were littered everywhere. The floor was murky with cigar ash, the air was blue with smoke, and the two Secret Service men looked as though they had not seen a bed, a bath, a razor, or a square meal for days.

"Oh, it's you, eh?" Lang said pivoting his long chin in the palm of his hand. "Always the dapper gentleman. And why the devil do you have to look like a fashion plate when we've been sleeping in our clothes for days?"

"It's a trick. But what's the matter with John? He looks like a candidate for a professional mourner's job."

"He's looking for half a million dollars worth of uncut diamonds—if that's any news to you!"

"You might try Tiffany's or Woolworths," suggested Keen, draping himself over the arm of an old leather chair. "Who pinched 'em?"

"Dope! If we knew that, we wouldn't be sitting here. They were being brought in last Saturday by a Miss Barbara Colony—on the *Dortmund*. And why were you so interested in the *Dortmund* and her passenger list, Keen?"

Lang was the bloodhound again. He stared fixedly at Keen as if to paralyze him by some mysterious form of hypnosis.

"Let's have the full story," said Keen lighting a cigarette and ignoring Lang's blast.

"Miss Colony is the daughter of Bliss Colony, the greatest diamond expert in this country. Colony has been commissioned to put on a diamond display at the World's Fair. And incidentally there might be more to it than that. It may be that something special was to be made up as a gift to two visiting foreign rulers who will be in this country this summer. Anyhow, the story is that a large number of uncut stones had been purchased through a noted Amsterdam dealer and Miss Colony was bringing them to this country for her father to work on."

"And coming across, the diamonds were pinched and poor old John over there has to find them. What a lark!" laughed Keen.

"Funny, eh?" John Scott muttered, still holding his massive head in his hands. "Give him the works, Lang, and we'll see if it's so funny then."

SUDDENLY something deep inside him made Keen cringe. Something told him he was on the spot. He had never seen Scott take this attitude before. These G-Boys had something up their sleeves and he wondered what they would pull on him next. He was measuring the distance from his chair to the door.

"Now just what was it you wanted in that passenger list?" snapped Lang, turning on Keen like a tiger.

"I wanted to check it with a newspaper story I had seen somewhere," Keen cracked back.

"What newspaper story? Isn't it queer, considering everything, that you should want that particular passenger list?"

"I could have obtained it from the line," taunted Keen. "Why should I ask you to get it, if I feared you'd try to tie me up with some stolen diamonds?"

Lang fumed at that. Was there no angle he could get this guy on?

"How did you know we were trying to tie you up with the diamonds?" the bloodhound argued.

"Because that's just the dumb thing you would do. You could shovel a wagon-load of uncut diamonds on this floor, Lang, and I wouldn't recognize them from seashore pebbles. Don't be dopey!"

"You shut up! I'm doing the talking here."

"Under difficulties though, Lang. You haven't your hat on and you always fume through your felt, you know."

Lang growled. "The next boner you pulled was the request for the names of the Coast Guard guys in this area. You know nothing about all this, but you want the *Dortmund's* passenger list and the list of Coast Guard guys around here. Would it interest you to know, Mister Keen, that Miss Barbara Colony, who was a passenger aboard the *Dortmund*, also has a brother—a Lieutenant Whitman Colony who's a Coast Guard pilot flying out of Cape May?"

"It interests me in a roundabout way, Lang," said Keen maintaining his calm somehow. "You have the boats right, but you missed on the names. I never heard of Miss Colony or Lieutenant Colony until this very minute. I was interested in a Jerry Connaught, an old friend of mine who was bringing me some Belgian firearms for my collection."

Lang almost went to the ceiling.

"You see, said Keen with a smile. "I had expected to hear from Jerry, but I didn't. Then I saw an item in one of the papers to the effect that a Mr. Jerry Kaynert—spelled K-A-Y-N-E-R-T—had been seen at the Rainbow Room. So I decided it might be my Jerry, and was interested to learn whether it was by checking the *Dortmund's* passenger list."

"You take the biscuit," snarled Lang. "You always have a swell story, don't you? Now give us the works on the Coast Guard angle."

"Very simple," sparred Keen for time. "But you don't think I have those diamonds, do you?"

"Cut it, Keen! Stop stalling! We're not dumb to you now, you know. This time you balled yourself up completely. Now let's have it straight on the Coast Guard guy."

"The Coast Guard fellow . . . Yes," Keen fumbled. Then he grinned widely—and Lang knew he was licked again. "The Coast Guard guy was a man named Reynal. He got in touch with me about a certain explosive. He was working on a new anti-aircraft shell of some kind, he said. And his idea was so fantastic, I decided the guy was either nuts or a phoney trying to get something out of me. He said he was in the Coast Guard and that he was working on the thing for the Government."

It was a shot in the dark. But there was some truth to his statement about Reynal. Then Keen almost fell out of his chair when John Scott leaped up and said: "What name was that, Keen?"

"Reynal," answered the young ballistics expert. "A guy named Anton Reynal."

"That's screwy, too—because a man named Anton Reynal was a passenger aboard the *Dortmund*, and up until that time wasn't even in this country!" John Scott grunted accusingly. "How do you figure that?"

"I don't," said Keen completely floored.

KEEN lit another cigarette to give him time to make a new stand. How a series of circumstances had tied him up like this, he had no idea. But he knew that he was trying to keep the knowledge of the girl, the pebbles, and the events of the night before out of the possession of either of these two worthies. And in doing so he had woven a pretty net of coincidence that threatened to tie him up completely.

"What's more," John Scott said, poring over a passenger list, "I find no such person as this 'Connaught' aboard the *Dortmund*. How do you figure that?"

"I'm amazed now," laughed Keen, "that there is such a ship as the *Dortmund*!"

Even Lang was too disturbed to find any further accusations.

Keen got to his feet and started pacing. His mind was busy with certain facts and events. He stopped in the middle of the room and turned on Scott: "If there was a man named Anton Reynal aboard the *Dortmund*, who in the name of the great King Kong was the man who communicated with me? You ought to check that guy Reynal. There's a twist there, somewhere."

"When did your Reynal contact you, Keen?"

"Early last week—about ten days ago by telephone from New York."

Scott believed Keen, but the doubtful Lang continued to wage war:

"And just what *was* this new explosive idea, your Reynal had?" he snarled, shoving his whiskery mug up near Keen's nose.

"Well, it was no joke—if he actually has such a thing. It was his idea to equip an anti-aircraft shell with some form of electric eye which—co-operating from light reflected from the plane it was fired at—would explode without actually coming in contact with the plane. From what I could make out of his talk, he was using a small fuse cap light which at night would reflect out through a number of small ports. These rays of light were to reflect off the body of the ship and back to an electric-eye mechanism which would fire the charge, which in turn would destroy the plane. He also had some idea of adjusting the light and electric-eye so that the scheme could be used in the daytime as well as at night."

There was no argument to this. Both Scott and Lang had to admit no one could think up that much detail so quickly, so they were right back where they had left off, except that the mystery had piled up heavier by the addition of two Anton Reynals.

Lang sat down and forked his fingers through his stringy gray hair. He wished he had never left the police force to become a detective. There, a guy knew what he was doing. Just a matter of socking a few heads with a night-stick when things became troublesome, and you just bundled the sockees into a patrol wagon and the Night Court magistrate took the headaches.

"Any way of checking this Reynal?" asked Keen, sparring for time to think.

Scott fumbled a stack of telephone

directories while Lang just grunted.

Keen mentally traced the movements of the girl in his own way, now. She had lost the diamonds somehow aboard the *Dortmund*. Then she had discovered how they were to be put overboard; perhaps she actually saw them put overboard. Finally, she'd induced her brother, the Coast Guard guy, to help her recover them.

But who had taken them? Where were they now? And who were the thieves? It was a certainty the girl had lost them again last night.

"Wait a minute!" snapped Keen. "Call the Aero Chamber of Commerce and see if anyone by the name of Reynal has a ship or a flying ticket. If my Reynal is interested in anti-aircraft shells, he might be interested in flying."

Lang grabbed a phone, fumbled through a conversation, then hung up awaiting the call back.

"What now, Mister Keen?" he growled. "You run the show. We're licked."

For a moment, Kerry Keen considered checking on the girl, but then he realized that that would be dangerous. He was sure, now, that she had lost the stones, or she would have reported them to some Government department to go through Customs in the usual way. No, she must be left alone for the time being, and the Secret Service men must be steered away from her.

"We might check on your Lieutenant Colony," he suggested.

"Don't worry about him. We checked him. He's under open arrest down there for carrying out an unauthorized flight last night," said Scott, still thumbing the directories.

"And *that* means nothing to you?" flamed Keen, sitting down hard and letting off a whistle.

"What could it mean? He didn't—wait a minute! Hey, John!" gagged Lang. "What the devil was that guy doing out last night, anyway?"

"That rubber boat was a piece of Coast Guard equipment," Scott added. "Let's check with Cape May and find out if Colony's plane is missing a rubber boat?"

The telephone bell rang and Lang took it. He answered in monosyllables for a few minutes, then jotted down a few notes and hung up.

"You had an idea, Keen," he said. "There *is* an Anton Reynal, and he has a transport ticket. He also owns a Lockheed Electra and he flies out of Kansas City. He's got dough, I guess, because he uses the plane for his own personal trips. He was last heard of at the Miami Air Races."

"I wonder where he is now," said Keen, biting his lower lip.

"A guy with a Lockheed Electra could be anywhere," growled Lang.

Keen kept his opinions to himself and decided to leave Lang and Scott as quickly as possible. Some strange urge prompted him to get home quickly.

"Well, now that you've been through my recent history, I presume I can go and carry on with my private ventures?" he said blandly.

"Sure, but what about this gal who

got out of this black plane last night? Is she the Griffon?" demanded Lang.

"If not, she must be his sister," Keen said with a sly grin. "Why don't you ask your Coast Guard guy? Maybe that was the unauthorized flight he was on."

"But this plane was black. The Coast Guard planes are silver!" fumed Lang.

"Very simple. Put it down to an optical illusion on the part of the cops. Most of them need glasses anyway."

"Listen, you!" Lang croaked. "You got a lot of answers so far. But they're a lot you ain't never answered and anything you can get this Griffon guy to do will help rub a few of them off the slate. We're gonner get those stones back somehow, or we'll know why. And you know a lot more about this business than you let on. If you don't want us asking too many questions, you'd better get busy. We ain't gonner keep this story out of the papers much longer, you know."

"Those stones won't go through Customs, will they?" said Keen with a taunting tone.

Lang and Scott exchanged helpless glances.

"Of course not," added Keen. "If they're for a Government show and for the World's Fair exhibition—and possibly for a gift to visiting royalty—they won't be taxed, will they?"

"You win. So what?"

"Well, if I managed to get them back, I might charge a little tax of my own? And no one would be any the wiser, eh?" Keen grinned, getting up.

"You wolf, you!" flamed Lang. "You get those stones back. We'll see you get your blood money!"

"Of course. Otherwise I might get them cut myself and keep the lot, huh?"

And with that taunt, Keen left the two Secret Service men to gnaw on their fingernails.

BUT though he left with a gay quip on his lips, Keen knew he was up against a tough proposition. Where the stones were, he had no idea. And if he did, how to get them back safely and into proper hands and still grab a chunk of their value for himself was another matter. How to kid Scott and Lang out of their suspicion of him was also a problem in itself. And then there was the matter of the girl, who had the secret of the Griffon's real identity.

He decided to make a bold move now as he steered his roadster uptown. He would call her up—make an appointment to meet her. It would be risky, of course, but one had to take chances in matters like this. It was neck or nothing now.

He drove to the 50th Street entrance of the Radio City parking lot, turned in his car, and hurried across the street to the R.C.A. building. There, he sauntered to the lower level and found a battery of telephone booths.

He searched through the directory, found the name "Colony," and discovered that they had a sumptuous apartment on Riverside Drive. He called the number and asked for Miss Barbara Colony.

A maid answered and in a few seconds a girl's voice responded.

"Good afternoon, Pebbles," said Keen, using that approach to identify the girl.

"Oh, good afternoon! I was wondering when you were going to call me up and invite me out to tea," the voice replied, and he was sure of his ground now. There was the same lilt to the voice and the same tingle of insurmountable humor and poise.

"Always the play-girl, eh?" Keen smiled. "Well, can you munch a crumpet with me at the Rainbow Grill within half an hour?"

"I can't wait. You be there somewhere on the south side and I'll be on hand within half an hour."

"Fine!" replied Keen. "Are you glad I called?"

"Well, I've been calling you for two hours. But that man of yours was too loyal. He refused to admit he knew any such person as you. He declared on a stack of Hibernian Bibles that I had the wrong number and that he was just some one in charge of Mullins' Morgue."

"Good old Pulski!" cheered Keen. "Aren't we devils?"

"Very interesting people. I'm going to like you."

"I hope so. Well, half an hour then, right?"

"I never fail—very often," the girl replied with a sad tone to the final words. Then she hung up.

Keen put the receiver back on the hook and pursed his lips. Then he went back to the directory table and thumbed through it selecting a series of numbers. They were all banks dealing in foreign exchange. And finally, after getting the Royal Bank of Canada downtown, he hung up with a gleam of satisfaction.

"Twenty-five grand in Canadian money is not to be sneezed at," he muttered to himself. Then he called the North Beach, Floyd Bennett and Newark Airports. But none of them could give him any information on a Lockheed Electra owned by an Anton Reynal.

"It'll turn up," he said hopefully.

He sauntered through the long corridor and took an elevator up to the Rainbow Grill. A waiter gave him a table for two on the south side.

"Get me a dry Martini, please. A young lady will join me in a few minutes," he said. The waiter took his order and dissolved into the color and glamor of the famous restaurant.

From his table he had a magnificent view downtown and well beyond the lower bay. His drink arrived and he sipped it, then put it down to take in the full beauty of the city. He had seen the same view from the air, but somehow from this steady and protected vantage point it offered new lines of beauty. The notched skyscrapers, the gleam of colored tile, the cottony clouds, and the blue-green of the bay.

He was so absorbed in the scenic panorama that it was not until a voice near him surprised him out of his reverie by saying: "They serve a grand Martini here, don't they?"

He turned and gasped: "Pebbles!"

THE GIRL was standing beside his table smiling at him over the rim of his glass. And now she put it down

and said: "I always seem to be drinking out of *your* glass, don't I?"

"Yes. And I believe you ought to pay some sort of a forfeit for that," said Keen, taking her in with his eyes. She was at her best in a Monroe tweed ensemble with a silver-fox collar. Her hair was done with an air of studied casualness and her saucy hat completed a very satisfactory picture.

"But not here, Mr. Keen," she whispered, glancing around with a clever gesture of school girl simplicity. Keen now liked her more than ever, for he sensed she was a very capable person. Somehow now, he didn't mind that she knew who he was. But at the same time he realized that he would have to play safe to evade any entangling alliances.

"May I get you another drink?" he asked.

"No, get yourself one and order, let's say, tea, buttered bread, English jam, and stacks of those tiny French pastries."

"I won't have it," he said sternly. "You've simply got to preserve that figure of yours. Stacks of French pastries! Good heavens!"

"Just *one* stack," she said with studied obedience. "You can preserve *your* figure."

He laughed and gave the order to a waiter, then said: "So Reynal got the pebbles back again, last night?"

She sipped the rest of the Martini before she answered, and Keen admired the bloom on the curve of her cheek.

"How did you know? You're the most remarkable man, Mr. Keen," she said putting the glass down.

"You left enough evidence in the road to tell even a rookie cop. I figured out that you were run off the road. Then they took the pebbles and left you with a disabled engine."

"Right! They unhooked the spark-plug connections and it took me some time to fit them back again. But how do you know about Reynal?"

"That's a long story. How did he get them in the first place? Didn't you put them in the Purser's strong box on the way over?"

The girl looked at him in amazement. How did he know all these details? "Well," she said, "they cleaned the Purser's box out the second day, so that would have been no use. I actually had them with me in my stateroom—hidden in a bottle of brandy. I felt sure they would be safe there. But I believe my Stewardess was in with them, and the stones disappeared on the Thursday before the Saturday we docked."

"And this man Reynal? What sort of a fellow is he?"

"Too clever for little . . . Barbara . . . er, Pebbles," she smiled. "Reynal had made my acquaintance on the way over. Said he knew my father."

"Is he an *older* man?"

"Of course, silly. He knew my father. They had—at least Reynal put it that way—studied diamond cutting in Amsterdam together years ago. But father does not remember him."

Keen pondered on that for some time, then he decided that *his* Anton Reynal must be this man's son. That would explain the two names.

The waiter broke it up for a few moments setting out their tea. This gave Keen a chance to study the girl and try to figure out where all this would lead to.

She poured, took lemon, then pressed her perfect teeth into a buttery slab of toast. She smiled at him kindly, and Keen's hopes rose. There was no flash of the trickster in her eyes.

"You are a very remarkable man, Mr. Keen," she said dabbing at her lips with a small square of damask. "We're going to have fun."

Keen recoiled at that and remembered Barney's words: "We should have dunked her. Now we got to shoot her—or marry her."

The prospect of either act simply staggered Keen. He clutched his cup of tea and wished it had been a stiff double-brandy.

"Before we plan any fun, let's figure out how we can get those pebbles back," he fenced, playing for time. "Does your brother, the Coast Guard fellow, know about me?"

One of her eyebrows assumed a high-lift angle. "No, you're my secret—and mine alone, Mr. Keen. The others wouldn't understand. I've heard about you as the—as the aerial Robin Hood for some time now—and I've always wanted to know you. Oh, no. I'm not giving my hero away. I'm not sharing my secret with anyone."

KERRY KEEN let out a quiet sigh through half-pursed lips. Then he relaxed again, studied her carefully, and said: "So, what next?"

"Well," she replied, "I've messed up the job you started, and Reynal and his men have the stones again. Father can't afford to lose that much at once, and after all, he is responsible. I think there will be some question on the insurance business."

"I have no doubt of it," agreed Keen. "But let's get the rest of the story straight and perhaps we'll find some angle to work on. Tell me how you know about Reynal putting the stuff overboard."

"I wish I knew how *you* know so much about it all," she said sipping her tea again. Then she went on with another glance of admiration. "Well, as soon as I discovered the stones were missing, I somehow suspected Mr. Reynal. He had spoken of gems and gem-cutting, and the more I thought back on our conversations, I sensed that he had been trying to find out about the stones for the World's Fair exhibit, and whether I was carrying them. Well, as I told you, they disappeared on Thursday night while I was at dinner, and I discovered my loss late that night."

"You told the Ship's officials, of course?"

"Yes. I told the Chief Purser and then I learned that his safe had been rifled earlier on the trip, but that nothing of importance was taken. So we both decided that some one had been after the stones, then. The Captain radioed ahead to New York so that the ship could be properly searched on arrival, but of course there was nothing to be found—and I knew there wouldn't be."

"You knew they had been dropped overboard?"

"Yes, on Friday night. I was walking the deck while we headed for Ambrose Channel, and I stopped to smoke a cigarette. I was alone, feeling pretty blue as you can imagine. I went to the rail, for the night was beautiful, and watched the water skim by. Then I heard voices from a porthole somewhere below, and I recognized one of the voices as that of Mr. Reynal. Then I sensed that I was standing directly over his stateroom."

"I don't know why I stayed, but somehow, I did. Then I suddenly saw an arm protruding out of the porthole. I also saw for a few seconds a queer looking



wooden thing with a bright shiny metal tin fitted in it somehow. It was dropped clear and it hit the white foam of the water and disappeared."

"And then you knew?" judged Keen.

"No. That's the strange part about it. You must remember I am not a Kerry Keen," she smiled a bit wanly. "It meant nothing to me, at first. But a few minutes later I started downstairs and half way to the main saloon deck, I saw one of the sailors marking off the progress of the course on the trip chart they put up to let the passengers know just where the ship is every twelve hours. And before I could make the turn in the stairs, I saw Mr. Reynal come down the board, and speak to the sailor."

"I get it. He asked for their exact position at midnight, eh?"

"Yes, and even then it did not occur to me what it was all about. But I waited until he had left, then approached and caught the sailor just as he was closing the glass door on the chart frame. I asked him why Mr. Reynal was interested in our exact position and he said he didn't know and that passengers were always asking queer questions. So I asked him what our position was at midnight."

"And he told you?"

He said: "There it is, Miss, marked on the chart, right up to midnight! And sure enough, for the first time I really looked at that chart and learned what Mr. Reynal had asked."

"And then you began to suspect?"

"No, not even then," she admitted with a guilty stare. "But I continued to puzzle about that wooden thing with the shiny tin, and when we were coming up the river to our pier the next day I really caught on that Reynal had put the stones overboard where they could be picked up—to evade bringing them in with his baggage."

"And you arrived, called your brother, and for several nights tried to find it—just as Reynal's gang did, only they used a cabin cruiser named the *Gambit*, while you borrowed a Government Coast Guard plane," closed Keen.

"Yes, and now my brother is in the dog-house for flying an unscheduled patrol. Reynal has the stones anyway, and—"

"—And you have uncovered the identity of the Griffon," added Keen in low tones. But he smiled over it all.

"Right," she said with a gleam in her eye. "And where do we go from here?"

"I have an idea we can do something about it tonight. But look here: "Tell me why you didn't paddle your rubber boat back to the Coast Guard plane? You could have escaped with them, you know."

"Why should I have gone back? You were getting the stones, and so I decided that I'd get you—and the stones, too. I do things like that. And my brother was so confused he let me do it."

"Well, it worked because you picked on me. If you had waited, you would have been caught by Reynal's gang in the *Gambit*. They were out there later. I spotted them. That wouldn't have been pleasant." And Keen winced at the thoughts of the prospect. She sure had pluck to go to these limits to remedy a robbery caused through no actual fault of her own."

"But," she repeated, "what now? Our Mr. Reynal has disappeared completely, so there's no check on him. He was not in the crowd that caught me last night. And just to relieve *your* mind further, I told them I had contacted some one out of Montauk Point in getting the stones back. I guess they traced me in my car, somehow, pulled into that side lane, then waited until I returned, knowing there was no other way back but down that road."

"Yes," muttered Keen, "but you might be interested to know that there is *another* Anton Reynal. He's evidently a son of your Mr. Reynal, and he has a Lockheed Electra somewhere about the country. He goes in for inventing particularly offensive anti-aircraft shells that may turn out to be blisters, if you get anywhere near them."

HE WENT ON to elaborate on the other Reynal and his Lockheed, and then added: "I also have reasons to believe that these Reynals plan to get out of the country and into Canada, where I understand they can get the pebbles cut in Montreal. I believe there are one or two experts up there."

The girl munched on a small sugary pastry and pondered on all this.

"Reynal?" she said quietly, staring at the crumbs on the table. "Lockheed Electra? Where have I heard of those two names together? Somewhere, I am certain. You've checked all the local airports?"

"Every one. No trace of young Reynal and his bus since the Miami races last January. I have all the main fields 'taped' and they'll tip me off if he appears. But I hardly think that likely now. Try and think, Pebbles."

"We sit here like a couple of hicks," the girl began to grumble. Then she abruptly stopped, a pastry poised between the plate and her bowed lips. "Hicks? . . . Hicks?" she said, a gleam of triumph appearing in her eye. "That's it!"

"What?" asked Keen, puzzled. "What hicks?"

"Hicksville! The Long Island sportsman pilot club out at Hicksville! That's

where I saw young Reynal and his Lockheed Electra. Why certainly, what a prize I am! Why old Mr. Reynal said something about having a son who was a pilot and who had an Electra he used to fly out of Hicksville. Why didn't I think of that before?"

"Well, for a gal who's had the worry of thinking about half a million dollars worth of diamonds for about a week, you've thought of plenty," said Keen. "We'll check Hicksville. And how!"

"I'll check Hicksville," she said firmly. "I'm going out there. I have friends with a place almost on the field. I can lay low there and keep a lookout. You buzz back to your place and carry on from there. We'll trap that lad before he can get out of the country. I remember the plane. It had a special insignia on it that young Reynal has registered—a triangle thing with an inverted horse-shoe in the middle in which rested a silly-looking gun of some sort."

"It may not be so silly-looking if it starts shooting at you," said Keen reflectively. "But come on, we've got to get moving. You have a car?"

"Down in the parking lot," she said as Keen signalled for the waiter and his check.

"All right. You buzz out to Hicksville first and keep in touch with me. The minute that fellow lands—no matter what happens or at what time—let me know. I'll call there now and check to see if he has arrived yet."

He moved fast now and reflected that Hicksville was a perfect spot for an approach by motor boat from either the Atlantic or the Sound side. Young Reynal would be able to make a quick landing there, pick up his father and the stones—and be away before anyone had time to even check them in. It was a good thing this girl remembered his amateur pilot's insignia.

At Keen's request, Barbara Colony drove off first while he stayed behind to pay the check. He followed later, went down in the elevator, and called the Hicksville Aviation Country Club to see if the Electra had landed there yet.

No soap!

HE hurried out to his car, turned in his check, and purred out toward the Queensboro Bridge. He stopped once on First Avenue and sat peering out through his windshield. Then glancing about he sighted a paint store and ran the car up to its door, climbed out, and went in. He returned in a few moments with two large cans of paint and dropped them into the rumble seat.

"That ought to help," he muttered. "But one can never tell. It's a chance we have to take. Still, for twenty-five grand it should be worth trying."

He let in the gear, snuggled back in the soft cushions, and with rare fingertip delicacy directed the Packard through the traffic and headed for Long Island.

It was natural he should ponder on the girl and how she had so suddenly come into his life. He felt strangely secure, however, in spite of the fact that she had accidentally, if startlingly, discovered his dual rôle, thus to become

the only person outside of Barney O'Dare to learn his true identity. He felt he could trust her and that possibly she might fit somewhere into his melodramatic scheme of things.

"She would no doubt fill in at times when his normal life required a little leavening or a change. She would be interesting to talk to and fill a void that had been apparent right from the start. Of course, it would not do to allow this friendship to go too far. Barney had suggested shooting or marriage, but that was the Mick in him. Keen sensed that these two would clash if allowed to mingle and there would have to be a new arrangement of plans in which mutual friendship, honesty, and loyalty would be blended to the correct formula.

Things would be different from now on. After all, he was entitled to the pleasure of a woman's companionship,

Answers

TO QUESTIONS ON PAGE 24

- 1—The Boulton & Paul *Defiant* and the Hawker *Hotspur* are the two new British two-seat fighters.
- 2—An H-engine is one that has four rows of cylinders set about a central crankshaft so that its end view forms the letter "H."
- 3—According to military law, an airman escaping from a damaged aircraft cannot be fired on during his actual descent.
- 4—A Harmattan is a very dry north-east wind prevalent in Western Africa. It's a flying hazard because it carries great quantities of dust.
- 5—Horsepower is a unit equalling 33,000 ft.-lb., or 33,000 lbs. raised one foot in one minute.
- 6—Brake-horsepower is the power developed by an engine at the actual propeller shaft.
- 7—A mock-up is a fairly elaborate model—made full size of cheap material—of a planned aircraft. It's built to aid the designer in cabin and instrument layout.
- 8—A nacelle is a streamlined body used to enclose the crew, engine, or engines of an airplane.
- 9—An aircraft tender is a ship designed to provide aid, repairs, and servicing for planes of the flying boat and seaplane type connected with the Navy.
- 10—Alex Henshaw is the young Englishman who flew from London to Cape-town and back in 3¼ days for a new world's record.

especially one like Barbara Colony. She had all the attributes that endeared her to a man of Keen's mentality—plus a grand love of adventure. Still, he could not deny that a triangle was being formed.

He pondered on all these possibilities as he directed the silver and black car through the traffic outside Roslyn. Then he pressed firmly on the accelerator to move the needle up a few more notches.

The sun was far down when he turned into the Grayland's driveway. He ran the car into the garage quickly, lifted out the cans of paint, and handed them over to the Mick, who appeared from nowhere like a Celtic wraith.

"That girl!" the Mick began, "she's bin—"

"I know . . . I know," frowned Keen.

"But get some brushes quick and slap this stuff all over the Bullet. I'll be down later to help you. The girl? Well, I had tea with her—and she's all right!"

"Has she got a sister?" Barney asked, his mug as long as a wet week.

"How do I know? I didn't have time to ask her. She's out at Hicksville looking for an Electra. They got the stones away from her last night when she left here, and they're going to beat it to Montreal, or somewhere tonight. We're certain of it."

Barney blinked and followed Keen back into the house, trying to piece all of it together.

"What's this paint for? We just dressed the Bullet a couple of weeks ago," he finally managed to argue.

"Never mind. Use it—on every inch of her. You'll find out why. I haven't time to explain it all now. I'll be back in a minute."

Wagging his great skull, the Mick wound his way down the stairs. He found some brushes, prepared them for use, opened one of the cans, and stirred the contents with a length of lath. He drew the stick out and stared at it.

The paint was a dull flat black!

He compared it with the beautiful lacquer finish of the Black Bullet and spat a resounding oath. Keen came down and together they carried out the job of daubing the amphibian with a coat of the new stuff, while Keen, in short explanatory sentences, outlined the events of the day.

Barney listened and nodded. "So we got a skirt on our hands now, eh?" he growled. "Any day now, Boss. It's either Granny McShane's cottage or Leavenworth!"

"You mean I've got a skirt on my hands. You don't have to worry about her. She's on the up and up. All we've got to do is to get back her pebbles."

"So we don't get any of the gravy, anyway?" the Mick muttered. "What we gonner live on, Boss?"

"Twenty-five grand in Bank of Canada bills — if this thing works out. That'll buy you a few cases, won't it?"

"And the jane gets the rocks—the half million?"

"She can't afford to lose that much. Hurry up, we've got to have most of this paint dry by tonight."

"That's women for you," the Mick frowned. "We gets us twenty-five grand—and she gets half a million! We can't win, Boss. We can't win."

Ignoring the wailings of the Mick, Keen went over the plane carefully and made certain that every portion that could possibly be painted was daubed over with a surface of the flat black paint. Then leaving Barney to check her for fuel, ammunition, and controls, he went upstairs to await further developments. He knew somehow through his sixth — or was it his seventh — sense that something would crop up at any minute.

He sat near the telephone, tempted at times to pick up the instrument and begin another wild coverage of the airports. But intuition told him to leave the instrument alone and keep the wire open for the call that would send them

off again.

He paced the room restlessly as the evening shadows began to crawl across the wide lawns of Graylands. He clenched his fists, paced some more. His throat constricted and his eyes were mere slits.

Then suddenly the phone tinkled!

Snatching up the instrument, he cried, "Hello!"

It was Pebbles. He knew that before he had put the phone to his ear.

"It's here," a voice cried. That was Pebbles with a vengeance.

"You are certain?" Keen queried. "Now take it easy and let me have it slowly." Meanwhile, he reached for a foot button hidden under the pile carpet and sent a signal down to Barney below.

"Yes, I am certain. I can see the field plainly from here. The Electra circled the field once and did things with its landing lights. A series of on-and-off flashes. Then, I saw a new station wagon coming out from somewhere behind the clubhouse. It's running out now toward the plane, which is landing. The station wagon is running up close to it."

"Splendid! You get out of there the minute they take off and come on through here to Graylands. I'll leave a door unlocked and you can wait for us."

"Yes, I'll do that," the girl said. "Now the Electra is taking off. You'd better get going. Good-by!"

Keen didn't stop to answer. He hung up and in ten seconds had pulled on his flying equipment, helmet, goggles, and red mask.

Once downstairs, he found the Mick was ready and had the Black Bullet purring. Keen climbed in, ran the plane out. Barney followed, and when they reached the water, Keen gave her the gun and she leaped to her step and thumped the rollers for the take-off. He headed across Great Pond, skirted Prospect Hill, then hammered at top speed across Long Island Sound toward a point a few miles south-west of New London.

The needle of the air-speed indicator trembled at the 325-m.p.h. mark, and Keen made the most of every adjustment on the throttle and prop. He turned once and yelled at Barney:

"We're after an Electra bearing a triangular insignia that has a horseshoe in the center—a horseshoe with some sort of a gun."

"I was afraid of that," the Mick muttered.

THE young ballistics expert opened his map and drew two lines on it. Both started from Hicksville. One line ran to Montréal and the other toward Quebec. He was gambling on the hope that the Electra would be found somewhere inside that narrow triangle.

He knew he had about 400 miles in which to catch the Electra, if she was heading for Quebec, and less if she were heading for Montreal. He also knew that some one had drawn \$25,000 in Canadian money from New York's Royal Bank of Canada that morning. Such an unusual sum in actual Dominion bills was

a tip that some one planned making a large payment for a service that would be safer if paid for in cash rather than by a check. On this item alone he was basing his belief that Reynal was heading for Canada with the uncut stones—and money to pay for the cutting.

Keen headed for Springfield, Mass., then flew a zig-zag course between Pittsfield and Turners Falls. He searched every inch of the sky for the lights or exhaust flare of the Electra.

The first hour was a tedious eye-straining period. Then just north of Bennington, Vt., Barney let out a hiss and a low oath.

"What's that?" he said suddenly. "Those queer lights!"

He pointed out one side of the cockpit, and Keen spotted what at first seemed like sparks falling in a streak from somewhere above. He jerked the Bullet over, peered again.

"Look! Explosions somewhere below us," the Mick added, standing up.

There were more sparky lines—and then Keen knew!

"She's above us! That's young Reynal and his new shells. He's dropping them, and they're timed to explode before they hit the ground. If one of those things drops near us and the light from the nose-cap reflects off this ship—we'll be left holding a joy stick!" Keen yelled back. "A busted one, at that," he added grimly.

"Is that why you painted our bus a dull black?" barked Barney.

"Yes. Just took a chance on it. Now we'll go upstairs after Mr. Reynal—and his pebbles."

Keen set the flaps and prop blades for climbing. The Black Bullet nosed up like an insane, high-speed escalator. And in a few minutes they were just below and behind the Electra, which was swerving back and forth and spewing her weird bombs with frantic abandon. Keen took a long chance and drew up close to make certain of her identity.

The evidence was produced by a series of flashes from a forward cabin window. A gun spanged and shots hailed all around them. Keen threw the Black Bullet all over the sky. And then the Mick went to work!

His double Brownings bit hard into the double-tail fins of the Electra. Keen swung off, came back with his Darns and Chatelleraults flaming—also at the tail assembly.

Lead came back at them in a heavy volume, but the Bullet was lancing all over the sky. And then from a position below and behind, Keen slammed a heavy salvo into the tail again and the Lockheed twisted like a hooked tarpon. They cleared while the Electra threw sections of her tail away, nosed down, and wallowed into a slow spin.

"She'll never pull out of that," Keen growled. "Look! Two of the swine have taken to the silk already. Let them go, she's falling speedier than they can get down. Get ready for a fast landing, Barney."

"She'll never pull out of that," Keen growled. "Look! Two of the swine have taken to the silk already. Let them go, she's falling speedier than they can get down. Get ready for a fast landing, Barney."

The Electra threw more parts away and increased the speed of her spin. She was heading for a wooded section just a few miles west of Bennington.

Keen bit his lip. He wondered about

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the men who had jumped and whether the Electra would hit in a space suitable for a quick inspection.

Then, as he watched, he saw another figure clamber out of the ill-fated plane, leap clear, and hurtle away. Something told him to follow *that* man. And no sooner had they reached him when Keen knew this was the fellow they were after. He was clutching a brown leather attaché case to his chest as he hung in his dangling parachute harness.

They circled him all the way down, then checked where the Electra hit.

"That guy has the stuff, Barney. He waited to get the bag before he jumped. At least that is what I would have done in the same circumstance."

The white canopy floated clear of the woods and the man dropped into the open fields of a prosperous-looking farm. Keen used every gag in the book to get the Bullet down fast. He slapped her down hard to prevent his quarry getting away.

Barney was out and running before the ship stopped. The man was being dragged across the ground by the big silk umbrella. And now the Mick ran through it and threw himself on the man.

He held him down until Keen came up. Then together they rolled him over. He was an elderly man and he still clutched the brown case. But he was dead! A black patch at the lower part of his stomach testified to the nature of a wound that had been received during

the air action.

"Gee, Boss," the Mick husked. "He sure gave it a whirl."

Keen nodded. Then he flipped the clasps of the case and the top opened disclosing packets of greenbacks of Canadian manufacture. Also a small cambrick bag filled with pebbles!

"Come on! Let's go!" said Keen quietly.

Together they raced back to the Black Bullet, clambered in, and took off. The Mick immediately rustled a bottle of O'Doul's Dew from one of the lockers and drew the cork with a joyous pop.

"You watch me this time," he said, raising the bottle. "I'll make it all the way down to the very bottom of this here label!"

"Thanks," said Keen. "I'll finish the rest. Let's go."

PEBBLES was waiting for them anxiously when they got in. She had a grand fire burning and sat toasting her long slim legs as they walked into the library-den.

"I could kiss you—both of you," she said, getting up and fitting the action to the word. The Mick took his with a red face, gulped, and somehow started back for the cellar without seeming to move his legs.

"I'll get you the best bottle of champagne that was ever pinched," and then turned his head while the girl rewarded Keen with a second embrace.

Keen opened the bag, took out the diamonds, and tossed them on the table. He

also removed the packages of bills, smiled knowingly at the girl—and stuck them in his desk drawer.

"You'd better tell the authorities that you mislaid them," he said, indicating the uncut gems. "I'm afraid it will take too much explaining otherwise. It was rather an interesting experiment, but your friend, Mr. Reynal, made a bad landing. And as they say on the tombstones—he is no more."

The girl sat down before the fire again, crossed her legs, and nodded: "But he shot at you first, eh?" she asked hopefully.

"Of course. They always do," said Keen. "We'll tell you all about it when Barney returns with the bubbly."

Until far into the night they sat and talked, Keen drilling the girl on how to explain the return of the stones to Scott and Lang, Barney keeping the glasses filled.

It was a lovely way to end a thrilling adventure and Barney was certain now that he was very glad they had not "dunked" Pebbles.

"You can stay here, tonight," said Keen to the girl. "We have heaps of rooms—and Barney makes a wonderful lady's maid when the occasion arises. Tomorrow you'll go back to town, turn over the stones, and—"

"—Come right back again. I think I shall enjoy it here," Pebbles said with a smile. "I can of course?"

"Sure!" both Keen and Barney cried before they realized what they were saying.

Workbench Tips

(Continued from page 53)

lamp, placed back out of the way of the bamboo being curved and held firmly to the standard with a rubber band passed over the heads of two small nails on either side.

To make the lamp, pass a small cotton rope through a thin aluminum tube from a coffee percolator. And then push the

tube through a hole in a rubber stopper that fits the bottle. Bend the tube to bring the lighted end of the wick to the center of the metal arm. Use denatured alcohol as fuel. When the lamp is not in use, cap the end of the tube with a slip-on pencil eraser to prevent wasteful evaporation.

Only by using such a device can the modeler make exactly accurate bamboo curves required in scale work. Incidentally, a candle may be used as a heat source, but it is both dirty and in many cases gets in the way of the curved bamboo ends.

—JOHN DALLAIRE, JR.

News of the Modelers

(Continued from page 52)

successful that it will now be held annually.

Art Vhay was director of the contest, and he feels that the tourney accomplished the object for which it was inaugurated. Vhay says: "The boys' first

taste of success with their simple models will undoubtedly carry them into more serious consideration of model building. In many former unlimited contests, the discouragement of the younger fellow sometimes resulted in his giving up the

activity entirely."

In Vhay's opinion, meets where the beginner is competing with fellows of his own age and experience should be on the program of every model aircraft organization.

What Do You Say?

(Continued from page 53)

HIGH-FLYING LOW-WING
Model Editor, FLYING ACES:

May I register a complaint? You ought to have more models by Sidney Struhl! His low-wing fighter (Messerschmitt, F. A. August 1938) is the best model I have in my collection. In fact, on one flight it stayed up for 10 min., 18.2 sec., then flew out of sight at about 1,000 ft.

BOB GLADSTONE
St. Louis, Mo.

(Editor's Note: They're paging you,

Sidney. How about dropping in and seeing us soon?)

"TRACK SHOE" SKYSTER
Model Editor, FLYING ACES:

During the summer of 1938 you published in FLYING ACES an endurance model. I built it and was extremely surprised at its perfect flying. Will you please publish the plans of it again?

The only thing I can remember about the model is that you said to "put on your track shoes to chase it, because

DAN TEITLER
New York City

once it gets going it goes far!"

BILL SURCHEK
East Port Chester, Conn.

(Editor's Note: The plane you mentioned, Bill, was the FLYING ACES "Sky Gull" September [1938]. But I'm afraid we won't be able to reprint it. You see, we try to give you fellows new stuff each month. Sorry.)

WANTS MORE TWIN-MOTOR JOBS
Model Editor, FLYING ACES:

I like your twin-motor ships very much and want you to print more models like the Curtiss A-13 Attack (F. A. June 1938). Most fellows think that

there's too much work to a twin-engined job, but I like 'em much better than the ordinary type.

ROY SHAPARD
Memphis, Tenn.

FIRST "TEARDROP" REPORT
Model Editor, FLYING ACES:

I built the *Teardrop Stick* from plans in the March FLYING ACES. It was the first F. A. model I ever built—and I think it's an ace-high sky hopper! I fitted my model with a Sikorsky-type pontoon.

ART HELLYER, JR.
Elmhurst, Ill.

Aero Book Review

(Continued from page 23)

tune—and yet, one wonders how any individual who rubbed elbows with so many famous aviators and worked on so many interesting jobs could have evaded fame of some sort.

Corrigan is a strict individualist with a wealth of sublime confidence. He has the fine ego of a man's hero. He knows what he wants and makes no bones about it. The world was his oyster and the sky his caviar. He made the most of the events and situations as they came along, selecting the ones he would most benefit by with uncanny judgment.

He could have tried to fly the Atlantic a year before he did. But as the Corrigan luck would have it, he selected the time when Howard Hughes and his expensive *Electra* was making headlines around the world to send his antiquated Curtiss *Robin* across the Atlantic—and then humorously and preposterously state that he didn't mean to do it!

It was this point that kept us reading Doug Corrigan's book. We wanted to find out for certain whether he planned to pull that "wrong-way" trick or whether it was an actual mistake. Well, we have read pages 190 and 191 over a dozen times—and we still don't know. We most certainly tried to find out. But he simply says that after he

took off and climbed up into the fog on that eventful day in July, 1938, he noticed that his top compass was not working, owing to the fact that most of the liquid in which the card floats had leaked out.

Imagine anyone taking off for anywhere without first checking his main compass! Still, Doug goes on to explain that he used the compass on the floor between his feet and selected a westerly course by that. Then he flew over the fog and later over the clouds until he reached Ireland—to discover that he had been reading the wrong end of the compass needle!

Prior to this statement, we had been figuring he was using a compass with a card dial that turned—now we learn he was using a stationary-card compass with a movable needle. So the more we read the more mysterious it all becomes. Yet once Corrigan gets into Ireland an officer of the Irish Free State Army greets him with a statement to the effect that they knew he was coming and that the New York papers had said so!

But don't take our word for it. Go out and buy *That's My Story* yourself. Perhaps you can get another interpretation out of it. It's as interesting as a good mystery story. Better in fact!

Happy Landings

(Continued from page 23)

engine comes in eight different models. The "Cyclone" G-model is produced in at least four different versions. And we all, long ago, gave up attempting to classify the various Pratt & Whitney motors, of which there appear to be at least eleven models.

As is well known by now, I don't believe all that's said about the greatness of the German Air Force. Nevertheless, I can't help noticing that their military types have been designed with a view to utter simplicity in every respect. They have no elaborate mechanical gun-turrets and many of their first-line planes do not use retractable landing gears. Their wing designs are simple and in many cases appear to be interchangeable.

The ideal in military planes would be first to select a few basic types for the various categories and have those

ships built along general lines such as the North American trainers, which can be assembled as primary trainers or more advanced models. The fuselages, which could be stressed for motors between 300 and 1,000 h.p., can be built with the wing-stubs integral so that during active service, damaged wings could be changed with very little trouble. Engines should be mounted on bearers and moved with the release of only a few nuts.

Two-seat types could be designed to be used as fighters, spotters, dive-bombers, or long-distance reconnaissance machines. They could all be built on the same basic fuselage and designed to take several types of wings, depending on the load factor.

We have been a little more conservative in the matter of bombers than most countries, and as a result we have

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fortunately settled on the two basic types—the Douglas B-18 and the Boeing B-17. But we should consider the complete program from fighter to bomber before we go any further trying to keep up with the fruitless quest

for high speed, which in most cases sacrifices unit efficiency.

We should also consider first our own particular needs and not aim to out-do the efforts of some other nation whose problems and requirements are

entirely different from ours. We have a national defense problem entirely different from that of Great Britain, France, Germany, or Italy. Our military planes should be designed accordingly.

“We Built an Airway the Hard Way!”

(Continued from page 25)

ing mob surrounded my plane, falling all over it, pulling at it, and fooling around with the propeller, I figured that the best thing I could do would be to forget barnstorming *pronto* and fly for home.

But when I tried to climb back into the plane, I was pushed back from it and came pretty near being mobbed. I was now more scared than angry. Then, when I had just about given up all hope, a big rawboned Texan pushed a flock of natives aside, grabbed hold of me, and said: “I’m Dan Breen. To save your ship and your life, I’ll get the officer in charge to get this crowd back. Then you can fly me up to my ranch. It’s not far from here.”

With these words, Breen walked over to the Colonel and said something in

Spanish. The Colonel in turn shouted to the mob and got it to move back to the edge of the field. The Texan then crawled into the plane with me. He was as scared as I was, too—for this was to be his first air journey.

A pretty stiff wind was blowing from the village, so I had to taxi my plane down the end of the field by the river, then head back toward the town for the take-off. Just before giving her the gun, I looked at Breen, asking him for the direction of his ranch.

“To hell with the direction—let’s get off the ground quickly before they start somethin’,” was his nervous reply. “They might fire on us any minute.”

I opened the throttle wide and sped across the field toward the village. Then, just before I tried to force the plane

off the ground, my propeller hit something! I pulled the control back and staggered the ship into the air. The vibration of the motor was terrible, and I had difficulty in climbing.

We were headed right across the city, just a few feet above the roofs of the houses. Fortunately, when I reached the center of the city I was able to level off my plane and pick up a little speed. Just in time, too, for we were then right over the large Plaza.

After ten minutes of flying in a straight line to get distance from the mob, I had to land, since I was afraid my motor would fall out. Well, examination disclosed that one blade of my prop was bent back, about four inches from the tip! I got out a few tools that I had with me, and with Breen’s help cut off both ends of the propeller. Then we serenely sailed on to the Texan’s ranch, where I spent the night.

The engine of this particular plane was supposed to deliver about 1,700 r.p.m. But the best I could now get out of it with that amputated airscrew was no better than 1,200. In fact, it was so far out of balance, and consequently caused so much vibration, that it was next to impossible to read my instruments, let alone do any decent flying.

Dan’s foreman informed us next day that the townspeople had dug a trench in their field—so that I would wreck my plane if I attempted to land there again. I decided then and there to get out of that part of Mexico as soon as I could—and stay out, r.p.m. or no r.p.m.! I took off for the border. And what a hectic flight that prop gave me!

Back in the States again, I sent a telegram to the Standard Steel firm at Pittsburgh, ordering a new propeller, telling them what had happened to the old one, and stating that if my plane hadn’t been equipped with a *steel* prop, I would have done one of three things: Killed a flock of Mexicans, killed myself—or been the cause of a war being declared upon the United States by Mexico!

That night, I received an answer from the company. It said that if I would permit them to use my statements as an indorsement, they would furnish me with a brand new propeller free of charge!

They didn’t have to ask me twice, either. That was the first \$500.00 worth of aviation material that I ever received for nothing. And, so far, the last.

“TOMORROW NEVER COMES!”

BUT LET ME end this article on a different note: Seeing the contented look on most Mexicans’ faces, I often wondered who are really better off—we, who are constantly on the go and wor-

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Gentlemen:

You betcher goggles I’m insuring! Shoot those nine issues direct by mail. I enclose \$1.00 to pay for seven of them—the other two are my “dividends.” Start with the issue.

Name

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City and State

rying every minute of the day; or they, who only live for one day, saying, "Why worry about tomorrow — it never comes!"

When all our banks were closed back in '33, a Mexican said to me: "In your mad rush through life, it would do you Americans a great deal of good if you

would stop to consider this: "There was time yesterday, there will be time today, and there will be time tomorrow—so take it easy!"

That's a good philosophy, too. So, fellows, let high flying get your "Yes" vote—and high blood pressure your "No" vote!

Youth Air Movement News

(Continued from page 22)

Major Fred Lord To Instruct

We have been given to understand that a number of noted civilian pilots who have had some Army or military training have already been selected to take short courses at Randolph Field preparatory to being assigned to the new youth training program. Among them is Major Fred Lord, former Royal Air Force ace, who served with distinction in the Spanish civil war. Major Lord has contributed articles to FLYING ACES on several occasions.

Light Plane Query

Will the new and still very secret Stinson light plane, which is to be powered with a Lycoming "50," be the ship

to grab off the training jobs in the CAA training plan? Inside dope says it will be a perfect machine for the job.

Open To All

The President's CAA training plan is not to be limited to fortunate college students alone—as was originally stated. Candidates with sufficient education to face ordinary CAA written examinations for Limited Commercial licenses will also be accepted. Further details on the plan and applications should be ready soon. Those wishing this information are advised to write to the Youth Air Movement Secretary, Civil Aeronautics Authority, Washington, D. C.

Here's the Douglas Globe-Girdler

(Continued from page 39)

COVERING AND ASSEMBLY

SAND the framework to a smooth finish to remove any bumps that might spoil the finish of the model. Using dope for adhesive, cover the entire ship—including the wood portions of the nose—with tissue.

The wings and fuselage to the back cockpit should be covered with silver tissue, and the rest of the ship with green. Cover the rudder with white tissue. Then dope strips of red and blue tissue to the rudder to duplicate the Army Air Service markings.

Cement the lower wing to the reinforcement plates at the bottom of the fuselage, scraping away some of the tissue to guarantee a solid joint. As this surface is used for a base in rigging the rest of the ship, it is important that it be perfectly lined up in all directions.

All struts are made of 1/16" by 3/16" bamboo, shaped to a streamline section, except the interplane struts which are 3/32" by 5/16" balsa.

Point the ends of the bamboo struts wherever they are attached to the ship. Then cover the points with cement and force them into the balsa structure. The true lengths of the struts are: "A," 1 1/2"; "B," 2 9/16"; "C," 2 1/2"; "D," 2 3/4"; "E," 4"; "F" and "G," 3". The sequence in which they are to be fitted is indicated alphabetically.

Bend the axle from a 7" length of .028 piano wire and cement it solidly to the landing gear struts and the bottom of the fuselage. You may prevent the 1 1/2" diameter wheels from slipping off the axles by wrapping the extending ends of piano wire with thread. Then apply a heavy coating of glue to the thread.

Spray the entire ship with water and apply a coat of dope when dry. Check

any tendency to warp.

Carve the prop from a block of medium hard balsa, 1" by 1 1/2" by 7 1/2", blanked out as shown on Plate 1. Undercamber the rear face about 1/8" and balance the prop perfectly. Dope the blades several times to toughen and polish the surface.

Form the shaft (.028 piano wire), slip it through the nose plug and prop, and imbed the end in the hub. Put a couple of brass washers between the prop and the nose-bearing.

DETAILS AND FLYING

IF YOU study the plans carefully you will see that many details and markings can be easily reproduced with scraps of balsa, pins, or India ink. A fine needle, threaded with No. 60 gray thread, may be used to "sew" the rigging around the struts. Dabs of cement are applied to hold the threads in place.

Six to eight strands of 1/8" flat brown rubber, preferably lubricated, are enough to fly your World Cruiser miniature—which should weigh in the neighborhood of two ounces.

Before flying, however, check the balance of the model. The center of grav-

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ity should be located on the wing spars. Add a bit of clay inside the nose between the cylinder banks, or in the tail—as the case may be—to correct any variation in balance.

Minor adjustments should now be made by gliding the model gently, warp-

ing the elevators down if there is a tendency to stall or by bending them up if the ship glides too steeply.

For the first test flights, wind the motor about 100 times and adjust the rudder until the ship flies in easy right circles. And after you have become

thoroughly acquainted with the behavior of your model, wind the rubber to its full capacity of 750 turns for full-length flights. Then your miniature of the globe girdling, history making Douglas will be ready for some "world cruising" right in your own backyard!

Conquest of the Atlantic!

(Continued from page 13)

of these ships before the summer is over. As a matter of fact, they have been given six Department of Commerce licenses for their planes already, which indicates that they will purchase that many Boeing "314's" for the Atlantic run. Over the New York-Botwood-Foynes-Southampton route these planes should be able to complete the trip non-stop in about seventeen hours in still air. Since they have a maximum range of 5,000 miles, they will have plenty of reserve for the 2,950-mile grind.

Imperial Airways is also ready, having received permits for landings in the United States. But at present, they need suitable aircraft. It should be under-

stood that while the *Caledonia* and *Cambria* Short Empire flying boats have been making important survey flights back and forth across the Atlantic, they are not capable of carrying pay loads commensurate with the cost involved.

The empire boats were designed for Britain-to-India-and-Australia work, where the stops are frequent and the jumps over-water comparatively short. New planes of the *Cabot* class have been built, but the Short firm has recently been plugged up with military orders for Short *Sunderlands* for the Air Ministry. Revamped for passengers, these long-range flying boats would fill the bill perfectly.

Anyhow, the British are planning on a twice-a-week schedule beginning June 1 and they will probably use the *Cabot* class boats, carrying six to twelve passengers and a large quantity of mail and express. Another possibility from the British angle are land planes of the De Havilland *Albatross* type or of the Armstrong-Whitworth *Ensign* class, both four-engined monoplanes. But the landing grounds at Botwood and Foynes would have to be made ready to accommodate these giants.

Whatever happens, you can be sure—if you have the money—that you'll be able to fly from New York to Great Britain on a scheduled run this summer.

Spin Money

(Continued from page 12)

a strawberry birthmark on his shoulder."

Pinkham, the unwitting eavesdropper, choked on his cognac and spilled five centimes worth of it down his tunic. Gribble! Orville Gribble! And he had had his finger on the fellow a few months ago. And it was Orville who was missing in action!

"That's the breaks I get," Phineas groaned. "I bet he killed himself eatin' that rooster. An' anyway his birthmark was shot off."

"Well, good evening to you, Colonel Swilling," another voice said. "See you in Berlin on Labor Day. Ha! Ha!"

The cognac soured against the Pinkham tonsils. He left the cafe and pedaled back to the airdrome.

A camion rolled across the tarmac just as he was parking his bicycle behind the Nissan hut he shared with Bump Gillis. Phineas strolled toward the farmhouse to look over the new Spad jockeys who had just arrived. There he joined Howell, Bump, and the others, adding his rusty voice to the welcoming committee. Two of the prospective Teuton-tormenting tyros were run-of-the-mill in type, young pilots aching to get a crack at the Boche and trying to act as if they had merely arrived at a country club gallop. The third fish from the pool looked somewhat bewildered. He chewed a thumbnail as he straddled his luggage and glanced from one to another of the battle-scarred veterans. He had a long sad face and his black hair had not had acquaintance with a pair of scissors in many weeks.

"I didn't get the name," Captain Howell said to the shy one.

"Clarence, sir. Lieutenant Clarence O. Gribble."

Phineas grunted "Huh?" and his Adam's apple ran up and down the

front of his neck like an elevator car in a shaft. "Grib—?"

Then Old Man Garrity came out into the big room, and he greeted his new pilots as cordially as he knew how. Phineas did not hear a word the Major said to them. He sat at the table scratching his pate down to the quick. He even forgot the electric buzzer he held in his welcoming paw because of the addled condition of his brain.

MAJOR GARRITY, a stickler for psychology, sent the new men upstairs the very next day. Lieutenant Clarence O. Gribble took off with "A" Flight at the first peep of dawn, and ten minutes later the said Clarence was getting his initial glimpse of von Glinz and his stripped Fokkers in the skies over Fleury.

The *Rittmeister* could smell green talent like a cat can smell fresh had-dock. He picked on Clarence. But Phineas Pinkham had his own ideas with regard to Lieutenant Gribble's longevity. He shook off one Tripe with a climbing turn made famous by Immelmann and then pointed his nose toward the *Rittmeister*, his Hisso tachometer going crazy.

Phineas' tracers gave the Von a hot foot, so the Tripe foreman swung away from Gribble. Bump Gillis then got between the Von and Phineas and a Spandau burst ruined the upholstery of his crashpad. The wonder from Iowa thereupon looked for Clarence again and finally saw him on a low shelf with two Heinies trying to mousetrap him.

Down went the heir to the Pinkham fortunes to do some neat hemstitching on a Tripe's top wing. He hopped over it, right-ruddered, and looped. He spilled the other Potsdam sky perambulator by erasing its rudder post and knocking off an aileron.

Captain Howell, stunned by the Pinkham aerial exhibition, nearly came to grief against a Tripe that suddenly loomed up in front of him. He yanked the stick back and the Spad seemed to trip over something. The flight leader had a time of it getting his ship out of a tantrum. When he landed on the drome of the Ninth a few minutes later with only one wheel, he spun around twice, slued toward the Frog farmhouse, and finally came to a stop with his empennage resting against the edge of the roof.

When Phineas finally located Lieutenant Gribble after the joust was over, the replacement's knees were knocking together. "Nice goin'," the miracle man of the squadron enthused. "Are ya all right, Clarence?"

"Y—Yeah," the fledgling stammered. "Thanks—for—everythin'—heh, heh!"

"Carbuncle," Howell said to Phineas later, "I never saw you doing that good before. I guess I was wrong about you, old man. The way you protected Gribble—well, it was—"

"It was my duty," Phineas said with outward dignity, his tongue in his cheek. "A Pinkham is always kind to dumb ani—er—new flyers, as—"

DURING the two days immediately thereafter Lieutenant Gribble got several kinds of acid tests up in the scraposphere, but it was Phineas Pinkham who almost became a nervous wreck. "What's the old turtle tryin' to do to Gribble?" he complained at mess. "Kill him quick? It is plain murder to—"

Bump Gillis narrowed his glimmers to look at his hutmate. "I don't get it, Carbuncle," he growled. "You never worried about anybody before. Huh, I wish—"

"Yeah," Howell added thoughtfully,

"you always stick to Clarence up there as if he owed you dough."

Phineas ignored the inuendos and left the mess with nose in the air. Ten minutes later he called at the Nisson where Gribble kept his razor. "Bung sour, Clarence," he hailed the newcomer to the squadron. "How'd you like to go into Barley Duck *avec moy* an' sip a scald or three, oui?"

"Sure," Gribble beamed. "Maybe I'll see some good looking French girls, huh? I ain't seen none yet. They was all squaws where I been before."

But Lieutenant Gribble did not see any Frog belles that night. An hour after Phineas had led him into town, Clarence was lit up like a Yule tree, and he was barely aware of entering a little shop in a narrow Bar-le-Duc street over the door of which hung the sign M. Le Papillon. Clarence showed little interest in what went on in the dimly lighted place. It was three hours later, in a room over an *estaminet*, that Lieutenant Gribble began to take cognizance of things.

"Now look, Clarence," Phineas prodded him. "Who was your folks?"

"I—I don't know—hic—I washa orphan," Clarence hiccupped. "I g-got 'dopted once but I didn' I-like it sho I beat it. G-Got caught an' went to 'nother—"

Phineas brushed spots away from in front of his eyes. What a setup! "Yeah," he said eagerly. "Ever hear about Gribble's Grits—the breakfast food?"

"S-Sure, I've et 'em. An' I don' like 'em—hic!"

"Well," Phineas informed him, "you are the sole heir to Gribble Grits, Clarence—only you don't know it. Right now you've got as good as a million bucks. A law firm is lookin' for you."

"I ain't done nothin'," Lieutenant Gribble gulped. "Only once—I put a shlug in a peanut machine, P-Pinkham."

It took another half hour for Phineas to convince Clarence that he was the heir to the Gribble Grits Company, Inc. "An' you've got a strawberry birthmark on your shoulder to prove it," Phineas told him. "Look at it, Clarence."

Sitting there in his undershirt, Lieutenant Gribble squinted over his shoulder. His sad eyes widened and he scratched his head. "S-Shay, I never noticed 'at before. How in h—?"

"Haw-w-w-w!" the Pinkham guffawed. "That's nothin'. I had an uncle once who did not know he had a leaky pump until it stopped on him. Now look here, Clarence, I—er—it was me who discovered you, wasn't it? Out of a million—er—I oughta get maybe 10,000 bucks commission, huh?"

Lieutenant Gribble sat still while the plotter's words were sinking in. "S-Shure, Pinkham, what'sh ten thoushan' out of million, huh?" he finally beamed. "Jush spin money—hic—tha'sh what!" Then, after two or three muffed attempts, Clarence managed to snap his fingers. "Ye-e-ow, I'm a millionaire! Go'n buy a yatch an' purple limer-shoen. When do I—hic—get the money?"

"I will get in touch with a certain colonel at Chaumont," the veteran fly-

er told his unwitting dupe, taking a paper from his pocket. He produced a fountain pen and handed it to Gribble. "Haw-w-w-w, not that I don't trust you, Clarence, but let's put it on paper. There—you just sign here, Clarence. I've got it all written down:

For services rendered professionally by Lieutenant Phineas Pinkham, I hereby agree to pay over to the party of the first part \$10,000 when I get the Gribble fortune!

"That's fair, ain't it?" queried the Iowa imp.

Clarence threw his arms around Phineas in a loving embrace, then gripped the pen. "Shwell pal—ol' pal of mine—yesh. I'll shign anything for a pal. Maybe I'll give you shirty thoushan'—hic—"

The pen scratched along the dotted line. Phineas pocketed the document that he felt should take care of his future, then went and drew a pitcher of cold water. He made Clarence drink deeply. And when the two left Bar-le-Duc, they were in complete accord.

"Bring on the Heinies now," Phineas yipped on the way home.

"You said it, Pinkham!" Clarence agreed. "H-Huh, I still can't believe it. Imagine me havin' a birthmark an' not knowin' it!"

"I should've put in that twenty francs I spent for tattooing," Phineas said to himself. "Oh, well, ten thousand—"

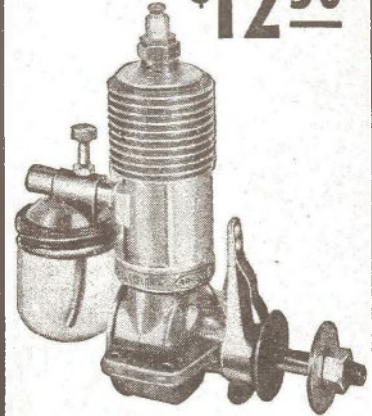
THINGS had been happening while the two pilots were in Bar-le-Duc. Brass hats had visited Major Garrity and had handed out a job to the Ninth Pursuit that was unadulterated suicide for the Spad rider who should prove unfortunate enough to get pinned with it. Chaumont promised a posthumous medal as a reward. It seemed that the Yanks had been driven back three more miles, and a colonel, in his haste to avoid a Kraut klink, had left his den in a dugout with such haste that he had completely forgotten a leather folder loaded with maps of a very important chunk of real estate in and around Souilly. If the Boche were to find them, they would have the Allied plan of attack in that salient figured out for the next four months. "This colonel," said one of the brass hats to Garrity, "tried to shoot himself. But he overlooked the little matter of loading his gun. He's now under treatment for tangled nerves in a Frog hospital."

"And all we have to do is get the maps," Phineas sniffed. "That is like takin' honey from a den of grizzly bears each one of which is sufferin' from an ulcerated wisdom tooth. Who is goin'? Where is the condemned man, huh? The *Stars and Stripes* next month will say, 'The condemned man ate a hearty dinner. The Allied chef gave him the best on the menu—*ragout* of Frog *chien*, and goldfish, an'— Nuts!'"

"I've got a good mind to send you," the Old Man roared, his voice breaking from the strain. "But you're not worth a medal—even a posthumous one." He turned to the assembled flyers: "You'll all draw slips out of a hat. You take off tomorrow night, whoever" Garrity coughed, then sneezed. "Whoever ids

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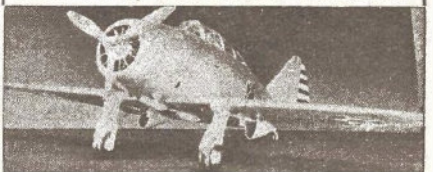
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the ud lucky bad—agh—CHO-O-O-O!”

Phineas reached for his skimmer that was blown off. “You must’ve come over in the draft,” he quipped. “Haw-w-w-r-r-r! Now listen, Lieutenant Gribble and all those other men who haven’t been here long—they don’t have to draw, do they, huh? After all, Major—”

“Oh, is that so?” Clarence blustered, shoving out his chest. “We don’t ask favors.”

The ambitious Pinkham swallowed a lump in his throat. “Yeah! Ha! Ha! Stout chap an’ all that, wh-what? You fathead—er—that million—”

“Toborrow dight, thed,” Garrity nasaed. “Uh—er—where’s Goober? Got to sed hib for cough bedicid id the bordig. Dab cold!”

THE NEXT DAY Phineas Pinkham told the Major about Clarence Gribble and said that it would be wrong to have an heir to a fortune draw out of the hat and maybe fly off to get murdered.

“Iderestig, Pigham,” Garrity snuffed. “Bud just the sabe, Gribble has to tage his chadces alog with the rest. Still, I’ll call this Curdle Swilling you just told me aboud, and I’ll tell hib about Gribble. Too bad—a billion dollars—”

“Only a million,” Phineas corrected him.

“Thad’s whad I said,” Garrity hollered. “A billion. Where’s Goober wid thad cough bedicid? I’ll die before that cragpot gets back! Ged oud, dow, ad led me alode. A-A-SHO-O-O-O!”

“C-Cripes,” Phineas groaned and tramped to his hut to think things over. He rummaged through his trunk of tricks, picked out a book that was well thumbed. On the cover were the bold letters, “SLEIGHT-OF-HAND AND HOW TO BECOME AN EXPERT.”

THE DAY wore on. Then at three in the afternoon, a car drove into the Ninth and Colonel Swilling got out of it. He asked for Lieutenant Clarence O. Gribble and the Spad rider was brought into his presence. Phineas Pinkham hung close to Clarence.

“Well! Well!” the colonel enthused. “Imagine finding you, Mr. Gribble!” He took some papers out of his pocket and placed them on the table. “Your middle initial stands for Orville, no doubt?”

“I—er—I don’t remember what it—”

“Sure,” Phineas chirped. “He has an awful memory, as he was an orphan for so many years.”

“Quite right, Lieutenant,” Swilling grunted. “Now if you have a birthmark on your shoulder, Gribble. That will prove to me that you are not just a fortune hunter.”

Clarence removed his tunic and gave the colonel a gander at the birthmark.

“That’s enough for me,” beamed the colonel. “You’re the nephew of Cyrus Gribble of Gribble Grits and no mistake. Your—e—r—inheritance—now I have everything right here. My law partner sent the papers to me—if you are willing to sign here—be responsible for all debts incurred—”

“Sign, Clarence,” Phineas tossed out, pins and needles darting all through his torso. “You have to take the debts with

all that dough. It is only—er—right!”

Whereupon Lieutenant Clarence O. Gribble affixed his signature with a flourish. Phineas’ pent-up breath souged out and slammed the door shut.

“Two bad,” Garrity muttered. “He gets a fortude ad baybe gets killed the sabe day. *C’est la guerre!*”

The Old Man’s remark spread a wet blanket over the Pinkham enthusiasm. A vision of a building bearing the sign, “PARAMOUNT NOVELTY COMPANY, P. P. PINKHAM, PRES.,” broke into bits before his mind’s optics. He told himself right there and then that Clarence would never hop over to hostile terra firma to correct a brass hat’s mistake. No! A thousand times no!

Glad Tidings Goomer then rushed in and set a bottle down on the table near the C. O., who roared: “About time, you rheumatic snail! Uher—why, I feel all right again! Cold has broken up already. That cognac last night did the—put that stuff on the shelf there, Goomer. Come in handy later, maybe.”

The mess monkey nodded, took the wrappings off the bottle, carried it across the room, and deposited it on a shelf. Phineas eyed the bottle and his brain cells began stepping up their revs. He got out of the farmhouse and went to his hut. There he took a sheet of white paper from a pad and painstakingly began to paint black letters on it—just in case.

The zero hour drew near. Major Garrity tore a sheet of paper into small square pieces. On one of the pieces he marked an “X.” Meanwhile Phineas looked in through the window, saw what he wanted to see, and promptly vacated the premises. At five o’clock the Old Man clucked to his brood and they gathered around him inside the Frog Farmhouse. With a loud noise the Major cleared his throat, tweaked his nose, and opened up:

“You are to come up one at a time, men, and draw a slip. The one marked with a cross is poison—I mean it’s the one—er— Well, who’s first?”

Captain Howell walked up, turned his eyes away from the Major’s kelly, and pawed into its contents with shaking digits. They came out holding a white slip and he backed away. After a swift glance told him the paper was blank, he fell into a chair. “Phew-w-w-w-w!” he sighed happily.

Eleven men followed Howell and each drew and took a peep at his luck. All of them indulged in a grin that nearly split their pans, then they wiped globules of worry juice off their respective brows.

Lieutenant Gribble tried to get up there next, but Phineas Pinkham pushed him out of the way. He groped for a white slip, turned and looked at it. “Awright, you lucky bums,” he yipped. “I got the “X” markin’ the spot where they will bury me. That shows the breaks I get!”

When the room was finally cleared, the C. O. muttered something into his beard and sat down. He was trying to figure out a reason for twelve men going up to that hat and drawing blanks, with the thirteenth man, Phineas Pink-

ham, getting stuck for the works. There was something flukey about it, he reasoned. But the thing had happened right before his eyes.

Not until Lieutenant Pinkham was hopping off the drome twenty minutes later did Major Garrity see the light. He was sitting at his desk composing a telegram with nice words of comfort for the Pinkhams of Boonetown, Iowa, when his eyes strayed to an ink bottle and glued themselves to the label. Why that was not his ink bottle! The label said, “MERLIN INK.” And the smalled print drew Garrity out of his chair: “Do right and fear no man. Don’t WRITE and fear no woman. Your billet doux are safe from lawyers when you use Merlin’s Vanishing Ink. Have Fun and—”

At first the Old Man was mad. Then he sighed and a slow grin crept over his face. “Great guy, Pinkham! Got courage! Too bad my having to send a nice letter to his folks. Going to miss that crackpot—er—damn the brass hats!”

PHINEAS flew over to Hunland gambling that he would lick odds of ten thousand to one against him. One chance for every buck he figured on getting out of the Gribble deal. Tied to his leg was a map marking the spot where the colonel had left his maps.

On that spot on Teuton topography huddled six Huns. One was an *Herr Oberst* who was well satisfied with himself.

“*Ja, das ist gut. Der maps ve find—ach, der Yangkees vill machen der try to find them. Das ist full mit impotence, nein? Already yedt deg ged by der handens of Cheneral von Hassenpfeffer ofer yedt by der willage. Der High Kommand der plans haben by der Morgen. If der Yangkee flyer ofer cumst, ve ledt him land yedt. Ve ged idt der Spad und der brisoner—und still haben der maps. Ach, Gott mit uns, sooch smardt peoples ist der Chermans yedt. How canst der Allies fight mit Uns, hein?*”

“*Dat ist fine, Herr Oberst,*” said another Heinie after the *Herr Offizier* got through blowing his own horn. “*Ledt der flyer cum by der spider veb, hein? Ho! Ho! Mach schnell mit der Schnapps, for soon der—*”

“Listen vunce!” broke in a third Jerry.

Yes, it was the Pinkham plane they heard. Phineas was angling down toward the town of Blooey, his eyes lining up landmarks as he wing-slapped with the Hiss throttled down.

This story has to jump from one place to another. We now take you back to Bar-le-Duc where a Frog chemist was tearing tufts of hair out of his already sparsely decorated scalp. “*Sacre nom de Dieu! Ze Yankee he do not take ze cough medicine. C’est ici! What ess he have tak’? Non—non—I do not believe thees. But oui, ze othaire bottle she ees went! I must get ze madam an’ ze enfants an’ start for Spain maintenant—vite! Zey weel shoot Alphonse Gaston eef—Mar-r-rie—Marie-e-e-e, grab quick ze enfants an’ pack ze bags!*”

Phineas kept nearing the ground. He

picked himself an open field and set himself down. A wheel crumpled and he sighed regretfully, then shrugged. He climbed out of the Spad, then looked toward the village of Blooey, mentally figuring the distance from a ruined church steeple there to a clump of trees slightly east of it.

"Uh—er—the dugout was just on the other side of those woods," he told himself and started reconnoitering. And now the short hair on the nape of his neck bristled. He could almost smell Huns. "Well, so far so good. For ten thousand—" He grinned as his fingers closed over the bottle of oily yellow liquid he had in his pocket. He had put a label over the face of it bearing the inscription NITRO-GLYCERINE. That was language that even the Krauts would understand, he hoped.

Phineas neared the ambush. Then two Boche leaped out and jabbed pigstickers into his ribs. "Wie Gehts, mein Freund! Surprise."

"Why, you dirty bums! Hidin' like that," Phineas gulped. "H-Huh! Well, it looks like you two-legged polecats figured what we would do over on the other side, jar? Vell, where ist idt der hoose-gow? Haw-w-w!"

"Ho! Ho! Das Pingham! Ter Tag, hein? First idt giffs you der wisit by Cheneral von Hassenpfeffer, Herr Cheneral he vants he shouldt know about der Allied armies. Leutnant. Der excellent vay he has to gedt der information out of Yangkee dumkopfs. Ja! Vorwarts!"

General Fritz von Hassenpfeffer grinned widely when Phineas was pushed into his presence. Five other Teutons with heads as big as grain bins chuckled in unison.

"Zo?" said the big Heinie brass hat. "Puh!" countered Phineas. "I see you are looking at our maps, General?" He lifted a bottle out of his pocket, held it up over his head. "Look vunce, you liverwurst hounds! Tell me what it says, hein?"

"Einen bottle, ja? Ho! Ho—er—ag-g-g-g-h-h-h! Nitro Gl—Gott in Himmel! Herr Leutnant, you don't shouldt drop das—ach Himmel, gedt idt der Dumkopf!"

"If any of you bums takes a step toward me," the resourceful Yank said loftily, "I'll drop it! There's enough cough—er—nitro here to blow up half the Kaiser's palace, haw-w-w-w!" He stepped back. "Awright, I want the maps, you squareheads. Hand them over or I'll throw this bottle at your big dome, General. I know I'm getting shot anyway if I don't. It's a quick way to go west. Just blows up and you are already there. Haw-w-w-w!"

Herr Obersts turned green. Their tongues stuck to their palates and they tried to talk with their hands. The general begged Phineas to stop tossing the bottle up and down.

"I forget to catch it after I count to ten," the Yank retorted, grinning. Ein—zwei—drei—"

"Nein! Nein! Loogk vunce, Herr Leutnant," the general choked. Ve ledt you haben der maps, ja! Ve show you der airblane! Loogk, I cross der heardt vunce. Ha! Ha! I am der sportd und I

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know when I am gelicked, mein Freund. Here ist der maps—all of der maps. Now, mein soldiers will show you der vay to der airplane. Ach du Lieber. Donner und Blitz—"

HOLDING THE BOTTLE over his head like a torch, Phineas walked out of the Heinie headquarters. His course was a wavering one. At times he spun in dizzy circles to make sure that a Kraut was not making an attempt to sneak up on him. The word spread all over town. Leutnant Phineas Pingham was not to be molested.

"Boy, are they fallin' for it!" he snickered as he made his way to a Kraut Albatros that was being warmed up. "That stuff the Old Man was going to take for his cough sure was the right color, haw! It made the Krauts come through with the maps fast. Well, now we're going places!"

The Boche Ofiziers and their underlings writhed with helpless frustration as the Yank, still holding that bottle of oily yellow liquid, climbed into the Alb. Heinie doughs had their guns trained on the ship, eyes peeled for a chance to knock off the Boontown miracle man. He would have to use both hands to get away from there. But a brass hat ran toward the doughs waving his arms.

"Nein. You shoot und hidt idt der bottle—und pouf! Ve be liddle bieees. Ledt der Dumkopf oop in der air und den shooldt yedt. Nein das ist nicht gut, needer. For he falls on us yedt maybe. Ach, Gott, maybe he fools yedt mit uns, ja. Budt if he don't fool mit uns, was ist!" He grabbed his head in both hands and shook it from side to side.

Phineas got the Alb off the ground and the Herr Obersts started running. Garrity's flyer went up to two thousand, then came down to swing low over Blooey. Above Heinie headquarters he tossed the bottle out. "There ya go, li'l old bottle," he chortled.

BLA-A-A-A-A-M! BO-O-O-O-ONG! KER-WHA-A-A-A-M!
 Pieces of houses rained skyward.

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BOATS
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Coal-skuttle helmets and bits of heavy trucks. The Alb pitched and tossed under the dumbfounded Phineas Pinkham. A wheel off a truck skimmed over the top wing of the Boche crate and missed it by a whisker.

"Cr-r-ripes!" the Yank breathed out, shaking sweat from his startled face. "That *w-wasn't* c-cough med—oh, wait 'til I tell the Old Man. If he ever swallowed that—of all the—Goomer, that halfwit! Where did he get—oh-h! When I think of how I was carryin' that all the way from—balancin' it back—oh, wait 'ty I get Goomer! I bet my dome is snow white. Ohh-h-h-h, ma-an!"

Two bat flyers chased the returning Yank, caught up with him just over the Allied lines, and threw lead at him. Anti-aircraft scrap iron was rolling off his wings when he skimmed drunkenly over the dividing line between Huns and Yanks. His rudder post was as sinuous as an eel when he finally brought the Alb to the carpet and laid it down.

"Haw-w-w-w!" he yipped. "I made

it! My ten thousand bucks are s-s-safe!" He tried to level the Alb off, but its nose was as heavy as a jilted lover's heart. It refused to lift and Phineas had to make the best of it. The best was a complete somersault that threw the joke-master through the ozone, over a tangle of barbed-wire, and into a trench as muddy as a bride's first coffee. The pride of the Pinkhams went up to his ankles in it—head first. Five doughs dragged him out of it eventually and took him to a dugout filled with officers.

"I never knew we had colored pilots," a colonel ground out.

"That's not funny," Phineas gurgled. "I've got a good mind to take the maps back where I got 'em. I am Lieutenant Pinkham of the Ninth Pursuit Squadron."

"Clean him up and then bring him back," the colonel barked.

LATER, Phineas sat in the dugout, taking deep breaths. "If a bum ever earned ten thousand bucks, it's me," he

declared to all who would listen. "Well, I want transportation back to the drome. Over by Barley Duck, y'know. An' give me another shot at that bottle. Somethin's got to keep me from droppin' dead before I get back."

Major Rufus Garrity was a fit candidate for a strait-jacket. Phineas Pinkham had limped into the Operations Office, had thrown the maps down on the table, and then yelped: "I scared the Heinies out of them maps with that bottle of cough medicine. Ha! Ha! I labeled it nitro-glycerine and told 'em I would blow them up if they made a pass at me. Well, I threw it away when I got upstairs a ways—and what do you think? It *was* nitro!"

After awhile the Old Man calmed down and Phineas explained all over again. The Major then got mad again and hollered for Glad Tidings Goomer to be brought in so that he could get a punch at him. "I—I would've drunk that stuff, too, if—er—ripes, when I think—of—oh, there you are, Goomer! Tried to kill your C. O., huh? Blow up the airdrome. You're—well, you're under arrest! Take him away! I'm still so scared I can't talk."

"Hello, Clarence," Phineas said affectionately to Gribble. "How's every little thing?"

"Well, I dunno. Somethin's puzzlin' me, Pinkham. I looked at the copy of that paper I signed for the colonel an'—well, ya better get a look at it, too, as it don't seem right to me. I ain't got seventy thousan' bucks, an'—"

"Of course not," Phineas said. "You will have it, though. Okay, let's go an' look at the papers."

IN GRIBBLE'S NISSON, the heir to what was left of a breakfast food venture spread out a paper in front of the heir to the Pinkham fortunes—and misfortunes. The Boonetown marvel read the typewritten paragraphs, growing weaker with every line that his addled brain absorbed. It became increasingly plain to Phineas that the Clarence, spurious heir or otherwise, had inherited one of the longest lists of debts on record. One paragraph seemed to laugh right out loud. It was listed under "As-sets"—

One elephant in fair condition, used in advertising GRIBBLE'S GRITS. Valued at \$800 minus an item of \$711 for hay and storage. The undersigned agrees to pay all debts—

"Why, you are no millionaire," Phineas yelped. "You are worse than a pauper! Why, you—after all I went through to—why you double-crossin' bum, you! Clarence, I am going to punch you right in the—"

"It wasn't me that said so," Clarence gulped. "You got me to be heir to them debts! You won't punch nobody. Oh, I know where that strawberry birthmark come from. I will have you arrested for conspir—stand up an' fight, you snake in the gr—!"

WHANGO-O! BLOP! PLUNK!

PHINEAS walked into the farmhouse a few minutes later dusting his hands off. He sat down and bit loose skin off his knuckles. Captain Howell

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screwed up his face and tossed out: "You look like you have just been through another air battle!" "Heir?" Phineas retorted. "Don't

mention that word. I will not even scrape up acquaintance with one of the Rock-erbits if he reports here for duty. You can't trust nobody."

Flying Aces Club News

(Continued from page 31)

"Of course it's strange for you to have a member of the F.A.C. in such a far away place as Denmark. But thinking of the enormous progress that flying has made, Denmark is not really far from the U.S.A. And I hope that the 'band' of speed and reliability of present day airplanes will tie our two countries together and will enlarge the co-operation and friendship between our two nations.

"I always feel so small when thinking of America, and I have often compared the two countries as though they

were airplanes. America is a 'big, powerful bomber,' in my deductions, while Denmark is a little 'sport-plane.'"

To the best of Clint's memory, this is the first letter we've ever had from Denmark. And, according to our files, the distinction goes to Viggo of being the only F.A. Clubster in Denmark! Incidentally, how do you like his comparison of the two countries?

Oh, oh! We're runnin' out of space again, boys. Guess we'll have to say goom-bye till later. And so, fellows—Snappy landings!

Make a "Scrappy" Gas Job

(Continued from page 47)

TEST FLYING

DO NOT attempt to fly the plane before balancing it with the motor and ignition equipment installed. Glide the model from about a four foot height. If *Scrappy* shows a tendency to stall, you can adjust this condition by shifting the position of the battery box slightly forward. And if the model glides too steeply, move the battery box toward the rear until the best results are obtained.

When *Scrappy* is ready for her first power flight, give the ignition a final check-up. Have your motor running smoothly, and set the timer or gas

supply for about 15 or 20 seconds.

With the engine's throttle set at about the half way mark, release the ship and run alongside of it. Correct any turning tendencies by a slight touch on the wing tip. And after the model gains flying speed, *Scrappy* will do the rest under her own power. Yep, even at this reduced power, *Scrappy* will show you the peppiest little bit of flying your eyes have ever witnessed outside of the local flying field.

And, above all things, *don't forget that timer!* Because if you lose the ship on her first flight, we don't want to have to say: "We told you so!"

On the Light Plane Tarmac

(Continued from page 27)

Old Man Gravity took you in hand and made you start from scratch again.

All of which bears strongly on Hick's case, which he relates in the accompanying letter. Read, mark, learn, and inwardly digest, you light plane fans. This is what Brother Hicks has to say:

Light Plane Editor:

I had a flying thrill a short time ago that could easily have been my last. Anyhow, I now believe in miracles, and little chills run up and down my spine whenever I think about it.

I should explain, of course, that I hold a Limited Commercial ticket which I gained at the Pattinson Flying School, of St. Elmo, Ill. Reginald Pattinson runs the school and is chief instructor there. He has a Warner-powered Waco-F, an OX-5 Curtiss Robin, and a Le Blond 90 Cardinal side-by-side cabin job. I stayed on the field last summer, bunking in one of the student cottages while building up my time for my L.C. ticket.

One Sunday, Pattinson decided to take two ships over to Highland and hop passengers all day. He flew the Waco and I ferried the Cardinal over for him. The field Reg selected was alongside a main road, but as the wind was

from the west we had to take off and land in toward an apple orchard, thus passing over a large house, a barn, and a windmill. (Editor's Note: *What, no high tension cables?*)

Reg used to kid me about being interested in the fair sex, and just before he went to work he came over and said: "Hey, Clark Gable! How would you like to be a real barnstormer today? I'm going to let you take a few passengers up if the traffic is right."

Well, I thought I was really in the flying game then, and I sat there picturing myself doing the hero stuff with my passengers. Of course, they would all be beautiful blondes.

But it wasn't my day, for there was practically no business at all. And so the afternoon passed without me even opening the motor.

By sundown we prepared to go home and Reg said: "I'll take off first and circle the field. You come after me. Then I'll pick you up and we'll fly back together."

He took off Okay, then I cranked the Le Blond and taxied down to the end of the field. I kicked the nose around into the wind, anxious to get off and not keep Reg waiting. I rammed the throttle up, pushed the stick forward, and let

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her run toward the apple grove.

Well, the motor seemed to be making good time—but somehow I couldn't get her tail up. I pump-handled that stick, all the time watching myself lumbering on toward the orchard. I finally got the tail up and saw that I was doing 60 on the indicator.

But still she wouldn't come off the ground! I let out a yell, pump-handled her again—and finally she began to lift—just a bit—about one hundred yards away from the first row of trees.

I wheezed, puffed, stiffened, and tried to get her higher on my own physical efforts. But she just went on and—well, I closed my eyes and waited for it!

But nothing happened. I guess we went *between* those apple branches! Then I gave her a final tug and she zoomed clear.

Just then I remembered to look at my tachometer. Wow! I had been taking off with the engine giving about two-thirds of her output! I'd forgotten to let her warm up sufficiently, so by rights I should have piled into that apple orchard. Why she didn't conk completely is still a mystery to me, but you can bet I'll never make that mistake again. I can thank my lucky stars I didn't pull that with my first passenger, had I had the opportunity to take one up.

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You said it, Weldon! You *were* lucky! And you get two bucks for that letter, too. And now, all you flyers and sky studes who read F.A., how about our hearing *your* experiences? We run one of these letters every month in this department, you know. Let's go!

Build the "Flying Aces Pronto"

(Continued from page 35)

The rudder is cemented in an upright position.

The wing is mounted on a center section composed of eight struts. Four struts on each side of the fuselage hold the wing rigidly in position. All the struts, with the exception of the main support, identified by letter "M-1," are cut to size and shaped from 1/8" sq. hard balsa. Cement these at the spread-out angle shown. Use small model making pins to help hold the struts in position while the cement hardens. Strut "M-1" is streamlined and cut to size from 1/8" by 1/4" hard balsa.

Directly in front of each "M-1" strut lengths of No. .16 wire, which are used for reinforcements, are cemented in place. Note that they are glued flush to the outsides of the number 2 ribs. In attaching this wire fitting, it will be necessary to remove a small portion of the covering—about 3/8" sq.—so that attachments may be made. The wing is

given an angle of incidence of 1/16". All center section struts are joined with cement.

FLYING

THREE strands of 1/8" flat rubber are used for the motive power. Attach the rubber motor to the front and rear hooks, allowing a slight slack. The rear end of the right fuselage side should be left open to facilitate rubber removal and installation.

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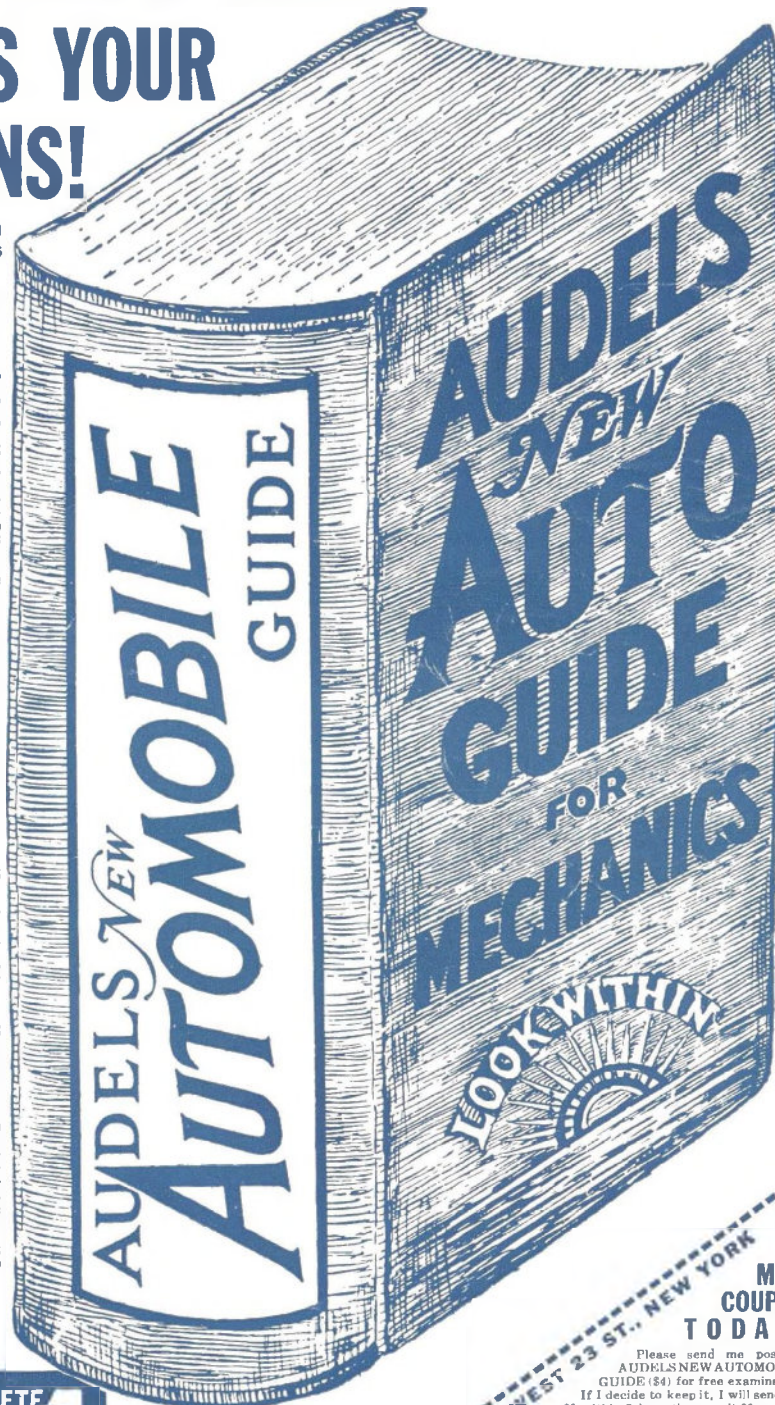
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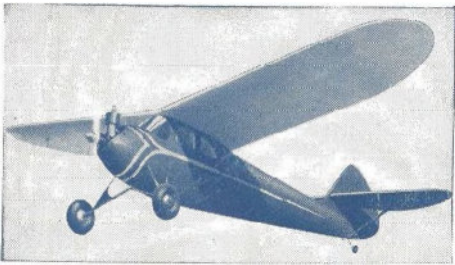
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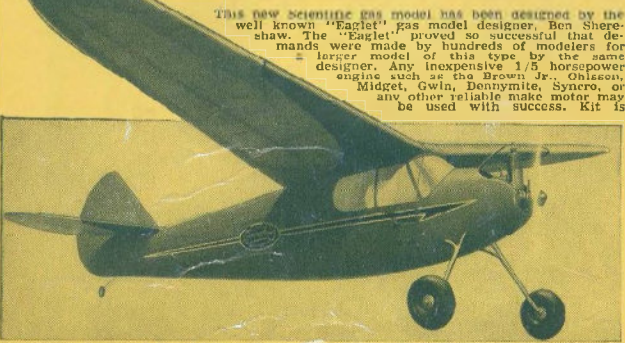
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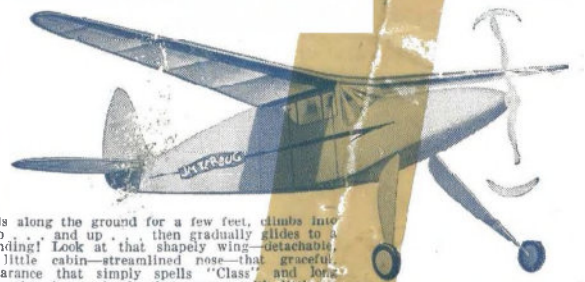
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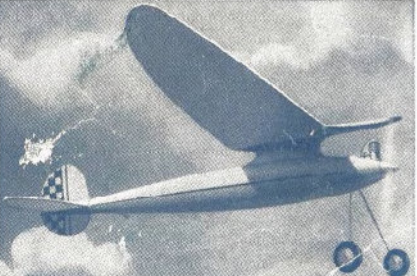
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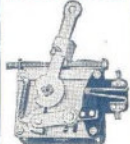
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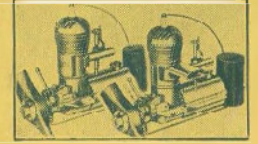
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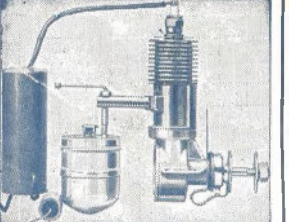
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