AIR STORIES

WONDER STORIES

Science-Aviation Stories
by
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Edsel Newton
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On the Cover This Month

is pictured Ed Earl Repp’s story, “The Flight of the Eastern Star—the great air liner, the Eastern Star,” on its round-the-world flight breaking up a waterspout by dashing through it, in order to save a trapped air liner that has been crippled by the accompanying storm.

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GLIDER FLYING

By HUGO GERNBACH

The oldest form of human flying is certainly glider flying. Such early experimenters as Lilienthal, Chanute—as well as Wright Brothers—all used gliders without motors.

Giders are of several different types, the early gliders having been double- and triple-winged; whereas the modern gliders of to-day are of the monoplane variety.

At the present time, glider flying threatens to become the sport of the air and is coming rapidly to the forefront in this country. During the period after the war, the Germans have done marvelous work in glider flying and, recently, a young German stayed aloft over eighteen hours in one of these gliders, relying simply upon the updrafts of the air to keep him aloft.

This may sound incredible; but it is an accomplished fact, and shows us what may become possible in the future.

Roughly speaking, the modern glider takes advantage of the upward currents of air, particularly as they occur around hilly country. This is considered true glider flying; but there is still another method whereby a glider can be towed by means of either a motorboat, an automobile, or a regular motorized airplane.

The automobile towing and motorboat pulling methods are, however, not considered good form by glider experts, who prefer to soar like birds free of all entanglements.

Of course, our work in glider flying is as yet a crude beginning, and no one knows its possibilities. Sooner or later, it may develop into a commercial means of transport in a manner that we do not even suspect to-day.

For instance, the Germans have recently made a number of experiments which were highly successful. Two gliders were towed by means of long ropes by one engine-propelled airplane. Thus they have made a real train, similar to our locomotive-and-car combination. They argue that, with little additional energy, it is possible to lift up three airplanes, two of which are engineless, and transport either passengers or freight through the air at an exceedingly low cost. This seems plausible because the greatest part of the weight of an airplane is the engine, and this is absent in a towed glider. The extra weight, usually taken up by the engine, can be used in the glider for freight or passengers. When the towed glider nears its destination, the pilot of the glider cuts loose from the tow line and glides down to earth. This landing, the Germans point out, is very much easier to accomplish in a glider than in a motorized plane; because the angle of glide is much less on a glider—it can cover a greater horizontal distance while descending.

All sorts of possibilities, aside from the sporting element, open to us in the field of gliders. We may be sure, for instance, that the future air liners will carry "lifeboats" in the form of gliders. Other possibilities are gliders with a sort of auxiliary engine without propellers, but using rocket propulsion through compressed air or some other means. The auxiliary power system would be used only to maintain altitude. For instance, a glider, if it were released from an altitude of one or two miles, could glide down in a flat angle, thereby covering a distance of thirty or forty miles in such a glide. No power of any kind would be needed, except to lift the glider up to the required height. It may be even possible to go back to the old hot-air-balloon system to raise the glider to the necessary height. Ordinary straw or wool burned underneath the balloon-like contrivance would furnish all the buoyancy for a temporary paper or silk balloon to lift up the glider.

On the other hand, there is a tremendous possibility in every country for gliders, purely as for sport. While no such spectacular flights have been made in this country as in Germany, the time is rapidly nearing when America will be on a par with Germany in glider construction and operation.

And let no one think that it is an expensive sport. Good gliders that can carry one man can be built anywhere from $50.00 up, and they can be flown practically anywhere where there are hills or where there are prevailing winds with a velocity of fifteen to twenty miles an hour. Nor is the new sport dangerous; for the planes are very light. Even a crash is of little consequence; and there seems to be no record of anyone having been killed flying a modern glider.

Glider flying is certainly one of the greatest and most exhilarating sports as yet devised.
And now the remaining planes, unmindful of the awful power flashing from their adversary, charged straight at him. But before they were fairly under way, one of them began to wobble; then it dropped in a tail spin to the sea.
THE BLUE DEMON

By the Author of "The Air Terror"

My plane was a complete success. Having won for our nation a sweeping victory and thus caused its adoption by the United States government as our chief type of aircraft, I was intensely gratified. Jealously guarding the salient features of its construction, and swearing every air official and pilot to secrecy, the government sought to maintain its monopoly of the invention. Although I was still terribly crippled in body by my fall in the hour of victory, I could endure the hardships of my new life in the knowledge that I had helped save my country. Only one cloud shadowed my happiness, and that was the disappearance of my old friend, Lon Grand, the man who had made my success possible.

Our late enemies had resumed diplomatic intercourse with us, and the whole world was again at peace. And then, with the stunning suddenness of a thunderslap from a blue sky, came new rumblings of disturbance to our security.

My good friend, Colonel Brandon, who had been promoted to the command of the First Corps of our air squadrons, was lost at sea with every ship of his fleet, which comprised three hundred of the largest and swiftest aircraft in the service! The first tidings of the disaster came by radio to the Air Department at Washington. It came with shocking brevity.

"We are attacked—half the fleet is down," was the brief and startling message which came at once from a score of ships on this beautiful summer day. Then there was only silence—profound and mysterious. In vain the radio operators throughout the country tried to pick up further details. Every ship on the sea and in the air, within a radius of five hundred miles, was besieged by frantic appeals for definite news of the tragedy. But none had seen the air fleet. Colonel Brandon had reported his position but two hours before, being then twenty miles due east of Minot Ledge light and going into formation for the monthly coast-defense maneuvers.

Then came the sudden message, and silence! But for the fact that Colonel Brandon's command failed to answer even their code signals, the Air Department would have been inclined to treat the matter as a huge hoax or the miscarriage of air messages.

Swift scouting planes were dispatched from Boston, and the sea for hundreds of leagues around the First Air Corps' last known position was searched in vain. Not a clue, not even a scrap of the great air fleet could be found; it had completely disappeared. Yet, since all were seaplanes, it seemed incredible that all could be forced down and leave no trace upon the sea.

One by one, the scout planes returned to their home base. Messages came from all over sea and land that the fleet had not been sighted after that last report to the Air Department. The mystery deepened. Many theories were advanced, only one being remotely believable. How could a great air fleet in the broad glare of day, in perfect flying weather and during times of peace and security, suddenly disappear and leave not a trace? Yet that seeming impossibility had happened. Besides the frenzied message to the Air Department, there remained not the slightest token to denote that a major calamity had occurred.

All through the night the search went on, and the perplexity and curiosity of the nation grew apace. Everybody knew that it was clearly impossible for a large air fleet, over either land or sea, to be obliterated within the space of a few minutes. The thing was unprecedented and beyond the pale of reason. So great was the excitement of the people that countless thousands remained awake, and by every means of communication implored the authorities for news of the fleet. Yet there was no news to give.

Then early the next morning a privately-owned seaplane crept disabled into the harbor at Boston. Its owner, a well-known business man, and his wife, told a weird and unbelievable story. It seems that they had been cruising at a high altitude at noon the previous day. Their position was a hundred miles east-north-east of Strawberry Point, and through their glasses they saw Colonel Brandon's ships circle out over the sea and begin their maneuvers. Although the air cruisers were several miles distant, the air was clear; and the movements could be seen plainly. Suddenly the watchers saw a score or more of the planes, scattered here and there among the fleet, break from the lines, gyrate strangely, then bank and dive into the sea. At once the formation was broken; many planes now began to dart about in confusion, and the rest lost their heads and fell out of control. For an instant the flagships seemingly attempted to rally them and restore the line. It was in vain. Rapidly the planes were falling; but there was no battle—no foe of any description was in sight.
The two spectators gazed in awe and wonder, as they realized that some strange and terrible force was working havoc with the fleet. They swept both sea and air with their glasses; there were no boats in sight, and the sky was cloudless. Only a few, low-hanging clouds were visible, and above them the sky was blue and unfecked by a single object. But, while they continued to gaze in amazement, plane after plane pitched about, rolled over, then dived down to its doom.

Nearly all were down and had been swallowed by the sea when the watchers' own plane developed motor trouble, and they had to glide down. Being without a radio transmitter, they were unable to report at once the mysterious catastrophe; and only after many hours' work on the motor were they enabled to limp into Boston.

The whole nation was stunned. Out of a peaceful sky had come sudden death to more than two thousand men, and destruction to the staunchest air fleet in the world. Every ship was constructed throughout of metal, and was supposedly capable of keeping afloat in a gale for hours. Yet all had been destroyed in a few minutes, and not even a scrap of wreckage had been left to tell the tale. Uncle Sam's newest and best-equipped air squadron, which our military experts had declared invincible, had been annihilated within an hour of our coast.

But it seemed that nothing could be done about it. No aircraft had been seen above or below the fleet, before its destruction began. Neither had there been any warship or submarine near to husband other planes; and, even though there had been such an agency bent on the destruction of our planes, how could it have accomplished its purpose so swiftly and completely? Nor could the government, through all its diplomats and agents, located in every capital on earth, obtain any inking as to the cause of the disaster. Other governments and the foreign press were very sympathetic and courteous; but all other nations were as much in the dark as and mystified as we. It was as though an avenging angel from on high had suddenly appeared and smitten the planes. Soundings were made at the point where the fleet was reported to have gone down; but the depth was too great for the work of divers, so nothing was salvaged to aid in the solution of the mystery.

After a few weeks the wrath and the excitement of our nation began to cool; and, as the weeks merged into months the prominence of the affair faded as life resumed its normal course. The tragic loss of the air squadrons was recorded among the archives of the world's unsolved riddles. Folks now began to doubt the story of the Boston aviators. Meanwhile the government was still secretly probing the mystery while it set diligently to work to repair the loss.

It was then that the whole country was shocked by a sudden repetition of the dire tragedy—but this time over the land.

It was late in the afternoon in mid-November: the sky was overcast and the earth below was drenched by fog banks swept along by a cold, raw wind. The Sixth Air Squadron, comprising more than one hundred fighting planes, while returning to the home port at Annapolis from maneuvers in the west, was feeling its way through the fog above the Blue Ridge Mountains. Suddenly radio messages leaped out of the air with the direst intelligence that it had been struck; warning by an unseen foe; that the planes, suddenly thrown out of control, were pitching about wildly and crashing into the hills. And then, as in the case of Colonel Brandon's ill-fated command, communication with the fleet abruptly ceased.

The Air Department at once ordered all available planes to the rescue. Since I happened to be in Annapolis on a motor trip I swung out of the automobile on my crutches (on which I was now able to move a short distance) and made my way over to the flagship of the fleet.

"Want to come with us, Mr. Clare?" inquired Commander Benson genially.

I nodded and he helped me into the cabin.

We were all too much excited to talk as we shot up through the banks of fog and then darted westward toward the Blue Ridge.

Although our speed was great, darkness had fallen by the time we reached the vicinity of the disaster. The dreary blackness of the night was intensified by a cold rain that swept down from the north. Beside the moan of the storm, the sli ther of the rain across the wings, and the subdued murmur of the motors there was no other sound. But the fog had lifted and we shot our searchlights into the gloom in search of the foe. Nothing but the flare-illumined hills was visible. Then fearfully we set the beams of our lights earthward, hoping against hope and dreading the revelations we knew were in store for us.

Soon we located the crumpled wreckage of the squadron, strewn over the rocks and scattered about over the bushes and among the trees of the forest. Some planes were impaled on tree-tops, some had crashed against hillsides; and others lay deep and almost concealed at the bottom of wooded gulleys.

CHAPTER II
What the Planes Revealed

As we dropped down, seeking a spot on which to land, it was apparent that every plane had been destroyed. As before, the work of the unseen forces had been thorough. But here, at least, they had left a clue. Here no sea had destroyed the evidence. Here we had something tangible to work upon.

We finally landed on a flat space, near one of the crushed planes. The officers, with Commander Benson in the lead, sprang from the cabin and rushed to the wreck. On my crutches I hobbled after them as fast as I could with the assistance of two of the crew. And then, standing there huddled together in the rain, we stared dumbfounded and speechless at the ghastly sight our flashlights revealed. With one glance we saw that all the bodies of the plane's crew were in the cabin; none had had a chance to jump. Two of the pilots still sat in their seats, their stiffened hands gripping the controls, their staring eyes wide and terrified as though death had come unexpectedly. The remainder of the crew sat in their places or sprawled on the floor. But the most appalling thing about them was their color; the skin of each was a pale, yellowish blue! We pulled up the sleeves of one and opened his shirt front. His whole body was blue! But we could find no wounds, abrasions or burns of any kind.

We saw that all had been killed instantly by some subtle and powerful force. Nor did the planes themselves show any marks of battle: what damage they had received came as a result of the crash.

Commander Benson sighed and looked around with a bewildered look. I saw that he, like the rest of us, was completely mystified.

"God!" he breathed at last. "This is awful! And
the color of the corpses! I never saw anything so horrible. To think that the boys had no chance—never a chance!"

Upon the mountain slopes and through the valleys we could now see the hollying lights of other searching parties. Some were near us and hoarsely called out their reports and discoveries. All coincided with our own.

"I almost believe that we are dealing with the devil himself," said Commander Benson grimly: "These men have been killed by some electromagnetic agency, I am sure. Yet we find no burns or marks upon their bodies, nor do we find signs of fire upon the planes. But the eyewitnesses of Colonel Brandon's destruction affirm that they distinctly saw fire enveloping at least one of the planes, as it plunged to the sea. However, what they saw might have been the flashes of sunlight on the metal parts."

"Despite that fact, we may have here a different method of destruction," I suggested.

"That is possible," agreed Captain Collins: "Here, as in the case of the Brandon tragedy, our known facts are meager. We are at peace with the whole world. For months there has been not even a diplomatic quarrel. And here we can find no trace of an enemy. Where, then, can we look for a solution to this dark mystery?" The captain paused and looked at us with a startled air.

Commander Benson stared and scratched his head thoughtfully.

"We have one thing to work on, Commander, I said. "You will recall that only military planes have been attacked. And it is only our planes that were destroyed; and it is a significant fact that they were the most powerful in the world, so far as we know."

"By George, I believe you are right, Clare," said Commander Benson: "Our enemy, whoever he is and however he accomplishes his dastardly work, has a military reason for it."

"And it strikes me that he has covered his tracks well," said Captain Collins, dryly.

"Not by a damned sight," snapped Commander Benson, glaring at him savagely: "We'll get this blue demon of the skies or sell our lives in the attempt."

"Amen," we all agreed solemnly.

The Death of Clues

UNFORTUNATELY, there was nothing we could do that might save the planes or to succor their unfortunate crews; for all were dead, all tinted by that horrible blue color, all with that expression of surprise and wonder on their faces.

We sought shelter from the storm in an airport across the mountains and sleeplessly awaited the coming of the dawn.

The day broke bright and clear, and after a hasty breakfast we returned to our sad task. The bodies of the brave airmen who had sacrificed their lives to an unknown foe, without opportunity to strike a blow in their defence, were gathered together reverently and conveyed to Washington. During all this work we made but one more important discovery—nearly every plane had been smashed beyond repair.

Diligent inquiry among the residents of the sparsely-settled region failed to bring us any clues. No one had either heard or seen any strange planes in that vicinity—only the regular mail planes had passed. No one had heard any sounds of battle or commotion in the skies. Nor had any strangers been seen upon the roads for many weeks. Those abroad on the roads in the vicinity of the tragedy on the night of the storm had seen or heard nothing unusual.

We kept up our inquiries for days, and patrolled the air for miles around, but without result. And finally we were forced to go home ourselves, but not without terror.

The national wonder and excitement following this tragedy was even greater than the aftermath of Colonel Brandon's end. As usual in such cases, the public blamed the government for not discovering and punishing the miscreants. Mass meetings were held in every important city, and red-faced orators called loudly for action against the weaklings in our administration. Resolutions condemning everything and everybody in general were offered and adopted by the score. Action! Action! was the cry. The censure of the Air Department was unreasonable in the extreme. The public wildly demanded an investigation, and the removal and punishment of certain high officials, whether guilty or innocent. With the blood scent in their nostrils they were looking for some prey. It was pertinently asserted that, probably, the secrets covering our military planes had been betrayed to a foreign power; and that men high in the councils of state, in collusion with said government, had entered into a conspiracy to destroy our chief arm of defense. Incredible and preposterous though as this accusation was, it found thousands of adherents among the thoughtless; thus embarrassing the administration and hindering any sane solution of the problem.

While public opinion was still at white heat and official Washington seemed on the verge of collapse, the nation was terrified by the news that our unseen and unknown enemy had again struck. This time the victims were small groups of planes and single units far removed from help; but the results were the same. Our men had been sent to their death without warning or a chance to defend themselves. In no instance did these planes have an opportunity to use their radio. The same sickly blue tint was found on the victims' skins. Although, in a few instances, the planes had been seen to go into a spin and fall, no one had seen what struck them down. All declared that this awful power, whatever it was, was invisible and the most deadly thing the world had ever known. There was no clue, no explanation, no chance to apprehend the terrible destroyer. We were further astounded by the news that the agents of this monster had struck in a score of places within the short space of an hour; and always the victim had been a military plane!

The nation all but went mad. For days both business and industry were virtually suspended; men and women throughout the country stood about in groups discussing in accents of awe and terror the visitations of this power. It was apparent to the most obtuse that, unless this damnable thing were speedily curbed and rendered harmless, our country would soon lie prone and helpless under the heel of a conqueror. Yet what was to be done? How were we to grapple with a foe that could not be heard or seen, the only evidences of whose existence were the grisly reminders of its visits? But we were somewhat comforted by the fact that the whole civilized world sympathized with us. Every power, large and small, sent condolences and lavish offers of aid. But these gracious sentiments, reassuring as they were, did not help us to solve the mystery. The situation was acute—the future pregnant with horror and disaster.

In sheer desperation the Air Department finally sent for me. Why it did so, God only knows, for I was plunged as deeply in the morass of fear and uncer-
tainty as any nephew of Uncle Sam. However, I went gladly; though I was somewhat ill at ease as I entered the council room and gazed upon the grim, gray faces of the nation's leaders grouped about the long table. I have known Commander Benson for years, and I want to state now here that no braver man ever sat at the controls of a plane; but when he came forward to meet me, and took my hand, there were tears in his honest blue eyes, and for a moment he could not speak.

"Clare, for God's sake help us," he finally said hoarsely: "We are at the end of our rope and unless something is done mighty quick our country will be on the rocks."

"How can I help?" I asked humbly.

"I hardly know," he replied with a gesture of despair: "But we have hoped that, as the inventors of the planes, you might be able to suggest something."

"One of the inventors," I corrected sharply: "You forget that there was another associated with me."

We then went over to the table where Commander Benson introduced me—really a superfluous proceeding, as I was known to nearly every man there.

"We earnestly desire your opinion, Mr. Clare," said the Air Secretary, "with regard to this nameless scourge that has swooped down upon us. We think that you, perhaps, may be able to show us a way out. Please speak frankly."

My Plan

I GAZED about the room. The heavy shades on the windows were down and the doors were closed.

"Have no fear," said the Secretary divine my thoughts: "We speak behind closed doors, and the entire building is under guard."

"Gentlemen, I deeply appreciate this confidence," I said, "though I fear that there is little I can do to unravel the net of perplexing circumstances that surround us. However, I have arrived at certain conclusions which I have hitherto thought best to keep to myself, but which I now frankly make known for what they may be worth. Allow me to say, then, that it seems to me that we are still psychologically at war with those who planned and executed the attack."

"We have been fighting a war for some time and I fear that we have been fighting a war against the wrong enemy. The real enemy is not the man who attacked us, but the man who conceived the attack."

"Our secret service men have been working in those countries since the loss of Colonel Brandon's fleet," said the Secretary: "but they have found nothing."

"As the attacks have all been made on our military plans," I remonstrated, "I think it would be wise to remove all such plans from active service, so far as possible, and confine them within their hangars and home fields until we can locate and grapple with this menace which Commander Benson has aptly named the 'blue demon.' And, since this destroyer, whatever it is, comes out of the skies we must look for it there, we must battle and overcome it there."

"I am convinced that this unknown enemy of ours is using an electromagnetic force," I went on: "It may come from a great distance, or it may be directed at comparatively close range. But it has occurred to me that we might insulate against it. Of course we do not understand the nature of this ray—if ray it is—for, although invisible, it leaves a blue stain which would indicate that some sort of chemical action forms one of its characteristics. Yet, I believe that we can insulate against it. Our secret air patrol should be greatly augmented; but I would suggest that all planes be sent into the air in single units widely scattered."

"Clare, I think your idea of insulating the planes a mighty good one," spoke up Commander Benson: "Somewhere in the air this deadly thing lurks. But what, in God's name, are we to look for? No one has reported any suspicious-looking aircraft loitering about, and who among us is astute enough to recognize this blue monster should we meet him?"

Of course no one had an answer to these perplexing questions. Indeed, it seemed an absurd and impossible task, to hunt for and fight an invisible foe. That we had to thank an old enemy for these hellish crimes, there could be no doubt. But what enemy? We could not charge any nation with such dastardly conduct in times of peace; such an accusation would be equivalent to a declaration of war. Yet all realized that something must be done, and that soon. The temper of the people demanded drastic action of some sort. War with all its carnage and heartache was preferable to this supine submission to the frightful attacks of an unknown foe.

For several minutes a poignart silence hung over the room; the very atmosphere of the place was eloquent of the uncertainty we felt. All realized that the life of a mighty nation was at stake; and the thought came to me that among those grim and silent men about that table must be found a savior.

At last General Marshall rose in his place. His face was pale and seamed, his lips set; but his eyes, deny ing the years of his snow-white hair, blazed with the ardor of youth. General Marshall had been a pioneer in the early days of the air defense; he had sounded the tocsin of warning and the call for an adequate air fleet until he had won his point against immense odds. Now his advice was valuable indeed and followed, even by those who once had been his bitterest opponents.

"Mr. Secretary," he began in clear, firm tones, "I recommend that Mr. Clare—"

He paused abruptly and stood staring wide-eyed at the loud speaker in the center of the table as the Air Department's code signal rasped out on the air.

"Mr. Secretary," came the announcer's hoarse voice from the government airrome at Annapolis: "I have the duty to report that three more battle planes have just crashed on this field; and our hangars are in flames!"

We stared at one another in helpless dismay. Slowly, as in a daze, every man got to his feet and waited breathlessly for the next words. This was the most stunning blow that had yet been struck. They were boldly attacking our planes in their home ports! They were burning our hangars before our very eyes, and it seemed that we were helpless to do anything to thwart them. We gazed in awe at the loud speaker, but no further words came. In some manner the announcer had been cut off.

"I recommend that Mr. Clare's proposal be adopted," continued General Marshall at last, his cool, collected voice tending to relieve the tension; "I further recommend that he be placed in charge of our air scouts and empowered to act at his own discretion and in his own way; that all red tape pertaining to his duties be slashed
CHAPTER III
After the Demon

A

t once a loud clamor arose. The enemy was at our doors again, we must get a fleet under way immediately and hunt down this destroyer; there was no time to lose in experiments—and so on. But in the midst of this hue and cry General Marshall held up his hand for silence. At last, in deference to his years and experience, the commotion ceased.

"Gentlemen," resumed the general, "I beg you to curb your impatience. To assemble and send out another fleet against this masked invader would be sheer madness. Our inability to cope with him openly has been demonstrated to our sorrow. We are dealing with a new form of enemy, unseen, deadly and without mercy. As Mr. Clare has suggested, our best hope is to render our planes immune to his thrusts—if we can do so—for only in this way may we learn the secret of his power and destroy it!"

"Mr. Clare, how long do you think it would take to insulate a fleet of—say—a dozen scouting planes?" asked the Secretary.

"Perhaps two weeks," I replied: "But I take pleasure in informing you that already I have one plane in readiness." They all turned in their chairs to stare at me incredulously. "I have anticipated the need of such a plane," I went on.

"And you are ready to take the air in it?" gasped the Secretary.

"I am, with your permission."

"Good!" exclaimed the Secretary, his face brightening: "How do you propose to work?" he added quietly.

"I hardly know," I confessed: "Our task is unprecedented and we fight blindly. Circumstances must largely guide our action. We know not where to look for this monster. But I propose to go into the air after it, to stay in the air, refueling from supply planes, until I either run it to ground and destroy this infernal power or am destroyed by it!"

A murmur of applause followed, but I was far from feeling as brave as my words. This indefinable, unseen terror had worked on my nerves, too, and I was in very truth fearful of the ultimate outcome. To lose our envied position as leader of the world's air powers was humiliating enough; but to have these children of my brain destroyed without being able to strike a single blow in their defence was maddening.

Commander Benson sprang to his feet.

"I urge that Mr. Clare's services be accepted at once," he said crisply, "and that he be dispatched on his errand without delay."

"You shall have a free hand," said the Secretary, shaking my hand. "Pray take your insulated plane and go at once; and may God speed you! What pilots do you wish to accompany you?" he added, quickly, as we passed into the crowded anteroom.

My eyes swept the faces of the airmen present; there were many aces there, all time-tried and true. The available supply was great; but when I saw Captain Price (Colonel Brandon's son-in-law) and Captain Collins looking at me longingly, my choice was made.

"I will take Captain Price and Captain Collins with me. Mr. Secretary, if you please," I said.

They came forward to thank me for the compliment; but I waved them back with a smile.

"Come, let's go!" I said, swinging toward the door on my crutches. With our hangars burning and our whole air fleet menaced with destruction, I knew there was no time to lose.

We took to the air that very night and began an aimless ramble through the skies. I say aimless; and such it was, so far as destination and a campaign of action were concerned. We realized that one lone plane against an invisible antagonist of whose size, power and location we had but vague conceptions, stood but a meager chance of success.

The weather was cold but beautiful. Not a cloud drifted across the star-studded sky. There was scarcely any breeze and the air was clear.

To our surprise the weather continued fair for the next three weeks, and we enjoyed it to the best of our ability considering the constant strain we were under. It was one of those calm, clear Decembers we sometimes have along the Atlantic coast. Day and night we sailed the sky, sometimes far inland, at others far at sea, changing our course and altitude frequently. But nothing occurred to stir our blood or mar our voyage. All was as serene and peaceful as a country churchyard. The demon had not been heard from again. The people began to lose their fear, and we to feel like fools on a wild-goose chase. But the government did not relax its vigilance. By this time more than a score of the new, insulated planes were on scouting duty.

Then, one day, as we flew high over the ocean, the weather suddenly changed. Clouds began to gather and roll up from the east. The wind freshened and brought with it a chill. In less than an hour, we were among the clouds, and so we dropped to a warmer stratum of air. The cloud banks mounted rapidly, and we thought that the whole heavens would soon be blanketed; though the sky to the west was still clear and blue.

We turned landward, not wishing to be caught in a storm. But, as we sped on, I looked back at the rolling clouds and studied them idly. Then my attention was suddenly attracted to four curiously-formed clouds, detached from the main mass and drifting slowly northward. These cloud formations, perhaps a hundred yards in circumference, were white and irregular in shape with long, feathery streamers and columns protruding and floating from the edges and curling about the main body. And, as I looked, I fancied that there were spots on the surface that billowed, rose and fell, puffed up and subsided like the slow exhaust from a steam pipe. And, in the center of each cloud, was a mass of snow-white vapor such as one often sees scurrying over the water in the lap of a gale. Through the binoculars the clouds seemed to be composed of fog particles rather than rain-laden vapor.

"Funny-looking clouds," remarked Captain Price, observing my intense interest. I handed the glasses to him.

"Damn curious," he said, calling Captain Collins' attention: "The barometer remains stationary and I can see no cause for this peculiar condensation."

"Their motion is contrary to the drift of the lower clouds," remarked Collins. "It is strange that, although we are getting the wind from the east, that these clouds so near us and at the same altitude are moving north."

So saying, he turned the plane about. Without question his motives we continued to stare as we flew back to within a quarter of a mile of the clouds; then paused in a hover to watch their motions. To our surprise, we saw that they were no longer drifting. The erratic air current had released them and they were now motionless. Their surface no longer heaved and
pulsated as though with life. Only the long ribbons of exquisite cloud tracery, as delicately fashioned as the most intricate lace, still swayed and waved around the edges as though blown about by the wind.

"They are just ordinary clouds, after all," said Captain Price in disgust. "I thought we were about to discover some new meteorological marvel."

What Came from the Clouds

I DON'T know what made me gaze up into the blue just at that time—so remarkable are the coincidences of life—but I saw a dark object descending swiftly from thousands of feet above us. Down it came with incredible speed; and then, to my surprise, I saw that it was a large plane similar to our own.

"One of our boys has spott ed us," I said, calling my companion's attention to the plane. But, to our amazement, this new arrival seemed not to have seen us, or he did not wish to make our acquaintance; for he came on down straight as a stone. At last he came to a hovering rest about two hundred yards from the strange appearing clouds, which now seemed to turn back and merge with the dark background of vapor.

Suddenly something blinding flashed above the newcomer's plane, scintillated and flanked out like a large mirror in the sunlight, while spirals of blue fire ran along his wings and seemed to leap from them. We stared in wonder.

"Look! Look!" I cried Price.

Following his startled gaze, we saw a large, white plane below the edge of the clouds going hurtling down to the sea.

"He dropped out of that cloud," said Collins in a low voice of awe. "And where's the cloud?" he added, in bewilderment. "I'll swear it was there but a moment ago."

He was right. There were but three of the white clouds left, and they seemed about to be absorbed by the dark masses behind them.

"They have drifted into the other clouds," I explained.

The lieutenant shook his head.

"There goes another!" I cried Captain Price, grabbing my arm in his excitement, just as I again saw that appalling flash of fire on the stranger's plane. But, even before the stricken plane struck the waves, I observed that another white cloud had completely disappeared. Before we had a chance to recover from our amazement, or to discuss the startling occurrence, we saw a third plane dart from the cloud bank out of control.

"At him!" I shouted wildly. "It is the 'blue demon,' and he is killing our friends. We will be next."

Before the words were out of my mouth, my pilots were driving the plane forward at terrific speed. At last we were to come to grips with the ruthless beast of the air that had eluded us so long. The remainder of our air forces would be saved and the darkest mystery that had ever stained our military record would be solved. But, as we rushed on, we were greatly alarmed and puzzled by the tactics of our strange enemy. For several moments he retreated; then paused as if in doubt, while his plane was bathed in a dazzling sheen of fire. Then, as we stared agape, he shot away with bewildering swiftness and melted into the clouds.

"He has beaten us!" gasped Captain Price. "Damn him!"

Chagrined and humiliated, we stopped in the edge of the clouds. We could not see ten yards into that black, rolling mass. We hesitated to penetrate its folds. However, we were given scant time to consider our problem. A cry of alarm from Lieutenant Collins drew my attention. Several hundred feet above us, and to the right about a hundred yards away, was another large, white plane, like the ones already sent down, emerge from the clouds and dart toward us like a shot. We gazed apprehensively—probably the same thought was in the mind of each—was this newcomer friend or foe? And then I saw that the fourth white cloud had disappeared.

Because of the sudden chill in the air we had closed the cabin. Every window, door and port was shut; but we watched the oncoming plane through the heavy, plate glass windows wondering whether to meet it in a spirit of friendship, to retreat or to give battle. It was a biplane, but of a pattern radically different from any we had ever seen. Its fuselage was extra large and swung low, and it carried two motors.

"Good Lord!" suddenly exclaimed Collins. "Look, everything is turning blue!"

We stared aghast. The air outside was swiftly assuming that deathly, terrifying hue that was associated with the "blue demon.

"Keep the cabin closed," I cried. "If that blue stuff gets in we are doomed. And—and-boys, the insulation works!" I added triumphantly. "Let's ram him!"

So we turned and darted toward the plane that by this time had reached our own level. I say darted, which should be the right word, for our motors and other machinery were functioning splendidly; but to our amazement and consternation, we were barely moving! Some great repellant force, like the blast of a large, white plane, was holding us in check. In vain we tried to increase our speed, knowing that without it our foe held the advantage. Yet he was not firing at us. We saw no sign of life about the plane. The weapon he was using against us was the swift and silent one of electricity. But there was no flash or fire about the great white bird to indicate it—it was apparent only by that indistinct blue haze and the powerful agent that was retrofitting our flight. There seemed to be nothing to do but to turn back and retreat. Yet I knew by the stern, grim faces of my pilots that such a thing had not entered their minds.

They motioned me to the controls and aimed the forward machine-gun as we slowly forged ahead. At first our shots made no impression, neither did the foe retreat. But at last in the midst of the fierce rattle of the shots we saw the white plane quiver, bank suddenly and then go into a nose dive. We had scored a hit. But, after a drop of several hundred feet, she flattened out and darted south like a bullet.

"After him!" shouted Price. And then we bent every energy to the chase. We were gratified that the force that had checked us had been removed and that, although the blue haze still surrounded our plane, we had recovered our normal speed. And our foe was mortal—we had wounded him—we had repelled his terrible ray, and he was running from us. However, it took us but a few minutes to discover that we had an adversary worthy of our steel, so far as speed was concerned. Save in our own planes I had never witnessed such rapid flight. Mile after mile the white plane held her own despite our most strenuous efforts. She flew due south, maintaining one level and not deviating a hair's breadth from her course.

"I'll bet they are making for South America," said Price. "I have seen many places along the Orinoco where an airplane base might be safely hidden. But wherever she leads we will follow," he added savagely.
"Amen," said Collins. "We will follow him and beat him to a frazzle, because our insulation renders us immune to his devilish ray."

**The Men of the East**

But our ambition to discover and destroy his base was doomed to disappointment. Before two hours had passed, the wind suddenly increased, assumed the proportions of a gale, shrieked about our ship, buffeting it and straining it in every fiber. Soon the whole heavens were black with storm-tossed clouds across which the lightning ran in vivid tongues of fire. The rain fell in torrents and, as a deep twilight settled about us, the sea was blotted out in the mist, and ahead we could see nothing but a gray wall of swirling rain.

 Loudly cursing the weather, Price looked at me.

 "I think we had better land," I said in answer to the question in his eyes. "We've lost track of the plane, anyhow, and it is not likely that we can pick it up again in this storm."

 "I fear that the scoundrels will go above it," suggested Lieutenant Collins.

 "If they were not damaged they might," I said. "But, now that we are off their trail, I think we will take the opportunity to land on some desolate spot to make temporary repairs. We have made a good start today—we have met the 'blue demon' in actual combat and all but beaten him. Let us console ourselves with these facts. We will go toward shore, lay up for the night and perhaps to-morrow we may have better luck."

 Accordingly we turned west, and in a half hour, flying low, we saw a flat, sandy island beneath us. On this we landed and made things snug for the night.

 The storm continued for several hours, but the dawn broke clear. The wind had veered to the south, and now dying away, was breaking up the clouds above a tossing sea. Patches of blue sky showed at intervals and through a rift in the clouds we sailed up into the sunshine.

 "Shall we go back home, or continue south for a spell in the hope that we may sight our quarry?" I asked.

 "Let's keep on for another day at least," replied Price.

 "I agree to that," said Collins. As that was my notion also, we accordingly set our course south.

 The clouds were breaking up rapidly. We sailed high above them, flying leisurely and keeping a sharp lookout for the white plane. Suddenly, through a break in the vapor, we saw it just above the sea. Its speed was much more leisurely than that of the day before.

 "We will drop down and rip him open," said Price joyously: "We've got him this time."

 Remembering the deadly blue ray, we closed every opening of the cabin as we began our dive. But we were not to have an easy victory. Hardly had we left the shelter of the clouds when he saw us, and made for the island we had just left. Once more that thin, blue haze surrounded us.

 "Keep your damned rays to yourself," sneered Collins. "They don't bother us any."

 It was true—we felt no discomfort—and this time the ray, or whatever it was, seemed to have lost its potency. It had not the power to seriously check our flight.

 "Something mighty serious has happened to those birds," said Collins gloomily. "They've lost their pep and are sure our meat."

 But the great white plane put on a sudden burst of speed, and at the same time our engine began to miss. We lost speed and the plane's nose dropped. We came up quickly, however, and once more got above our adversary and sprayed him with bullets from our machine guns. Again he out-maneuvered us and we missed. Captain Price cursed roundly as the beautiful white creature zoomed up out of reach. We saw their game—they would get above us and once more elude us among the clouds. But they were too slow. With all the tremendous force at our command we came up under them, tore into their fuselage and broke a wing. Then, as we drew swiftly back, the white plane, like a crippled bird, lurched drunkenly, then plunged, a whirling streak of white, to the ground. It landed in a clump of palmettos and burst into flame.

 In a fever of haste and anxiety we landed near and hurried toward the burning plane, fearing that the fire would rob us of the fruits of our victory. I reached the plane, by extraordinary effort, just behind my pilots. The fire was roaring around the motors; evidently some of the gas pipes had burst in the crash. The cabin was badly shattered, and protruding half way through a broken window hung the body of a dark-skinned man. My companions pulled him from the wreckage, carried him aside and laid him under a palmetto. He was a handsome man with raven-black hair and jet black eyes; his features were finely molded and regular, his hands small but muscular with tapering fingers, his build athletic. A purple turban, its scarf awry, was on his head.

 "Some high-caste oriental, or I'm a goat," exclaimed Price.

 We stared at one another. Who could be our mysterious opponent?

 In the cabin of the wreck, we found the body of another oriental, garbed like his comrade, but of shorter stature. A careful search revealed no sign of any other being about the craft.

 All efforts to extinguish the fire with sand were useless. We could only stand back and watch it burn itself out; which it did when the petrol tanks were empty.

 When at last the metal parts had cooled sufficiently to be handled we went about among them and examined them with care and awe. Despite the fact that the motors and the other machinery were blackened and warped, their rods, valves and dials broken and twisted by the intense heat, they presented an intricate maze of delicate and wonderful mechanical construction. We poked about among the mass, but the fire had destroyed the great secrets which we sought. We could not explain the functions of the ruined batteries and tanks, those queer-looking motors and pumps. We could not rearrange the severed wires. We could not reconstruct the melted mirrors, reflectors and transformers. Nor did a diligent search of the unburned portion of the plane reward us with a single document to help us in our problem; in fact there were no papers of any kind, no records or plans. Who were these men of the east? And by whom were they sent? Only a scant wardrobe and a little bedding were all that we found in the cabin.

 "The damned assassins have covered their tracks well," snapped Price disgustedly. "Our victory is blown."

 "In a degree, that is true," I acknowledged ruefully, "for this plane, as we witnessed in the skirmish yesterday, is but one of many—maybe thousands—hiding away somewhere awaiting a favorable time to strike
CHAPTER IV

The Poe Invades Washington

WE got home without further adventures. Our report to the Air Department was held secret; not a word leakage out to the public.

For several days all was quiet. The weather was fair, business was good, and once more the people believed that the worst was over. Then, one day, in the midst of a storm, the enemy again struck. It happened over Washington above the Capitol itself. Six military planes which had not yet been insulated, winging their way home to Fort Myer, were suddenly attacked and destroyed. Their wrecks were strung along in a zigzag line extending from the Washington Monument beyond the Lincoln Memorial. Every man aboard them was killed; and every body bore that grisly blue mark of the mysterious slayer.

The National Defence Council, assailed on all sides by a righteously indignant and suspicious public, and smarting under another bitter reminder of its impotency to stop the slaughter of its planes, assembled in extraordinary session. The atmosphere of the chamber was one of gloom and despair. My pilots and I were called in to recite the incidents of our battle with the foe.

"The theory of Captain Price, that this awful thing may have a base in South America, I think a sound one," said Commander Benson. "I believe that it would be well to send planes to scout in that region. Besides, I believe that our secret service should be doubled in every capital in the world. Although we have just witnessed another example of the demon's cunning and power, we feel that we are making some progress toward its annihilation. Mr. Clare and his pilots have demonstrated that the insulated planes are invulnerable to its attacks, and no plane so insulated has been destroyed. However, I feel that our progress toward the solution of this mighty problem is slow and that, unless we can hasten it, the price we will pay for our delay will stagger humanity. Therefore, I earnestly recommend that every available factory in the country be run night and day for the construction and insulation of military planes."

Commander Benson's recommendations were adopted without one dissenting voice. And then I asked for the privilege of conducting another night patrol off Boston; this was in obedience to a hunch rather than to any definite analyses. Not knowing when or where the demon would strike next, one patrol district would seem as likely to produce results as another. However, the startling sequence of events proved that sometimes a hunch may be right.

We took the air night after night, and nothing hap-

pened to us for a week; but in the meantime over the land we continued to lose planes—sometimes singly and other times in flights. And then, one Sunday night, our luck turned.

The weather was magnificent. The full moon rode high, flooding the sea with silver as we swung out over it. The sky was clear, with only a few billowy clouds to frolic its velvety, star-strewn dome. Those clouds, which drifted lazily along in a light breeze, were scattered and irregular in size; but off to the right, only a few miles from shore, was a group of these foggy clouds, their white, fluffy banks and ridges standing clear and bare in the soft light. There were no others near them. They were of about the same size and shape; and, as we passed, I watched them curiously and counted them. There were seven.

We went on. For some time no one had spoken—doubtless every one was under the mystic spell of the mellow night. Then I noticed Price staring fixedly to the rear. Suddenly he rubbed his eyes and seized the binoculars.

"Look there, boys," he exclaimed a moment later. "I just counted those clouds when we passed—there were seven—and now there are but four! And—and—for the love of God, look! In their place are three white planes—the planes of the blue demon—and they are being attacked."

Unable to believe our eyes, we stared like fools. Above the three white planes had suddenly appeared, as though projected from empty space, the great craft that had escaped us before.

"There's our baby again," exclaimed Collins glee-

fully. "We've got him this time, or I'm a lubber." Then he swiftly turned the plane back.

And now, as we approached them, we saw that amazing blue fire blaze and flash and circle about the plane as it bore down on the white fleet. Then, one after another, the remaining four clouds vanished suddenly, leaving in their places four more white planes!

We stared at one another speechless with amazement. There were now seven white planes, each the exact counterpart of the one we had forced down on that sandy island. They had moved unseen within a mantle of clouds—and one of the great mysteries about our foe was solved. Under cover of their cloud screen they had approached their victims and struck them down by means of some infernal power.

"What dumbheads we all are!" I exclaimed in dis-
gust. "Why didn't some fool among us discover that we lost no planes during clear weather—that clouds were always about?"

"But what about that fellow that seems to be all afire?" asked Price, "is he friend or foe? Foe, I'm thinking, for he ran from us. Probably he is the leader. And yet—"

The captain paused for want of words.

We came to a hovering stop less than five hundred yards from the white planes. Two of them suddenly nose-dived to the sea. Then, as the remaining five zoomed and dived and banked in their mad efforts to escape the same fate, their aggressor gained altitude with a swift, upward surge. He quickly wheeled to the left and brought all five white planes upon his quarter. Again his plane blazed with blue and green and yellow fire: and three more of the white planes, whose cloud curtain had been mysteriously dissolved, went lurching down and were swallowed by the waves!

And now we were surprised to see two remaining planes, unmindful of the awful power flashing from their adversary, charge straight at him. But, before
they were fairly under way one of them began to wobble; then it dove straight into the air, only to drop back in a moment in a tailspin to the sea.

It now became a death struggle between the remaining white plane and its terrible antagonist. Still hovering there inactive, not knowing who was friend or foe, if either, and expecting to be attacked by the victor, we stared silently at the remarkable battle. In some strange manner the white plane, although now the center of the aggressor's attack, managed to parry his fiery thrusts and to return again and again to the attack. For the first time we noticed a pale, blue ray dart intermittently from the cabin of the white plane. Then we suddenly realized that its great foe had been hard hit; no longer the fire flashed from its wings and fuselage. It began to retreat at an upward angle before the thrusts of its enemy. Three times it returned and attempted to ram the white plane, which always eluded it. But we could see that the white plane also was badly crippled. Its movements had become slower and they lacked their usual skill.

Suddenly the big plane drew away from its white foe. It rose higher and higher with a slow, unsteady motion, while we followed at a distance, and the white plane kept climbing and circling after it a hundred yards below it. Then, to our utter amazement, we saw a man emerge from the cabin of the upper plane, walk out upon a wing and pause there, staring down at his enemy. A blue smoke was issuing from the fuselage behind him, and the whole plane was trembling and swaying as if about to fall. The man was without a parachute, and we wondered what he had in mind as he continued to gaze down at the circling plane. Why the latter did not finish him off as he stood there, a fair and open target, we could not imagine. But likely its pilots were hard pressed to keep the plane in the air.

An Astounding Discovery

The white plane still circled closer in its narrowing orbit, passing directly under the man on the wing. Suddenly we saw him gather himself for a spring.

"My God, he is going to jump!" I cried aghast. "He is going to leap to the other plane!"

Then as we stared in dumb and silent awe he sprang into the air. Straight down he plunged, and he had gathered the plane's motion well, for he alighted squarely on his feet in the center of its wings.

The man himself down to the cabin and entered by an open door. A few hoarse cries reached us, mingled with the clank of metal striking metal, then all was silence. But in a moment the plane staggered into a nose dive. For a thousand feet it dove as we followed after, and we thought that it was surely about to crash into the sea.

Yet, after a moment, it flattened out and turned toward the land.

A sudden mighty rush of air now thrust us aside, and the great plane which had just been abandoned, careening madly from side to side, rushed past us and buried itself in the ocean. Intent on watching the white plane, we had forgotten it momentarily and came near being crushed by it.

Meanwhile, the crippled white plane, paying no attention to us, was painfully making its way toward the land, with crazy, uncertain glides. It was evident that its navigator was nearly spent and was seeking a haven of refuge on land. At last he reached the shore, just grazing the top of the cliffs, and came to a crushing stop in a stony field a quarter of a mile inland.

As soon as possible, we landed by the side of the wrecked plane and rushed forward. The first human figures we saw were two turbaned orientals, dressed like the two we had vanquished. One glance and we saw that both were dead. Each had a smile of devilish defiance on his dark face, a smile of haughtiness and disdain, and their wide-open staring eyes held no shadow of fear. Hurriedly we looked for their intrepid conqueror. Then we saw him lying on his face, wedged in between the pilot's seat and the instrument board where he doubtless had fallen when the plane struck. Blood was flowing freely from a wound on his head, but he was breathing. Collins and Price pulled him out and laid him on the ground beside the cabin. And then as I bent over him my senses reeled drunkenly, and for a moment I doubted the evidence of my eyes. For I was gazing at the rugged, honest face of Lon Grand!

"Good God, boys!" I gasped. "This is my long-lost friend! This is Lon Grand!"

"They stared at me incredulously."

"He was fighting our battle," said Price at last, "and to think that just a short time ago we were trying to send him down to Davy Jones!"

"We must get him to a hospital at once," said the ever-ready and resourceful Collins as he knelt to bind his handkerchief about Lon's bleeding head. "Price," he continued, placing his hands beneath Lon's shoulders, "you take his feet."

We soon had Lon aboard our plane, then as the excited natives of the locality ran up, we shot into the air and headed for Portsmouth, the site of the nearest hospital. On the way we radioed to the Air Department to secure the wrecked plane.

It took heroic work to save Lon's life; although he had no severe wounds or injuries save that on his head. For weeks he lay in a coma; but at last science and tender nursing prevailed and he came out of the shadows—came from under the mental cloud that had possessed him so long. Calm reason without a glint of fear, doubt or uncertainty, now glowed in his splendid eyes. Doubtless the blow he had received in that last mad flight had proved his mental salvation.

Day after day and often far into the night I had sat by his bedside praying that his life be spared. I left the work of the air patrol to others. But it was now without particular interest, for the attacks of the "blue demon" had entirely ceased. But I could not hold on life, and so fearful were the doctors that any sudden excitement might again unbalance his mind, that it was another month before I was allowed to reveal myself to him and ask him to tell his story.

"It is but a simple tale, Clare," he said modestly as he gazed fondly into my eyes. I sat by his wheel-chair holding his hand in a warm clasp. "I am sorry that I have been unable to tell it to you sooner for now it may be too late unless—"

He paused and looked at me with a whimsical smile. "Unless your insulated plane has turned the trick," he finished.

"You have turned the trick yourself, Lon," I said warmly. "You alone saved us, but we are just dying to know how you have wrought this miracle. We have lost no more planes since that last heroic battle of yours. I reckon the 'blue demon' is sleeping."

"The blue demon," repeated Lon reflectively. "Well, the name is appropriate enough. But I can't understand why they have let up in their attacks. Still, there are many other things about this strange enemy of ours that I can't understand. One thing I do not positively know—its identity. Think of it—I who have lived among the conspirators, supped and slept with
them—cannot with certainty name their nation. So I leave the enigma for each man to form his own opinion.

"To go back to the beginning," resumed Lon after a pause, "we all know how the invention of your plane completely vanquished our enemies from the east. Beaten and humiliated, it was natural for them to attempt to learn the secret of its construction. But the ironclad discipline of our government's air forces prevented this. You know, old pal, how I wandered away from you in the clutches of one of my queer spells before the war was over. This time my aberration must have lasted for weeks and months. I can recall only hazy glimmerings of my life and actions for some time. I do not know just what happened to me, but I must have been drugged and kidnapped.

"When last my senses returned in a measure, I found myself in a wild, mountainous country containing dense forests and great, level plains. I was surprised to find that my companions were orientals belonging to a powerful nation which ancient caste now banished by their government. I was treated graciously, housed in comfortable quarters and given to understand that they were my friends. Then came the great surprise. Their head man, a rajah, tall and proud and powerful, came to see me. He informed me bluntly that, since I knew the secrets of my country's great airplane, I was to reveal it to him and to assist him and his followers in the building of planes like it. He also politely gave me to understand that, unless this information were forthcoming within a reasonable time, my life was to be forfeit.

"Well, I begged for time to consider this startling proposition; and while debating it, I was allowed to roam around at will. Then it was that I made some astounding discoveries.

"The little valley where I was held a prisoner harbored a town of several thousand people, and in its center, ready for operation, was an airplane factory in which the whole population was expected to work. I discovered that this was an inaccessible region in the north of India, unknown to the outside world and seldom visited. It was presided over by this rajah who, I take it, was a sort of social outcast from his particular caste. He was a merciless despot; but everybody there seemed to worship him and worked uncomplainingly under his regime. I gathered that he was justified in this by the effect it had on the surrounding nation and that he was to turn the new planes, when finished, over to it. Thus this power, while presenting a friendly face to the United States, was secretly planning its destruction.

"At last I pretended to fall in with their plan, but under one subterfuge and another I delayed the work. I didn't know what to do; but I was determined to sacrifice my life rather than betray my country. But I wanted to live, gain the secrets of this strange band of men and aid in preserving my country. Fate helped to solve my problem. One evening just at twilight while returning alone from a stroll in the valley I saved from assassins the life of a young oriental of good breeding, education and intelligence. A low-caste laborer, for some fancied injury, was about to stab him to the heart when I stepped between them, receiving a flash wound in my chest. The young man, Relgoon by name, from that time on was my friend. So to him I gradually imparted my desire to outwit my captors, to escape and to reveal their secrets to my government. He agreed readily to aid me, and with a solemn oath pledged his life to my cause.

"At last, a model of one of our super-planes was started. I built it as near like ours as I could remember; but I introduced some changes. The plane was hardly under way when we were visited by a fleet of beautiful white planes, all manned by members of the band. I was taken on board one of the planes and given a ride in the air. I was frankly told that these planes possessed some remarkable features, far superior to the American planes which they wished me to study and incorporate in the plane I was building. I was shown the apparatus of the invisible death ray they carried, which was capable of killing a man at the distance of two thousand yards, which could be intensified and directed at a minute target.

"Most astounding of all, they possessed a devilish contrivance to screen their movements. This was a machine for generating a fog cloud which they could keep about them as they sailed and in which they could lie concealed for hours, especially when blended with the real clouds of the sky. Yet through this cloud they could send their ray, directing it by means of some hellish electric eyes which I was never able to discover and copy—my old think-box functions but poorly at times.

"Now Relgoon and I, working hand in hand, set out not only to equal these damnable instruments, but also to improve and surpass them. You know, old scout, that I have always been quite apt in the field of electromagnetism. So, while neglecting to build a cloud creator in the new plane—giving as my reason that owing to the plane's peculiar construction it would be best to install it the very last thing—and remembering that one of the most obdurate elements menacing the safety and navigation of all planes is fog, we created a fog dissolver.

"When the plane was ready for the air, but still incomplete in equipment, I invited the rajah and several of his officers aboard and we went for a trial flight. The plane surpassed all my calculations. It behaved superbly, responding to all maneuvers with marvelous speed and precision. The rajah was delighted. He rubbed his hands together in glee, I fancy in anticipation of some nation's gold that was soon to cross his palm. While he was in this good humor I disclosed my new dissolver, casually reminding him that fog was one of the most troublesome and dangerous of all the obstacles of flight. He agreed to try out the invention, and if successful, to install it on our new planes. He was favorably impressed with the idea, and by radio he ordered one of the white planes to approach us shrouded in its cloud mantle, little dreaming that I was negotiating the collapse of his golden dream.

"In due time the plane appeared in its glorious white cloud. I pointed the dissolver, and lo, its fog was shattered and the plane revealed in a twinkling. Nor could the plane again build up its cloud under the attack of my rays.

"The rajah was prodigal in his praise as we returned to town. He was immensely gratified that my work had merged without friction into all his plans. I was given more freedom and was accorded every honor that the little band possessed."

**The Escape**

"At last the plane was complete, even to the introduction of the projector which sends out the ray with its poisonous power and its peculiar hue. But, like a fool, at the last minute I neglected to install the fog producer; I was in such a big hurry to get away. Secretly, bit by bit, Relgoon and I provisioned the plane
and made it ready for a long voyage. Then, during one dark night of rain and wind, when the sentinels had sought shelter from the storm, while the few lights of the city blinked dimly through the mist and the people of the town were asleep, we stole over to the hangar, doped and bound the guards, ran out the plane and zoomed up through the rain.

“We made but little headway during the night; but by morning, the storm having lifted, we sailed out over the Pacific. Cruising along the islands of Japan we encountered heavy fog banks, but by means of our dis- solver, which cut a clear path through the vapor fifty yards wide and about five hundred yards long, we sailed through it easily without slackening speed.

“Three days later we landed among the cactus of Northern Mexico, because we were forced down by motor trouble. To avoid arousing the suspicion of the natives and being subjected to unpleasant questioning, we represented ourselves as United States military aviators. But owing to the remonstrations of the region and the red tape of the officials it was over a month before we were repaired and again took the air. Then we were stunned to learn of Colonel Brandon’s sad fate. I saw how it was—the mysterious eastern power, learning of our escape and fearing that we would soon warn our country, had determined to rely on the prowess of their own devilish contraptions and destroy our planes one by one before they could be warned.

“Why I did not immediately reveal myself and my plane to the proper authorities is one of the great pu- zles of my mental illness. I was aghast with indigna- tion and hate against this sneaking, unseen foe of my country, which I can not even name. And Relgoon shared my hatred. So, immediately we set out to hunt and destroy these white planes which, though deprived of our inventions, had nevertheless set out to destroy us. But we had a great advantage unknown to the enemy. Secretly I had greatly increased the power of the ray and added other little tricks that were sure to help us.

“I had an obsession to locate the base of those white devils and lead our planes upon them. But there were delays; we had hard work to keep from being dis- covered, to get supplies and find a snug haven for our plane. And, in the meantime, our planes were being destroyed. Yet I hesitated to make myself known. My wayward mind kept suggesting that I first locate the enemy’s base. But so cleverly is that base con- cealed that only a few days before my last flight did we discover it. And then, I regret to say, my faithful Relgoon lost his life. You will find that base in a cove of Pamlico Sound where a good-sized stream empties into the cove, its mouth hidden by low, overhanging live oaks heavily covered with festoons of Spanish moss. Here is the entrance to the invaders’ haven. This haven is never entered or left by the planes save at night and then under cover of their clouds. It is not a mechanical base—only a few supplies are kept, and their gas is supplied by night-prowling launches with crews in the pay of this unknown power. Go at once, I beg of you, and destroy this outer harbor of hell.”

Lon sank back exhausted and closed his eyes.

Within an hour preparations were going forward to descend on this base of the terrible white planes. And, before nightfall, a fleet comprising the cream of our insulated military planes took off for the south.

I need only to add that the base was found abandoned. Our subtle enemy of the East, whatever it might have been, doubtless cowed and alarmed by Lon’s heroic battle and the impregnability of the insulated planes, and convinced that the game was up, had ceased its operations utterly.

As Lon and his companion had left the mountain rendezvous in India at night he was never able to locate it again. So no further particulars of this international outrage were ever learned.

But the great work of my friend Lon Grand, now fully recovered and hale and hearty in the mellow years of mid-life, goes steadily forward. Today he is one of the world’s leading aviation engineers.

THE END

WHAT IS YOUR KNOWLEDGE OF AVIATION?

Test Yourself by This Questionnaire

The questions given below are taken from the stories in this issue. They will serve, by your ability to answer them, to test yourself in your knowledge of aviation. By thus testing yourself, you will be able to fix in your mind a number of important facts of aviation that are presented by the stories.

The pages, on which the answers are given, follow each question.

1—Of what may clouds be composed? (Page 491)

2—Should condensation of vapor take place with a stationary reading of the barometer? (Page 491)

3—What is one of the most obstinate elements that menace safety and navigation of planes? (Page 496)

4—How could one in an aircraft arrange to see in all six directions at once? (Page 544)

5—What is the name given to a plane which is supposed to rise vertically? (Page 531)

6—What happens to one’s calendar as he goes west over the International Date Line? (Page 499)

7—What might be the advantage of giving a dirigible wings? (Page 509)

8—What is the cause of lightning? (Page 511)
Almost at once I saw a long stream of rapidly falling dots. Then the nearest had his plunge checked, as a gossamer-white balloon of silk opened, then another bulged, and then another. I wondered if they would land safely on the broad hull of the Eastern Star.
FLIGHT OF THE EASTERN STAR

By the Author of "Beyond Gravity," "The Stellar Missile," "The Radium Pool," etc.

OR many years I had planned to fly around the world in one of the gigantic International Airways liners; but not until recently had I been able to adjust my affairs so that they would not require my personal attention for a few weeks at least. However, during the years, there had appeared safer and speedier aero-transportation. So, when I was ready to make the flight, I felt assured of a passage, not only with the utmost safety, but also with the maximum of comfort. The International Airways Company had even abandoned many of its huge landing fields, and adopted instead towering pylon-like structures to which their leviathans of the air were anchored by an application of electromagnetism.

I was fortunate indeed in having booked passage on the great Eastern Star; for, if I had not, I would have missed the thrilling episodes that followed. The novel features of the great craft, many of them revolutionary, added to the excitement of being able to fly on her maiden trip. I was eager to be off and, an hour before her scheduled arrival from the east, I was in the Los Angeles station at the base of the anchoring pylon located in the center of the Plaza. This historical spot in the center of old Los Angeles had been purchased by the International Airways Company in 1950; but not until recently had the space been utilized as the location for the anchoring towers.

On arriving at the station, I went at once to the office of the Pacific Coast manager of the company, Jackson Worthington, my former college chum. As I entered, he was seated at his desk, staring into a large luminous screen which was placed at a convenient angle before him. He glanced up.

"Hello, Tom!" he said, rising to grasp my hand. I had not seen Jack for several years and at once I noted that his temples were gray and new lines on his pleasant features told more eloquently than words the responsibility of his job. "I see you're listed as a passenger. Why didn't you come to me for your reservation? How are you anyhow, you old—"

"I feel the need of excitement, Jack," I cut in, wringing his hand heartily: "I didn't think it necessary to cause you a lot of inconvenience, so I had my secretary book my passage. Outside of overwork, I'm as fit as I was when we put it over Gayle. Remember it, Jack?"

His eyes sparkled as he motioned me to a chair. "Do I?" he ejaculated, smiling reminiscently: "That was the game that made history for Bingham. I still carry the scars of that battle! I could have managed that big brute of a half-back for spiking me!"

"It was a dirty trick, all right," I acknowledged, remembering vividly the incident; a Gayle player many years before had spiked Jack in the side in an effort to put our star out of the game. "But it's all in the game. You've got to expect slams in almost everything."

"I suppose so," he said, seriously: "But what the devil made you decide on a trip around the world? Business or pleasure?"

"Pleasure, Jack, old boy," I answered, handing him a cigar of my private brand: "I'm getting stale, and I want to make the flight before I'm too old. I've only had three trips to Europe and one to Hawaii; and I couldn't enjoy 'em because there was too much business to occupy my mind. Now I've managed to clean things up a bit; so that I have nothing to worry about for a while."

"Well, I'll change your reservation for you, Tom," he said, laying a hand on my knee: "A bachelor like you will want to fly in comfort. I had a chance to take back the No. 1 cabin on the Eastern Star; it's yours now if you want it. You'll be well up forward, and I'll arrange with Captain Markson to show you everything. You won't be lonesome, and I assure you that there's a thrill in every mile."

"What kind of a ship is this Eastern Star, Jack?" I inquired: "I don't recall that I've ever seen the pictures of her."

"First-class, ultra-modern airliner, Tom," he answered with pride in his voice: "She's the finest airliner ever built and the fastest. You leave Los Angeles at six o'clock this afternoon; you are in Tokio at ten tomorrow night, even after losing twenty-four hours by the change at the Date Line. I suppose you'll want stop-over privileges?"

"That's fine, Jack!" I said: "Yes, I'd like to stop in London for a few days. You see, I intended to be away for about fifteen days in all; but I'm allowing myself three weeks, in event of any unforeseen delays."

The Position Locator

A BUZZER sounded somewhere under his desk. Worthington
turned to regard the illuminated screen; my eyes followed his and I beheld, on the surface of the oblong device, hundreds of tiny moving specks. I leaned forward to observe them closely; the specks were the locations of aircraft in flight! I was astonished, and regarded the screen with curiosity. I saw the familiar coast lines of the United States. Canada, at the north, loomed almost solid, except for the occasional hair-like lines that revealed her rivers; the Great Lakes fairly glinted. Gazing toward the east, I beheld the rugged coastline of Maine. Then an area which seemed familiar—liquid stood between the Atlantic seaboard of the United States and the British Isles, to represent the Atlantic Ocean. Here and there, over the land and water shadings, were the tiny specks that revealed the exact locations of every aircraft in flight over the territory exposed on the uncertain screen.

Jack Worthington regarded their movements for an instant, and with a finger he traced the forward motion of a small speck. It seemed to glow intermittently, as though signaling by flash. He grasped a small disc-like object from a hook and placed it to his ear; with his free hand he pulled closer to him another small round object that stood on a low pedestal. I continued to watch the flashing of the dot on the screen.

"Los Angeles talking," he said into the instrument: "What's wrong, Eastern Star?"

There was a brief pause and I allowed my gaze to wander to the features of my friend.

"Forty-five minutes' delay!" Jack Worthington said: "How come?"

Another pause:

"Rocky Mountain updraft, eh?" said Jack, frowning: "Well, you can make up the lost time from Los Angeles west. Tell Captain Markson that the company won't tolerate too many delays. All ships coming west will have to swing off the regular route east of Denver and come around the up-draft. Your route is dangerous and the delays are costly."

He swung his swivel chair around and faced me again. His features seemed sober and serious.

"That damned Rocky Mountain up-draft causes us more trouble than all the air-pockets from here to Japan, Tom," he said, shaking his head: "Some days, the atmosphere over the Colorado peaks are as free from up or down suction as the air is over Los Angeles. On other occasions, aircraft are sucked into them and are drawn either upward or downward. There's no way of foretelling what sort of atmospheric movements are going on in that region."

"Why doesn't the company re-route the course, then?" I asked abstractedly.

"Because our franchise permits us only ten miles leeway on either side of our regulated airline," he replied: "Every time we swung off that course, the Occidental people on one side of us and the Transcontinental company on the other make a kick to the Federal Aviation Commission against us for violating their franchises. It's enough to cause a man to go insane, trying to figure out just how to keep our passengers and ships in safety when they reach the treacherous air-stream regions!"

"That's quite an instrument you have there, Jack," I said, nodding at the screen.

"International holds all patents to that position locator," he said: "It is somewhat of an invention, although little has yet been said about it. On it we can locate every one of our ships in the air, no matter where they are. If rival ships are equipped with low-wave detectors we can also spot their positions. Each one of our ships broadcasts continuously on private wavelengths by noctotellvision, which gives us their location over any part of the globe. We have ships in the air practically everywhere, you know, and with our own detector we can get the location of every ship in half the world at a time."

He faced the instrument again and twisted a small dial on a panel underneath the screen. Its glow died for an instant and then across it flashed a new map.

"There," he said with finality, "you see the other side of the globe, from Los Angeles to Cairo. Here the Hawaiian Islands; farther west is the Orient, Japan here and China there. Further on there is Manchuria; Siberia and Russia over there. These white dots are International Airway Express ships; while all others belong to rival companies. See the immensity of the Pacific, Tom. Even looking at this makes you think of her beauty. Do you know that the old Pacific is very much like some of our modern types of women?"

"How's that, Jack?" I asked with a grin: "I know very little about women."

"Beautiful but treacherous!" he answered with a laugh: "She's the siren of all water bodies but, like woman, she is necessary to man. We can't keep away from the Pacific; despite the fact that more ships have been lost on her than all the other oceans put together. Once lost in the Pacific, you are lost indeed. We know that up-drafts and down-drafts exist over the Rockies; but we can never tell what's going to pop up over the Pacific. Yet International has been fortunate in combating these unseen obstacles in later years. I've often wondered what becomes of the aircraft lost over the Pacific."

"Perhaps some day we'll find out, Jack," I said with a trace of alarm: "You don't suppose there's any chance of the Eastern Star—"

Jack Worthington patted my knee and laughed:

"None in the world, Tom," he replied. "You needn't have any fear of a ship like the Eastern Star getting lost. I didn't mean to cause you any apprehension with my ponderings. Forget it and enjoy your flight. There's nothing to worry about. The Eastern Star has gone through the most exacting tests."

The Captain Explains

JACKSON WORTHINGTON was always the personification of kindness. Whether the fact that we had been college chums made any difference, I do not know; but he arranged for me to see everything. And, as we waited for the Eastern Star to loom into view, each passing minute served to increase my impatience at the delay. I wanted to be off. I was as anxious to be away from the scenes of my brain-killing business as a youngster waiting for vacation time.

After half an hour of waiting, I was becoming ill-humored. I stared about the waiting room on the ground level just under the anchoring pylon and, for the tenth time, I noticed the two elevators which nestled in a corner, ready to take their loads of passengers upward some six hundred feet. I glared with baleful eyes at a small, pale man, the announcer, who sat at a switchboard near an open exposure, fidgeting a row of push-buttons. Frequently he gazed through the window at the sky exposed before him and I could tell by the impatient look on his wizened features that the Eastern Star had not yet put in her appearance. Somehow, I had never before been able to fix the blame for the delay of the air Leviathan and added to the fact that I strangely disliked his looks. I felt
almost like grabbing him by the collar and casting him through the window. I was angry at the ship’s delay, angry and ill-humored at the beginning of the adventure. I suppose my days of bachelorhood had created within me a certain temperament that could be satisfied only on a collision course with my whims and fancies.

Suddenly the little man spoke into a tube, and the room reverberated with the rasping sound of his amplified voice:

“Eastern Star, forty-five minutes late, is now nosing down to anchor. Passengers will deposit their hand baggage with the checker for delivery on board the liner. The Eastern Star will take off in exactly eighteen minutes. Tokio first landing! All aboard!”

There was a sudden scramble toward the elevators. At a signal from the operators, the little man pressed a button on his keyboard and the doors closed; the lifts were moving upward rapidly. I shot a glance toward the station’s great windows; a deep shadow was darkening the space, and I felt a slight jar as the huge ship’s nose came into contact with the electromagnetic plates which drew her downward to anchor. My ship had arrived at last; but I waited on the ground for Jack Worthington until the rush for the elevators had ceased; though I was anxious to see the surface appearance of the Eastern Star.

Presently Jack ushered me to one of the lifts; at once we were waited upward and deposited on the closed platform. A ship’s officer was waiting on the landing, glancing nervously at his wrist watch. He looked up and bowed to Jack Worthington, who was mumbling something to himself about the expense of a forty-five-minute delay. Far below, the din of busy city life clanged irritatingly in my ears; even though the sound was muted by the encumbrance. There was the clatter and scraping of baggage, as the two-score handlers lifted it from the express elevators and shot it down into the liner over bearing rams and through compressed-air chutes. Then, as I understood, it would be sorted out in the ship and labeled according to its destination—Tokio, Peiping, Nanking, Calcutta and other points.

Captain Markson, a rather large, muscular man with gray hair and steady blue eyes, appeared and addressed my friend.

“I am mighty sorry, Mr. Worthington,” he said seriously, but with a trace of nervousness in his manner: “But I think I can make up that forty-five minutes, once I get up in the rarefied-air regions.”

“Of course you can, Captain,” Jack replied, smiling with a lightness that I knew was forced. “What happened to you over the Rockies?”

“We were cruising along at our regular clip,” the captain explained, “when we ran head on into an updraft, some miles east of their usual area; I hadn’t expected a suction-stream so far east. I was in for it before I knew; but we managed to fight out of it without any damage, although about half the passengers were almost nervous wrecks. There’s a lot of old women on board; you know; mostly school teachers from the Middle West, wanting to see the Orient from the air. Anyhow, the updraft was not as severe as some I have encountered in the past; but it took forty-five minutes of steady fighting to keep from being lifted beyond our altitude limit, and get out of it.”

“There must be quite a blow over the Rockies, Captain?” I put in.

“Worse than an ordinary blow, sir,” he replied, positively. “There’s no comparison between an updraft and a blow.”

“This is my friend, Mr. Rodman, Captain Markson,” Jack said by way of introduction: “Take care of him aboard. Show him everything and give him the run of the ship.”

Captain Markson grasped my hand tightly and wrung it with friendly warmth.

“Glad to have you along, Mr. Rodman,” he said: “I’m sure you will enjoy the flight. There’s everything on the Eastern Star that is needed to keep a man comfortable and happy.”


“I repeat that the Eastern Star boasts of everything required to keep a man happy,” he said, smiling.

“Just the same, gentlemen,” I replied, feeling somewhat nervous at the thought of enforced association with nervous females of uncertain age: “I don’t think I’ll be much interested in your lady passengers. I’ll stick with the officers, since I may.”

CHAPTER II

The “Eastern Star”

My friend laughed loudly; he then turned to the captain and addressed him seriously.

“There’s a valuable consignment of gold bullion being put aboard, Captain Markson,” he said in a low tone: “It must be delivered at Peiping by 9:00 A.M., local time, Thursday. If you fail in making delivery by that hour, the company will lose the $100,000 guarantee which we have given against delay.”

“Don’t worry, Mr. Worthington,” the captain replied: “We’ll arrive in Peiping hours before that. The bullion will be delivered on time.”

A uniformed officer brought the ship’s clearance papers. The captain glanced at his chronometer, impatient to be off; then he turned to his superior.

“Does anyone know about the consignment, Mr. Worthington?” he asked.

“None but the shippers, the consignees and the three of us, Captain,” Jack replied. “Why?”

“Oh, I just wondered if there were any chance of a raid upon the gold,” the captain returned: “Well—there won’t be any up-drafts to delay us between here and Peiping, sir. We’ll make it in plenty of time. I’ll let you know of anything unforeseen. Good-by, Mr. Worthington. We’ll take good care of your friend.”

“He’ll take care of himself well enough if you allow him, Captain,” Jack said, nodding.

“Never had a nurse, male or female, in all my life, Jack,” I grumped. “I can get along all right providing the captain gives me a bodyguard to keep his foot-loom schoolma’am’s away from me from.”

“Then you stick close to First Officer Madden, and the women will let you alone,” Jack said, good-humorously: “He’s got the ugliest face in the whole universe; but he’s a better sport than a dozen average men put together, even though he’s not a ladies’ man.”

“That’s about right, gentlemen,” Captain Markson laughed: “You’ll be safe with Madden. Adios, Mr. Worthington.”

“Good-bye, Captain,” Jack replied, and turned to me: “Let me know if any of the men or officers on the Eastern Star fail to treat you right. I’ll fire ‘em on the spot. And see if you can’t walk some of that punch off you”—he poked me playfully—“Have a good time, Tom. Be sure to see me when you get back.”
A gong clanged somewhere in the interior of the Eastern Star. I stepped down the passageway leading into the craft from the platform. Captain Markson followed close behind. He pressed a signal button as he entered the open side of the ship; and I heard some unseen machinery hum softly. I glanced back in time to see two heavy steel doors sliding together; there was a soft snap as they locked tightly.

The interior of the ship where I stood beside Captain Markson seemed to be an arched passageway; the walls were spotlessly enamelled and the floor thickly carpeted. The captain led me well toward the center and paused before a row of small elevators, one of which soon whisked us upward to the main deck. I was surprised at the luxury manifest in the decorations of the Eastern Star. On every hand stood massive divans, upholstered chairs, thick, oaken tables finished beautifully; the walls were adorned with paintings and tapestries. No great hotel would be more lavishly decorated than this expansive salon before me. I was elated; for here was comfort indeed.

The salon seemed strangely vacant, however; and I presumed that, somewhere in the ship, there must be a deck from which passengers could look down to earth and wave adieu to their loved ones as the craft moved away from her anchoring pylon. But, before I could inquire of Captain Markson if there were such an eyrie, he addressed me:

"Would you like to come up into the control room to watch the take-off, Mr. Rodman?" he asked. "We cast off in another minute."

"You bet, Captain!" I said: "I'd like to watch it."

I followed him out of the reception cabin, along a well-lighted and roomy passageway, toward the nose of the ship. We went up a flight of carpeted stairs and entered a large, circular room, over which seemed to be a dome of thick, transparent glass. A dozen uniformed officers stood at various posts in the combination bridge and control room. A man wearing a braided visor stepped forward and saluted smartly:

"All ready, Captain!" he said. "What orders, sir?"

"Signal the ground man to break the magnetic contact, Madden," Captain Markson said, crisply: "Start the electromagnetic power distributors for the usual vertical take-off to 2,000 feet and set the course indicator at 30-3-2."

"Very good, sir!" Madden turned to a control panel.

I was not disappointed in Madden's famous visage. It is no injustice to a gallant officer to say that he is indisputably ugly; though it is only an uncoyness of features. For, to offset it, the pleasant twinkle in his pale eyes seems to compensate whatever natural antipathy the unusual set of his features aroused. He is not repellent, mind you. He has an odd personality to make him respected by a man, if not admired by thegentler sex. And, as I learned to know the man in the later hours of the flight, I found that he is an excellent officer, a fine navigator and—as Jack Worthington had said—a good sport. Should I ever need a friend in a pinch, a real man in a tight place, I will select Madden to stand by me in place of a score of those loose-lipped, Apollo-faced gentlemen of the balloon variety.

The Near-Catastrophe

IT was Madden who was first at the control when the unexpected thing occurred; and it was Madden who brought the Eastern Star to an even keel when her nose suddenly dipped earthward under the pressure of her driving exhausts. Just how the near-catastrophe happened, when the ship cast herself free from the anchoring tower, I do not know; although I learned later that one of the four pilots had neglected to test the elevators to make sure that they were in position for upward flight. As the result of this negligence, before the Eastern Star had risen to the necessary 2,000-foot level, her nose shot earthward at a terrific clip under the power of her exhausts. I was thrown into a corner by the abrupt dive of the ship as her tail lifted skyward. I had one glance through the observation windows of the control cabin and saw the earth rushing up rapidly. Then I caught sight of Madden, who—with a bound like the spring of a panther at a victim—leaped aside and grasped a reserve elevation-control wheel.

The Eastern Star's nose missed the tops of the buildings by inches, rather than feet. Then, with a force that caused her interior bracing girders to groan under the pressure of a sudden upward thrust, it swung up; while her keel grazed a spire opposite the Plaza. The ship seemed to leap into the air almost perpendicularly.

With my arms locked around a rigid, stationary pilot chair, I clung in this precarious position to prevent myself—from being hurled to the far end of the cabin; it was like being hanged by the arms from a horizontal bar, legs dangling. Fearfully, I glanced upward. Frantic officers were clinging to various handholds, struggling to maintain equilibrium. Only Madden seemed cool, as he stood braced at the chair to which I clung. I could not see his face, yet I felt that, if the ship should escape total destruction and those on board and in her path below be spared, then Madden alone could be thanked.

I saw him loosen a foot from its anchor around the chair. His boot scraped on the metallic floor as it sought a signal pedal to increase the power of the driving exhausts which, I was to learn, propelled the Eastern Star. With a jerk the huge air leviathan leaped upward, skimming the roof of the rebuilt Hall of Justice. Simultaneously with the sudden upward thrust, I heard the roar of her exhausts as they shot peculiar jets of pale blue flame rearward from below her tail laterals. Then she floated on an even keel and I arose, shaking.

Captain Markson stood in the center of the cabin, legs planted apart and arms akimbo, again in command. During the few long seconds when our lives hung in the balance I had not seen him once. His face was now livid and his mouth twisted in a rage!

"Madden!" he shrieked: "Stay at the wheel! Walton, Blunt, Wilson and Baker, come here!"

I mopped the perspiration from my brow with a shaking hand while Madden tensed at the controls; and the four pilots whom he had called detached themselves from the maze of instruments before them and dejectedly faced the pilot. I glanced earthward; throngs of onlookers filled Main and Spring Streets, looking like white dotted insects as they stared upward at the huge ship. I heard Madden growling to himself and I looked at him. His face was calm enough and his senses entirely under control; but he was mumbling of dire things to perform on the persons of certain negligent pilots who had permitted the near-catastrophe to happen. Just what had caused it I was soon to learn, for Captain Markson bellowed with mounting rage.

"What in hell do you fellows mean by neglecting to test your elevators before your ship is put under way?" he roared. "Which one of you is to blame? What kind of pilots are you—correspondence-school gradu-
FLIGHT OF THE EASTERN STAR

Baker's Choice

A

N utterly dejected young pilot stepped forward and saluted. Captain Markson frowned on him and raised an arm as though to strike him full in the face. Baker controlled himself and raged, his face like fists twisting perilously close to the officer's frightened features.

"Speak, you idiot—you murderers!" Captain Markson bellowed wrathfully.

The officer's lips quivered for an instant before his words finally came forth.

"It was my fault, sir," he said tensely, his face sickly pale: "Mr. Madden ordered me to take charge of Control One for the take-off. It was my duty to test the laterals and set them for upward flight, sir. It was an accident that I overlooked it, sir!"

Captain Markson stared at the man curiously for an instant and then blew up again:

"So it was you, Baker?" he roared, stepping back to survey the negligent pilot of Control One. He turned, and tore from the wall of the control room one of its framed certificates, and thrust it at the pilot.

The man, Baker, took it from him meekly and hung his head.

"You're through, Baker!" he said. "Madden! Swing around and circle the station once at landing velocity! Baker, you will report to Mr. Worthington for your check! Prepare for a 'chute landing at once, sir! Walton, Blunt and Wilson, return to your posts!"

Pilot Baker stood for an instant, as though rooted to the floor, unable to move; then slowly he walked to the parachute rack, selected his own device and donned it rapidly. The other three pilots, glad to have escaped from the wrath of their commanding officer, returned to their various controls. Captain Markson strode to my side and peered intently through the observation exposures; then faced around.

"As a civilian witness, Mr. Rodman," he said, "you will bear me out in this decision at the Federal inquiry. You understand the situation as well as I do; I would make another landing if time permitted it, but I cannot afford to lose any more time. We must reach Tokyo and Peiping without delay. I'm sorry, sir, that such a damned negligence has cursed my command."

I regarded him curiously. His features were stern and hard-set. The Eastern Star was skirting the towering City Hall obelisk. Her nose tipped slightly earthward, and I glanced around to observe Baker. He was standing in the center of the floor before a comparatively small round hatch, that yawned as the covering was thrown back; and he was prepared to step into the discharging cylinder. The ship seemed to hover over the anchoring towers for an instant. With a last look around the cabin, Baker faced Captain Markson and saluted.

"Good-bye, sir!" he said in half whisper that was barely audible: "It will never happen again, sir!"

"I dislike to discharge you this way, Baker," Captain Markson said, his eyes softening for a second: "But it's for the good of the service and the protection of aircraft passengers and third parties."

Baker eased himself into the tube which I discovered, was for the purpose of saving the lives of the ship's forward crew in event of accident. That was true, but it was no life-saving device for Pilot Baker. I shuddered as he passed from view, haunted by the look in his eyes as he glanced, strangely, toward me. Captain Markson peered earthward for a sight of floating silk; what he saw caused him to start violently. Hurling earthward was only a rapidly decreasing speck; Pilot Baker had elected to die rather than face the disgrace that he knew was in store for him!

A whining siren caused me to jump nervously, as I watched the falling speck, hoping to see the silken cloth bulge upward and tuck away. Captain Markson strode swiftly across the cabin and pressed a button below a three-foot square screen; it glowed with the wrathful features of Jackson Worthington. Jack's voice came through an amplifying reproducer to reach every nook and cranny of the control room.

"What the devil's going on in your ship, Captain Markson?" he demanded: "My God, you caused a panic that injured twenty people on the ground with your crazy antics! What's wrong, Markson?"

"Accidents have happened since man began to travel, sir," Captain Markson replied tensely: "Pilot Baker neglected to elevate and damn near smashed us up! I discharged him, sir, and sent him down in a parachute. I have already lost fifteen more minutes and I cannot afford to make another landing. I hope he arrived safe!"

"He didn't, Markson!" the official growled: "The field men are cleaning up the mess now! What about the inquiry?"

I stepped to the captain's side as he spoke again.

"Your friend, Mr. Rodman is a witness, sir!" he said evenly. "He will bear me up. Baker was given a perfect chance to land safely; but he chose the other way, I guess, rather than face the notoriety and disgrace!"

"That's right, Jack!" I put in, edging close to the screen so that my features would be transmitted to him: "It was Baker's negligence. He confessed to it."

"Anyhow," Worthington said, "that doesn't let us out of heavy damage suits. There must be a curse on the Eastern Star! She's had nothing but bad luck since we put her into service! Let me speak to Markson again."

CHAPTER III
An Inspection

I TURNED away to take up a post beside Madden. Intent upon watching the rapid progress of the Eastern Star over the city of Los Angeles toward the open expanse of the Pacific, I paid no further heed to the conversation between Markson and Worthington. We passed scores of red-lighted beacons that flashed brilliantly even in the late afternoon sun, guiding International Airway Express craft over their allotted lines. Gradually, the Eastern Star picked up speed as she sped on her belated course to circumnavigate the globe. Madden slowly increased her driving power until a faint hiss reached me in the control cabin. I felt a desire to inspect the propulsion principles of the huge craft; but elected to await the time when the excitement and ill-humor should have passed from the minds of the officers in charge. I wondered what had transpired among the other passengers during those few seconds of dire danger back at the control room. Captain Markson interrupted my thoughts by relieving Madden of the supervision of the controls. The first officer relinquished the post without a word; as though it were a usual thing for the captain to...
assume that duty.

"I'll take her until we get beyond the coast, Mad- den!" Captain Markson said, staring at the instru-
ments: "Seems as if I can't trust anybody on this
ship of late. Anyhow, the barometer indicates low
pressure over the Pacific. I'll navigate her through it!"

"Very well, sir!" Madden replied: "Shall I go
through the ship to see how the passengers have come
to grips with things?"

"By all means, sir!" the captain grumbled: "Take
Mr. Rodman with you and show him the ship. Mr.
Rodman, this is First Officer Madden. I'll join you
later when I feel safe enough in turning the ship over
to these nincompoops!"

Madden smiled, and led me out of the cabin and
down the corridor toward the reception room.

"Quite a close shave, Mr. Madden," I said, as we
strode side by side down the hall: "Let me congratul-
ate you upon your prompt action in saving the ship
from crashing, sir!"

"All in the day's work," he replied quietly: "Such
things are bound to happen at times. I happened to be
the closest man to the reserve control; any one of the
others might have done the same trick."

"But they didn't," I replied: "We would have been
killed, without a doubt, if your mind had not been
working so rapidly."

"Thank you, sir," he said, looking straight ahead:
"Nothing about that though to warrant a hero medal.
And Baker was a damned good pilot-navigator! I
can't see how he overlooked the elevators!"

"Seemed rather young to hold a pilot's rating?" I
put in.

"Thirty-five is the best age for a pilot. Baker was
thirty. Been with the company just a short time, how-
ever," Madden said.

"Married?" I asked.

"Don't know, sir," the officer replied, shaking his
head: "From what I could see he wasn't much of a
mixer; that is, he didn't confide much in his mess.
The Old Man never did take much fancy to him; he
didn't hop fast enough for Captain Markson. The
captain is a flyer of the old school, who flew ships when
aircraft still had struts to hold 'em together. Now
that we have all an-ti-gravity ships, he thinks the men
need the struts to keep 'em up on their feet."

Panic had reigned, temporarily, among the pas-
sengers of the Eastern Star when her convolutions
threw them about, in spite of the customary starting
precautions. But, when Madden and myself had com-
pleted the tour of inspection, we were elated to discover
that they had quieted down after the first scare, and
most of them had retired to their cabins. Several had
suffered slight bruises and abrasions from the tumblings
they had received. But, on the whole, things were in
much better condition than Madden had anticipated.

"Well, Mr. Rodman," Madden said presently: "There
will be a few more minutes before your dinner time.
If you are free, I'd like to show you the mechanical
workings of the Eastern Star. I presume you are in-
terested to know just how she is propelled?"

"I've wondered about its mechanical embodiments,
Mr. Madden," I replied. "I've always felt an interest
in mechanics, physics and aero-dynamics; although I
understand but little of any of the sciences. If you
don't mind showing me around—"

We went down a short companionway to the engine
rooms where powerful units of machinery hummed,
as the great craft swung swiftly through the heavens
toward the northwest. I was awestruck by the com-
pactness of the units. For such a large craft, I rather
expected to find the Eastern Star's machinery spread
all over an engine deck.

Just inside the door, behind a screen, and extending
across the breadth of a room, were immense batteries
of electrical units, that fairly sputtered under a bombard-
ment of rapid-fire electrical charges which seemed to
fly from one post to another, sizzling and cracking not un
pleasingly. They seemed alive with power. Thick
cables ran from each unit to a central manifold, that
virtually glowed under cover of a green phosphores-
cence. From the manifold extended another series of
cables, heavily covered with a lead-like metal. They
disappeared behind an unattended panel. It was on
the tip of my tongue to inquire about them; but Madden,
sensing my curiosity, volunteered the information.

"These 'bats' distribute high-frequency current to
ignite the driving explosives," he said simply: "The
cables run from here to another chamber in which are
housed the compression units. In internal-combustion
engines, a high-voltage spark is used to explode the
gases in the cylinders. The Eastern Star's propulsion
principles are along the same lines; yet, instead of
gasoline, paralene or other highly inflammable liquids,
we use a combination of fuels in the form of a powder,
which is driven into combustion chambers by centrifu-
gal pressure. There the fuel is mixed with oxygen,
exploded and driven through twelve separate units
forming the driving-exhaust systems. You probably
noticed the exhaust tubes extending outward from the
rigid lateral platform at the tail?"

"No I haven't, Mr. Madden," I confessed. "Frankly
I've never seen the Eastern Star or even her picture
before."

An Amazing Ship

He stared at me blankly, as though questioning my
ignorance of this tremendous air leviathan.

"What?" he said incredulously. "You've never seen
this craft on her inspection tour around the country,
I thought everybody had."

"I am ashamed that I must confess my ignorance
again, Mr. Madden," I replied.

"Then I wish to lay the foundation of making you ac-
quainted with her, sir," he said: "It is rather odd that
a man of your position has not had a chance to investi-
gate such progress in aviation as this ship has de-
veloped."

"I've been too busy in the last few months attending
to my own business affairs, to look into others, Mr.
Madden," I said: "But I welcome this opportunity
to learn something."

From the "battery" room, we entered another
chamber; a half dozen perspiring men stood beside
compact, oblong cylinder blocks, and watched the
gauges that rested on panels above them. A low hum,
like the almost inaudible purr of a new automotive
engine, issued from each of the heavy steel units.
There were in the room twelve such metal blocks,
arranged horizontally across it. By each stood huge
metal cylinders, each individually attached to its block
by means of bright metallic tubing. Behind the blocks
ran another series of tubes that vanished into another
chamber toward the rear of the ship.

"Each one of these explosive blocks or units is capa-
ble of producing 10,000 horsepower," Madden re-
marked, continuing his interesting explanations: "These
cylinders contain fuel for immediate discharge into
the units. The powder is ignited within the blocks.
With no other outlet than the tubes behind them, the
POWER thus created is forced through the interior exhausts. Carbon and other elements, left uncombined in the gases after they are first ignited, are in turn forced into a series of exploding chambers, similar to the first blocks, where they are discharged with terrific force. The power thus derived, wasting not a single atom of any portion of the original fuel, and using even the neutral gases, is exerted through the exhausts, creating a backward pressure which forces the ship forward at a terrific velocity.

"Using a catalytic of perellium, our fuel is utilized by the addition of oxygen extracted from the atmosphere. The real novelty of this ship's propulsion principles, Mr. Rodman, is these explosive gases; the other features are secondary, because they follow the well-known principles of rocket propulsion. Other fuel-producing equipment is contained in a forward chamber where the air is treated with the small quantities of perellium necessary. The amazing feature of perellium is that, each time it is ignited, it forms a new explosive compound of lesser, but still great power. Thus, we can get almost an infinite number of explosions with almost unlimited power. As it is, the power we get from a unit quantity is many times greater than any explosive heretofore known. The great difficulty is, how to employ this great power to its full capacity. The Eastern Star does not utilize it all; our mechanical apparatus is not strong enough. The man who can create a new principle for the discharge of all the power contained in that fuel will earn for himself a greater fortune than the scientist who discovered the method of producing the gases."

"Interesting, Mr. Madden," I said: "Very interesting! But isn't there a possibility of this powder exploding itself in the tanks?"

Madden grinned good-naturedly.

"No more than gasoline in an automobile tank will ignite itself, Mr. Rodman," he said: "Like gasoline, our powdered fuel needs the high-voltage ignition spark to discharge it. There is no possibility of such a disaster."

"I trust not," I said.

"Let me show you our electromagnetizing units, sir," he said. "They are really interesting to observe; although most everything is housed up in tight compartments. Did you know that the Eastern Star has a surface covering entirely of cobalt-astrium-steel?"

"Cobalt-astrium-steel?" I asked. "What kind of metal is that?"

"I'm only an officer of aviation, sir, not a scientist," was his answer, "but I'll try to explain the metal for your benefit. As near as I can explain, cobalt-steel is an alloy of metals, light and strong, adaptable to a high degree of electromagnetism. Since it has been proved that Einstein's theory of relativity is correct, the new alloy has been developed with the addition of astrarium, as the only known insulation against gravity. This metal, highly charged with electromagnetism, to a great extent nullifies gravity. By that means the Eastern Star is capable of rising under practically negligible power—only enough to overcome inertia. In landing, all that is necessary is to diminish gradually the charge of electromagnetism and she will drift down to the level of the anchoring towers. At the proper level she is again insulated, and on top of the landing pylons are hidden electromagnets which attract the ship to anchor safely and securely."

"I was awed at this tremendous advance of aviation. I had spent many hours in the air during my life, but never in a craft of the Eastern Star's magnitude. She was seemingly, the ultimate—all that man could ever hope for in flying. But I presume that, like those now obsolete, her type will eventually step aside—as did sail for steam and steam for electricity, like electricity for gravitational nullification and so on until man has worn himself back to the dust!"

To A Rescue

I WAS about to press Madden for further details when a sirene alarm sounded in the room. Instantly the crew attending to their work in that section of the ship stood tense, waiting for orders. Madden grasped me by the arm and hustled me out through the "battery" room and up again into the passenger quarters. Hurriedly we made our way through the throns of loungers and strollers, and quickly entered the control cabin.

We rushed in to find Captain Markson bending over a glowing screen. His face was twisted in a scowl.

"What's up, sir?" Madden inquired at once. I stood near the observation exposures and peered ahead. The sky seemed overcast—it had grown thus in the time we had spent below. I looked downward; far below the billowing Pacific was hidden. The atmosphere seemed in a turmoil beneath us; banks of vapor twisted and writhed in dark, boiling masses. A terrific head wind bucked the streamlined ship and crashed with a roar against the exhaust pressure at her tail; every sound was audible within the enclosed control room. And the Eastern Star appeared to be standing perfectly still in mid-air; but I knew that she was penetrating the troubled skies at an unbelievable velocity. I shot a questioning look at the captain and his first officer as they stared into the luminous instrument. Then I heard Captain Markson's muffled oath.

"We are going to be held up again, Madden!" he said bitterly. "We'll have to go to the assistance of a tramp ship at intersection 28-12-6. The fool let his ship run into a high waterspout and seems to be ready to cash his chips. Well—we'll see what we can do about it! Take a turn around the ship, Madden, and see that every man is standing by. Mr. Rodman can remain here. I'll take the controls!"

As the first officer departed, I glanced at the instrument panels for a chance glimpse of our velocity and altitude. The altimeter indicator hovered at 49,000 feet; the velocimeter indicated 500 miles per hour. I stared at it open-mouthed, incredulous.

"We'll be alongside of her in ten minutes," Captain Markson said, taking the controls. "She's a hundred miles to the south of us. We'll lose another twenty-five minutes, perhaps a half hour, if she hasn't cranked."

"You mean you'll have to average six hundred miles per hour, Captain?" I asked, astonished.

He nodded as he touched a pedal on the floor with his boot toe. Frozen vapor was now beating with a loud clatter on the glass; the particles of ice snapped against the exposures with spatterful spays. The glass within was frothing around the edges, visibly creeping toward the panel-centers forming a circle. The captain turned suddenly toward the control operators.

"Blunt!" he snapped: "Lift her to sixty-five thousand until we get over this storm! Gradually now!"

Instantly the Eastern Star's nose pointed skyward at a gentle angle. After a short while, during which I felt a tremendous weight pressing on me, Captain Markson twisted a small wheel in the center of a large control, and she floated again on an even keel. I glanced at the altimeter; in the space of ten minutes more than a minute we had jumped upward from 49,000 to 65,000
feet. The space below us seethed and writhed like a monstrous beast in agony. Captain Markson’s voice brought my eyes to him; his face was stern and set.

"Wilson!" he shot abruptly: "Lift her another five thousand, and we’ll be out of it!"

Already the frost began to creep away from its closing circle; the cabin was getting warm and stuffy. I breathed deeply and stared ahead; I was forced to shield my eyes, however, from the terrible glare of the sun which broke through upon us; its rays burned even through the protecting shield of thick glass. Captain Markson pulled his visor down over his eyes and touched the pedal again. I felt the ship leap forward like an arrow shot from a bow. The wind, even in this rarefied atmosphere, shrieked a high-toned, singing note in friction against the ship’s snout.

The world seemed enveloped in a swirling mass, ever whirling and twisting. Far ahead I could see below a greater upheaval, that seemed like a great, cone-like spinning top! It seemed to race straight toward us and Captain Markson suddenly noticed the Eastern Star down into it. The ship bounced and rolled under the force of the atmospheric disturbance from the spout, while it was still miles away.

Suddenly Captain Markson swung away from the controls and walked swiftly to the ship’s television instruments.

"Hold her course, men!" he growled: "Head her right into the storm. We’ll find the tramp somewhere in it!"

He pressed a series of buttons on a panel near the instruments and belloved into a mouthpiece. No answer came. He swung the dials around and presently the shadows on the screen took shape. The haggard face of a man appeared in it, and I heard his nervous, tense voice coming through the speaker.

"For God’s sake, can’t I get some assistance?" he cried, eyes gleaming wide, nostrils dilated with emotion: "We can’t last another fifteen minutes! Save us! Our position is Latitude 40-6 North, Longitude 132-12 West. Our ship is No. 12 of the Iverson Freight Line. We can’t hold together much longer in this weather. Our laterals and ailerons are ripping!

Captain Markson waited long enough to get the name of the ship, then yelled loudly into his instruments.

"Ahoy, No. 12!" he shouted: "Do you get me?"

The man’s features appeared on the screen again.

"I hear you!" he wheezed. Then his voice was broken with a fit of coughing: "Where are you? Hurry! The spout is lifting us beyond our capacity!"

"I’ll be right under you in exactly four minutes, No. 12!" Captain Markson roared: "Get your engines running full speed ahead with the wind! I’ll dive into the spout and break it! You’ll be able to slide out of it! Then stand by to the windward, and we’ll look you over!"

"Thank God!" the man groaned as his features pattered out of the screen.

"Give her the gun, Walton!" the captain hissed between his teeth. "Cut the spout in two!"

CHAPTER IV

Into the Spout!

INSTANTLY the Eastern Star shot ahead at a even forward angle and buried her nose in the upper heave! The storm outside appeared monotonous and then, as though the ship had dived into the ocean, the observation exposures were drenched with the deluge! Tons of water smashed against her nose with such force that the huge air Leviathan groaned and shuddered, but she went on nevertheless. For several long, torturous seconds the deluge continued. The Eastern Star seemed, as it were, to be driving ahead in the depths of the ocean; then suddenly her nose swung out of the spout. A slightly westering sun, gorgeous in a radiant sky, appeared ahead, and the ship was free! There were a series of resounding clashes like the rumble of water on a rocky beach. I looked at the spout again, and when Eastern Star emerged into the sunlight; it seemed to have been cut in twain, and was falling rapidly in tremendous sheets of broken, tumbling water and mist. High above, where the spout had raged unchecked, floated No. 12 like a huge sausage. She appeared to buckle in her center portions. Her stabilizing laterals had been torn away, and she pitched and rolled from side to side, drunkenly.

Almost immediately the Eastern Star swung around and headed for the helpless freighter. That No. 12 was beginning to slow slowly into a gentle descent, was easy to see. Despite the fact that her motors still roared in perfect rhythm, she made no headway. The screws appeared to have lost their power to pull, but they managed still to keep her aloft and from rolling over entirely and plunging plummet-like to the depths below!

As she neared the wreck, the Eastern Star slowed perceptibly. Captain Markson raced toward the exposures and regarded her with disgust.

"It’s a damn shame that men have to navigate junk-heaps like that!" he said, clicking his teeth: "There ought to be a law to prevent such obsolete craft from taking the air. They are a menace!"

Mindful of the danger of No. 12’s possible plunge, Captain Markson refused to permit his command to get too close to her. I began to wonder how he was going to rescue the wrecked ship’s crew. But I was soon to learn, for Captain Markson returned to his television instruments and turned on the power. The dials were already adjusted to the broadcasting wavelength of No. 12, and the screen glowed at once with the haggard features of her skipper. Captain Markson regarded him for an instant and then spoke roughly.

"Can you manage to get into port, No. 12?" he asked.

"I doubt it, sir!" the man wheezed, still coughing: "She’s settling forward now, and she’s likely to plunge at any moment! Can you take her on our deck?"

"All right!" Captain Markson returned, scowling: "I’ll do it! We’ll spread nets on our hull top, and lay-to right under you in one minute! I’ll take the chance with my own passengers for humanity’s sake! Chute your men through the safety tube and I’ll catch ’em in the nets. Hurry!"

The skipped yelled an unintelligible something, as the screen died. Captain Markson grabbed a telephone and yelled into it.

"Raise the rescue nets!" he bellowed: "And stand by for further orders!"

He bided an order to the pilots; the Eastern Star edged into position under the rolling freighter and hailed presently, laid-to. I glanced upward. Almost at once I saw a long string of rapidly falling dots. Then the nearest had his plunge checked, as a gosamer-white balloon of silk opened; then another bulged, and another. The crew was on its way downward. I wondered if they would land safely on the broad hull of the Eastern Star. There appeared to be no wind now, and they floated lightly straight down. I glanced warmly at Captain Markson. His face was
tense, and he plainly chafed at the delay in getting all the crock off as he watched every single movement of the apparently drunken craft above.

Presently a bell sounded: Captain Markson picked up a receiver and held it to his ear.

"Good!" he said. "Bring the men down at once. What? One man went over the side? Sorry! Is No. 12's skipper with them?"

I heard a faint voice coming through the tube. It was muffled.

"Oh!" the voice said: "He refuses to leave his ship. She's carrying a valuable cargo and he won't desert it!"

Captain Markson swore under his breath.

"Send the men down!" he shouted, "and stand by on the hull until I talk to the skipper!"

He swung to his instruments. The screen glowed, revealing the objects in the television room of the wreck. Markson pressed a button; I heard the signal as it vibrated furiously in the other ship. But no answer came back and Captain Markson picked up the telephone again and ordered the rescuers into the ship. The skipper was spending precious moments trying to get a word to the skipper of the lost ship, while No. 12 was pitching madly and threatened to drop down upon us at any moment. I myself was getting extremely nervous, as I watched each sickening plunge of the ship. Then, suddenly the reproducing units of the television instruments clinked. I glanced at the screen. The freighter's commander had reappeared.

"Thank you for saving my men, sir!" he was saying: "I can not leave—I'll face the music. Better get out from under at once! She won't stay up another minute!"

"Don't be a fool, captain!" Captain Markson growled. "To hell with that notion! Drop down now and we'll pick you up!"

"Sorry, sir!" the man said, a peculiar tone in his voice: "I go down with my ship!"

Captain Markson stamped a foot on the floor in a rage.

"I'm asking you to drop down now, skipper!" he roared: "I'll give you two seconds to decide. If you refuse, then be damned to you!"

"Pick up my cargo," the man argued, "and I'll go with you!"

"Go to hell!" Captain Markson swore: "I've got to make Tokio on time! I have the mails, and I'm ninety minutes late now! Are you coming down?"

Scurried had Captain Markson finished his sentence than No. 12 suddenly shuddered. Three of her whirling screws stopped dead. She tilted her nose upward for an instant and made a sickening half-roll over. But Captain Markson was not to be caught napping in such a dangerous position. He bellowed an order and the Eastern Star came to life; with a terrific recoil she shot ahead as No. 12 plunged downward. I heard a series of rapid-fire explosions; the wrecked ship's hull seemed to open up suddenly and spew boxes, bales and mechanism. A fragment clattered against the steel hull of the Eastern Star; it sent a ringing echo reverberating through the ship. The Eastern Star roared ahead, rapidly gaining velocity. Captain Markson stood staring into the screen. I walked to his side. The screen revealed the tramp's skipper again; his face wore a mask of death, his lips drawn tight and bloodless across his teeth.

"Can you ask if I was coming down, sir?" he said with a trace of humor which manifested itself in the face of inevitable death. I admired him for it. Here indeed was a brave man—a man who could laugh and jest with the hand of death grasping at his throat. "Well, Captain," he continued: "I don't know how far I've come, but I went down hell of a way!" Then he laughed loudly, almost hysterically, I thought.

"You had your chance, skipper!" Captain Markson said, coldly. I stared at him curiously. Though his words were cold and gruff, his face disclosed both admiration and sorrow for this man who was plunging to his death: "But after all, I guess you're right! There's no getting away from tradition! A man's got to go with his vessel, no matter whether it's an airship or a lumbering water packet! God be merciful to you!"

The perishing captain laughed maniacally, and waved a hand as the screen sputtered and died. I walked away with a deep feeling of regret, and glanced downward. Far below No. 12 plunged like a plummet. Presently I beheld a small round patch of white; she had struck the billowing waves of the Pacific. A moment later I heard a muffled splash. That was all!

"Poor devil!" Captain Markson remarked, shaking his head. Behind the Eastern Star roared westward toward Tokio, her first scheduled stop.

Far off our port scudded a huge airliner. I watched her with growing interest. The insignia, barely visible at the distance, told that she was of our own line, the International Airway Express; her driving exhausts, like our own, were spouting blue flame. The sun smote her abeam and she glinted like a thing of virgin gold. Then she dropped from view into the east.

Despite the late hour when we arrived, the air over Tokio was crammed with the quaint but speedy aircraft typical of the Orient. The Eastern Star came to a graceful landing at an anchoring tower, chaperoned by a half-hundred droneing planes, their sirens shrilling a welcome.

Tokio was enjoying one of its annual air carnivals, staged until the late hours of the evening. Craft be-decked with genuine and painted flowers raced through the air with rollicking abandon; yet they remained at a safe distance away from the regular air lanes. I watched them, fascinated, as they cavorted hither and yon, lighted brilliantly from batteries of high-powered floodlights spread on the ground below. Ikamono Wrens, Hirashimoto Gulls, the more cumbersome Chocchong metal blimps, and many other types of craft dotted the skies, piloted by care-free revelers. It was an open season for American tourists; and our passenger list boasted of many Middle-Western school teachers, bent on seeing pleasure-loving Japan.

I too felt an urge to desert the Eastern Star here at this delightful time, to enjoy the carefree carnival from a comfortable roof-top apartment in the American Quarter. For, after all, I had three weeks in which to enjoy my flight around the world.

So it was with delight and anticipation that I ordered my luggage crated to the landing. I had encoun-tered plenty of excitement crossing the Pacific. Here was more—of a different sort, more inviting to the heart of a pleasure-seeking bachelor. I would remain in Tokio for three days; then board once again a great liner, and continue my flight around the world. I sought out Captain Markson and First Officer Mad- den and bade them good-bye. They seemed surprised at my decision to stop over in Tokio, and expressed their disappointment at not having me with them for the remainder of the flight; but I assured them that I would surely be with them on my next vacation tour. But the remainder of this flight bore little excitement

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Like one gone mad, Manning put the Skyrocket through a more gruelling set of paces than had ever before been employed in testing a flier of that size—quick turns, vertical climbs, nose dives, side slips.
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of the rough house?" broke in a cheery voice, as another young man, of about Manning's age, entered a door on the opposite side of the room.

"Congratulations, Dick, old top," said Manning joyously; "I'm the proud father of a bouncing baby boy, and we're going to name him after you. How does Richard Herrick Manning sound, eh?"

"Great! Bob, great," Herrick replied, "and we will yet make him as famous as his father."

Thus it was that Richard Herrick Manning came into the world traveling at the rate of two hundred miles per hour and soaring majestically above the Atlantic. He had the honor of being the first babe to be born crossing the ocean by air. At the time a certain newspaper called him a son of science; but little did anyone realize what a master in the realm of science he was to become.

**Coming of the "Phantom"**

TWENTY-FIVE years had passed since that night; the first flight of the Mercury had become just a memory, a step in the progress of man's successful efforts to conquer time and distance. Larger, finer, and more highly-perfected ships had long ago shouldered out the Mercury, which, with the lapse of years, had already passed to the junk-heap.

During the quarter century since that exciting night, Richard Herrick Manning had become a very fine specimen of young manhood. At the age of twelve he had begun to take a great interest in science. This, of course, was very pleasing to both his father and his father's intimate friend, Richard Herrick, after whom the lad had been named. But, when young Manning was but fifteen, his father and mother met death together in an air disaster. It, therefore, fell to Richard Herrick to be both father and mother to the youthful orphan.

"Uncle Dick," as Herrick was called by young Manning, proved to be a very efficient guardian, and under such tutelage, by the time the youth had reached twenty, he was not only an athlete of distinction but, without doubt, one of the most prominent young scientists in the United States. During the mornings Herrick and his protégé were to be seen working industriously in the laboratory or workshop; but after lunch all scientific apparatus would be laid away, and the afternoons spent in hunting, fishing, flying, or strenuous sports.

After Manning had reached man's estate, and acquired a coveted position as technical advisor for a certain large aircraft corporation, a change came gradually over the once Jolly Herrick. He became moody and irritable. More of his time was spent in the laboratory and, what was worst of all, he and young Manning began to disagree on certain matters of science. Gradually the gap widened between the two, who had been almost like father and son. At last Herrick, to avert an open break, moved to the West coast; some time later Manning received from him a letter saying that he was engaged in work that would carry him all over the Orient. From then on they corresponded in a desultory way, and young Manning received occasional letters from China, India, Java, and many other places.

Dick Manning was just twenty-three when the Phantom appeared. The newspapers announced with blazing headlines that the great airliner Mammoth had been captured and plundered by an unknown craft. A long dispatch followed, which told in detail how the huge airship had been held up by a strange black ship and robbed of well over a million dollars in gold. Although crime in the air was not absolutely unknown, never before had a fast ship like the Mammoth been attacked. Because the pirate became invisible at a short distance, it was given the name, the Phantom.

No one on board the Mammoth seemed to know much about the robbery, it had happened so quickly. Men in black cloaks, with black hoods over their heads and faces, had found their way down from the top of the ship, held up the pursuer, forced the strong room, carried out the treasure, and bore it aloft. Just as the alarm was given the pilot saw a dim shape race away and vanish into the night.

The papers accepted the incident as the usual part of the day's news until, only a few days later, another airliner was attacked; and this time the victims were sent plunging into the sea. Then followed a reign of terror; surface ships were blown up; cities were bombed, and airships were sent to destruction; always at night, by a black airship which afterward faded away almost instantly into the night.

The world was in an uproar; the United States dispatched ten of the fastest military planes in existence with orders to bring down the pirate ship. At last the pursuers succeeded in getting on the trail and chasing the Phantom for many miles; but its speed was so great that each time it eluded them. The ship would remain just out of gunshot and, when the high-powered motors of pursuers began to labor under the strain of such speed, the Phantom steadily drew away and left them "holding the bag."

Some days later the government planes, flying over the Arizona desert, came upon the Phantom lying, like a huge dragon of old, upon the sand. One of the men later described it as being "just a long black shell, with a point in front like a dagger, and fins at the back. The aviators dropped bombs; which strangely failed to burst. Then, the planes' motors became suddenly paralyzed; and those mighty machines seemed to be clawed from the sky, as easily as a kitten claws a ball of yarn from a chair. Only two men escaped death, and they seemed almost insane as they told their story. A certain one screamed, like a man dumfounded: "I tell you the devil himself is behind it all! I can see the thing, still, lying there on the burning sand, dead and lifeless, like a huge black torpedo. Then I felt a slight shock pass through my body and, the next thing I knew, our motors were dead and we were heading for the ground."

A slight break occurred in the man's story at this point, and he shivered as with the ague:

"As I crawled out from the wreckage of our plane, there the thing was, hanging suspended about fifty feet in the air and making a whistling sound. While I watched, it shot away like a bullet, with a low hissing noise, and disappeared behind the range."

**CHAPTER II**

**Herrick's Return**

WHILE the reign of terror lasted, only one man had the opportunity to view the Phantom at close quarters and lived to tell the tale. A certain young inventor was trying out an electric airplane one evening about dusk. His plane was working; but not to his satisfaction. He was contemplating the necessity of landing, before his batteries went dead; when out of the West came a black shape! Suddenly, a bright light shone on him; the thing hovered over his head, and he saw for a moment a long cigar-shaped craft, sharply
pointed at the bow and having huge fins attached to its stern. At first glance, the thing seemed to be made of steel plates riveted together and painted black. At various points along the side were crystal-encrusted ports, through one of which shone the brilliant light.

For a moment the apparition, hissing like a python, hovered above the terror-stricken young man; then he felt a slight shock pass through him, and the thing was gone into the night.

One thing only the world had learned by this incident; that the terrible power which the Phantom exercised to paralyze combustion engines had no effect upon electric motors. Undoubtedly, the shock experienced by the inventor was the same as that which had been described by the army aviators.

There was much conjecturing as to where this strange craft came from. Some said from the Arizona desert, some suggested from far-away Mongolia; and a syndicate writer with a fertile imagination even went so far as to hint that the Phantom hailed from the moon or Mars. One paper intimated the possibility that anyone's best friend might be the contriver of the Phantom and, as a result, old friends became suspicious of each other.

For six long months the reign of terror continued. Terrorists learned that the Phantom was not at all to be trifled with; and a king's ransom was offered to the man who should give information leading to discovery of the Phantom's headquarters. Scientists worked day and night trying to find some means to cope with the menace. "The brain that directs this diabolical machine," said one prominent physicist, "has ideas a hundred years ahead of the times." It was all too true; a master mind was being matched against the aviators of the time.

At last, after six months of repeated outrages, the reign of terror depredation, Richard Manning had been very busy working out an idea which his father, at the time of his death, had in the process of development. Although the papers each day announced some new atrocity committed by that terrible ship, Manning gave the Phantom little thought and spent most of his time in the laboratory. Each night of his life, before sleep, he, over a coffee, would criticise his attitude toward the Phantom, and ask him why he did not aid with his science to find a means of combating the terrible curse which had settled upon the world. He took these sallies good naturedly, and usually would say laughingly that, when he had perfected his new machine, the days of the "Phantom" would be numbered. But, before the new Manning invention could be perfected, the Phantom had disappeared.

During the year of quiet which followed the reign of terror, Dick Manning worked hard and succeeded in completing his invention. It was with a feeling of contentment that he awaited the arrival of Richard Herrick, whom he had not seen for over two years, but who was now stopping off on his way to Europe to pay his protégé a visit.

It was on the first evening, after dinner, that Herrick, who seemed to be again in high spirits, said to Manning:

"Richard, my boy, what is this new electrostatic motor of yours that you mentioned in your letters? Is it really practical?"

"Yes, I think it is," replied the youth with enthusiasm: "Why, when I finish it, the Phantom—if he still exists—may as well give up the ghost."

"Well," chuckled Herrick after a time: "it must be a whole lot better than some so-called electrostatic motors which I have seen."

"Now, Uncle Dick," went on young Manning seriously: "I know that the idea of utilizing static electricity as a means of motive power was long ago abandoned by most scientists; but there was one who did not lightly cast the idea aside, and that was my father. I found among his personal papers, soon after you went West, a set of drawings which outlined a scheme for making the utilization of static electricity really practicable. With these plans as a guide, I have at last succeeded in producing what I call a static supercharger, as well as an electrostatic motor which runs with great efficiency on the power furnished by the supercharger."

Young Manning then proceeded to outline to Herrick just how the supercharger and motor worked. There is no reason for boring the reader with a detailed scientific discussion of the machine, but perhaps a few words should be said about its nature.

The atmosphere at all times contains a certain amount of static electricity; sometimes its concentration reaches a high value, and at other times there is very little. Lightning, for instance, is a discharge of static electricity, either two clouds or between a cloud and the earth. To understand why static electricity has never been brought into use, the reader must bear in mind that (in terms of electricity) "volts" means electrical pressures and "amperes" means current-flow. In high-school laboratories there are electrostatic machines which discharge sparks of four and five thousand volts. These discharges, however, practically negligible amperage and have little energy value. They may be taken through the body without endangering life. Richard Manning, with his new static machine threw a new light on the subject. Briefly, his invention consisted of an instrument that drew static in enormous quantities from the atmosphere. By means of coils, chemical rectifiers and other strange devices, the charges of high-voltage static were converted into current of considerable amperage which operated a specially designed motor of super-efficiency.

The Girl

EVEN Herrick, hardened old scientist that he was, showed astonishment when he saw evidence of the terrific power from the atmosphere made available by the strange machine; during the rest of his stay he seemed at times, to be deep in profound meditation. All of this Manning noticed perfunctorily; but, at the time, he gave it little thought.

At last the day came for Herrick to continue his journey to Europe. In contrast with his previous mood, he was in excellent humor that morning at breakfast.

"Say, Richard," he said, stirring his coffee, "Why don't you let your work ride for a while, and go with me to Europe? The change will do you good, and we will be back in a couple of weeks."

For a moment Manning pondered, then he said: "By George! Uncle Dick, that's an idea. I believe I will."

And so, when the air-liner Ambassador rose from her gigantic landing stage in New York, Herrick and Manning were among those on board.

Nine hours exactly was the time required by the new liners to fly from New York to Paris. They left New York usually at six o'clock in the evening, New York time; and arrived in Paris at eight the next morning, Paris time. The Ambassador was one of the largest on the line and, during its two years of service, not once
had it failed to arrive at its destination on time. Not even the worst of storms had marred its splendid record.

During the early evening Richard enjoyed the flight immensely. For some minutes he amused himself by looking down through the windows of an observation deck upon the waves of the great Atlantic. From time to time surface ships—mere toys they looked from that height—slid past and soon disappeared into the west. At last, when he had tired of looking at the sea, he went into the news room, read the latest bulletins, and then retired to his stateroom to dress. He had seen but little of Herrick, who was now very busy, sending radiograms attending to matters which he had neglected during his short stay at Manning’s home.

When twelve o’clock came, however (they had set their watches at once five hours ahead to Paris time) Uncle Dick joined Manning, and they went into the brightly-lighted dining-room. It was well filled with diners in evening attire and, above the buzz of conversation, could be heard the strains of an orchestra. Attentive waiters, garbed in spotless white, glistened with heavily-laden trays and from the kitchen.

Mr. Richard Herrick Manning was just in the act of cutting a particularly juicy piece of filet mignon, smothered in onions, when a delicate aroma of violets assailed his nostrils and the steward swept by with a stylishly dressed young lady, of possibly twenty-two years, in tow. He found the girl a seat at a nearby table, facing Manning. That gentleman, forgetting himself for an instant, ceased cutting the steak to stare after her. As she seated herself, she gave him a cold glance, and, very much embarrassed, he fell to eating indolently. When he again plucked up courage enough to glance furtively in her direction, the smile on her face reassured him that she was not altogether displeased by his admiration. He colored, but managed to smile back. As he later said to Herrick: “She is, without doubt, the most beautiful girl I have ever seen, Uncle Dick. Her eyes, her hair, her lips, are perfect.”

“Rot, Richard! perfect rot!” Herrick scoffed; “who ever heard of a cold-blooded scientist falling in love at first sight? Why buy, the idea is preposterous.” Richard, however, was not so sure. After dinner, while he was reading in the library, a breath of that soft perfume came to him again; and he looked up, just in time to see Her disappear through a door into the salon. But, glory! There on the floor in front of him lay a bit of lace and chiffon. Like a shot, he was out of his chair and after the fair one who had let it fall. Amid the groups in the salon, he picked his way and at last caught up with her goddess, just as she was entering the ballroom.

“Pardon me,” he said, holding up the little handkerchief, “but did you not drop this?”

“Oh how careless of me!” she exclaimed, in what Richard thought an extraordinarily pleasing voice: “Thank you, ever so much.” There was an awkward pause; and then the orchestra struck up a lively tune. He spurred his courage—“May I have this dance?” he asked boldly.

“Why!” she hesitated, and capitulated—“I guess so.

The next moment she was in his arms and they were whirling over the polished floor. Richard Herrick, who stood idly watching the dancers, had seen them. “Humph!” he snorted, and stalked back into the salon.

But Richard Manning did not see him.

At that moment he was incapable of seeing anything.
"It's no ordinary ship," said the captain. A touch of grimness edged his tone: "It must be that damned 'Flying Dutchman' of the air, the Phantom."

"The Phantom," echoed Richard in a whisper, and he felt the hair raise on the nape of his neck.

"I must get up forward and take charge of things!" exclaimed the captain, showing some agitation, as he rushed along the darkened corridors toward the control cabin. Like one in a daze, Richard stumbled after him, and at length came into a small, dimly-lighted room where the captain was already giving orders to several of his officers.

"Hata!" rang a cold voice, with a slight foreign accent, from the radiophone.

"Full speed ahead!" bellowed the captain. The huge motors took on a new tone as the speed was increased. Suddenly, without warning, the fifteen mighty motors, which propelled the ship, ceased to roar; they seemed to stutter a moment, and then stopped with a wheezing cough. A silence that could almost have been cut with a knife settled over the huge monster of the air. For the fraction of a second, every man in the control room stood aghast. The young wheelman was the first to break the silence.

"My God!" he cried in panic; "We've gone dead!"

"Keep cool everyone!" yelled the captain, "and start the auxiliaries!" An instant later the four electric motors on top of the ship whirred, and their descent was slowly checked.

"Every man to his post!" ordered the captain, "and be prepared for anything."

"Can I be of any assistance?" asked Manning, stepping forward.

The captain then pulled from his pocket a beautiful automatic electric pistol and pressed it into Manning's hand. "Climb up here to the top of the ship and plug the first pirate that tries to get down here," he said, and turned to continue giving his orders.

A narrow spiral staircase extended from the control room, through a tube, to the upper surface of the ship. Up this steep helical stairway, the gun gleaming in his hand, climbed Richard Manning, passing at regular intervals the small doors which gave access to the different corridors in the ship. As he reached one of these, he heard a stifled scream in the corridor on the other side. Waiting to hear no more, he yanked open the tiny door and found himself looking down a long hall, which he might have recognized as the one on which his own stateroom was located.

He gave that fact no thought; for there, not five yards away, was Margaret Huntington, the girl of the lace handkerchief, struggling in the grasp of a black-cloaked and hooded figure! As the door came open, the sinister invader straightened and looked up. For a moment Manning saw two slits cut in the hood and through them felt that two coils of fire were shining upon him. Then the masked man turned and fled down the hall.

"Stop!" yelled Manning and, raising the automatic, fired. The figure dodged into a stateroom as the electric bullet exploded into flame against the mantelum door frame. The flash died out instantly, and the door slammed heavily.

"Are you all right, Margaret?" Manning anxiously asked the gently of tussled scarlet from the floor.

"Yes, I guess so," she replied weakly, "but oh, Dick, I'm afraid!"—and she relaxed into his arms. As Dick Manning felt that beautiful creature huddle closer against him, a strange exuberance swelled in his heart and he crushed her to him and smothered her with kisses.

"I love you, Margaret," he whispered, "I'm crazy about you.

"I love you too, Dick," she replied, gently pushing him away and rearranging her hair.

"What's all the rumpus?" demanded a bald-headed old gentleman appearing in pajamas; "I heard a shot and I open my door to find some fresh whiskersnapper of a boy making love. I tell you I'll report this to the—"

"Save your breath!" broke in Manning; "that shot you heard was fired at the Phantom and he escaped through that door."

**Exciting Events**

By this time the whole ship was astir; it was, therefore, quite a crowd that followed Manning into the stateroom through whose door the hooded figure had disappeared. It was with some surprise that Manning now noted that the room was his own! There, on the side opposite the door, a yawning porthole told very plainly how the "Phantom" had escaped. A small ladder ran past the porthole from a gondola, several yards below, up to the topmost platform of the ship. Next to Manning's stateroom was that of Herrick; the two rooms were linked up by a small bathroom. Manning stepped to Herrick's door and jerked it open. Herrick, rubbing the sleep from his eyes, sat up in bed.

"What in the devil is the idea of waking a man at this time of night?" he grumbled.

"It's the Phantom!" exclaimed Manning.

"The what?" questioned Herrick, suddenly aroused to interest.

The conversation was interrupted by a loud cracking noise which seemed to come from above.

"Good heavens! what's that?" exclaimed Herrick, looking toward the porthole. Manning dashed to it and looked out, but he saw nothing. Instantly he decided to crawl through that of his own room and climb up the ladder to the top of the ship. In spite of the fact that the ports on the *Ambassador* were somewhat larger than those on surface ships, it was with considerable difficulty that Richard managed to squeeze through. "Gee!" he thought to himself, "that 'Phantom' fellow must be a sure-enough phantom to crawl through a hole like this." At last, however, he succeeded, and clung to the tiny ladder with the cool night breeze fansing his brow. High above him on the roof of the liner he could still hear that intermittent cracking.

Far below him, somewhere in that black void, lay the grim Atlantic, waiting to swallow him up should he make a misstep. A shudder passed through him as he thought of the sea over a mile below him; but he steeled his courage and started climbing.

For what seemed an age, he climbed, and gradually, as the top was neared, his path curved to the horizontal. At last, he came to a position which enabled him to view the extreme top. Some distance down the length of the ship, to his left, was a beam of light streaming out through a manhole. Slightly to the right of the manhole he could make out a dim black form, around which snapped and popped electrical discharges; and which, he judged, was not over a twentieth the size of the *Ambassador*. The intermittent electrical discharges shed a ghastly light over the larger ship, and in the glow he could see two of the whirling propellers that kept the great air-liner moving aloft. Not a single light shone from the Phantom, as he judged it to be, except for the electrical fireworks.
Suddenly as it had begun, the electrical display ceased and left only the whine of the auxiliary motors to break the silence. Then Manning saw a light appear near the base of the shadowy ship and, in its glow, he was able to make out several persons. A tiny spark bobbed along toward the lighted manhole in the top of the Ambassador. Then, to Richard’s surprise, there was a metallic sound, followed by a blood-curdling scream; the ship exploded and rose into space and the screaming grew fainter and fainter as the victim followed the tiny light down, down into the unfathomable depths.

For an instant Manning, frozen with horror, clung to the ladder and wondered how it felt to be struck by a propeller rotating at high speed, and hurled off into an abyss. He was brought to his senses by the rattle of a machine gun, which was cutting a red streak through the darkness at the edge of the manhole toward the light that shone from the Phantom; the officers of the liner were firing on the pirates. Manning raised his gun, aimed also toward the light, and pressed the trigger; its electrical missiles flashed among the shadowy figures. The new element entering into the conflict evidently frightened the Phantom’s crew; for the light went out, a loud hissing arose, and Manning saw the huge dark shape shoot away into the night.

For the rest of the night, to most of the passengers of the liner, sleep was out of the question. There was one man, however, who returned to his berth as though nothing had happened, and that was Herrick.

“Uncle Dick has nerves of steel,” his nephew remarked: “I really believe if the ship were on fire he would grumble about being disturbed.”

Every one on board was anxious to hear Miss Huntington’s story of the attack, and how it had happened. The following is the story in her own words, as they appeared in the newspapers the next day.

“I retired rather late and tossed for some time in my berth. Then I heard a loud hissing noise, that seemed to come from outside the ship. I sat up in bed and was terrified to see a terrible, ugly face peering at me through the porthole. I screamed, jumped out of bed, and rushed into the hall, only to be caught by that awful figure in black. If Mr. Manning hadn’t arrived on the scene, I dread to think of what would have become of me.”

Of course the whole world was stirred up over the reappearance of the Phantom, and the world’s governments renewed their efforts to run down that terror of the air; but, as before, all their activities ended in failure.

CHAPTER IV
The Abduction

URING the two weeks Manning spent in Europe, he saw a great deal of Margaret Huntington, the girl of the aurora hair. He also met and took a great liking to the blunt, grizzled old man who was her father. The magnetic personality of the young scientist and inventor had its effect in turn upon the flinty nature of the physicist.

“Young Manning is a person,” he told a friend, “who will get ahead in this world. He has some unique ideas and has enough force in his make-up to push his schemes to the finish. I should be glad to give the dearest thing I possess to such a fine young man.” Such a long discourse from Dr. Huntington was extraordinary, to say the least; but it showed the high esteem in which he held Richard Manning.

When Herrick had completed his business in Europe, he and Manning returned to America; and with them returned Margaret Huntington and her father. Herrick was disgusted at Manning’s affair with Miss Huntington, and did not endeavor in any way to disguise his feelings.

“Love wasn’t made for scientists,” he grumbled. “Who ever heard of a scientist that amounted to a damn after he got married?”


Herrick growled something about “feather-brained youth,” and allowed the subject to drop for the time. So Richard pursued his wooing unhampered. He proposed, and was accepted.

At last, the evening of the wedding arrived. Herrick had never been fully reconciled to his former ward’s infatuation; but the night of the wedding found him on hand.

The guests had all arrived and everything was in order. Young Manning, who should have been the happiest man in America, was plainly nervous; while Herrick was in strangely good humor. He laughed and joked with almost everyone present, seeming the gayest of the guests. This mood struck Manning as being rather merciful; because, just an hour before, at dinner, Herrick had told him very plainly that he did not yet approve of the match—why, he did not say.

“I can’t figure out Uncle Dick these days,” Manning remarked to Dr. Huntington: “sometimes he acts like himself and then, at other times, he seems to be some other person.”

“Don’t try to understand, my boy,” said Huntington, dryly: “all of us old codgers get that way as we work up toward our second childhood.”

Richard laughed and dismissed the matter from his mind.

The time for the ceremony arrived, but the bride did not descend. Fifteen minutes dragged by, and still no Margaret. Finally, Dr. Huntington started upstairs to see what was detaining her.

“She’s probably still primping, or weeping, or doing some other fool thing,” he growled as he strode off.

In a moment he reappeared at the top of the stairs. His face was ashys——

“She’s gone!” he cried frantically, and waved a yellow scrap of paper in his hand.

Like a flash Manning was up the stairs. The condition of Margaret’s boudoir told plainlier than words what had happened. There had been a struggle; she and her servant had evidently been carried bodily from the room into a balcony that overlooked the garden. The French doors leading to the balcony were open and a small silk handkerchief lying on the threshold proclaimed what had happened. A flier, of some type, had probably furnished the means of escape for the kidnappers.

A chill passed through Manning’s heart, when he saw the condition of the room. This turned to dismay and utter dejection, as he read what was written on the piece of paper that Huntington handed him. It was a small yellow sheet torn from a pocket notebook; and on it were but three lines of typewritten words in red:

“Margaret Huntington is dead to the world!
The man who pursues dies, and he places all mankind in jeopardy!

The ‘Phantom.’”

Manning, after reading this terrible proclamation,
The reader may think strange that strong men like Manning and Huntington should give up without a struggle; but the Phantom had so terrorized the world that its invulnerability was conceded. A stupendous reward had been offered for the capture of the Phantom's master; thousands had pursued him hopelessly and turned and swallows the world, unless left to his dark devices. Of course, Manning doubted that the Phantom could really exterminate the human race; but he knew that the monster could play havoc with civilization. This was why he hesitated to seek vengeance.

At last, though, he could endure his inaction no longer; he made up his mind that the Phantom must be removed once and forever from the face of the earth. But how was he to accomplish this? How was he to make a machine capable of attaining a speed equal to that of the pirate ship? And then, to find the lurking place of the Phantom?

He sent for Herrick; but received word that the latter had ventured into a remote part of Asia to seek some kind of mineral deposits. He next turned for aid to Margaret's father, Dr. Huntington, and was shocked to learn that the old physicist had suffered a complete lapse of memory, and was undergoing treatment in a Paris sanatorium. If Manning had read the newspapers in the meantime, he would have known that under the shock of losing his daughter, Huntington's great mind had been jerked from its moorings and thrown into a state bordering on chaos.

So of the three great scientists, Richard Manning was the one upon whose shoulders rested the whole duty of running the Phantom to earth. But the great question that confronted him was, how to go about building the proper ship? He knew that with his electrostatic motor terrific power was available; but to attain a speed of five or six hundred miles an hour, even with unlimited power, was no small task. Of course, his estimate of five hundred miles was just a guess at the speed of the Phantom; it might be that and it might be five thousand. At the time, he decided to make his goal six hundred miles an hour, almost twice the speed of the average flier. But, after a great deal of figuring, the main question still loomed: how could he do it?

For hours he pondered that question; then, as he went out to exercise in the park, the solution was revealed to him by a small boy. The little fellow had in his hand a large rubber balloon which he would inflate to capacity, then deflate by releasing his finger from the end and allowing the air to rush out. At one time, when the balloon was full with air, the child accidentally turned it loose. Manning, who was idly watching the actions of the little fellow, saw the balloon shoot high into the air and fall several yards away.

"What a dumbbell I am!" he exclaimed aloud: "Not to have thought of the rocket principle before now!"

With this in mind, he designed the strange craft in which he hoped to catch the "Flying Dutchman" of the air. The same aircraft corporation that had built the Mercury, Robert Manning's first ship, constructed the Skyrocket, the masterpiece of Richard Manning. It was designed on a principle which, in the '30s, had shown great promise; but had then been side-tracked and forgotten, because of the difficulty of obtaining the enormous power required.

Under the personal direction of Manning, the new plane grew rapidly and, with an army of workmen at his disposal, in comparatively short time he had it completed. What a beauty it was to be; graceful as a gazelle yet sturdy as an elephant, incorporating a radical change from the now usual type of combination dirigible and airplane. All excess weight was eliminated, and the body was built very slender, resembling more a needle than a torpedo. All the protruding edges, such as those of the planes and stabilizers, were streamlined to an exceedingly high degree. Through the center or core of the hull, from stem to stern, ran a large tube constructed of layer after layer of pure manoilium. In this huge tube were located, and operated by means of electrostatic motors, the gigantic fans which were to draw in air at the nose and blow it out at the rear. Although this scheme necessitated an enormous expenditure of energy, Manning believed that the centralization of power and the double action of the fans would greatly increase the speed and efficiency of the machine.

As shown in the model and, later, as shown in the ship itself, this proved to be true.

One morning, when the new ship was almost finished, Manning received a radiogram which again nearly distracted him. It read: "Richard Herrick was instantly killed this morning by an explosion." Unknown to Manning, who had been so busily engaged, Herrick had returned from Asia. While working in his laboratory, Manning learned, something that Herrick was mixing had exploded; killing him instantly and disfiguring his face, especially, beyond recognition. When Manning gazed upon the torn face of the old scientist, he could hardly believe that it was indeed that of the man who had been a second father to him; but the figure of a dragon tattooed upon the right arm, above the elbow, excluded all doubt of his identity.

The second tragedy, coming so close upon the first, had nearly the effect of sending Richard to join Huntington; but, somehow, his iron will dominated, and after Herrick had been laid in his last resting place, the younger scientist continued his work from the point where it had been interrupted.

When the great plane, which he had determined to name the Skyrocket, was in the last stage of completion, Richard began to gather around him a carefully

over and over, sank into a chair and buried his face in his hands.

"Good God!" exclaimed Herrick, who had followed, and had taken the message from his trembling hands: "The fiend threatens the whole world! What are you going to do, Richard?"

Manning slowly raised his head. His face was haggard; he had aged ten years in the last five minutes.

"I don't know," he replied listlessly, "I guess my hands are tied."

Dr. Huntington, man of iron that he was, sat down heavily, and shook with sobs.

Two more weeks dragged by: Dr. Huntington had returned to Paris and Herrick to the West coast. Manning was almost on the verge of insanity. At night in his dreams he would see Margaret struggling in a slimy crocodile-infested river; while he stood chained to the bank utterly unable to help her in any way. Then, he would see her dragged under by some loathsome monster, and he would wake with her despairing cries ringing in his ears. From this terrible nightmare, he would fall into another, in which he would see cities being consumed by fire and thousands of people being killed by a terrible monster that breathed forth smoke and flame.

The "Skyrocket"

The Phantom had so terrorized the world that its invulnerability was conceded. A stupendous reward had been offered for the capture of the Phantom's master; thousands had pursued him hopelessly and turned and swallows the world, unless left to his dark devices. Of course, Manning doubted that the Phantom could really exterminate the human race; but he knew that the monster could play havoc with civilization. This was why he hesitated to seek vengeance.

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When the great plane, which he had determined to name the Skyrocket, was in the last stage of completion, Richard began to gather around him a carefully
selected crew to man the craft. Just by chance, he succeeded in procuring, as his chief officer, the former captain of the Ambassador, who had recently resigned from the service of the lines. With such a man in charge, he believed the chances of success in the hunt were greatly increased. The other ten of the crew were clean-limbed, brave young fellows—each of whom was an expert pilot, and each of whom held a commission in the Air Reserves.

The day for testing the new ship arrived. It was rolled from its cradle in the hangar and the motors tuned up. Once again, as the marvellous structure lay there glistening in the morning sunlight, each vital part was gone over, the static supercharger was tested, the motors were adjusted, and the other mechanical parts were checked.

At last Manning gave the word to be off. The motors hummed and, like a feather wafted aloft in a breeze, the Skyrocket sailed into the sky.

"Forward!" ordered Richard, when an altitude of two thousand feet had been reached, and the ship, with a hiss, leaped forward like the device for which it was named.

Almost like one gone stark mad, Manning put the Skyrocket into a more grueling set of races than had ever before been employed in testing a flyer of that size. Quick turns, vertical climbs, nose-dives, side-slips, all of which would have snapped an ordinary plane in two, had little or no effect upon the sturdy Skyrocket.

At last, Manning ordered full speed ahead, and the plane shot forward on a straight course. Slowly, as the craft gained velocity, the speedometer crept up; three hundred miles per hour, four hundred, five hundred, six hundred, and so on until it stood almost at six hundred and fifty!

Manning was extremely pleased with the performance of the Skyrocket, and began immediately to lay his plans for catching the Phantom. As a result, three days later the Skyrocket again left its hangar; the hunt was on.

CHAPTER V
The Hunt

For fully a week the Skyrocket combed the wildest portions of the globe in search of the Phantom; but no signs of the strange craft were to be seen.

Back and forth, over the western deserts, swept the graceful Skyrocket, while sharp eyes scanned the blistering sands below, searching—ever searching—for the smallest clue that might give an inkling as to the whereabouts of the Phantom. From Alaska to the South Sea Islands, the hunters scrutinized sea and land; but without success.

All this time life aboard the ship was very pleasant. The huge electrostatic motors worked better than Manning had ever hoped; day after day they drove the graceful flyer forward without once faltering. After the motors had been sufficiently broken in, Manning decided to ascertain the maximum speed of his new craft. When the rate of 1,000 miles per hour was reached, the throttle still lacked a few notches of being wide open.

One day, as they were rounding the side of a mountain, on the eastern slope of the Andes, they came face to face with the Phantom! Although only once before had that craft been seen in daylight by those who lived to tell the tale, not a single man on board doubted that the sharp pointed torpedo-shaped flyer was the one they had been seeking. On the appearance of the Skyrocket, the Phantom, instead of attacking, veered round and raced away to the south; the Skyrocket was instantly in hot pursuit.

Half-way round the world the chase lasted. Time after time the Skyrocket crept up almost within gunshot of the black quarry; and then the Phantom would put on a burst of speed and draw away. For days the most terrific race in history went on. The Phantom was desperate, fleeing for its life; the Skyrocket was fighting to make the world safe. Time after time, the men aboard the pursuer felt peculiar electric thrills pass through their bodies. The Phantom was using its long-range weapon, the engine-paralyzing ray; but it had no effect upon the electric motors of Manning's ship. The men on board the Skyrocket were beginning to tire of the chase when fate, in a playful mood, stepped in and allowed the Phantom to escape. In other words, while the chase was in progress, among the East Indies, a terrific tropical thunder storm blew up. The supercharger on the Skyrocket became highly overloaded and, although nothing of a serious nature developed, the hunters were forced to abandon the chase for the time. The Phantom had apparently dissolved into thin air.

To say that Manning was disappointed is to put it mildly; but with the never-say-die spirit that he possessed, he proceeded to cruise back and forth over the thousands of islands that dot that portion of the sea.

Two days after the escape of the Phantom, they were drifting over an isolated island of considerable size, about two hundred miles south of Java, when the captain shouted, "Look!" and pointed earthward. There, in a clearing, lay the Phantom; the chase was over!

Manning was for dropping down and attacking the quarry on the spot; but the captain, who was still suspicious, convinced him that it might be a trap and that, possibly, the best thing to do was to act as though the Phantom had not been observed, land at some convenient place, and scout back on foot to determine the lay of the land. So they landed and Richard, much against the will of the captain, went scouting alone.

"I'll be back in half an hour, probably," he said, "but if I am not back in an hour come after me."

Away he went into the jungle and, after five minutes of fighting his way through the underbrush, arrived at the edge of the clearing. He lay on his stomach behind a bush and sized up the black ship; it lay silhouetted against a red sandstone cliff that rose perpendicular, directly behind it.

His observations were suddenly cut short by something landing on his back. Nearly all the wind was knocked from him and, before he could so much as raise a finger, he found his hands securely tied with a piece of tough vine, and his arm being held in a grip like a vise. His captor proved to be a gigantic Malay, the largest man that he had ever laid eyes upon, who stood at least seven feet in height and must have weighed fully three hundred pounds. The giant was naked to the waist; but a pair of dirty duck trousers covered the lower portion of his body. A greasy red-and-white turban wound round his head completed his scanty attire.

"Uga!" he grunted, pointing toward the Phantom; and, to make his meaning more clear, he gave Manning a shove forward which nearly sent the latter sprawling.

Half-dragged, half-carried, Manning was taken aboard the ship of mystery which he had so long pursued. Down a dimly-lighted and heavily-carpeted
corridor he was hurried, and through a heavy door at the end. He found himself in a softly-lighted luxurious room which served as the office, no doubt, for that fiend who ruled the Phantom. The furnishings, the atmosphere of the place were undoubtedly oriental; the heavy drapes which hung around the room were Chinese, and the divan with its many pillows was purely Persian. One who had read of the mysteries of harem life, as they are pictured to the Western reader, might well have expected to see some scantily-dressed beauties reclining on the large divan. If so, great would have been his disappointment; for the only person in the room was a masked man, who half sat, half reclined, in a large easy chair behind an exquisitely carved ebony desk. But the thing which struck Richard as being most extraordinary was that the man of mystery seemed to be a prisoner on his own ship. He was fastened firmly, to all appearances, by several strands of heavy silk rope which circled his body and which were doubtless secured in some manner to the back of the chair. Richard immediately suspected the hooded individual of being the same person at whom he had shot on the Ambassador. At least the hood and cloak, the form, were identical; whether or not it was the same man, he could not be sure.

For a moment after Manning and his captor entered the presence of the masked man, no word was spoken; but he could feel the fiery eyes behind the mask burning into him. Then the master of the Phantom spoke in a not displeasing voice, his English betraying an undefinable foreign accent:

"Ah! Meester Manning, welcome to Galon; we have been expecting thee's visit and eet ees indeed a pleasure to receive such an important person... Eet ees rare that we have veseetors." He paused a moment, then grunted something to the giant Malay; and Manning had the satisfaction of feeling his bonds being loosed. Before he could follow his impulse to do something of a violent nature, however, he was propelled backward by the huge Malay and landed sprawling in an easy chair.

"That ees much better, Meester Manning," said the hooded figure. "Now be calm, and we'll talk business." At least the Malay did his best as the Malayan stepped across the room and stood by the door.

"A sweet time I would have passing that gorilla!" thought Manning; "I must think fast."

Back from the Dead!

ALTHOUGH he appeared to be the picture of meekness, his brain was moving like lightning. Suddenly, before the huge Malay could realize what was happening, Manning was out of his chair, like a flash, was across the room, and had torn the hood from the head of the Phantom's master. When he saw the face thus revealed he stepped back aghast. His face turned deadly white, a gasping cry gurgled in his throat, and the black hood fell from his nerveless fingers. The man who sat in front of him was Richard Herrick, come back from the dead!

Manning sank into a chair and buried his face in his hands. What turmoil raged in his breast. To think that the man who had been his best friend, and whom he had long believed to be dead and buried, should prove to be that hated fiend of the Phantom! Silence reigned in the room. Even the giant Malay who had sprung to Herrick's assistance seemed to feel the tenseness of the situation, for he stood gazing at his master's face, now twisted with many emotions, on which he was looking for the first time.

Herrick was the first to break the silence: "Richard, my boy, do not judge too hastily." He paused, the young man did not move.

"Will you please forget for a moment that I am the 'Phantom' and listen to me?" There was no answer: "For God's sake, Richard, you must hear me!" exclaimed Herrick frantically.

Manning raised his head.

"I will listen," he said slowly and in a voice choked by emotion. "But what can you say?"

"Thank God I reached the 'Phantom,'" signing with relief: "in half an hour all will be explained and Herrick will then be ready to join his fathers on the banks of the Styx." He leaned back in his chair, and after gazing vacantly into space for a moment, he began:

"Years ago, when you were but a lad, your father and I were working together one day in the workshop. An iron bar which hung suspended above us suddenly came loose, struck me on the head, and knocked me unconscious. The blow did not prove very serious, but your father insisted that I see a specialist in order to be sure that everything was all right. I consulted a noted authority on the brain; he took X-rays and told me that there was a slight dent in my skull; that the bone was pressing slightly on the brain, but that it did not present serious danger.

"Nothing will come of it," he told me, 'provided you lead an active outdoor life and never allow your brain to become fatigued. But, if you fail to carry out these simple instructions, the pressure on your brain as it fills with blood may cause mental derangement.'"

"So, during the years that followed, I tried to lead a normal life, and trained you along the same lines. With pride I watched you develop into splendid manhood, and had nearly forgotten the incident of the iron bar, until a few years ago, I began to perceive queer ideas that filled my mind at times, yet quickly passed away. But the ideas returned with renewed force, despite all that I could do. A great fear clutched me, and I consulted specialist after specialist. All recommended different things, but the main thing was to occupy my mind... But these ideas gained force in my mind, my own doctor at last sent me to a private sanitarium; but I hated conditions there. A different spirit, a cold-blooded cruel mentality seemed to have taken possession of me. I was becoming a regular Mr. Hyde.

"One night I escaped, returned home, and then departed for the West. You know what happened then. I wandered like a lost soul all through the Orient. Every day I could feel my other self, the demon, slowly consuming the good in me. God! I wanted to die; but I was afraid.

"In my travels I landed upon this island, Galon, made friends with the natives, and started my devilish work. Here I discovered the secret of my paralyzing ray; learned that by means of this ray I could create a vacuum in the air at a distance of, or by shortening the wavelength, paralyze a gas engine. The ship that I built works on the simple principle of atmospheric pressure; by means of the ray I exhaust the air in front or above the craft, and the air pressure on the opposite side pushes it into a vacuum. The principle is simple, but the atomic ray is too dangerous for human weakness to possess. For the safety of mankind, no one else must ever learn that secret."

(Continued on page 556)
The smaller ship continued to spiral and lose altitude until she levelled off for a moment and then silently slid toward a flat surface that was almost level with the sea. He was approaching what seemed to be a great floor, floating upon the surface of the Pacific.
FREEDOM OF THE SKIES

It was a bright day in early June of the year 1974. A young man was standing in the archway of the main passenger entrance of the Grand Central Air Terminal in Los Angeles, absentmindedly fingering a new pilot captain’s cap, which had been presented to him but ten minutes before. Yet, where the flush of success might have been expected in his looks, his face was pale and wan; and in his eyes there was the light of tragedy. He was suffering in agony, unknown to his fellow pilots; and when one of them came quickly out to grasp his hand in congratulation, tears flooded his eyes. He said hoarsely to his friend, only: “Please, Joe—I—I can’t stand it if you do! It doesn’t mean anything now but—but oblivion.”

The captain for whom he had been pilot-mate for several months looked into those dimmed eyes, amazed: “For God’s sake, Fred, you can’t mean that—now, with a new commission as passenger-plane captain. Why, I don’t understand. Won’t you tell me?”

“Don’t make me talk, Joe, if you’re my friend. Just go in there and tell the dispatcher that I’m ready to fly the cargo plane to Guayaquil. Don’t make any excuses for me—just tell him I said I wanted to make my first trip as pilot-captain alone.”

“You’re a queer bird, Brettner,” said Joe Blaine. “Why don’t you tell him yourself?”

Brettner was nervously impatient. “I can’t! If I did I’d jumble up the whole works. I can’t talk—but I’ve got to make the trip alone. If I took the passenger plane I’d go crazy.”

Blaine made a mumbled remark about the freight plane being so much harder to handle; but he hurried back into the office, prepared to argue for half an hour in the cause of his friend.

Ten minutes before this conversation began, Fred Brettner had stood before the inspectors of air-pilots and had taken from their hands the papers which authorized him to assume the responsibility for any ship on any line of the great International Airways. And, now that the great moment had come, it meant nothing more than an opportunity to get away from the scene of what was to him a tragedy. The latter had come about in a manner so common to airmen of his day. Up from Shanghai, as pilot-mate on a fifty-place sesqui-amphibian, he had played the hero to a girl. Her name was Nadia Deneen, and she lived in the city where Fred had lived, and she loved the things he loved; and so, through those long months, she had made his between-cruise hours so infinitely worth while that he lived exultantly.

A Sudden Departure

She was sweet and clean and clever, a brumette, with hazel eyes that smiled out to make his own world seem to smile back; life had then indeed been sweet. He had once rescued her from beneath the blown-down door of a hurricane hatch, while Joe Blaine was piloting the big amphibian through a storm, and a hurrying steward had closed the door without looking out on the promenade deck for passengers. The steward had not reckoned that there are yet in the world daring spirits who might stand dreaming in such a place, whether or not the ship was making dizzy banks and turns through the terrible currents of air above the mid-Pacific.

After the rescue Nadia had never forgotten. She had, apparently, taken the advice of a well-known writer and consented to let him marry her, in recompense for having saved her life. She did succeed in making him the happiest man in the world, even to agreeing that he should continue with his career in the air. They were to be married the day he should become a pilot-captain. And they had planned to live near the terminal, where she could meet him each time he put down after a long hop from the far places of the earth.

One cannot describe love. When it has come into the heart of a sincere young man, its end is always a tragedy. That Fred Brettner, sensitive, as high-strung as a fine racy horse, as imaginative as a poet, should have lost Nadia Deneen’s love after having known it was a pity. He had nothing else left. The turmoil in his soul was too poignant to be suppressed. He had gone to her home that morning, the day of his triumph, which he was to share with her—and he had found only the maid who gave him a short note, which he would ever recall as bearing the statement that she had gone, never to return.

She had lived alone with her servant. There were no relations to whom he could appeal for help in locating her. It was a soul-stirring mystery that had struck a vigorous young man of twenty-three, and in twenty-four hours his face had become shamed like that of a man of fifty. There was absolutely no reason why Nadia should have ended their beautiful relationship so abruptly. It was not like her; and yet it had happened—it was real. He tried to shake off his mood, as Joe Blaine returned with the verdict from the dispatcher, who had granted Brettner’s request to make the Guayaquil freight hop alone.
AIR WONDER STORIES

He went back once more that morning to Nadia's home, hoping against hope that she had returned, that her message to him was all a dream. Not finding her there, he turned back to the terminal and his ship, gathered his clearance papers, and started away. Nor did he see, in his preoccupation, a strange little man with a wizened face and eagle eyes, who observed him intently as he made his way to the controls of the great ship and sent it upward from the field.

And, for any curious observer who had followed the little man, the only significance would have lain in the fact that, upon the clearance of each ship that morning, for whatever port in whatever country, this man had returned to the cockpit of a long-range pursuit-plane nearby on the field and tapped out a message in radio code.

Strange Events

WHEN Fred Brettner had taxied down the field and lifted the big freighter from the ground, he felt somewhat relieved. Her five motors spurted flame from the exhausts, the singeing of the wind through the braces; and the thought of the long trek to Guayaquil, Ecuador, all at speed, made the turmoil in his heart. But, after five or ten minutes of the journey's monotony, he thought of Nadia again. How could she have left him at the moment when all their plans were to have been consummated? It was mysterious.

The maid had merely found the note and given it to him; she knew nothing more about it, and had no knowledge of Nadia's whereabouts.

He lifted the ship higher and gave her full throttle. He tried to quiet his nerves with a cigar. But nothing would change him now. He would have to forget. Life shouldn't be a tragedy to a man, just because the girl he loved had seen fit to part from him. The experience would be all the more worth while when he had conquered the weakness in himself which caused him to view it as a tragedy. And yet, could he forget in an hour? He steadied himself and chewed his cigar. Nadia's face seemed reflected in the cabin window; he slid the glass over to one side and breathed deeply of the irrefrangible air. He could never forget; but a pilot must go on. If he had known a reason for Nadia's sudden departure—if anything had happened to separate them, he felt that he had a right to know it. But there had been only the curt note:—"I can't explain—Nadia." And please forget me entirely—I can't explain—Nadia." And the motors of the great ship sang a weird song to a heavy heart.

* * *

Five minutes after Fred Brettner had hopped off for Guayaquil, Joe Blaine, senior pilot-captain of the International fleet, ordered all passengers aboard and lifted his big amphibian off for Shanghai; the usual song in his heart stilled only by the sudden mystery of his former mate's actions. Thinking it best to wait till another time before questioning Brettner, Blaine had decided to make the best of matters. Safely on his course, he turned over the controls to his new pilot-mate and went aft toward the passenger quarters. As he passed the door of the radio room, a thought occurred to him, and he went inside, to find the operator frantically working over the set. Upon questioning the young man, Blaine learned that the conduits carrying the wiring from the air-driven generator had been gutted. He poured questions at the operator: "You're sure you didn't order the repairers to have them disconnected for replacement? Why didn't you test the set before we lifted? Who would disconnect our wiring?"

"I don't know," said the horrified operator. "I only know the jinx has the whole fleet that left the terminal this morning. Metzler, who was to take the morning express to Seattle, was ill when he took off, and he didn't know what was wrong with him. He didn't say anything about it—"

"What has that got to do with our generator leads?" interrupted the captain.

"Nothing," answered the operator miserably: "Only it won't help us. It will take considerable time to insulate makeshift leads in this emergency. What gets me, captain, is that anyone should tamper with the leads. We've got to watch out—there's something afoot!"

After the long-flight traffic that cleared from the terminal that morning—the International Airliners that went out to the cities of the world in an ever-increasing, romantic race for trade—a long-range pursuit-plane left the great airport and swung over to a small landing field some fifty miles distant. Its only passenger was the little eagle-eyed man with the wizened face who had been so interested that morning whenever a plane left the terminal of the International. But, when he landed at the other field and taxied over to the only hanger which was open at that hour, it was only to take on, as an unwilling passenger, Nadia Deneen, sweet-heart of Fred Brettner! That she resisted being put aboard the craft was evident from her muffled sobs and attempts to pull away from her strong-armed keepers.

"I'd a given her some dope, only we've got to have her awake," said one of the men. And the wizened-faced pilot nodded assent as he shoved the throttle full out and took off. At ten thousand feet, he leveled off and steered a course southwest across the Pacific.

CHAPTER II

Brettner Reflects

THROUGHOUT the morning, the great Guayaquil-bound freighter was sliding onward toward the tropics. Fred's mood had changed; he was thinking about the world he had left beneath him—new in ideas, but as old as ever, and never truly sensible after all! Though he was living in a day when marriage was seemingly, no longer the mode, he himself was still old-fashioned and conservative; and he had thought himself fortunate to meet a girl who did not care for the new freedom demanded by so many of her sex.

And, now, his dreams had been rudely shattered.

Love was the greatest problem of life as it had been with so many others since the beginning of civilization. In these days men were working for the love of work; the ideal of Social service had become a reality. Work was a matter of serving the community and, therefore, common co-operation had facilitated it in every way.

In fact, the outer aspects of life had been so simplified that the only great problem remaining was that of love, the world-old problem; and there is no such thing as a logical solution of this.

And now the greatest blow that could come to a man had hit Fred, and he was trying to think his way out. He was still in the stage when youth must analyze and try with all its might to master itself.

He reflected again. Back in the dark days of strife in 1930, for instance, his grandfather had been one of those daring souls who piloted planes continuously to
Singapore. The old man could now remember several instances when he had left Los Angeles with a feeling that he would never return; but by sticking close to the controls, he had managed to avert the disasters his intuition foretold, and had flown his ship through. And, if his grandfather had accomplished that with all the worry entailed by gasoline engines and the possibility of dead motors, the distractions of navigation and such details, he himself could certainly fly a modern perfect plane to Guayaquil, however heavy his heart.

But he was not long given to such reflections. For, two hours after his leaving the terminal, a pursuit-plane drew alongside and nosed up to attract his attention. He looked her over; for a moment he wondered why the plane should be so close. Then a hand shot out from the forward cockpit and waved to him. He banked his ship over to get a better view. When he did so, he saw Nadia, her face pale and frantic, making terrified gestures to him! It looked as though she were telling him to stay on his course and not follow. But he knew he must follow; one look at the face of the pilot whose shifting, steely eyes glared in his direction, and Fred Brettner made his decision.

The pursuit ship climbed steadily, and Fred followed. Sixteen, eighteen, twenty thousand feet—and still up into the clouds they sailed. He wondered why the pilot of the little plane should want such altitude. But it was not long before he was to know. When the pursuit plane leveled off, its pilot shut off his motor and motioned for Fred to do likewise. Then the pilot yelled to him: "If you want this girl to live, you'd better follow me!"

That was all he said. He did not give Nadia a chance to talk; instead, he turned about and headed westward over the Pacific. Whereupon Fred Brettner gave his five motors full throttle, and stayed close behind the other plane.

He searched his mind for possible reasons for this strange manner of abducting Nadia. What could this sinister pilot want of him? He could not pay ransom, for he was not a nixed man, but only one of the masses. Why, in the name of Heaven, should anyone resort to this method, to any method of breaking up the happiness of a young couple who in this advanced day were clinging to conservatism, to the traditions of finer, higher-minded people? It had all come so suddenly that he had not thought of his radio transmitter. He rushed for the switch and turned on the air-driven generator. His first thought was an "SOS" message; but when he clamped down on the key it was dead. No vacuum tube glowed. He was helpless to tell the world of Nadia's plight.

**Captured!**

AFTER three hours of flight, during which time Brettner's mind had been considering a hundred possibilities of what was happening, the pursuit ship throttled down slowly and nosed downwards, Fred following her with his heavy cargo plane. He looked below, but saw no sign of a landing place in the limitless expanse of water. However, the pilot of the smaller ship continued to spiral and lose altitude, until she leveled off for a moment, and then silently slid toward a flat surface that was almost level with the sea. He saw the plane make a perfect landing, and then himself circled for position to do likewise. Then he realized that he was approaching what seemed to be a great floor, floating upon the surface of the Pacific. He slid the big cargo carrier down upon it, and taxied up beside the pursuit ship, at the side of which were now waiting Nadia and the pilot. When he had cut his motors and hurried out of the cabin to join them, he was met by two men who, it seemed, had suddenly appeared from nowhere. They took positions on either side of him, each seizing one of his arms in a tight grasp. "Any discussion must be with the Grand Master," said the one on his left. "You are ordered not to ask questions concerning your presence here until you are before him," said the one on his right.

Brettner's only concern was for Nadia. "Can I see the girl first?" he asked.

His escort on the left nodded and turned with him. The pilot of the pursuit-plane had pressed a button which opened a huge trapdoor, into which his craft was wheeled. Nadia was left to join Fred and the two men. She hurried to him, her large eyes filled with tears. The guards permitted their embraces.

"Fred, what can all this mean?" she asked. "They came to my apartment and forced me to write that awful message to you—it wasn't true!"

"We'll have to make the best of it," he whispered. "It looks like a big kettleful of devilment to me. I suppose they took you in order to make me follow. They couldn't steal our planes from the hangar—they want the cargo, you see. It's been hinted about that a cargo plane is always in danger—especially when it carries valuable electrical and chemical apparatus, as mine does."

"But isn't it dangerous—will they let us live?"

"Please don't think of that. They won't harm you, or me," he said with assurance.

"But they won't let us go back home; they will be afraid we will reveal their rendezvous."

Fred looked around the island-like structure: "Apparently they can move it. It has the color of the sea, when you look at it from above, and it would be hard to locate."

One of the men stepped between them: "The Grand Master will receive you below in three minutes," he said, almost pleasantly.

They followed the guards down through a hatchway and into an enormous compartment. "This thing cost enough to build to keep a thousand people in luxury for the rest of their lives," commented Brettner: "The Grand Master must have fabulous riches."

"That never bothered me; I reckoned he had a thousand for the switch and turned on the air-driven generator. His first thought was an "SOS" message; but when he clamped down on the key it was dead. No vacuum tube glowed. He was helpless to tell the world of Nadia's plight."

"There may be a thousand of them in partnership."

"I think your deductions will not be borne out," said Fred and stopped. They were soon following the guards through a hallway and into a reception room. They looked for an instant down another aisle which extended for what appeared to be the length of a city block. The ship, or whatever it was, appeared to have the deck surface of five of the large battleships of fifty years before, but whatever went on within it was still a mystery to them.

Presently a door was opened before them, and before them stood a tall, well-built young man, apparently about twenty-five, dressed in a one-piece suit of black velvet with a sash about his waist. His face was expressionless, and its paleness gave it a waxen appearance; but there was a ringing quality in his well-modulated voice: "It is my duty to warn you to speak the whole truth in all matters pertaining to yourselves. Then, only, will you be allowed the freedom of the decks, and avoid not be true yourselves."

"He's just the man I want to see," said Fred. "If there's anything personal about this I want an oppor-
tunity to state my side of the case."

The Grand Master

THE orderly turned and walked away without reply. He went to the door and opened it, motioning for Fred and the girl to follow.

"Be careful what you say, Fred," cautioned Nadia.

"I want to know why you’re here," Brettner said decisively: "That’s my first question to fire at this Grand Master. I’ll bet he’s one of those Napoleonic eccentrics, like certain capitalists of post-war days who are said to have possessed such a complex for power."

Nadia laughed, even her eyes twinkled; "If you didn’t have a sense of humor I’d feel blue," she said.

"But it’s true," muttered Brettner. "Think of it—kidnapping you!"

The two young people were ushered into an immense room which was lined with blue and golden tapestries, with elaborate furniture everywhere, about a large desk in the center. There were multi-colored lights spaced upon the walls, and their reflection gave the place a weird atmosphere. At the desk sat a young man, apparently no more than thirty, with keen blue eyes, blond hair and the form of a Greek athlete. He was dressed, as were the guards, in a one-piece suit of velvet; but he wore a silver crest, the top of which consisted of an eagle with wings spread to the winds.

The orderly silently placed two chairs before the desk and motioned them to be seated; then he disappeared through the door and it closed. When Fred and Nadia had seated themselves, the man at the desk spoke in a rich, deep voice: "You are before the Grand Master of The Conquerors of the Skies," he began: "When I say the ‘Conquerors of the Skies,’ I refer to the most powerful organization in the world. Our aim is to control the air; suffice to say that we are assured of success. You are now within our citadel, which is the largest submarine structure ever built. It can be submerged in eight minutes. Our methods of action, at present, are confined to the demoralization of the pilots and crews of the International Airliners."

The Grand Master paused and smiled: "My men have disabled the radio instruments on all liners passing within five hundred miles of our position. This vessel is a floating nation—we call it Marino. Marino shall conquer the world."

"Now, Captain Brettner, our reason for abducting your sweetheart, was to ensure the presence here of this young lady while we are gaining possession of an added number of ships."

The Grand Master paused. Brettner’s face was suddenly a livid white; he understood that Nadia was to be held as hostage for some infamous purpose. The words of the Grand Master ate into his soul. And he must see her suffer for the greed of such a man as the one sitting before him! He wanted to fly at the throat of the pirate, but instead he turned suddenly in his chair and hoarsely whispered her name, "Nadia—Nadia—My God—you!" Their eyes met, two pairs of richly-tinted pools with everything that they held worth while reflected in them. They could not speak. Only the fortitude of the girl whose eyes met his gave Brettner courage to look again at the Grand Master. The latter smiled.

"It’s not such a tragedy, Captain Brettner. You shall not be deprived of the society of this young lady. I give you my word of honor that Miss Deneen shall remain unmolested, with the freedom of the decks, as long as you obey orders. I don’t want her; I want you!"

"May I ask why?" demanded Brettner.

"I thought it was obvious," smiled the Grand Master: "It shall make it clear, however. You are to return to the mainland in a ship piloted by our men. You are to tell the officials of your company that you lost the ship by accident and that you were rescued by this man. Meanwhile, Miss Deneen remains with us as security for your loyalty to us."

"One of my pilots with a light amphibian monoplane will take you. Upon your arrival in Los Angeles, you are to make only the necessary explanations; and when you get command of another plane—a cargo carrier—you will fly her here."

"And if I refuse?" At his words Brettner felt Nadia start. Before the Grand Master could reply, she spoke: "You mustn’t give yourself to dishonor for such as this, Fred—I’ll—I’ll do anything before you shall!"

"You will be wiser not to refuse," said the Grand Master: "If you agree, and then betray us, our detective force, which covers the movements of every one connected with the International, will discover it. Our agents are everywhere. You must consider. Why, if this young lady consents you may even be married aboard—we have a chaplain—and live in luxury with us indefinitely. You may be captain. Your knowledge of air craft will enable you to bring a great number of planes to our decks. And, after we have accumulated enough additional supplies from cargo planes, we shall put our forces in motion for a conquest of the world."

"Why didn’t you buy the planes at first, and save yourself the expense of building this great ship?" asked Brettner, intrigued by curiosity.

The Grand Master still smiled: "We had to have headquarters, captain! We knew that, in order to maintain an immense number of airplanes, we would need a hiding place. The land portion of the world—that which is comfortable—is now entirely within the scrutiny of adventurous airmen. I know of no place outside the frigid zones where one could be so secure as we are here in Marino. You must remember we are a nation; and, as a nation, we are going to conquer the world. This meager start of ours is only to secure airplanes and supplies."

"We have ten thousand pilots, all belonging to the Order—all ready upon an hour’s notice to come aboard. As fast as we capture the ships of the International, we have men ready to assume command of them. We have marked out immense stores of explosives in the different parts of the world, which will be picked up by our planes, swarms of them, when we are ready."

"No, we are not cutthroats, Captain; but we are determined. We need more than the hundred ships which we have aboard. We want ten thousand—enough to cover all the cities of the world—and all the high explosives available. We must work fast, yet with care. Therefore, my final word to you is: If you wish to see Miss Deneen live happily—or live at all—follow my instructions to the letter!"

CHAPTER III
Brettnor Meditates

THE two young people gasped. The Grand Master nodded and pointed to the door: "Go," he said, still smiling to himself.

At the last word of the Grand Master, a guard entered the room and guided the two captives through another door into the great aisle. There they met another mem-
her of the Order, who told them to follow her. Several hundred feet farther down, the man stopped where the corridor was lined on either side by a number of doors; he opened one of them.

"This is the room of the young woman," he said. "She will enter here and make herself as comfortable as possible. Five minutes will be given the captain to say "farewell"; and then he must accompany pilot and plane No.78 to the mainland."

The two young people immediately forgot the presence of their guard. But there was no time for them to discuss the matter further. Unharnessed they embraced, and Nadia whispered: "I'm afraid I'm costing you your honor—your life, Fred!"

He kissed her: "It's worth it!" he said. He held her close and thought hard for a moment. No idea of escape coming to him, he thought of her welfare as a prisoner. "Remember the old formula, dear—let us live in the memory of our love, no matter how unpleasant our path."

She sighed: "You always think of things, Fred. "I'm sorry," she lowered her voice to a whisper which only he could hear"—you'll find a way out of this, too!" Whereupon the guard took his arm and ordered him to depart.

Brettnar, in order to leave Nadia there in the doorway of her quarters, had needed all his will-power. The whole affair was so contrary to every ideal he had cherished—freedom, love, the inheritance of every American to live without slavery and without force! And now a daring act of piracy had placed him in this situation!

He must find some way to combat this Grand Master and his wild dreams. He wondered curiously why the Grand Master should wish to conquer the world; why, in fact, any one should be so greedy. And yet, as he reasoned further, the Grand Master might possess ideals of his own. Perhaps the ruler of this floating kingdom wanted to reign over the entire world, so that it might attain even greater civilization and progress. But again, why should he set himself up as the arbiter of the world's destiny? There was little suffering at least in America. Nor was the age-old cry of misery now ringing from the lips of the newer and finer generation of Europeans. Prosperity, throughout the world, had been brought about by a great program of cooperation between individuals and nations, all of whom had realized that this planet is small and that the happiness of all means the happiness of each individual.

Now, in this age of peace and plenty, there had arisen the spectre of this gigantic piracy—

He was walking along the decks, escorted by the guard, when his mind came back to the reality of what he must face. The Grand Master meant business. Millions of dollars had been expended in this submarine structure alone, how many millions he could not calculate. It was an immense thing, occupying an almost inconceivable space in the water. It was so built that, when it came to the surface, only the decks were visible. The remainder of the ship was under water, but he saw that it was almost indestructible by attack from the water. It had thousands and thousands of compartments and watertight doors. It contained immense machine shops and dynamos, and that newly-conceived apparatus for the taking of motor fuel from the different elements. Power? If appearance did not lie, the Grand Master had power; if his assertion were true, that ten thousand pilots belonged to his Order, he had enormous power; for no nation on earth had possessed more than that, since war had vanished from the earth. And now, in place of international war, a powerful individual was arising to menace the earth.

Another Capture

On his way up to the surface, Brettnar saw hundreds of men and many women carrying on the multitudinous details of life, and all apparently happy in their surroundings. At first he had believed that they, too, were fanatics carrying out the wishes of a fanatical leader. But their cheerful industry and efficient manner of carrying on their life astounded him. The guards, who appreciated Brettnar's astonishment, seemed to feel the chasm between them; for there was not an unnecessary word spoken.

Presently they arrived at a great opening that led up to the deck. Here the sun shone in, and here and there were the great lead-covered covers of the sun-power converters. As Brettnar learned, the sun's energy was being converted into electrical energy which was stored in great batteries to be used during days of the inevitable fog. They climbed the stairs—ladder, in the language of the sea—and emerged upon the huge deck. A large plane was sliding down for a landing, and another of the pursuit-planes preceded it. As the large ship came closer, Brettnar recognized it as a big trans-Pacific passenger liner of the International. And, as he made out the ship's number, he gave a start; for this was Joe Blaine's craft.

When the ship had finally landed and taxied into position near the hatchway, Captain Blaine emerged from the gangway, under guard, and looked about him, with bewilderment written on his face. He saw Fred, gave a start, hurriedly started toward him. The guards intercepted them.

"For God's sake!" said Blaine excitedly: "Was this your game, Brettnar, when you asked for a cargo plane? And you are in with that gang of pirates that disguised themselves as passengers and seized my ship!"

The guards motioned their prisoner away.

"No, Joe," Brettnar answered quickly: "I'm as innocent as you are. I wanted that cargo plane so I could be alone, but I discovered later that these people had abducted my sweetheart. I followed them, and was taken here."

"Good Heavens!" gasped Blaine. He was silent for a moment. "Sorry, old man, I was so hasty!" The guards were forcing him down the ladder. Brettnar waved at him and turned to his guard: "I'm ready now," he said simply.

Presently a small amphibian plane was wheeled from the elevator, and a pilot came out to tune up the motor. He called Captain Brettnar to enter the cockpit. Fred climbed in, the plane rose and they were off on a zigzag course in the general direction of the California coast. This weaving flight was, evidently, the ruse which Marino's flyers used to cover their tracks. Six hours later they slipped into a small, unpretentious airport, a few miles from the Grand Central Terminal. When the plane had landed, and the motor was cut out, the Marino pilot said: "You're to phone and tell your headquarters that you crashed on the mountains in a fog, and that I rescued you." Brettnar picked up the instrument and, dialing his office, spoke to the superintendent, repeating the story which had been prepared for him.

When Brettnar had finished, his companion asked: "What do your officials say?"

Fred tried to make light of the situation:
“They’re all up in the air,” he said smiling, “and if they knew of the existence of Marino there’d be a sudden war. I hear that Blaine and his ship disappeared between here and Honolulu, without a word or even an 'SOS.' The officials don’t know what to make of it, and they’re naturally disappointed in me for having lost my ship. I’ll have a hard time sticking to my story.

‘You’d better stick to it, though!’ snapped the Grand Master’s henchman: ‘It is useless to fight Marino, even if you were yellow enough to desert your girl and tell the truth. You’d never see her again—and, believe me, you yourself wouldn’t live longer than twenty-four hours!’

Brettner shuddered. ‘I suppose you have the best of me!’ he said: ‘Well, Skipper, if we’re to be friendly enemies, let’s get down to brass tacks. Are your men going to make life miserable for me by shadowing me?’

The pilot from Marino nodded.

‘Well, will there be any objections to my going to my girl’s apartment and getting her some of her clothes?’

‘None.’

Brettner thanked him: ‘I’ll go to the office first, and arrange to leave, if they’ll trust me with another plane, tomorrow morning. South to Guayaquil on the same route. I’ll meet you two hours out.’

‘Don’t bother about the time,’ said his companion, a rather good-natured fellow who had seemed pleased with Brettner’s nickname of ‘Skipper’: ‘I’ll follow you out.’

‘But don’t you think headquarters will want to see you and thank you for having saved the life of your valuable pilot-captain?’ Brettner said satirically.

‘Yes! I brought you here only so that our agent would know ahead of time about your arrival. Your offices are buzzing with excitement by now. Our man is one of your employees, and will be watching you when you arrive. Let’s go.’

They got into the plane again and, after skimming over the residential section of the city, landed at the Grand Central Terminal. As they did so, the chief dispatcher came out to meet the plane. He was, by name, Gastro—a short, fat man with a heavy shock of grey hair. His peculiar appearance had made him an outstanding character in the minds of the patrons of the International. No one who had ever seen him could forget his oily face and his great hair. And, strangely, he was smiling when he shook Fred’s hand in greeting.

‘The loss of those three planes has certainly aroused the officials,’ he said: ‘But I’m glad you’re safe.’

The acute Brettner could not help noting, when he introduced his ‘rescuer,’ that the eyes of the two met in a manner that told that they were already friends. They exchanged ostentatiously formal greetings and talked as strangers. But, as Fred Brettner looked from one man to the other and reviewed the events of the day, he was averse to the possibilities inherent in Gastro’s association with Marino.

CHAPTER IV

Gastro

GASTRO accompanied Brettner through the throng of planes and into the field office, leaving the pilot with his plane. Fred took a seat across from the dispatcher, who had relighted his inevitable cigar and was regarding him blandly.

‘The officials are deeply concerned about so many mishaps, Captain,’ he began.

Fred felt that strange shudder run through his body. ‘We have lost three planes today,’ continued the dispatcher, ‘and you are the only pilot who has been lucky enough to return. It is reported that a number of privately-owned planes have disappeared suddenly while on cruises. I do not know to what we may attribute these strange disappearances. But we’ve got to go on. The commerce of the world must not be delayed by the loss of a few ships.’ He chewed the ropey cigar for awhile and studied the floor: ‘I’m giving you another ship, Captain. I suppose I’d give you any number of ships before losing faith in you.’

Brettner gasped, it was all working so smoothly. ‘Oh, I—’ His voice fell: ‘Thank you, Gastro.’

The dispatcher rose and walked up and down the room. He had lost his bluntness and was now visibly nervous. ‘Good Heavens, Captain,’ he said finally, ‘we mustn’t lose all our ships! We’ve got to have men who will exert every effort to save their commands, even at the expense of their own lives. You asked for a cargo plane this morning—were you afraid to take passengers out on your first trip?’

‘No,’ said Brettner: ‘I wanted to be alone—I had some trouble.’ His voice fell: ‘My fiancee suddenly disappeared, leaving me only a line or two. I suppose that’s my own affair, though!’

‘Of course,’ said Gastro: ‘Of course—Of course.’ He said it the third time, as though the words fascinated him: ‘Come around tomorrow and I’ll give you another cargo plane—with an important load for Buenos Aires. You must get it through. Good night!’

‘Good night!’ said Captain Brettner, in a mechanical voice. On the street again he was suddenly conscious of being in the hands of so powerful an Order, with agents in such unexpected places that he did not know whom to trust. His best friend might have belonged to it, ‘Conquerors of the World,’ eh? Well, they had him. Nothing short of death could now relieve him of his responsibilities to them, responsibilities which he must fulfill if he was to save Nadia from death or worse. He had the consolation, at least, that he would never have stolen a penny for his own gain. But to save the life of Nadia, what might he not do? ‘Conquerors of the World?’ And wrecking the happiness of youth in order to fulfill a mad dream. Of course that would be their method. Entrap young men into their Order, to get them to deliver their stolen planes. Planes cost thousands of dollars. A big cargo ship such as the one Fred had landed upon the deck of Marino had cost two hundred thousand, to say nothing of its costly freight.

‘Whew!’ he breathed. ‘This Order has the system. Their planes cheaply obtained—stolen. Ready to rob government stores of explosives. Using the sun’s energy to give them power. Gee, if I could only induce the government to raid Marino!’

But he knew he dared not make a false move. He was certain to be observed, and the result would be the sudden death of Nadia. No, there must be a more subtle way. Schemes ran through his mind; but none of them seemed practicable. Men were watching him; perhaps the very policemen in the streets belonged to the Order. An attempt to converse with a policeman might bring about his death. How many people were in the hands of this fanatical Grand Master? So many planes had disappeared that day as to alarm the government officials. The news bulletins carried shouting headlines of great losses all over the land; sudden disappearances for which there were no clues. While pass-
ing a newspaper office on his way to Nadia's apartment, he heard the radio announcement from the governor's office, of an additional reward of twenty thousand dollars for information leading to the discovery of the missing passenger plane. Brettner shrugged his shoulders. The world was totally unaware of what it was facing.

At Nadia's apartment, he procured her key from the landlord, who knew him well. In her living room, he stood motionless for a moment. The atmosphere brought back so many memories, and struck so much terror to his heart when he thought of what she might suffer, that he sank into a chair and covered his head with his hands. Is life like this? One tries his best to live honorably, by the law of his being, and a great, crushing force arises to smash his life to bits.

Within his mind was the consciousness of having a great battle to fight. He must not give way to weakness. He must be strong and clever. Were the battle for himself only, he might have taken a great chance, a long shot. But, with Nadia's life hanging in the balance, with their love restrained, their entire futures threatened with ruin, only the subtlest moves could save them. He knew what he meant to her and what she expected from him. He could not point her. But this was not a question of pride—it was a fight for her life.

The flyers who had first hopped across the ocean had only their own lives at stake and could take chances; he could take none. He must save Nadia and, in doing so, he would save the world.

So Captain Brettner took a small traveling bag and filled it with Nadia's belongings; after which he hurried back to his hotel. Ceaselessly his mind reviewed the possibilities of combating the forces of Marino. No possible way of telling the governor. They would lose a forced smile upon his face. The slightest move toward giving away the secret might result in his death. The only means by which he could act through his employers would be discovered by Gastro who, he was sure, was a traitor in the employ of Marino. And yet he could prove nothing when called upon to do so. He decided to attempt a few hours of needed sleep, which might help to unravel the tangle of thoughts which ran through his mind.

Just before he reached the entrance of his hotel a pauper came close to him as they approached, speaking low and quickly: "Remember, Marro, watches you. Go to your room. You will be watched from the room adjoining yours." The man went on with unchanging pace, leaving Brettner on the curb staring backward at him in amazement.

Two Conspirators Meet

THE Buenos Aires freight plane was loaded and waiting the next morning when Captain Brettner walked nonchalantly into the office and saluted Gastro, who had been informed of his arrival. "How goes the weather?" asked Gastro. "A fine day, Mr. Brettner," replied the clerk. "No, thank you," answered the pilot. "A fine day, Mr. Brettner," the clerk said again.

A stranger who had landed his plane on the field hurried into the office. Gastro appeared not to observe him until four skylarking pilots had passed on through the gate nearby; after which he nodded to the newcomer. There was a whispered conversation between them.

"Better keep Brettner aboard after this," said Gastro. "He's the only new man you've risked sending ashore—dangerous business."

The strange pilot nodded slightly: "True, but we have his sweetheart. He's a valuable man. The Grand Master needs him for the dangerous work."

"Oh, I see. He wanted to see if Brettner could be trusted, eh?"

"That's it," said the pilot: "His hands are tied. Your tip about placing his young woman in our power was a good one. I have been told while aboard that, if he shows any hesitation hereafter, he will get what all traitors get—the extermination room."

"The what?" Gastro's face paled as he leaned toward the stranger. The latter looked at him intently:

"The extermination room. A bare room with vents in the walls to admit a gas that disintegrates whoever is inside."

"My God!" thought the dispatcher.

The pilot continued proudly: "It was I who suggested to the Grand Master that this room be put to use in the case of all prisoners we cannot use, as well as for traitors. We are holding the threat of it over the young woman, to ensure her lover carrying out the great mission."

Gastro shuddered inwardly at this man's words.

"Yes, the great mission?" he said aloud.

The pilot nodded: "The thing that only the Grand Master knows. However, he is now sorry that he permitted this young man to lose a plane and thus lose favor in the eyes of the officials. It would have been better to allow him to gain more of their confidence, and then turn everything over to us. It seems that Marino's success lies in the hands of Captain Brettner."

The pilot smiled again.

"The Grand Master is very astute," breathed Gastro.

The pilot's eyes narrowed: "No one dares to think him unwiseful," he said.

"If I had done so, I would never have accepted your proposition," said the dispatcher: "But I want to be the ruler of one of those South American lands."

"Your wish will be gratified when we have succeeded," said the pilot.

Captain Brettner lifted his plane above the fog, south of Los Angeles, and set his course indicator for Buenos Aires. He must fly along it for a few hours to avert suspicion, before turning toward Marino. His great problem was to avoid involving through his mind, in the depths of which he felt there must be a solution. He would cheerfully have given his own life, if that would help. But there was Nadia; what was happening to her now? Would they ever be free to love each other again, to go their own way as free men and women do? He writhed inwardly. Then he straightened and began coolly to consider matters. He was in a most singular position. There was one possibility by which, if nothing interfered, he could save the world from Marino. The solution to his problem he saw lay in Nadia's ability, to send a message to Metter, the greatest chemist of that day, whom he knew. Metter had finally proved that he could place, in the bulk of a bomb a man could carry, an explosive powerful enough to destroy everything within a mile; the discovery had just been reported briefly in the radio news bulletin, which he had tuned in, while in his room the night before.

Two hours out—five hundred miles from Los Angeles—there drew alongside the pursuit-plane which had taken him ashore the evening before. The pilot did not even look his way, but turned towards the west; and Brettner followed.
As Brettnert moved along behind the other plane, his thought returned to Metter and his tremendous invention. Then he thought of another resource which might, possibly, save the situation. The psychological experts of his day, exponents of the development of the human mind, had so nearly reached perfection in their science that the long scoffed-at feat of mental telepathy had come to be realized among them. If he could only "tune in" on one of them and tell his great secret, the receiver of it might be able to warn the nation of this danger. He would try it, not knowing whether or not he was succeeding in the least. He would endeavor to communicate with one of them in particular—Professor Ray, whom he had met months before, on a Vladivostok-bound air-line. The professor had then mentioned, and had demonstrated, some of the fundamental principles of mental telepathy, which Brettnert had absorbed with the greatest interest. But he did not know where the professor might then be.

However, he took from his pocket a small ball, a common steel ball which had come from a bearing, and used this tiny convex mirror as a concentration point; thus making use of the principles which had set forth by the professor, he looked into the glistening object for a moment and focussed his mind upon a mental picture of Professor Ray.

The image did not appear for some five minutes, by which time the plane hit a rough spot in the air and required his undivided attention. Fred looked up to see the pursuit-plane above him. He then reverted to a crudity of several decades before and swore aloud. He was angry; his anger served him well. For, when he again looked into the ball, with fierce determination in his soul, the image of the professor stood out better than he could have expected. He believed that he now had mental access to Professor Ray. But he kept his mind off Marino. He made a mental picture of his room at the hotel, with the professor entering. He mentally told the professor to wait therein for him, three days hence, at two in the afternoon when he expected to arrive. Perhaps, dangerous. It was a bewailing man grasping a straw. Would Ray recognize him and conceive what urgent need might lie behind this unusual request?

Presently Brettnert straightened his plane again and looked about him. He was flying straight. He looked into the ball again, hoping the professor would respond. He closed his mind to everything save the supreme effort, desperately concentrating on Professor Ray's image and the message. Finally he relaxed, as he found the mental picture of the professor nodding at him. He relaxed and wiped the sweat from his forehead. He hoped that his conversation with the professor had been real; that it was not a product simply of his fervid imagination.

What Nadia Revealed

SOME time later, Fred Brettnert looked out to see the pursuit-plane hovering near, nosing down for a landing. He saw the little plane slide several thousand feet, circle and then slide down to the ocean surface. It must be Marino. It was! He saw the plane taxi up to the elevator and disappear. He circled the great deck, put the great freighter "on her ear," and slipped for a landing. He came in slowly, with the old "Lindbergh skill," as Blaine had called it. He had often thought how skillful the Lone Eagle must have been, to fly such a contraption as The Spirit of St. Louis across the Atlantic with a low-powered motor of his times. Blaine had commented that Brettnert could have done it before breakfast with a modern plane.

The guards met him as he descended to the deck. Not a word was spoken. He was ushered below into a room where there was a table, with food and plates for two, and was instructed to wait for five minutes. At the end of that time Nadia came through a door opposite. They embraced. It all seemed too good to be true. It was a trap, he was certain, and he wondered how he could tell her. As he gazed at her, her eyes showed a glint of understanding. They talked of trivial things and avoided the topic which most concerned them. There must be cavedroppers about. He could see that she wanted to scream in the tension she was under, but she was bearing up like a good soldier. Nothing weak or petty in Nadia!

"I brought your things," he said. "Left them in the plane. If they permit you to have them, I am sure they will be delivered safely to you."

"Was there a letter for me?" she asked, munching a sandwich.

"No, darling, nor does the landlord seem worried about your sudden disappearance. I suppose he knows all about it. Marino is all-powerful. I must do all I can to serve her."

He saw a sudden look of pain come into her eyes. So she didn't understand. Her look showed that she now believed that he had deliberately trapped her, that he himself was a member of the Order. She didn't know he was lying for her sake. But there were probably cunningly-concealed microphones in the room and, perhaps, telephoto instruments which showed every facial expression. His own countenance, he felt painfully sure, seemed unconcerned. She saw it, perhaps, as a deceitful face covering the subtle actions of the man whom she had loved. He dared not tell her that he was not a member, not even a sympathizer of the Order. Yet he could not continue the meal in painful silence. He had to talk.

"Marino has great possibilities," he went on recklessly: "It is governed by the greatest mind the world has ever known. I now believe he should be the dictator of it all. He is a conqueror, but he does not wish to destroy. He wants only to rule wisely. I am his servant. Perhaps, after all he has accomplished his purpose—and I am going to exert every effort in his behalf—he will be kind enough to give me a place of trust and importance. Who knows?" He breathed a sigh and avoided her look.

A door opened; a guard entered, stood silently for a moment, and then motioned for Brettnert to follow. Then terror filled Fred's soul. Nadia had risen from her chair, screaming:

"Take me out there—out there to that horrible room—For God's sake take me out and let me die! He—he is the greatest traitor in the world—a traitor to his country and to me!"

"It is best that you know," Fred lied again: "I can do more for you as one of Marino's subjects and make you far happier than otherwise. You must understand," he pleaded: "Have faith in me and in Marino."

"No!" she shrieked: "I'll die first! You didn't tell me—you took my life in your hands, so that you could have me with you in your association with these pirates! I hate you with all the bitterness of one who has loved you and discovered what a criminal you are. You used my love to steal my freedom! Love! I would rather die than marry you."
His eyes followed her as she tottered to a seat. A great pity filled him, but he knew he must go on. She was looking at him again, and he forced himself to face her.

"I wish they would let me walk into that room and die," she said.

"What room?" he asked, suddenly ignoring the guard's tug at his arm.

Nadia uttered hardly: "Into that room where the guards drove a hundred prisoners of your Order of the Conquerors of the World! Into that room of absolute destruction, from which no one may return!"

"My God, no!" he said, terrified.

"Your best friend, Joe Blaine went in there last night!" she said. And then she sighed and slumped, faintingly, to the floor.

The guard insistently pushed him through the door and into the aisle. He was blinded in the flood of his bewildering thoughts. His uncertain footsteps faltered. He had stood up under so much that the addition of this terrible news found him unequal to the situation. He, too, fainted, and merciful unconsciousness brought peace to his soul.

CHAPTER V

Some Regrets

THE Grand Master of the Conquerors of the World had dismissed his advisers and retired into solitude in his magnificent headquarters. He was, for some reason, in lower spirits than usual. Perhaps he regretted that the laws which he had laid down for Marino had exacted the lives of so many prisoners. Perhaps he felt himself in the power of an organization which he had started and which he ruled, and yet one which he himself could not deter from its course. He may have been reviewing swiftly his youthful idealistic dream of the conquest he was now engaged in. He had killed many in the initial work of building this great submarine and equipping it. Yet he had never wished to kill anyone—even for power. And, although he perhaps had seen the world already in the palm of his hand, he now felt that he had made a mistake, had gone against his own conscience, in decreeing the death of his prisoners. And in this hour he was nervously upset. In his agony and regret, he thought of ending his own life. But he restored his firmness in the belief that, once having accomplished his purpose of dominating the world, he might again forget—live down the terrible memory of the evening before when Captain Joseph Blaine had marched before a hundred other pilots and mechanics into that room of extermination, and to an unexpected death. He was still trying to clear his mind of the last compunctions when the door of his office opened, and his first aide came in.

"An important message for Your Excellency," he said.

"Proceed," snapped the Grand Master.

"Captain Brettnier, whom you ordered to report on his arrival, has collapsed upon hearing of the death of his comrades, Sire!"

The Grand Master's face paled:

"Who permitted him to know of this? A most damning demoralizing thing to tell so valuable a man!"

"Miss Deneen, Your Excellency—at luncheon. He acquainted her with his desire to become a servant of Marino; upon which she told him of the disintegration room and what happened there last night."

The Grand Master did not lose control of himself, as a lesser leader might have done. He had indulged in useless regrets, perhaps, but they must not deter his action. What had happened was now irreparable.

"How many planes have we aboard?" demanded the Grand Master.

"Three hundred and ninety-eight, Sire."

The Grand Master breathed deeply: "Radio to Castro ashore; he will meet our pilot in Captain Brettnier's room in the hotel in Los Angeles. Be sure to send a resourceful man for him. Also, have five hundred of our pilots ready for action upon an hour's notice; have their planes here and ashore equipped for destruction. Have the Grand Marshal remind them that, if there exists a traitor among them, he will die immediately upon being discovered. Deliver these orders yourself. Now have a guard bring Captain Brettnier here."

The Grand Master's voice fell abruptly. He wished he could simplify matters; but, as they stood, the world must be conquered before he could learn of the power which was being massed against it.

Captain Brettnier was brought in and placed on a chaise longue before the Grand Master, for he was still too weak to sit up. His audience with the Grand Master came as a relief; but he was determined to keep his lips closed and learn all that was possible. The Grand Master smiled reassuringly upon him:

"You have done good work, Captain. You have placed two valuable cargo ships in our hands without being suspected. Their cargoes alone are of great utility to Marino. The planes I will use in the work of reducing several important cities along the North and South Pacific coasts. How do you feel about all this, especially if I offer you, when we have triumphed, the governorship of Argentina?"

Fred was thoughtful for a moment:

"A most unusual offer—a governorship. Yes, if I can be of such service as to merit such an office, your slightest wish is a command. My only request is that you relieve Miss Deneen of the mental suffering which came of her belief that I had purposely allied myself with you and was aware of the plans for her abduction before it came about. Tell her what you may, otherwise. However, I prefer that you should release her and retain me to help you."

"She would tell the world of our plans," objected the Grand Master: "No! With her, matters shall stand as they are until you have carried out the great mission which I have planned for you. If I permitted her release, I might not trust you fully to carry out this mission. Upon your completion of the great task for which I have chosen you, I give you my word of honor, you and the young lady shall be free citizens of Marino; but not until then."

"What do you wish of me—what is this great task of which you speak?" asked Brettnier, weakly.

The Grand Master resumed his seat. His eyes sparkled and his forceful voice was impressive: "I gather from an informant ashore that you are acquainted with the great scientist, Metter," he said.

"Slightly," agreed Fred: "He was a passenger on my plane, on several trips."

New Orders

THE Grand Master was apparently pleased with himself. "Professor Ray was right," he said, smiling.

"Professor Ray?" gasped Fred.

The Grand Master nodded: "One of my worthy allies. A great scientist of the mind. He claims to have
tuned in on you today as you flew this way. May I ask why you wanted him to meet you, in your room at the hotel?"

Brettner could only tell the truth, astonished as he was. He knew that, if this mental science had been so developed as to reveal what was upon his mind at a given hour, they were likely to know the rest of his message.

"I wanted to have him help me obtain the release of Miss Deneen," he admitted.

"You are an honest man," said the Grand Master with cynicism. He leaned backward in his chair and looked toward the ceiling, then straightened with determination: "Go ashore with your pilot—No. 313, this time. Return to your room in the hotel. The pilot will there meet Gastro, whom you have already suspected as my agent. You are not to return until after you have obtained from Metter a few pounds of those explosive tablets. You are to telephone, as soon as instructions to do so are given you, and make an appointment to meet him. You will tell him you require this explosive to bombard a shoal out in the Pacific, and thus create an island where you can have a little place of your own. It sounds like a weird story; but it has been done. I am confident that he will let you have the explosive. It is the only one which will serve the purpose of the great mission; the particulars of which you are to know when you have returned and reported to me. I am going to give you five thousand pieces of International gold with which to pay Metter. You may depart within an hour. Remember, if anything transpires which shows you to be a traitor to us—and to your sweetheart—it will mean death to both of you."

Brettner rose quickly from his lounge, feeling much stronger. Apparently not in the least concerned by the last words of the Grand Master, he was inwardly troubled, however; for with Professor Ray following his mental trail he dared not make a tangible plan. It seemed that his fate was sealed. But he then remembered how the professor had told him of the art of placing his mind out of focus, so that none save himself could know his thoughts. And, if he could accomplish this, then Professor Ray, who had chosen to join the "Conquerors of the World" might prove his own undoing.

"This Grand Master is a resourceful character," he thought, while he was being helped outside, and into the room where a white-shirted physician was to examine him and fit him for "the great mission."

Knowing that not only the fate of Nadia and himself depended on his ability to conquer Marino, Captain Brettner was at a loss to steady himself for the great ordeal which he must soon face. However, in the depths of his mind, there lay a message that vaguely conveyed some hope. The thing was not definite, but his intuitions were strong; as were the intuitions of all educated and refined people of his day. And he knew this plan that was still incubating beneath his consciousness would come to success, in some manner.

That evening found Fred Brettner again in his hotel room, where he waited, more or less anxiously, for the return of pilot No. 313. The latter had brought him to this hotel near Los Angeles, and escorted him all the way to his room; then left with the assurance that he would return as soon as Gastro had taken possession of the room next to his own.

When Fred opened the door for a peep down the aisle, and saw Gastro enter the room next to his own, a sudden inspiration seized him. He remembered the orders which had been given him—to converse with no one. He imagined this applied to such individuals as Gastro, as well as to those not associated with the Order. So he suppressed his desire to spring at the traitor's throat, and stepped quickly back into his own room.

He did not close the door tightly, though, but stood there waiting for the appearance of the pilot who was to return and give him the word to telephone Metter. He had a conviction that the pilot would first talk with Gastro—and so overhearing any conversation between them would be of benefit. So he was waiting close to the door, when he heard footsteps come past to Gastro's room, and a soft knock. Fred heard Gastro open the door, and heard it close again. He opened his own door softly to see if the pilot had entered Gastro's room. Concluding that he had, Fred stepped softly to the door of the other room and bent down to listen. He heard the pilot ask Gastro to get something from the dresser. The latter turned around apparently to obey and in that moment, through the keyhole, Fred saw the pilot whip something from his pocket. It was a strangely-shaped weapon—"the Radium-Ray pistol which kills instantly without loss of blood," Brettner thought horrified. Before he could open the door and spring upon the assassin the latter had turned the weapon upon Gastro. There was a silent, bluish flash and the dispatcher wilted to the floor and lay still. Then reason left Brettner. At the sight of this atrocious act he forgot the danger that menaced himself, Nadia and the world. He swung open the door, threw himself upon the back of the murderer, and gave his arm a sudden wrench which sent the gun spiraling into the corner. The big pilot turned upon him and, showering him "fire from under his hat" squarely on Fred's face. But the latter, in his fury, drove his own fist into the body and face of the pilot as fast and hard as he could strike.

Round and round they struggled. Once, in the turmoil of it all, Fred felt himself weakening. But a picture of Nadia came to him, with all the radiance of her smile and, again, all the bitterness in her look the last time he had seen her. These "Conquerors of the World," were ruthless pirates. His own pal, Joe Blaine, innocent of all intrigue, had been murdered by them. He must overcome this man. Yet the pilot was crowding him, and working him around, in order to get at the pistol which lay near Gastro's body. Brettner realized the fact and himself struggled for the position which the pilot had tried to gain. And, when once he had forced his opponent's back against the wall, the grim determination of the unbeatable fighter filled him. He continued to exchange blows now with a renewed fierceness. An unbreakable soul dominated him. Yet an unexpected blow unbalanced him, and he found himself on his hands and knees on the floor, the pilot leaped to get the pistol. A prayer ran through Fred's mind; he himself was willing to die, but now in his hands might lie the fate of the world. He hurled himself in a flying leap toward the knees of his antagonist; it was the perfect tackle, not forgotten since his college days, and the big man crushed to the floor. His head struck the side of the bed and he lay still, an ugly wound in his temple.

The blow had been fatal. Fred bent down, felt of his heart; it was still.

There was no time to lose; he hurriedly closed the door, locked it, and returned to his own room. Quickly, he washed the blood from his hands and face, hurriedly changed his suit and was ready for further action. He opened the door and then looked down the hallway;
it seemed, fortunately, that no one had heard the fight. So he again opened the door of Gastro’s room and entered. The killing of the dispatcher puzzled him and he wished to discover its meaning. Searching the man’s clothes he came upon a curious little ledge; it was that of the United States Secret Service! So that was it! Gastro, in the employ of the government, had been outwitted, decoyed to this room, and put out of the way.

But he could not waste time over that. He had a mission—to telephone for Metter. In the telephonophone he saw the face of a Japanese servant, and asked for the scientist:

“He is out of the country, Sir,” spoke the servant.

“I do not expect him back here for a week.”

“Are any of his colleagues here?” asked Fred, suddenly frightened. He was thinking of what would happen to Nadia if he could not promptly return with the pills of explosive to the Grand Master.

“They have accompanied him,” answered the servant.

“Can I help you?”

“Yes,” said Fred: “I am going to ask you to do something for me.”

The face of the Japanese was expectant and pleasant. Whereupon Brettner outlined his needs. The face of the servant was wreathed in a smile. He hesitated a moment. Brettner smiled and added: “And there’s five thousand pieces of International gold for you if you arrive here within thirty minutes.”

The servant agreed instantly.

While waiting for the man’s arrival Fred examined the weapon, making certain that he could operate it. Then he put it into the carton in which he had carried the gold, placing the money on the bed. When the Japanese arrived, Fred greeted him with enthusiasm and an apparently light heart, exchanged the money for the package of tiny white pills which had cost many lives, and might cost so many more, and bade the man adieu with a feeling of relief.

No words of explanation had been necessary. Only there had been in the eyes of the Japanese a strange light of humor—a thing for which Fred could not account until he looked into the mirror and saw how his face was swollen. Perhaps he could offer an excuse to the Grand Master, he thought. So he switched off the lights and hurried from the hotel. He wondered where to go next, what to do. Perhaps he could find the course by compass. But, if he could get a plane through the Order, the automatic course-indicator would take him there. Reentering Gastro’s room, he walked over to the pilot’s body and ripped from the inside of the man’s blouse a green and white ribbon; that was evidently the sign of the Order. So he drove out hastily to the tiny field, where the ships of the Order had always landed, and on displaying the ribbon was give a choice of planes. The one in which he had arrived was waiting there, headed into the wind, so Brettner chose that. Ten seconds later, he was off to Marseilles.

Four hours later, while dawn was rising in the East, he saw the indicator settle to zero, and knew he was again over the floating nation. He nosed down and searched the ocean about him until finally he discovered the deck of the great submarine. Then he leveled off, circling a mile away, while he contemplated his next move.

Suddenly he thought again of Professor Ray. He wondered if the mental expert had discovered what had happened. By means of what he had learned, he believed that he had closed his mind to the professor. But what if he had failed?

The brightening sky had surely revealed his plane to those below. He dared not wait longer. He nosed down and let out the pontoons until the little plane settled quietly in the water near the edge of the submarine. Her pontoons held her there until Fred cleared her and found himself on deck. He looked about him, but discovered no one. Guards always waited at the landing places on deck; it would seem that an amphibian never landed in the water.

Apparently, too, the Grand Master was ready to move the great structure upon a minute’s notice. And suddenly this seemed to happen, in an unexpected way. A great stream of men suddenly emerged through a hatchway, perhaps a quarter of a mile away, and stood waiting. Then the elevators brought up plane after plane, and into each of these climbed two men. The planes took their positions in line at the further end of the deck. The silence of the motors was weird, and the whir of the propellers was fantastic to Fred. He was frozen in his tracks for a moment, until he recalled all the ordeal through which he had passed. And then he slid down a hatch and hurried toward the room of the Grand Master. When he arrived, and convinced the orderly at the door that the packages contained what the Grand Master had been waiting for, he was ushered into the inner chamber; where he had to wait for only a short time. He listened to the voices in the Grand Master’s office. When the orderly announced him, he heard the Grand Master say, “Yes, yes—Bring him in.”

Fred laughed silently. A flash of intuition revealed to him, that the Grand Master was in immediate need of sympathy and assurance; that the agony of a troubled conscience for having sent a hundred or more of the world’s finest citizens to a terrible death, was eating at the vitals of the super-criminal.

Captain Brettner steadied himself. It was the first time in his life when he felt the desirability of a stimulus; for he was, by nature, almost totally incapable of deception. But his plans were made and he must follow them. He was surprised at his own resolution when the orderly escorted him again into the presence of the Grand Master. A coolness born of desperation had come over him and he faced the great pirate with his boyish smile.

The Grand Master was grave. “I am glad you have reported on time,” he said: ‘You have been in a struggle?” he added as he surveyed Fred’s features. Fred saluted: “To execute your orders, Your Excellency, I was forced to defend the explosives which you ordered. Gastro had turned traitor and killed pilot 313, and in turn I killed Gastro with the pilot’s Radium-Ray gun. On Gastro’s body I found the badge of the United States Secret Service. The bodies are awaiting discovery at the hotel. Of course I cannot return for I will be accused of their murder. I trust I am safe in your protection.”

The Grand Master studied Fred’s face a moment, and then directed a series of searching questions at our hero. Whereupon Fred related an ingenious tale of his suspecting Gastro, and the latter’s attempt to gain possession of the explosives; the ensuing struggle and the killings. “I had your orders to bring them here, and here they are.” He placed the dangerous packages on the desk and stood at attention.

The Grand Master smiled again, reassuringly: “You have proved yourself,” he said. He pressed a button, and his orderly entered the room. Then he turned back to Brettner.

(Continued on page 557)
The austere Mr. Maxwell rushed to save the machine and Mr. Trent rushed to save his cat and both arrived just as the cat let go and landed in a mad scramble on the faces and heads of these two gentlemen.
ORACE TREAT, of Treat Trout, Treat Corporation, Fiscal Agents, looked up as his secretary entered the private office.

"That crack-pot inventor is out here again, and he says that he is not going away until he sees you," she announced, indifferently.

"Well, dammit, send him in and let's get the torture over with."

The girl started out but was almost knocked over at the door by that "crackpot inventor" as he dashed in.

"Glad to see you, Mr. Treat, I'm Joe Flannelcake of the Sunset Aviation Club. You remember me; I was one of the fellows that helped launch that glider the day you dedicated our field. I've come to you to demonstrate the greatest plane the aviation industry has ever known; a revolutionary idea in heavier-than-air craft. As you know, it has long been the idea of aviators to produce a machine that would rise vertically from the ground, without a running take-off. My friend, I have just such a machine; a machine that fills a long-felt need; present planes will become obsolete over night; everyone will be riding in a 'Flannelcake Flyer'; you can't go wrong, it's—"

"Hey, wait a minute! Take a breath, will you?" said Mr. Treat.

"Listen, young fellow, I don't intend to listen to you practice side-show barking over some fool notion of yours. Now, what do you want; make it short!"

The self-styled inventor did not seem bothered at the rebuke; he only smiled blandly, and continued:

"Mr. Treat, you are in business for money; I have a stunt here that will make you plenty, if you want to finance it. I have a machine that will rise vertically; that alone ought to interest you."

"If it were true, it would interest me, but if you're another helicopter nut, I can't be bothered. By the way, did you make this machine yet?"

"No, I haven't; but that's where you come in, if you will—"

"Get out of here! I haven't time to listen to fairy tales!"

"But Mr. Treat, I haven't explained yet.—"

A button on the desk was pressed, and a well-dressed but mean-looking man walked in.

Said Mr. Treat:

"You're not going to, either! Oscar, give this guy the works."

Oscar responded by lightly tossing Joe Flannelcake into the hallway.

Horace Treat was primarily a hard-boiled financier; but he had done much to further the cause of aviation by understanding glider clubs in different districts, and by his interests in aviation societies. His position had made him the target for a number of get-rich-quick inventors who hoped for his financial backing. But, after this last inventor had gone he felt that in spite of the fellow's book-agent tactics he seemed sincere.

Two months later, a man bearing a model airplane sought admittance at the palatial Treat home in Sea Cliff Terrace. The butler announced to Mr. Treat the arrival of a Mr. Flannelcake.

"Throw him out! I've seen enough of that flat-head," growled Horace Treat.

As the butler left the library, one of the full-length windows opened, and the ever-smiling face of Joe Flannelcake appeared.

"You ain't seen nothing yet, Mr. Treat," said he: "I've got my plane here, and it works."

Horace Treat's anger was mixed with curiosity; so he said nothing as the inventor entered the room and placed his model plane on the floor.

It resembled the conventional form of toy plane, except that the rear airfoils or elevators were of the same size as the front wings. In fact, there was no telling which was the front; for each end had a propeller mounted on it. It seemed as though constructed from two toy airships, hooked tail to tail.

Horace Treat looked at it closely:

"Which way does it go, anyway?"

"Up," returned Joe, smiling blandly as ever: "Yes sir, it goes up."

"Well, let's see it go, then," snorted the financier.

JOE started to wind up the model: "You see, Mr. Treat, this plane is powered by a steel spring of the type found in German-made mechanical toys; it is light and efficient. A propeller is connected to each end of the spring; which causes both propellers to turn, but in opposite directions. You will notice a small gear on this prop; this is the rear end of the plane. This gear has a stop fastened to the teeth at one point, which automatically stops the rear propeller after it has turned a certain number of times. Now the idea of the thing is, that when both screws turn, the plane will not move along the ground, because they pull against each other. The angle of the wings is adjustable and, in starting, the front and rear wings are tilted oppositely. The wind from the propellers strikes the wing surface, and is deflected downwards, caus—"
ing the plane to rise upward, by virtue of Newton's second law of motion; or, now, lemme see, maybe it was the third law——

Mr. Treat was at last interested, or at least, curious; but he was also impatient.

"To hell with Newton; let's see the thing go!"

"Yes, certainly, of course; now watch, it's wound up, and as soon as I set the gear stop——"

"Somebody sure wound you up, too. If those propellers develop as much wind as you do, the thing ought to go to the moon."

"All right, here goes now; the rudder is set, so that it will circle the room after it's aloft."

Joe Flannelcake released a trigger on the device and stepped back. The propeller spun, and the craft rocked slightly to and fro on the rug. One end lifted slightly, it rocked a bit more, and then the whole machine slowly lifted, in a wobbly fashion, to a height of about three feet from the floor. At this point the gear stop took effect, the rear prop ceased turning, and the machine started to circle the room in a curiously lame fashion. The rear end hung slightly downward, and the whole machine wobbled back and forth.

"You see," commenced Joe, "I will have to put a motor of the Jenkins' reversible propeller on the rear end, which will reverse after the machine has lifted; this will push, and keep the rear end level. I shall also arrange to have the wings level out automatically, after rising so that it will fly faster."

The craft remained in the air about a minute and a half, and then gradually settled downward as the spring wound down. About a foot from the floor, the machine suddenly went into a side-slip, and landed in a corner on top of Mr. Treat's Maltese tomcat. The cat made several passes at it before Joe rescued the plane. But the cat growled ominously; it apparently thought the score hadn't been settled yet.

Mr. Treat arose with a broad smile and extended his hand.

"Well, my boy, it isn't much, but it seems to work. I'll tell you; get the thing fixed up, and be around here next Saturday afternoon. I'll have Mr. Maxwell, of the Panaman Air Transport Company, here to give his OK on it. If he likes it, we can have a real one made."

"Thank you, Mr. Treat, thank you; you have made a great decision, you will be hailed as the greatest man aviation has ever known; the royalties from this apparatus will make us as rich as Croesus, it'll——"

"Can the chatter and get out! And don't forget to be back here Saturday."

"Yes sir, I already have a larger model in the making, and I'll have it finished up by Saturday."

An Accident

At Saturday noon a group of men was assembled at the Treat home for the try-out. Mr. Treat, Mr. Maxwell, several reporters and a photographer were there to see the "latest" in aircraft. Mr. Joseph Flannelcake proudly displayed a model plane, powered by two miniature gasoline engines manufactured from cartridge shells. It was about four feet in length, and of about the same wing spread.

"Well, Mr. Treat, where shall we try it out? said Joe.

"We'd better try it outside; it's too big for the house."

"Not at all, Mr. Treat. The machine can be controlled perfectly, and besides, the wind is too strong to-day."

"Hmmm! Well, let's take it into the reception room then; but if it breaks anything, I'll break your neck."

The reception room of the Treat mansion was of ballroom dimensions; it was high-ceilinged, and adorned with pictures, vases, and bric-a-brac of artistic or antique design.

Joe placed his machine on the floor, and made adjustments on the rudder and on the gears.

"We have here, gentlemen," he began, "a true model of what the ideal plane should be. It is equipped with reversing propellers, adjustable wings, and automatic stabilizers. Now, gentlemen, this machine is fool-proof; it is so constructed, that it is impossible to 'crack up' in it. It cannot go into a tail-slip, because it has no tail; it cannot nose-dive, because of the adjustable wings; it can side-slip, but its perfect balance will cause it to right itself. It has no landing wheels, because it can travel straight up or down, and needs none. It can stop, start, and go backwards while in the air. You wouldn't have an automobile that had no reverse in it, would you? Then why have an airplane——"

"Will you please stop that salesmanship, and start that thing going?" broke in Mr. Treat.

Joe started each of the tiny motors by winding a string around a projecting shaft, and pulling on it. They sputtered a bit, but soon commenced to idle beautifully, emitting a noise like an outboard motor in the distance.

"Fine little motors, these," he said. "Made 'em out of forty-five shells; a piece of string from the gas tank to the manifold serves as a carburetor, capillary attraction, just like a lamp wick. Yes sir, this little boat will go straight up; just an application of mechanics, you know. Same thing as if you take an automobile, and go up a hill that is fifty feet high. The car will do it nicely; but if you should attempt to climb a pole of the same height, you couldn't do it. Not because the car hasn't the power, but because it is not harnessed right. Now, if you would put a drum of small diameter on the rear axle, and wrap a cable around it, and tie the cable to the top of the pole, the car could be made to pull its own weight off the ground. Similarly, with the plane, if you finally get it to a certain height, then why not straight up?"

The audience was becoming impatient; that is, except for a newspaper man, who was inspecting one of the motors, oblivious of Joe's speech. Said Mr. Maxwell: "Never mind about all that. Start the thing off."

Joe moved a small lever on the back of the machine, which caused the motors to speed up to a more or less uneven roar. He then removed his hand from the top of it and stepped back. The machine floundered about for a bit, like a mosh that has been burnt in a candle flame, and then lifted slightly from the floor. It slipped back and forth like a piece of cardboard in a high wind; and then rose vertically into the air. A cloud of pale blue smoke eddied up with it, making it resemble a pinwheel. The exhaust pipes threw a pretty little flame, and the thing was under way.

"Watch, my friends, the propeller is about to reverse," cried Joe above the noise. And sure enough, the rear blades whined a moment, then changed their pitch. The rear wings also adjusted themselves to the angle of the front ones, instead of opposite, and the machine started at a good rate around the room. It circled once perfectly, and the room was beginning to smoke up quite a bit, when Mrs. Treat entered the room, and, with a statement about smoking up her valuable tapestries, ordered the butter to open a window.
The window was opened; and when the plane made its next revolution, it was forced downward by the draft. It had been circling just over everybody's heads; but now it came down, and just skidded over a gorgeous chesterfield on the far side of the room. Up to this time no one had noticed that the Maltese was reclining on the said chesterfield; but as the plane passed over it, the cat made a springing leap for it, and sunk the claws of both forefeet into the fuselage. The craft had considerable momentum; it yanked the cat into the air, and then banked sharply upward from the added weight on the rear, like a big bird fighting a wildcat. The austere Mr. Maxwell rushed to save the machine, and Mr. Treat rushed to save his cat; and both arrived just as the cat let go and landed in a mad scramble on the faces and heads of those two gentlemen! The infuriated cat clawed deep furrows in Mr. Maxwell's bald pate with its front paws, while its hind legs were gaining good traction in Mr. Treat's mouth and nostrils.

**The Juggernaut**

The plane, released from its unwelcome passenger, continued upward at its same sharp angle. The first thing encountered in its line of travel was the expensive, glass-prism bedecked chandelier, which it struck vigorously. The rear propeller sustained the weight of the machine, while the front one merrily shot glass pendants all around the room. Soon the machine cut its way through and the remainder of the fixture crashed down to the floor. Above the groans of Treat and Maxwell, who were bleeding from many scratches, the voice of Joe, happy as usual, could be heard. He was talking to the photographer, who was setting his camera and enjoying the scene immensely.

"That proves the durability of my ship. It is practically wreck-proof. The machine is perfect."

But the machine wasn't as perfect as it might have been. Its control wires were severed, for it now pursued an erratic course around the room, scraping walls and dousing everything with the oil and gasoline that were exuding through several gashes in its body. The butler dashed out of the room, and Mrs. Treat ran to the rescue of her bleeding husband. She was stopped half way, however, by the flying machine, which struck her squarely on the back of the head; and the front prop proceeded to tear out her hair. She fought it off madly, and succeeded in throwing the machine backward into the air. It veered around, boomerang fashion, and then it shot over the photographer's head, smearing his face with oil. He reeled over backwards, and went down with the reporters like pins in a bowling alley; accidentally discharging his flashlight gun. With a smart explosion and cloud of smoke, this efficiently set fire to the gasoline that the plane had sprayed around. The room was in a turmoil when the butler returned with a shotgun and aimed at the plane, which now had one propeller in the goldfish aquarium, tossing water and fish about the place. The aquarium broke open, and the plane again took the air, just as the butler let both barrels go. He missed the ship, but took most of the tapestries and plaster from one side of the room. Joe Flannelcake, trying to catch his brainchild, was desperately running around the room, stepping and falling over everybody. How long pandemonium would have reigned is not known, if it were not for a lucky circumstance in the flight of the ship. For no reason at all, the plane suddenly started to fly straight—yes, straight for the large bay window at the end of the room. As a fitting climax to its reign of terror, it crashed loudly through the glass. Joe followed it to the window, and gazed wistfully after it as the strong breeze through the Golden Gate carried the plane into the waters of the bay. He watched the sport where it had disappeared, totally unmindful of the room behind him, which was now burning furiously. He was awakened from his coma by the arrival of the fire department; and, when he went through the window to the street, he was met by an angry group of blood-splattered men. They might have been recognized by their closest friends as Mr. Treat, Mr. Maxwell, and some gentlemen of the press.

"Well, gentlemen, it's too bad that things turned out this way; but really, it shows what a good machine—" he started to say.

"Good machine, h—h," said the battered Mr. Treat: "You dumpkopf, incohempoop, flatheadet, crackpot!"

And, as one man, they all started after Joe. But Joe had been a track runner once, and he was soon out of sight.

Spoke Mr. Maxwell, sorrowfully, as he staunched a new stream of blood from his cheek: "Even at that, I'd like to see a full-size Flannelcake flyer."

**The End.**

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*Turn to Page 484*
Now our line turned like a wheeling snake, high in the air and was rushing back upon the circle of our enemies. And as our long line of mighty cities whirled past them all our batteries were thundering.
CITIES IN THE AIR

By the Author of "The Hidden World"

What Has Gone Before

War has been declared between the American Federation of cities in the air and the combined European and Asiatic Federations.

The Americans are using great metal structures like dice, the cities being movable horizontally as well as vertically.

Captain Martin Brent, commander of one of the air squadrons, is called back to New York to join his fleet. They have learned that from Europe and Asia are coming two waves of attack on America.

Captain Brent's squadron, with a great number of other cruisers, is ordered to intercept the European invasion; while an equal number of American cruisers are ordered out over the Atlantic to repel the Asiatic invasion.

EDMOND HAMILTON

STRODE to the square little window, looked forth from it. It was quite open and unbarred, and large enough too to allow one to pass through it, yet as I projected my head from it and gazed up and downward in the darkness I saw that there was no need of bars across it. For the little window was set directly in the sheer, towering side of the mighty power-tower's pinnacle. Far up above our level soared that tremendous tapering tower, so far that the tip seemed among the stars above, while far below, a thousand feet at least, lay the smooth metal of the great plaza. And though there were other windows below and above us, each was separated a full ten feet or more from the other, and, as we knew, to merely escape from our cell into another level of the great tower would avail us nothing, since to gain the plaza outside we would need to pass through the tower's lower levels thronged always with armed guards. It seemed, indeed, that as Connell had said there was no hope of escape for us, the door being solid, thick metal, and as I turned back toward the other three something of Connell's own hopelessness had taken root within my heart.

And that hopelessness grew within me in the hours that followed. For when day came and illuminated with brilliant light all the giant air-city that stretched far around us it seemed only to emphasize the utter helplessness of our position. Far beneath on the great plaza lay many cruisers, and could we win to one of them we might well make a break at top speed across the Atlantic, since so simple in design and so unvarying in their exhaustless power-supply are modern air-cruisers that one man alone at their bridge-room controls could operate them. Yet to win down to those cruisers, down to the great plaza's surface— that seemed impossible. And so as that day waned, and night swept over the great floating mass of the towers of Berlin, to be followed by

The letters that come pouring in, with praises of "Cities in the Air" are best proof to us of the approval of Mr. Hamilton's latest story. But the best part—the most intensely interesting as well as entertaining finale—is presented herewith.

Let no one think that, just because the theme of the author's story is so revolutionary, it may never come about. Stranger things have happened and more so-called impossible inventions have occurred during the past few hundred years than the basic idea of a city floating in the air. After all, everything is comparative. One hundred years ago, a person who had declared that it would be possible to transport ten thousand men in a single vessel, and carry them in a week from New York to France, would probably have been declared insane.

But such is progress. And it behooves us to be careful when we indict anything natural as being impossible.
upon the city around us, we were as cut off from the world as though upon the moon. Twice each day, at dawn and at dusk, our door was opened by the guards that brought our food, that food being as in our own air-cities the paste-like synthetic compounds of artificial proteins and fats and carbohydrates which had decades before replaced the old natural foods. But though our door was thus flung open twice each day, there was no hope of escape for us in that fact. For the two guards who brought our food in to us carried their heat-pistols always in one hand, and always, night and day, there watched in the corridor outside a full score of similarly armed guards by whom one could not hope to pass living toward the cage-lifts. It seemed indeed, as Connell had said, that weeks of frenzied meditation could never disclose any plausible plan of escape, and so I lapsed with him into a state of half-lassitude that had been induced by our utter despair.

And so days passed. Not even the prospect of our own deaths which I knew to be looming before us, was sufficient to rouse me from that lassitude, not even the fact that at the end of that fortnight, as I had guessed, the great attack of the air-cities was to be launched upon the American Federation, and that it was for that reason that our captors had given us that time.

Connell, Macklin, myself—we three had faced in our time perils and risks enough, but so overwhelming was the doom that hung over us and over our nation now that it stunned us, held us in stupefied despair. But one of us there was that was not so stunned, and that was Hilliard, my young second officer. His eager, restless nature, chafing at our imprisonment and at the thing that was looming for our land, resisted stubbornly the deep hopelessness that had settled upon the rest of us, and hour after hour he spent in pacing about the little cell, or in striving to devise some means for escaping from it. And at last, upon the fourth day of our imprisonment there in the tower, he turned suddenly toward us with an eager cry upon his lips.

CHAPTER VI
A Daring Venture

I HAVE it!” he exclaimed. “A way that two of us can win free with—and maybe all! A chance out of millions, with death at the end of it, maybe, but a chance to get Connell and his secret back!”

“But how?” I questioned. “How can two of us, even, get clear of this cell?”

“The guards!” he exclaimed excitedly. “The two guards that bring our food each dawn and dusk—if we can overpower them—”

“It’s useless, Hilliard,” I said. “Even if we did overpower them we could not pass the score of other guards in the corridor outside, or the scores of others on its lower floors.”

“But listen,” he appealed, and then, as he went on to detail to us the plan that he had devised, I felt some slight measure of hope rising within me, saw that dawning hope reflected in the faces of Connell and Macklin.

“It is a chance!” he exclaimed. “And if we can do it, if we can get back to our own land, it means a chance still for the American Federation! For the European and Asiatic Federations won’t be starting their attack for another ten days or more, their preparations not finished till then, and in that time by bending every effort toward it our own engineers could put the new tube-propellers in all our American air-cities! Could make those cities able to meet the enemy cities, attack when it comes!”

So, with that foremost in mind, we swiftly decided that upon that very evening, when our guards brought our food at dusk, we would put the plan into operation, would stake everything upon it. For even if but two of us could escape by it, if Connell could be one of those two, and could get back across the Atlantic with his tremendous secret, it meant a fighting-chance for our Federation. And with that in mind the rest of us were willing to take all chances, to dare all risks. Risky enough the thing would be, we knew, all depending upon what occurred in our moment of rushing action, and numberless were the features of it that might go entirely wrong and ruin us. But we steel ourselves with the thought of what would become of our Federation if we failed. And so ready and tense with resolution we waited for the coming of dusk.

To me, through the remaining hours of that day, it seemed that never had the sun sunk westward so slowly. From our window we could see all the activities that went on in the great air-city about us, could see the thronging crowds which hung here miles in the air above the earth, and could see those activities lessening somewhat as the long shadows of sunset fell across narrow streets and smooth plazas. In the great plaza beneath, at the foot of that electrostatic tower in which we were imprisoned, there rested always a number of great cruisers of the European fleet, reporting to the First Air Chief there in the tower’s base, and now with the approach of night other cruisers from the war-marring masses above the city were slanting down to rest upon the plaza. And these cruisers we watched with intent gaze as the sunset’s light declined.

Outside in the corridor we could hear the occasional movement of feet as the score of guards there moved about now and then, but heard not the approaching feet of the two that brought our food. What if they were not to come upon this evening? Or what if more than two, or less than two, were to come? Either contingency would be equally ruinous to our plan, and with the passing of each moment we sat in an increasing agony of expectation, Connell’s eyes burning, Macklin as imperturbable as ever, Hilliard eager and tense. Then at last, when the shadows of dusk were falling across the great city of the air outside, were deepening in our little cell, we heard voices outside, the greetings of our guards in the corridor, and then a moment later the solid metal door of our cell had clicked open. Then into the cell stepped our two usual guards with our food, their heat-pistols ready as always in their right hands.

The eyes of one warily upon us, the other took both of the metal containers of synthetic food and reached to place them, as usual, upon the lower bunk-rack, at the room’s right hand side. Macklin was lying upon that bunk-rack having stretched himself out as though sleeping. The rest of us were lounging at the cell’s other side, the second guard’s heat-pistol watchfully upon us while the first reached toward the bunk-rack to place the metal food-containers beside the supposedly sleeping Macklin’s head. But as he placed them there, as he began to turn away from it, Macklin’s hands shot suddenly behind his head as he lay there and grasped the arm of the first guard in a single movement, jerking him toward the bunk-rack! Like lightning the second guard turned with his pistol toward that sudden movement and as he did so, forgetful for the instant of the rest of us, we three had leaped upon him! And then as Hilliard and I bore the second guard to the floor,
wrenching the pistol from him, Macklin and Connell had jammed the first one against the cell’s corner, with hand upon his mouth, and had him equally powerless!

The whole swift scene of action had taken but a flashing moment to carry out, and so lightning-like had been our movements, so careful above all had we been to gage with our hands the two guards as we grasped them, that no single sound saved for a few low-choking gasps had come from them. And then, while with hands over their mouths and with all the strength of our muscles Hilliard and I held the two guards, Macklin and Connell were swiftly stripping their tight-jacketed green uniforms from them.

A moment more, and Connell and Macklin were swiftly donning their own black uniforms of the American Federation and donning the green ones. Now came a restless movement of feet in the corridor without, and with the speed of utter necessity we took the two discarded black uniforms and forced them upon the two guards, holding them still voiceless and powerless. Then, that done, the two guards were as like in their black uniforms as Hilliard and myself; with Connell and Macklin, the latter having been chosen because of the similarity of his appearance to one of the guards, wearing now the guards’ green uniforms. And now the very climax of our endeavor was come, that moment upon which depended all, for now, suddenly removing our hands from the lips of the two guards we held, we added our own sudden cries to theirs, and at the same moment Connell and Macklin, in their green uniforms, were engaging in a mock struggle with us and with our guards, whose din seemed terrific there in the quiet upper levels of the great tower!

Instantly as those cries arose there was a rush of feet outside and the score of guards there poured down the corridor and through the cell’s door, to see four of us in black uniforms struggling apparently with two green-uniformed guards, who were in reality Connell and Macklin. It was the moment upon which all rested, and in that moment the score of guards acted as Hilliard had foreseen, gazing not in that wild moment of frenzied action at faces but at uniforms, seeing only in that first moment in the dusky cell four black-garbed men struggling with two green-garbed ones they had seen enter it but moments before. And, seeing this, they rushed upon us four black-uniformed ones, Hilliard and myself and the guards whom in the guise of aiding in the struggle we had held, and began to beat us back against the cell’s end, totally forgetting in that moment the two green-uniformed men they were succoring! And in that moment, as they pressed us back, Connell and Macklin were stealing swiftly out of the cell, and down the corridor toward the hall of the cage-lifts!

For but a moment more did we struggle with our outnumbering opponents there, and then as they gripped and held the four of us helpless and jerked our heads up wild cries came from them as they saw the faces of us, saw that two of us were their own guards! Then the next moment, needing no other explanation of what had happened, they turned with their own black-garbed fellows, rushed out of the cell, slamming shut its door behind them, down the corridor and toward the cage-lifts after Connell and Macklin! We heard those cries re-echoed swiftly over all the mighty building, heard rushing feet and repeated calls on the levels of the great tower above and beneath us. And then, as we flung ourselves to our window, gazed downward, we saw in the next moment two green-garbed tiny figures issuing from the giant electrostatic tower’s base far beneath us, running across the great plaza toward the nearest of the cruisers. They were Connell and Macklin!

I cried out with Hilliard hoarse words of encouragement, forgetful that none could hear from our terrific height, saw Connell and Macklin rushing up the slender gangplank in the cruiser’s side and through its open door, saw that door slam shut behind them, just as from the base of the tower there poured out after them a flood of pursuing green-garbed figures. Those pursuers were raising their heat-pistols, and a hail of shining heat-carpets were flying through the air toward the cruiser in the next moment, but as they shot toward it there came faintly up to us the droning of the ship’s great motors and then with all the power of those motors in its vertical lifting tube-propellers it was rising upward, was lifting smoothly and swiftly upward toward us! And at the same moment the green-uniformed crowd of guards beneath were rushing across the plaza toward the other resting cruisers, were rushing within them to soar up after Connell and Macklin!

Up toward us shot the lifting cruiser of our two friends, though, up toward our little window, for such had been our plan by which two, escaping, might succeed in rescuing the remaining two. When I looked down, saw beneath the scores of cruisers on the plaza rising now after it, heard through all the great tower and for far around it a great roar of rising shouts as the escape was discovered, saw the giant gleaming muzzles of the great batteries of heat-guns around the plaza turning swiftly upward on their pivots toward the rising cruiser of Connell and Macklin! And so the next moment as that cruiser shot up toward us, as I made out Macklin plain in its transparent-windowed bridge-room, driving it toward us, I flung an arm from the tower to him, shouting in frenzied appeal.

“Back, Macklin!” I cried, with Hilliard crying too beside me, “No time to get us—back home with Connell, for God’s sake!”

He saw my frenzied gesture westward, caught the meaning of my wild warning shout as the guns beneath swung toward him and the cruisers below rushed up, and I saw him hang there for a fraction of a moment irresolute, hesitating. Then the next moment, just as there came a swift-spreading thunder of detonations from the great heat-guns around the plaza he had whirled the wheel over and sent the great cruiser rushing away from the tower, sent it rushing westward through the dusk above the great air-city’s gathered lights. In the next instant there shot through the air where it had been the shining heat-shells from beneath! And then as Macklin’s cruiser rushed comet-like onward through the dusk the great heat-guns beneath were turning again toward it.

I cried out hoarsely as they thundered again, but with a wild, wild cry Westward had Connell evaded the rushing shells and were hurtling on. Now over all the great air-city, over all the mighty mass of Berlin was spreading a roar of alarm, and now the cruisers that had rushed up in pursuit were rocketing westward after that single fleeing one, the batteries beneath us holding their fire lest they strike their own pursuing ships. With our hearts pounding Hilliard and I saw that single little cruiser leap on, saw it shooting through the dusk until its gleaming shape was now far away from the great air-city, racing westward!
Swiftly, though the numberless pursuing cruisers were converging upon it, and then, as we strained our eyes to see the flying gleaming craft, there came a greater thundering of guns as all the suddenly-alarmed batteries at the air-city’s westward edge loosed their shells upon the fleeing cruiser! That cruiser seemed to halt for a moment unaccountably, there was a great blinding flare that could be made only by heat-shells striking, and then the cruiser, the cruiser that held Macklin and Connell and all the American Federation’s fate, was reeling blindly downward and out of sight, whirling lifelessly downward toward the earth far below!

CHAPTER VII

The Great Movement Starts

STUNNED and stupefied, Hilliard and I gazed out in that moment from our window, out through the dusk above the air-city to where the cruiser of our two friends had plunged to death. I think now that for those first few moments neither of us was able completely to comprehend what had happened, to comprehend what maiming fate it was that had sent our friends down to death there as they seemed making their escape. Staring forth blandly, we saw the cruisers that had been pursuing them, that had been overtaking them, turning back now toward the air-city, heard a cheer rolling across that city as the crowds in its streets witnessed the destruction of the fleeing craft, the glare of the shells that had destroyed it. That great roaring cheer from beneath penetrated at last into my brain with realization of what had happened.

"Macklin—Connell—" I whispered. "Macklin and Connell—gone—and the last chance to warn our Federation gone—"

Hilliard’s eyes were bright with unshed tears. "Our last chance," he said.

Looking back, I think now that it was not the passing of our one chance for freedom, nor the passing even of our one chance to carry Connell’s great secret homeward, that weighed upon us most in the following time. It was the swift passing of our two friends, of Macklin especially, who for long had formed with Hilliard and myself the trio that commanded my cruiser, that stabbed us most in those first following hours and days. Prisoned there as before, but two of us now where there had been four, we waited now in a certain heedlessness for the doom that we knew awaited us and our Federation. The wild break for freedom that two of us had made and that had ended in those two’s destuction, had apparently not changed the plans of the European First Air Chief in regard to us, and we knew that at the end of the designated fortnight, less than ten days hence now, we must either reveal all our knowledge of the American forces, which we could not do, or suffer death.

We knew, too, that even as Connell had guessed, it was at the end of that fortnight, ten days hence, that the European and Asiatic Federations planned to launch their final gigantic attack of air-cities, since it was evident that they wished to gain their information from us only to use it immediately in their attack. For now below, in the city’s base-compartment, the great new tube-propellers that were to whirl it through the air at such terrific speed were being completed, we knew, as in all the two hundred air-cities of the European and Asiatic Federations. The long months of experimentation over, it needed but weeks or days to rush those new tube-propellers into place. And had Connell escaped with his secret it might well have been, I thought, that even in the ten days left the new-type tubes could have been swiftly manufactured by thousands and placed in all our own American air-cities.

If Connell had escaped! But Connell had not escaped, Connell had plunged to death with Macklin, and the flaring speed on, at velocity that torned through that little cell, Hilliard and I despite that ever-approaching doom almost paid no attention whatever to all outside and about us, brooding there in silence hour upon hour as night followed day and day night. We had not, even, the slightest further thoughts of escape, altho such thoughts would have been hopeless, for now our door was never opened save by the full score of armed guards outside. So, losing all thought and all hope of freedom, we sat on in our little prison high in the mighty tower, dead to all the unceasing rush of preparations and gathering of cruisers in the city about us.

But at last, upon the eighth day after the break of Connell and Macklin, and the second day before our approaching doom, there came an event which roused us suddenly from that renewed apathy into which we had fallen. For days we had noticed that the crowds in the streets were proving fewer and fewer, the only people now remaining being groups of green-uniformed officials unceasingly moving in and out of the headquarters there. There was finally made clear to us the reason of their activities. For, as we gazed forth from our window on the afternoon of that day, we seemed to sense a certain air of anticipation in the people that remained. They swarmed forth into the great air-city’s streets; we heard in a moment more a strange great hissing from far below us, all around the city’s base and edge; and then were aware that with that hissing sound and with a great tremor of power that beat through all its colossal metal mass, the great air-city was moving! Was moving not slowly and majestically as air-cities commonly move, but was leaping forward through the air with sudden tremendous speed. We knew now that most of the city’s population had been removed to the ground and the movement toward the west had started.

Now came excited roars from the crowds beneath us, the great rumbling that was Berlin leaping forward as now as Hilliard and I leaned from our window with an excitement almost as great we caught our breaths. For we could see now, from the cloud-masses that lay beneath in the distance, that the great air-city was cleaving the air at a speed that was rapidly mounting to over a hundred miles an hour. Terrific winds were whirling all about our power-tower, as it shot through the atmosphere, and those same winds sweeping with titanic force through the city’s streets and about its towers forced the crowds in those streets swiftly within the shelter of the structures. And still at ever-mounting speed, the hissing of power and the tremendous roar of winds increasing still, the mighty air-city was whirling on, its soaring towers of metal swaying back beneath the awful winds of their progress, whipping through high cloud-banks and out into clear air again, giving us flashing glimpses of our own wind-swept window of the ground far outward and beneath flashing back at immense speed as we shot onward, tearing all the colossal city speed on, at a velocity that I knew must be over a hundred and fifty miles an hour!

A colossal city, speeding through earth’s atmosphere! Awed, despite ourselves, Hilliard and I clung at our window there as with all else in the city we sped on. A colossal city five full miles in its diameter, with all
its works and streets and giant batteries of heat-guns, and rushing above earth at a velocity seeming almost unattainable! And even as we watched, we felt the great city slanting upward with the same terrific speed, climbing swiftly upward until the air about us was all but freezing and then diving down toward earth once more on a long, gliding swoop! Then it had turned in mid-air, was flashing back over its course, was going through maneuver after maneuver until at last the great hissing from its base ceased, and it hung at its former height above the earth once more, the crowds in its towers surging forth now to renew their excited shouts.

**Last Preparations**

**HILLIARD** and I gazed for a long moment at each other. "The tube-propellers they were putting in—finished—," he said slowly, "And Berlin ready now for the great attack—"

"And all the other European Federation cities," I said, "and all those of the Asiatic Federation—all must be nearly completed now, their new tube-propellers installed also. And in two more days—"

It was indeed true—each had been brought in hammer-like in my brain and in Hilliard's in those hours that followed, those hours that were now closing down, one by one, upon the doom of ourselves and of all our nation. Two more days! Two more days at the end of which would have ended the fortight of our imprisonment, when would come for us the death that had loomed larger and larger during each of those passing days. Two more days at the end of which the great air-cities of the European and Asiatic Federations would rush like whirlwinds over the oceans toward our own slow-moving and helpless cities, to beat them down with all the thunder of their giant batteries. Two more days!—and at the end of them for us and for all the great air-cities and all the millions of the American Federation, doom!

It is not to be wondered at, therefore, that in the following hours, Hilliard and I felt close about us the intense despair that ever since the ill-fated attempt of Connell and Macklin had surrounded us. Through all that night following the first demonstration of the immense speed of the air-city, we sat awake, listening to the great shouts of triumph and exultation that came dimly up to us from the crowds that remained in the streets far beneath. The European Federation, we knew, already felt the glow of imminent victory that this new speed of their great air-cities would give them, and were exultant at the chance to annihilate completely the hated American Federation. And, to accomplish that, the very last great preparations were going on now in every part of the air-city.

Great loads of shining heat-shells were being transferred from the stores that had been brought to Berlin, to the giant batteries of heat-guns around the city's edge and its central plaza around the electrostatic tower. The cruisers of the European battle-fleet, still some two thousand in number, were resting on all the landing plazas, and were being cared for and inspected by hordes of green-uniformed attendants. All other air-craft were lowered into the great city's base-hangars to be out of the way during the oncoming combat. By a stroke of genius on the part of Berlin's commander, the power of the great air-forts had been added to that of the city itself, by simply placing the air-forts here and there on unused landing plazas, where they formed in effect great armored gun-turrets on the city's surface. And, finally, the mighty city's speed and power to maneuver had been tested rigorously. With all its peoples inside its metal towers, it was shot at terrific speed low and high above the earth; turning and dippin rising at that awful velocity like a flashing airplane rather than a gigantic city of the magnitude it really had.

Through all the hours of that night, and the next day (the thirteenth of our imprisonment) those great preparations, that unceasing rush of excited activity, continued. Night came, and still the last preparations were to be made; magazines were being filled, and green-uniformed figures were swimming in countless numbers in the streets; going about their maneuvers; battle-cruisers were moving ceaselessly across the sky. During the hours of that night, as Hilliard and I sat silent there, high above all the tremendous turmoil of the streets and plazas below, we sometimes raised our eyes to watch also the calm, slow march of the great constellations across the sky above; glittering groups of stars that seemed to look down with cool and contemptuous eyes upon all this mad flurry of human excitement and human endeavor. Dazing a little now and then, we sat there until at last dawn sent its rosy light across the world. It was the last dawn, I knew, that Hilliard or I would look upon.

Now, it seemed, all the preparations in the giant air-city about us were completed. The crowds that had moved in its streets during the day and night before remained, but silent now with the thrill of approaching combat. Tense and silent the city remained, as the sun crept up toward the zenith through the morning hours of that fateful day. And, high in our tower-cell, Hilli and I found ourselves gripped by the same tense feeling of anticipation. From our window as we watched the city, we made out the west, a dark spot rushing through the air toward Berlin, a spot that was growing steadily larger in size, that was broadening out into a large dark disk; and then as it came swiftly closer we saw with astonishment that it was a city, a giant air-city almost as large as Berlin itself!

**The Gathering of the Cities**

We heard a stir of excitement in the streets below as that mighty air-city came closer to us; then saw it slowing down until at last it had come smoothly to rest out to the south of Berlin, hanging there in mid-air a half dozen miles away. It was London! Even as I had recognized it, Hilliard had done so also. London! The great air-city that held all southern England for the European Federation, could be clearly recognized, not only by its size but by the somewhat different architectural design of its metal towers and plazas. We could make out clearly now the surface of the other city, its huge batteries of heat-guns, and its great towers surmounted by a central pinnacle. And now, as we scanned the horizon away to the north, we could see another dark disk, another mighty air-city, rushing swiftly toward us!

"They're gathering!" Hilliard's voice was agonized. "Gathering—all the air-cities of the European Federation! It's the beginning of the end."

"Gathering for their great attack," I said.

"God, if Connell and Macklin could have escaped!" Hilliard's cry burst from his tortured soul. "If our own air-cities had only the speed and the power to resist this attack!"

"Steady, Hilliard," I told him, my hand on his shoulder. "It's the end, I think—the end for our Federation as well as ourselves—but we must face it."

Now the air-city from the north was rushing closer,
was hanging northward of Berlin, and we saw that it was Stockholm. And, even as it came to rest out there beside us, two other air-cities were rushing up from the western horizon swiftly and identifying themselves, when they too shot up to hang near our central city, as Geneva and Rome. And then from the west were coming others, Paris and Brussels and Amsterdam; while down from the cold east were speeding Moscow and Helsingfors and Leningrad. City after city was rushing from all quarters of the compass, from every part of the European Federation, until they filled the sky. Through the hours of that afternoon we watched their numbers grow until they numbered a hundred. They had come from every part of the earth, over which the European Federation held sway. From the bleak eastern steppes, from the jagged peaks and green valleys of the Pyrenees, from the great ice-locked fiords of the north and from the blue plains of southern Africa, they were rushing at colossal speed to gather here in a great circle about their capital—Berlin! Great air-cities, each of which flashed through the air at the same tremendous speed, each of which bore upon it great batteries of those giant heat-guns that nothing else in the air could sustain, each of which held upon it a soaring electrostatic tower and thousands of other clustered pinnacles. As in Berlin, the crowding, seething millions of its peoples had been left on the ground quarters prepared for them. The gathering of the cities! At last, with the coming of sunset, all but the last few of the Federation's mighty air-cities had gathered around Berlin.

By then, gazing out from our window high in the electrostatic tower, Hilliard and I seemed to be looking across a single gigantic city that stretched in mid-air as far as the eye could reach, so closely were the scores of great hovering air-cities hanging together! It was as though we were looking forth across an endless plain of clustered towers of metal, from which rose here and there the higher pinnacle of a city's power-source; a titan plain of towers and streets of metal, crowded with millions of the European Federation's soldiers. And, as the blood-red sunset flamed eastward upon all this huge assemblage, now waiting only for the last of their number, something seemed to snap in my brain, and all the stoicism which I had summoned to meet our fate and our nation's fate abruptly vanished.

"We can't stay here while doom rushes upon our nation!" I cried madly. "Since they start out tonight—since our time is up and we die ourselves tonight—we'll go to death fighting for our freedom!"

But, now, it was Hilliard who endeavored to calm me. "It's useless, Brant," he said. "A few hours more; then all will be rushing west while the Asiatic Federation is moving east upon our air-cities. And at any moment now, before that attack starts, they will be coming hither for us."

"But they'll not take us to a death like that!" I exclaimed, a cold, long-repressed fury surging up within me. "If we're to die we'll do it, striking a blow at our enemies!"

Like a caged tiger I paced the little cell's interior, growing shadowy and dusky now; the sun had disappeared. From the corridor outside came the voices of the guards, and at any moment I expected the door to swing open and admit those who would take us to a last examination at which our silence would bring immediate death. But, far out over the great mass of scores upon scores of air-cities that filled the air about us, a great, complicated pattern of brilliant lights was gleaming through the deepened twilight; and now, from south and east and west, the last of the great European Federation's air-cities were assembling about that tremendous gathering mass of cities. Then, as I turned from the central door which I had been examining in blind and futile rage, my eyes fell upon our bunk-racks and the strong but slender strips of metal that held them out from the metal wall, against which they were set diagonally. And, as I looked at them an idea, a last flame of hope, burned into my brain, and I turned swiftly to Hilliard.

"Those strips of metal! I exclaimed, pointing toward them. "Those bunk-supports—it's a chance to escape! A chance that may mean death, Hilliard, I think—but death is upon us now in any case—"

Swiftly, almost incoherently, I explained to him the idea that had suggested itself to me. I heard his breath catch as he comprehended its appalling nature. Then I saw his eyes gleam as he realized that, inasmuch as almost certain death awaited us, death in escaping could not deter us, for we were already doomed. So, we grasped one of the metal strips and tried with all our force to tear its lower end loose from the metal wall. That lower end, set directly in the wall, seemed integral with its metal; and, as we pulled upon the metal strip, gasping with our great effort, muscles tired, we still kept on. We had to work quietly lest some sound betray us to the guards without. It seemed that we could never tear it loose. Straightening from the violent exertion, with dizzy heads, muscles aching, we paused for a moment, then reached to grasp the strip again, braced ourselves against the wall and exerted all our force upon it. It held for a terrible moment, then seemed to give, to bend—and then, with a little grating sound, we had pulled the strip loose from the wall into which it had been set.

CHAPTER VIII
A Single Chance

INTENTLY for a moment we listened without moving; but there came no sound of alarm from without, nothing but the occasional voices of the guards. And now we grasped another of the metal bunk-supports, and wrenched its metal strip loose from the wall with another tremendous effort. We had in our hands two metal strips, each of some three feet in length. These we now bent swiftly into two L's or right angles of equal sides, using all our combined strength on each to bend the strong metal. Then, swiftly loosening the long, strong leather belts that criss-crossed over our black air-jackets, we formed of them swiftly two leather ropes ten feet in length. Each of these we attached to one of our metal L's, making each fast to one of the jagged, broken ends of one of the bent strips. Then, pattering from our swift efforts, we stood erect, and moved toward our little window.

Night lay over the world now, and from our window we saw the cities illumined by their lights stretching out to the horizon. On the landing plazas of the air-city beneath us rested the great European Federation battle-fleet. In the plaza directly beneath us, that which surrounded the base of our great electrostatic tower, there rested but a few score of cruisers, those of the commanders who were now at the headquarters inside the great tower's base. The plaza was practically deserted; for it was the evening meal. For a moment I stood there at the window, gazing out over that tremendous mass of giant air-cities. Then, summoning all my courage, I flung my right leg over the window's base, through its opening.
Sitting astride that opening, while Hilliard watched anxiously behind me, I placed the metal angle I carried upon the flat metal sill of the window, one end of its angle catching on the sill while the other end, to which my leather rope was fastened, pointed straight downward toward the great plaza a thousand feet beneath. Then, holding to that leather rope, I slid out of the window's opening; and hung by my hands from the slender rope with only empty air between me and the plaza far below. Tensely I swung there in that moment, but the metal angle caught in the sill held my weight. And so, sliding down the leather rope fastened to it, I felt my feet strike in a moment against the sill of the window below. Another moment and I stood upon that sill, crouching within that window's opening.

The window in which I crouched opened into one of the great upper corridors of the electrostatic tower; but I knew that to venture back into the building, swarming now with guards, was to meet death, nor did I plan to do so. Giving my leather rope a twitch, I worked loose the angle resting on the sill above; and, when that dropped toward me, I placed it on the sill on which I stood, and the next moment was sliding down to the window below. And now above me Hilliard's head was visible and something white was following me, was sliding from window to window after me, down the smooth side of the mighty pinnacle to the street far below. Down—down—like two strange insects we crept downward from window to window. None in the streets below glimpsed the two tiny shapes crawling down the mighty tower's side; for the darkness had deepened now, and in the plaza directly beneath us there were none of the crowds that swirled elsewhere.

Our greatest danger, indeed, was that we would be seen by someone inside the tower as we swung down from window to window; and twice I was forced to hang for a few seconds from my leather rope above a window inside which I could hear voices. Yet still down and down we swung, praying that the regular line of windows in the static-tower's side, extended unbroken clear to its base; for otherwise we were lost. Down and down we went, my heart beating anxiously now despite the awful hazards of our progress; so hastily that once Hilliard's hook or angle slipped halfway out from the sill upon which it hung, and all but precipitated him down to death before he could slide into the window beneath him.

But now we were within the last dozen levels of the plaza's surface, and were down with all the eagerness of renewed hope. For in the plaza there beneath us there lay still the unguarded cruisers, their officers and crews gathered in the great tower down which we were creeping. Another level—another—and down we swung through the dusk, in such a descent as surely man never had made before. The plaza was close beneath, the window of our cell now far above. From far around that plaza, from Berlin and from all the air-cities about, we heard the great hum of final preparations being made. I knew they were ready now to sally forth on their gigantic attack. But we were within the last few levels of the plaza, now, swinging down with mad haste from window to window toward its smooth surface. And then it was, when we were within a few yards of that surface, that I heard a dim cry from far above.

"Down now with all your strength, Hilliard!" I cried to my friend above me. "They've come to our cell after us—are giving the alarm!"

"The nearest cruiser there below!" he exclaimed thickly as he swung madly down after me. "We'll make it yet!"

But now the cry of our guards high above was being taken up and repeated by other voices in the great electrostatic tower. That cry was coming down through it from level to level, even as we swung from the last window to the level plaza. And, as we staggered across it, toward the open door of the nearest cruiser, there came a series of popping detonations from above and the next moment little flares of terrific heat were bursting all about us as the guards shot their heat cartridges down toward us! From their great height and through the dusk their aim was poor, and in a moment more we were at the cruiser's open door. But now the alarm was spreading over all the tower behind us, and at the same moment that we flung ourselves in through the cruiser's open door, slamming it behind us, we heard a wild clamor of voices from the power-tower's base!

The next instant, though, we were bursting up into the cruiser's bridge-room and for a moment of agony I fumbled at its controls, set differently from those of our American cruisers. Then the motor-stud had clicked beneath my fingers and, as the great electric motors beneath dined suddenly loud with the current rushing through them, I sent all their power into the cruiser's tube-propellers. Up it went rushing, up and away at terrific speed and at a steep slant, even as a mass of green-uniformed figures burst from the electrostatic tower into the plaza! Out and over that plaza at terrific speed we shot, out and upward at such awful mounting velocity that, before the great batteries of heat-guns around us could turn, before the alarm from the power-tower had time to spread, we were whirling up and through the dusk over all the massed towers and gleaming lights of the great air-city Berlin!

Out and over—and now as we soared upward into the rarefied levels of the air like a shooting-star, our cruiser was driving outward over the cities, stabbing westward through the air, literally chasing the sun that had disappeared hours before. From Berlin behind us there rose a hundred cruisers, roaring in swift and deadly pursuit! But so swift had been our rush, so hardly had been the alarm of our departure, that before the great batteries of Berlin could blast us from the air we were beyond them; and before the other massed air-cities over which we were rushing could receive that alarm we had split the air westward above them, and had rushed out from over the last of their titanic floating masses and into the night!

"We're clear of the cities!" I yelled to Hilliard over the thunderous droning of our motors and the roar of winds about us. "If we can shake off those pursuing cruisers we'll win back across the Atlantic yet!"

"But their whole battle-fleet is rising now!" cried Hilliard, gazing back. "And now all their air-cities are beginning to move westward too—all their hundred air-cities are moving west to the attack!"

Across the Atlantic

DESPITE the wild peril of our rushing ship, I felt for a moment all the blood congealing around my heart as Hilliard yelled those words, and I looked backward for one last glimpse. For there, behind us, behind the hundred ships that were pursuing us, the whole two thousand cruisers of the European battle-fleet had risen and were coming westward also. They were not pursuing us so much as they were speeding westward according to their plan, moving after as in a great crescent formation! And, behind them, we could see now all the hundred gigantic air-cities of the European Fed-
eration, massed there in a colossal circular formation about their central city of Berlin; moving westward also behind the crescent of their fleet, they were flash-
ing with terrible majesty through the air in their cir-
cular-massed formation; at a speed that mounted swiftly to two hundred miles an hour!

The great attack had begun!

Only a moment I gazed back upon that colossal spec-
tacle never seen by man before, and knew that in that moment, far on the world's other side, the hundreds of great air-cities of the Asiatic Federation would be rushing eastward; the two great forces of hurling air-
cities were converging upon the American Federation.

Then, as we shot forward with our own greater and
terrific speed, the vast massed cities and the fleet before them had passed from sight behind us and only the hundred grim pursuing cruisers were visible in the night as we hurtled on!

On—on—and now I shouted to Hilliard to go be-
neath to the cruiser's motor room. He moved down
toward them while I gripped the wheel tightly, standing
there alone in the bridge-room of the long great cruiser
that had but Hilliard and I inside it. And, while we
hurried on at our maximum terrific speed through the cruis-
ers' detonation behind us, we realized that we and our
pursuers were outracing the sun around the earth!
We saw by the growing light that we were high
above the sea instead of land. The sea that we saw
through breaks in the vapor-layer, gleamed to the west
of us with sunset lines. We were over the Atlantic,
and now, as hope of escape from our pursuers burned
stronger within me, there came a sudden faltering in
the steady drone of our great motors! I felt before
the cruiser lose speed in that moment, knew that faltering
to be caused by the circuit-breakers tripping at the
tremendous power we were using. But then after an
awful moment of hesitation the motors were droning
as loudly as ever as Hilliard, beneath, had thrown back
the circuit-breakers in the connections that conveyed
the static electricity from the atmospheric charge about
us to our transformers. Only a moment we had fal-
tered thus; but in that moment the hundred pursuers
beneath us had finally passed us.

Coward still, like some phantom, we rushed, minute after minute of droning, racing flight, with the sun-
set ahead flaming brilliant now, as we overtook it.

steadily, the long gleaming ships behind us were creep-
ing closer while the sun rose in the western sky. Though
Hilliard was working like a madman in the
motor-room beneath, tending the motors as a mother
anxiously watches her child, he was but one and could
not do the work of a dozen. And so, on after us, they
came; drawing toward us so close that at last I knew
that we could not win free of them in our frenzied
flight. For, although we had rushed on for a time
that seemed endless to us, and a few hundred miles
remained between us and the American coast, their
leaders were so near now that another minute, I knew,
would find them using their bow guns upon us.

Even as the thought came to me, there was a thunder-
ing detonation behind us and then but a few feet to
either side, a shining heat-shell flashed past us.
Another detonation, and another followed, and I knew that
not for long could we escape them thus; since with each
moment the shooting was becoming more accurate. So,
just as a dozen of their bow guns thundered again, I
suddenly drove the cruiser downward in a flying head-
long plunge down through the vapor-layer beneath us;
and, as the pursuing ships plunged straight down after
us, I sent our own cruiser instantly whirling upward
and through that layer once more!

It was a maneuver that gained us a moment's advan-
tage; since when the pursuing ships drove up through
the vapor-masses again on my track, it took them an
instant to locate and shape their course after me. In
that instant we had moved a little from them; but now,
remorselessly as ever, they came on after us as pursu-
sued and pursuing ships drove like light toward the
flaming western sky. On and on, until again they
were close behind, until again their guns were begin-
ning to thunder, and then I repeated my former man-
uever, my last resort. I dived headlong downward
again through the vapor-layer, and upward again, as
their ships drove after me. But, when I flashed up
again through the vapor-masses this time, I suddenly
slowed my ship, slowed it and then held it motionless
there in mid-air, with cold of icy fear tight around my
heart in that moment! For, this time, half of the
hundred pursuing ships had not dived down after me
but had flashed on ahead as I drove down; and so,
now, when I flashed up they hung before me, while the
remainder drove still toward me from behind! I was
trapped at last between their masses of ships before
and behind me!

Slowing my cruiser, holding it motionless there with
mechanical fingers in that moment, I knew it to be the
end. Our last moment had come. The two masses of
ships were moving toward me, from ahead and be-
hind, were moving toward our cruiser. Our only escape
cut off, no twists or turns now could save us; they
were converging upon us, were moving deliberately
ward us from either side. Another moment, I knew,
hundreds of heat-guns would thunder from them,
hundreds of heat-shells would send our ship downward
in flaring, fusing destruction. Another moment—
A great cry sounded beside me, and I wheeled to find
Hilliard pointing mutely upward toward a mass of
long, gleaming shapes that were rushing headlong down
upon us from high above, that were diving headlong
down upon the European cruisers to east and west of
us, raining a hail of heat-shells upon them! "American
ships!" My cry was echoing Hilliard's. Great gleam-
ing cruisers, our fighters! The hundred east and west
of us, were driving down upon those hundred with all
their heat-guns thundering! Then in the next moment,
while our own cruiser hung motionless, helpless there
in mid-air, American and European cruisers were whir-
ling in a mad, swift battle about us, ships striking and
falling like lightning on all sides of us. And before
we could comprehend with our stunned minds what was
taking place, the European cruisers had suddenly
dropped from that battle, had massed together and were
splitting the air eastward, rushing back eastward and
disappearing toward the mighty approaching armada
of great air-cities and cruisers of which they were the
scouts.

Now from the mass of the American cruisers one
shot toward our own, level and hung beside our own
ship, and as its door was flung open we opened the door
of our own. I stared at a tall figure, not crediting my
eyes.

"Macklin!" I cried as I recognized him: "Macklin!
You got clear, then?"

"Brant—Hilliard—!" he was himself exclaiming:
"It is you two in that ship, then! We were sent on a
last patrol out here, saw your ship attacked by other
European ships, came to your rescue—"

"We escaped from Berlin," I told him: "But you,
Macklin, we thought you and Connell dead, saw your
cruiser struck by heat-shells and falling—"
"It was a last ruse," Macklin swiftly explained: "Those pursuing ships were overtaking us; so, when their batteries fired a storm of heat-shells after us, we fired one of our own heat-guns back toward them at the same time, and our shells meeting one or two of the oncoming ones made them burst and flare there behind us. Then, at the next moment, we sent our ship whirling down as though struck and destroyed."

"But Connell, then!" I cried; "Connell got back with his great secret. All the hundred European Federation air-cities are rushing across the Atlantic to the attack!"

We leaped across the gap to the gangway; the door of Macklin’s cruiser closed behind us; and he gave the order that sent it, with the whole cruiser fleet, westward at swiftly mounting speed. Then he turned back to us.

"Connell got back with his secret, yes," he said; "And though the hundred European Federation air-cities are rushing westward and word has come that the massed hundred Asiatic Federation cities also are rushing eastward for the attack, they will find the great air-cities of the American Federation massed together and ready for them! In the ten days since our return, every effort of our cities has been exerted to make use of Connell’s knowledge, and to equip with the new tube-propellers that will give them the same tremendous speed as our enemies. And now all our cities are massed together and waiting for the attack of our enemies."

CHAPTER IX

The Battle of the Air-Cities

Now the hundred cruisers of our forces were leaving the air westward at terrific speed, while Macklin and Hilliard and I stood together in the bridge-room of the foremost as it rushed on. Beneath us, the gray Atlantic showed here and there through openings in the vapor-masses, and ahead the sun still hung in the western sky. And within a few minutes more, we saw that the vapor-layer beneath was thinning, and that now we were flashing not over the sea but over land; over green hills and valleys that we could glimpse rushing past far beneath us. I gazed to north and south in search of New York and the other coastal air-cities that should have hung there, but nothing was in sight.

"All our American Federation air-cities," Macklin told me: "are massed together, hanging south of the Great Lakes. From Buenos Aires to Winnipeg, they’ve come."

"You think, then, that the European and Asiatic Federation air-cities are going to make a simultaneous attack from both sides?" I shouted to him above the roaring of our flight. He nodded emphatically.

"Undoubtedly. The Asiatic Federation cities are over the Pacific now, and are keeping in touch with the European ones by distance-phone to time their attack to coincide from east and west. They know our own cities have massed together, must know now that they’ve been equipped with the great new speed-tubes also; but they’re coming on."

"Two to one," I said: "Two hundred air-cities attacking one hundred. God, what a battle it will be!"

But now Hilliard had broken into our conversation, was pointing far ahead toward a dark, flat mass that stood out against the brilliant western sky, and toward which we were moving. The terrific speed at which we had been racing on for hours was decreasing now. Far beneath the land was still rolling back at great speed, long green plains now; since already we had flashed west over the Alleghenies. Then, as the dark mass westward grew steadily with our approach to it, other ships were driving suddenly beside our own, watchful patrols that drove down upon our hundred cruisers and swiftly challenged them. Macklin answered the challenges by the distance-phone, but for the moment I paid small attention to him, gazing forward with heart beating rapidly at the great mass that hung high in mid-air before us. For, as we drove closer toward that mass, it was becoming visible to us as our eye, the hundred giant air-cities of the American Federation! The hundred mighty American Federation air-cities were clustered there miles above the green plains, in a great circular mass, with New York, most colossal of all of them, at the center! Cities that had long hung over North and South America from sea to sea, air-cities whose names were those of the long-vanished cities of the land, that once had dotted the surface of those continents. Boston and Los Angeles, Rio de Janeiro and Chicago, Mexico City and Quebec, Valparaiso and Miami—these and scores of others hung there in that great cluster. All the air-cities of the American Federation were gathered here about their new air-capital of New York to withstand the tremendous attacks now closing in from east and west!

Massed there as they were, the hundred mighty air-cities seemed, even as the European ones had seemed to me, but one vast plain of metal towers and streets. As far as the eye could reach, there stretched away the tremendous forest of those soaring towers, with here and there rising from them the taller spires of each city’s great electrostatic tower. And, everywhere among those towers, everywhere around the rim of each great circular air-city and at its center there loomed great batteries of giant heat-guns; while here and there, on the plazas of the cities rested the turret-like cubes of the recalled great air-forts, their own grim heat-guns protruding expectantly. And through streets and towers, between the batteries and around the air-forts and across the plazas of the assembled cities, there swarmed the millions of their peoples, wild with excitement now as the last dread hour approached. And, massed there above all the great floating cities, hung grim and motionless the two thousand or more cruisers that still remained of the American Federation’s eastern and western fleets.

It was toward these massed battle-cruisers, at a level somewhat higher than that of the air-cities, that our own hundred cruisers were rushing. Over those assembled giant cities we raced, the great mass of them below us almost hiding the ground beneath. As we shot above them, I saw now that they had been ranged in a tremendous circle, the great capital of New York hanging in the center. Across the great ring of the air-cities we rushed; were racing at last above New York, toward its own giant power-tower. Then we had reached it, and were sinking vertically downward, until our hundred cruisers came to rest upon the central plaza. Here, even as in Berlin, the central plaza was reserved always for the ships of the First Air Chief and his followers; so that, although immense crowds now beat through all the streets and plazas about it, there were none around our ship. In an instant Macklin and Hilliard and I were out of that which had brought us and hastening across the clear space toward the static-tower’s base.

Preparations

On past its guards and through the ante-rooms we strode, and in another moment were in the office.
of the First Air Chief. There was unfamiliar apparatus among the great switchboards of its walls, I noted as we entered. The First Air Chief himself had risen from his great table-mas as we entered and was coming toward us; beside him, another figure, whom I recognized instantly as Connell. Then both of them were grasping the hands of Hilliard and of myself.

“Brant!” Yarnall was exclaiming: “I got Macklin’s report of your escape and his rescue of you—man, but I’m glad that you got free! And it was what you did there in Berlin, what you did to help Connell and Macklin escape, that has enabled us to use Connell’s knowledge and fitted this city for the coming battle!”

“I did no more than the others,” I told him: “But you know of the enemy’s coming then? You know that already the European Federation cities are on their way?”

He nodded. “They and the Asiatic Federation’s cities from the westward, Brant;” he said: “And we are awaiting them here—awaiting them with a chance at least, thanks to you four—to strike back at them when they come. And already they are near—by the map here you can see—”

And he turned toward the great table-map upon which was depicted the whole of the earth’s surface, the red circles upon it denoting as before the position of the air-cities that hung above it. Now, however, all the circles of the American Federation cities were massed together south of the white outline of the Great Lakes, hanging motionless as the cities around us were hanging motionless. Away to the east on the map, though, just moving in from the Atlantic over the eastern coast, there was creeping across the map another mass of red circles, moving slowly toward our own, that represented the great gathered cities of the European Federation that were rushing westward toward us. And in from the Pacific was creeping a similar mass of a hundred little red circles that were, I knew, the Asiatic Federation’s cities.

From east and west they were moving, there on the map, moving even as the cities they represented moved through the air, automatically showing their positions and progress. This was accomplished, I knew, by means of special batteries of cruiser-finders, tuned and trained to detect the great electro-static motors of air-cities, and recording instantly thus whenever those cities moved with their great electric fields. Their readings and their records were sent on special mechanical calculators which plotted the exact positions and movements of the cities; and these calculators, in turn, were connected to small special projectors set beneath the great ground-ball table-map, casting upward upon it the red circles of the air-cities. Thus those red circles moved upon the map, even as the great air-cities moved across the world.

This arrangement, indeed, was of no late date, and was used by both European and Asiatic Federations as well as by ourselves; but as I gazed now about the great circular room I saw that within it were some new arrangements also. These consisted of a series of six great glass screens which were arranged in box-like form about the great air-city’s controls at the room’s center. And, while the First Air Chief swiftly explained to us their purpose and design, I saw that one sitting inside their box-form, with four on four sides, and one above and one below, could see in all those directions as though from the very top of the great power-tower. For they were in effect great electrical periscopes; four great similar screens had been set on four sides of the electro-static tower’s high tip, and another one above that tip, while the sixth had been set in the under-side of the great city’s base. The views possible to those six screens were then transferred down to the six there about us; the light-visions that struck the screens above and beneath being transformed by television receivers into electrical vibrations and brought down to television reproducers behind our own six screens.

Sitting there at the city’s controls, amid those six screens and looking into them, one could see as clearly as though from the power-tower’s tip in all directions. It was quite necessary, too, that this should be the case; since the man who operated the great air-city, from its six direction-controls and its single speed control there, must see clearly in all directions, now that the great air-cities could rush at such tremendous speed through the air. When I said as much to the First Air Chief, who had turned now and was gazing intently at the great table-map upon which the eastern and western masses of circles were slowly creeping toward our own, he nodded, and contemplated me for a moment with a curious expression.

“The man,” he said finally, “who is to hold the controls of New York in the battle tomorrow, will be you, Brant!”

“The honor is great,” I said: “I’ve operated the city’s controls, though never did I expect to take it into battle. But Macklin and Hilliard here—I want them to stay here for the time being—I want the hundred cruisers on the plaza outside to stay there during the battle.”

“You have a plan?” the First Air Chief asked, but I shook my head.

“No more than an idea,” I said: “An idea that may help us if the battle goes against us, if their attack is too strong for us. Even then it is too insane, perhaps, to be of any use, but it might help us—”

Yarnall nodded assent, and then Macklin and Hilliard had joined the two dozen or more of black-garbed attendants and engineers who were busy at the great switchboards that lined the circular room’s walls. They scrutinized its dials to determine the rate of the vast currents rushing down from the power-tower’s tip far above to the motors in the city’s great base; added a fresh battery of transformers or threw in resistances to hold that current steady; and moved ceaselessly about the walls in their anxious watch. Now, Yarnall and Connell and I were left alone in the office, and the three metal seats there behind the big table-map, with the great screens of the electrical periscopes all about us. Yarnall would sit in the center, with eyes upon the red circles on the great map, tensely watching their progress, as admiral of our mighty fleet of colossal cities, ready to direct it and our cruisers to the battle. Connell would be at his right, before him the black mouthpiece and speaker of a single distance-phone. Behind that were the scores of switches and intricate controls, which connected that distance-phone to the operators of all our hundred air-cities.

The Battle Nears

A s the third of the trio, I would sit at Yarnall’s left, before me the six switch-levers which sent the colossal city of New York whirling through the air in any direction; while beside them was the gleaming knob which regulated the city’s speed. The great batteries of New York were at my command also; all their mighty heat-guns around the city’s edge and around our electro-static tower and elsewhere were controlled by the distance-phone whose mouthpiece rose
before me. The great batteries of all our other cities were controlled in the same way by their own operators, and were subject like New York to the command of the First Air Chief beside me, who could maneuver our whole great armada of tremendous cities at will through the air. In the city of San Francisco, too, we knew, was the Second Air Chief, placed there to take command in case New York were destroyed or the First Air Chief disabled.

Thus, on the morrow were grouped we three, who were to sway such colossal forces in a battle as no men had seen before. Now, Yarnall was pointing to the table-map's surface, where the red massed circles of the European and Asiatic Federation armadas were indicated but a few hundred miles on either side of our own great mass of cities. Watching them there, we sat in silence, save for the clicking of occasional switches by the engineers about us. From far away, far across New York and all the other air-cities gathered around it, there was coming the dull, dim throbbing of the life of millions that swarmed through those cities. And now Yarnall reached forward and touched the control of the great electrical periscopes whose screens boxed us in.

Instantly those dull glass screens were alive with light, and it was as though we were gazing forth from the very tip of the power-tower out over our gathered mass of cities. North and east and south and west, from all the screens about us the views were alike, of a tremendous mass of clustered metal towers that en-circled New York. Below us was the screen, above which our metal seats were suspended on supports. It seemed a trap-door through which we were gazing down toward the green plains far beneath; though in reality all the city's massive base lay between us and that view. So intensely realistic was the scene that lay about us that we all but forgot the great circular room in which we really were, and seemed suspended high in air above the great mass of our gathered air-cities.

"The enemy armadas," said Yarnall, his voice low, "will be in sight within fifteen minutes."

For upon the map the two massive red circles were rushing on from east and west, and seemed now almost upon the mass of circles that was our own great fleet of cities. Looking out over those cities, through the periscopic screens about us, we could see the forts raising their great guns to firing range. I realized, as I saw it, that the battle now ready to start would mean annihilation to half the world. This was indeed Armageddon, when on earth itself was left no human being at peace; when every nation was rushing through the air toward this last conflict!

Now, however, Yarnall touched another control, and from the electro-static tower's tip, high above us flashed great signals of brilliant lights that were taken up and repeated from all the power-towers of all the hundred cities that ringed us round. And, as those signals flashed, the great crowds that filled the streets of the air-cities were suddenly flowing out of those streets into the cities' towers; until within a few moments none were visible in all the streets and plazas, save those blazed who stood ready at the great heat-guns of our batteries. And those crowds went quietly, despite their tense excitement, because they knew that they were being ordered inside for their greater protection. There was no refuge upon the earth's surface far beneath, for them; then when the destructive powers of all the world were battling above it in the air.

Then the First Air Chief spoke a brief order and, as Connell beside him repeated it swiftly into the distance-phone (as he did with Yarnall's orders in all the combat that followed) the air-cities leaped, as if the buildings breathing above us and visible in our top screen divided into two masses, of a thousand or more ships each, which swept swiftly to east and west. Beyond the great ring of air-cities they leaped, until they were far out; and each division then formed into a great curving line screening our ring of cities to east and west, facing the fleets rushing toward them from those directions. Then we were gazing again at the table-map before us, a deathly silence seeming to grip all the world. Upon that map we could see the European and Asiatic armadas were now within hardly more than a hundred miles of our own; and tensely we watched the east and western screens now, gazing out beyond our cities.

"They'll use their cruiser-fleets for their first attack," Yarnall was saying as we gazed tensely forth. "They'll try to wipe out our cruisers before they bring their cities on to attack ours."

I nodded. "It would give them a big advantage when the cities come to blows. But our cruisers beat them back once with the odds two to one, and now—"

I broke off sharply, and at the same moment heard a low breath from Yarnall and Connell simultaneously, felt seemingly a low tremor that seemed to run instantaneously across all our massed air-cities. For there, far to the westward, black against the sky, there had appeared a line of far-flung black dots that were growing very quickly in size, and that were massed together in a crescent formation whose horns were toward us. It was the advancing cruiser-fleet of the Asiatic Federation forces. Tensely we watched it as it came on; then we looked to the east to see a similar crescent of advancing dots, the European cruiser fleet. On they came, smoothly rushing toward our own lines of cruisers, hanging to the east and west of our cities; and then for the moment we forgot them as we made out, to east and west, behind them, advancing toward us, great black masses that even at that distance seemed to fill the air. They were the two massed mighty armadas of the European and Asiatic Federation's air-cities, rushing to battle with our own!

CHAPTER X
The First Clash

For one moment we gazed toward them and toward the advancing cruisers that rushed before them, as though held by the grandeur of the spectacle. The tremendous mass of our air-cities standing there, high above the earth the gleaming ranks of our own two thousand cruisers that poised to east and west, the advancing cruiser-fleets of twice their strength behind which there rushed gigantic on the great massed air-cities of our enemies—it was a spectacle breathtaking enough! But, then, the two enemy cruiser fleets had come within a short distance of our own waiting cruisers; and, as they did so, both their fleets shot suddenly upward, as though in answer to a common order, to drive above our own cruisers and our air-cities! Instantly Yarnall had uttered a swift order; and as Connell's quick voice sent that order flying out to our cruiser-masses, they too whirled upward and forward to meet the onrushing enemy fleets. Then, far out in mid-air to east and west of us the great cruiser fleets had met, had smashed into each other with blind fury.
Through our screens we saw cruisers enveloped by scores in blinding flares, in that first moment of combat, as they raged in two separate mighty battles.

But, east and west, our own cruisers were outnumbered two to one and, despite their fierce resistance, were being pressed steadily back toward our gathered cities. Closer and closer through the air toward us were reeling those struggling lines of cruisers, more and more American ships falling in white-hot destruction as the heat-guns of their opponents concentrated upon them. Still far beyond them, to east and west, the colossal masses of the European and Asiatic air-cities were now rushing on toward us! Yarnall sent another order flying out, and the next moment a mass of cruisers that had remained at the edges of our gathered cities, on either side, and had not been in the first battle, were leaping forward now, like suddenly released hounds after prey. A score of them to the eastern combat and a score to the western one they flashed; and each, as it reached the lines of struggling ships, shot up over them and then flashed along their lines above them. And as they did, there shot downward from them over the battling cruisers intense jets of concentrated power and force, which puffed out instantly into great white cloud masses that enveloped all the grappling thousands of ships!

Yarnall had brought into the battle, I saw, those great artificial cloud projectors that had saved us in our first great battle over the Atlantic! And, even as their white masses enveloped the struggling ships, he sent forth another order; and our own cruisers shot upward and downward out of those cloud-masses, at the very instant that they had been formed. Thus, with all our own cruisers clear of the cloud-masses to east and west, and the European and Asiatic ships inside them driving for the moment in blind confusion, our cruisers poured a deadly hail of heat-shells down into the cloud-masses and the thousands of ships that swirled inside them! Only for a moment was it that they remained within the cloud-masses before fighting their way free; but in that moment they had been unable to fire a single effective shell at our own ships only to be encountered by the terrible storm of deadly shells into the cloudy masses. So when, a moment later, the European and Asiatic ships broke from the vapor-clouds east and westward, our broadsides had taken toll of hundreds of their blinded ships, and hardly more than our own forces did they number now!

But, when they broke free from the cloud-masses and into open air again, they did not advance toward our awaiting ships; instead they shot back from either front toward their cities, in answer to some mysterious order. At once a similar order from Yarnall brought flashing back, to form again above our own cities, our own ships—still nearly two thousand strong and almost as many in number as the combined cruisers of our enemies. I heard dimly the great cheers that were rolling across all our cities, for this mighty blow which had beaten back our enemies’ cruiser-fleets once more. Then those cheers died swiftly away; for, far away to east and west, the gigantic masses of the approaching air-cities loomed larger and larger, rushing through the air toward us!

Eastward the European Federation was approaching, in a gigantic circle that seemed to fill the whole eastern sky. To us three sitting there amid our periscopic screens, it was as though all the eastern screen was filled with that great oncoming mass of cities; Paris, London, Moscow, Cairo, Rome—all the tremendous air-cities of the great European Federation—and their capital of Berlin still at the center.

And westward, upon our western screen, loomed equally gigantic the similar circle of air-cities of the Asiatic Federation. Peking, the third in size of the world’s air-capitals, at the center of its cluster of cities rushed at us with speed toward us, with Shanghai and Tokio and Bombay and Rangoon foremost in its circle. From east and west thus the two stupendous circles of cities rushed toward our own, grimly waiting; and, as we watched them, there flashed over me in that tense moment a strange wonder as to the feelings with which one of a hundred years before would have watched this battle. Then I laid aside that passing wonder as the two great circles drew nearer to the range of our great heat-gun batteries. And this, surely, was a spectacle that none had ever seen or dreamed before—this spectacle of the world’s mighty cities converging swiftly upon each other in battle to the death!

And as strange, too, must have been the sight of us three, sitting there amid our box-like periscopic screens, the heart of the mighty tower’s base; yet seeing and directing from there all the great mass of the hundred mighty cities that flashed past us.

“They’re not going to join forces!” I exclaimed:
“They’re going to strike us at the same moment from east and west!”

Yarnall nodded, his eyes intent upon the screens:
“Either that,” he said, “or—”

Armageddon!

H e broke off suddenly; for at that moment there came to us a giant salvo of thunder—from both east and west, a terrific shock of sound that rolled deep through the air toward us from the two distant armadas advancing! An instant later there was a whistling sound over our own cities, and we knew that a great storm of heat-shells was plunging toward them. A few struck with wild bursting flares across our massed cities, and with their suddenly-released gigantic heat there appeared great craters of fusing, melting metal. The greater part of the shells, though, fell short, whirled down into earth to flash on the ground far below. The range was not yet closed, I knew; and so far our own great cities remained silent as death.

Yarnall was watching now with hands clenched tightly, as the two circles from east and west came on. A moment later there rolled from them another great salvo, and another mass of shells rushed toward us; but, though most of these also fell short, a greater number than before flared and fused in melting, tearing death upon our own massed cities!

I gazed anxiously at Yarnall, a strange dread taking possession of me for an instant as the tremendous armadas came on. Would he never give the order to fire? He was sitting still as a carved statue, his eyes upon the screens and his lips compressed; and in that moment there came to me a dim sense of all the terrible responsibility that weighed upon him, the leader of a third of earth’s cities and peoples battling against the remainder of mankind. Silent he sat and still, while the great approaching armadas rushed nearer, their cities coming more and more distinctly into view in our far-seeing screens. In another moment, I knew, another thunderous broadside would be belching toward us. But, just as I looked for it to come, Yarnall spoke a single word and, as Connell’s swift voice sent that word flying out to all our cities, as my own flashed it to all the batteries of our centralmost city of New York, there was a hush of a split-second. And then, out
from all our own hundred giant cities, there broke such a titanic thundering detonation as seemed to shake violently all the air about us! And, an instant later, we saw the heat-shells from our batteries falling in thousands upon the two advancing armadas, upon their rushing gigantic cities, and flaring into white-hot craters of fusing metal.

Before that terrific blow the two advancing masses seemed to stagger a little in mid-air, to hesitate for an instant; but then they advanced steadily onward and their own great batteries thunders an answer to our salvo. Then, as the two giant circles drew nearer to our own on either side, the whole world seemed swallowed again in one ceaseless thundering of sound. The giant batteries of all our great air-cities burst forth again, to send a storm of heat-shells rushing east and west upon our enemies! The air between us and the armadas near on either side must have been filled with shells in that moment; for we saw tremendous flares there in mid-air as shells of ours met some of theirs and burst. But few of them did that, most of them whirling through the air to burst and flare in all their awful destroying heat and brilliance upon the air-cities!

In that instant, as the batteries of all three gigantic armadas thundered, it seemed that numberless fountains of brilliant light and terrific heat were springing into being amid the metal towers of all the three masses of great air-cities! Great fountains of heat unthinkable, beneath which all the metal about them fused and melted instantly, and about which all life was scorched into annihilation! Yet this had taken but the first moment of the time to accomplish; and now, as the two great circles of the European and Asiatic Federations swept nearer, I saw that two of the foremost of the great European cities, Paris and Lisbon, were staggering and reeling as they rushed forward with the rest! They had met an awful storm of striking heat-shells from our own cities; and though their great motors were deep in their mighty bases, though the alloy of their electrostatic towers could not be affected by heat-shells, yet the deadly hail of shells that had fallen upon them had penetrated apparently almost down to their great motors beneath!

I whirled to Yarnall, "Paris and Lisbon!" I cried: "They're falling behind the rest a little—they're hit hard!"

He nodded, eyes burning now: "All east batteries concentrate on Paris and Lisbon!" he ordered; and, as my voice sent the order flying out to our eastern massed cities, their batteries were thundering with even greater fury.

But now all their shells were aimed toward the two crippled cities of Paris and Lisbon, and a hell of bursting shells were flaring across those two ill-fated giants of the air. It was as though a living wave, of brilliant heat and light from the bursting shells, were dancing like lightnings across the two cities; and in that instant it must have burned from them all the life in their towers, even as they were striving to do with our own. The towers of each city became in that moment almost a single great surface of fusing, white-hot metal; its awfulness added to by the exploding of the stores of heat-shells and magazines beneath the terrific flares. Out beyond them and around them there swep others of the European armada to protect them. There came Madrid and London and Moscow, all their guns thundering answer; but now our own gunners were not to be denied of their prey. As our batteries sent repeated storms of shells upon the two doomed cities we saw Paris staggering, slipping to a lower level, hanging a moment there, and then whirling sidewise downward, down to the green earth far below! In a moment it had crashed, with a terrifying rending and cracking of metal!

I heard a dull roar of cheers rolling across our city above and between the thunder of the guns, cheers that were redoubled a moment later as Lisbon too whirled downward to annihilation, a mere mass of fusing metal. But, even as the cheers sounded they were stifled, and Yarnall was uttering further orders to our batteries.

From the Asiatic Federation's circle, a great smothering fire of shells had been falling in those moments upon the westernmost of our own cities, upon Omaha. Its guns were still thundering in savage answer; but, battery by battery, they were going silent as there fell upon them the concentrated fire of the whole advancing Asiatic Federation cities, the great guns of Peking thundering at the center of the rest. Then Omaha, too, had slipped and staggered and was whirling down to earth in fusing destruction, its motors reached by the bursting shells at last!

Avoiding the Ambush

NOW it seemed as though in all the world was nothing but thundering guns and bursting shells; for now as they came nearer toward each other the three great circles of cities were exchanging a veritable tempest of heat-shells upon each other. Watching that hell of battle through our screens, we three sat tensely there. Yarnall's eyes were intent upon the advancing armadas; Connell, gripping his distance-phone, was barking orders to the great cities that were thundering about us. The two giant circles of the enemies' cities were very near our own now, rushing toward us at their tremendous speed; and, as they thus neared us, it seemed that nothing could surpass the tremendous roaring broadsides that were hurled from city to city. I saw Amsterdam and Madrid staggering a little behind their fellows, reeling beneath our awful fire, saw Hong-Kong in the Asiatic forces, its great towers all but bellowed by the flaming heat-shells, plunge suddenly downward as more of those shells reached its motors! But in our own mass now New Orleans was plunging likewise beneath the fire of the advancing fleets; and St. Louis was swaying as though badly hit!

But at that moment there came an abrupt exclamation from Yarnall; and then we saw that the two advancing circles of the enemy cities, rushing toward our own, were changing their form, were changing swiftly into two great crescents of which the horns of each were toward us. Those two giant crescents were moving to join each other, to form one great circle; and, if they did so, our own mass of cities would be completely surrounded by the overwhelming numbers of our enemies, the easy target for all their mighty batteries. We would inevitably be annihilated by the combining circles of fire. But, even before I had understood that maneuver, Yarnall's swift order was flashing out to all our gathered cities.

"North at full speed for all cities! Unchanged formation!"

The next instant our whole great mass of cities was moving, was moving with swiftly mounting speed northward! For, as his order sounded I had jerked open the speed-controls before myself, I turned back one of the direction-levers. And, as I did so, there had come a great droning of motors from beneath, resounding even above the madly-thundering guns, fingering all the mighty city of New York northward. Also there came the
great hissing of the numberless new tube-propellers that were jerking it swiftly forward! And, as New York leaped northward at my touch, all its great battleships; heard booms that were not there; heard shots that were not there; heard the most of the air-ships that joined us leaping northward, and they all their guns were still thundering toward the advancing armadas!

But now the enemy had seen our swift leap northward, and, as their commanders guessed our purpose, they sent their own two crescents whirling toward us with even greater speed to enclose us before we could escape! For the next moment it was a race between the three great city-masses, a race in which we were behind, now that we were closed upon us from either side. And, as our cities and theirs raced through the air at tremendous speed, every gun still firing, it seemed that we must lose! For, just north of us, the two northward horns of the closing crescents had almost met, were almost joined before us! That northward horn of the Asiatic crescent held Shanghai and Colombo and Singapore and others; while the horn that projected from the European mass had foremost in it Moscow and Brussels and Amsterdam and other cities that had been cities falling downward. Moscow with Sydney and Algiers, and Boston with Detroit, these whirl'd downward in that moment—no longer recognizable as air-cities and seeming to the eye but great twisted bulks of rended metal.

But not even that giant collision had been able to halt the tremendous momentum of our northward-thundering mass of cities; for as those cities before us crashed downward, the whole great cloud of our mass, New York still at its center, was thundering on through the gap that that crush had made in the line before us! We were sweeping northward and out beyond that line that our great crush had shat tered. We had won free only by means of that awful crash. Instantly, Yarrow had cried another order, and our great mass of air-cities was swiftly shifting its formation into a long line; and at its head rushed our own city of New York. And then, while the great circle of the enemy's combined armada remained there for the moment still behind us, as though stunned by our colossal crash and escape through it, the First Air Chief sent another order flashing forth. At once our line turned like a wheeling snake, high in the air, and was rushing back upon the circle of our enemies! We were rushing back and along the line of European Federation cities that made up that circle's eastern half for the moment. And, as our long line of mighty cities whirled past them, all our batteries were thundering upon them roaring death.

The advantage now was all with us; since in their great circular formation more than half their great mass of cities could not reach us with their guns. And, so during that moment, the odds were more than even as our long line swept on, with all our batteries pouring their broadsides forth! Steady at the controls, I held New York at that colossal line's head, holding it at an even distance from the great circle of the enemy cities. I saw now that our terrific fire, as we rushed past those cities, was swiftly in that moment taking effect upon them. Even as I gazed, Amsterdam, Vienna, Cairo and Madrid were falling beneath the awful concentrated fire of our rushing cities; and in our own line Buenos Aires staggered, swayed and fell as the enemy barked savagely toward us.

"Oh! Yarrow was crying beside me: "It's our chance to strike hard at them—before they can bring the rest of their cities into action!"

"But they're doing it now!" I shouted back to him,
above the thunder of guns, the drone of motors and hissing tube-propellers. "They're stringing their circle out into a line also!"

For it was plainly visible, upon the great screen beside me, that the commanders of the enemy were striving to form their great circle into a line that could meet our own more effectively in mid-air. We saw their cities rushing inward and changing formation there beside us; but we knew that our change had come too late; and so hung upon the flank of the great mass of cities, our line rushing along it with all our guns turned toward it. And now, though Quebec was falling in our line, our guns had sent down Copenhagen, Yokohama and Calcutta in the mass beside us; since by now we had raced past the mass of the European air-cities and our guns were thundering against the Asiatic cities. Their guns roared sullenly in answer to us as we flashed past them; but, for the moment, in their disorganization, in their attempts to reform swiftly from their circle into a line like our own, their fire was seriously hampered by their own movements. In that moment we were pouring a smothering hail of shells upon them, and city upon city was whirling downward in wild destruction.

Then suddenly, with a supremely swift effort, their circle had lengthened, straightened, their confusion of the moment behind them and an armored line of cities had formed almost instantly into a long line, like our own, but longer than our own. We found ourselves in that moment with our own line parallel in mid-air to theirs, a mixture of European and Asiatic cities directly opposite us; and then, as we raced on, they were racing on with us, their own batteries thundering with newly-released fury, as they sought to blast us from the air beside them! I heard the sharp crack of the First Air Chief beside me, and heard New York steady at the head of our line. The two great city-fleets were racing through the air in a great running fight, with every gun thundering!

Directly opposite New York there raced, at the head of their line, the mighty air-city of Peking, third of the three great air-capitals. The two giants were evenly matched; and now at the head of our respective lines we engaged in a tremendous duel in mid-air, a duel so close and fast, almost, I forgot the fate of the rushing armadas behind us. In all New York about us mightily fountains of brilliant light and awful heat, were flaring with each salvo of heat-shells from the Asiatic capital. But, at the same time, our own gunners were working their batteries like madmen; and we could see similar giant craters of fusing metal springing into being over all the vast mass of clustered towers that was Peking. Far behind in the enemy's line raced the third great air-capital of Berlin; and we guessed that it was now from Berlin that the movements of all our foes were being directed. But so awful was the battle that we were undergoing with the Asiatic capital opposite us that for the moment we forgot almost all else.

Behind us, I was dimly aware of all our great line of air-cities grappling with the line rushing opposite; Chicago, a little farther back in our line from ourselves, was carrying on as terrific a duel with London. Constantinople in the enemy's line was lying clown beneath the batteries of Denver and Valparaiso. Montreal, in our own, was falling in fusing death as it became the target for all the giant batteries of the colossal city of Berlin. City after city in the two races, struggling lines was falling to annihilation as the awful battle raged on. High above the colossal lines of racing cities, our own great fleet of cruisers and the enemy's were whirling in a wild fury, insane as our own giant battle of cities. Surely Armageddon had come upon the earth at last!

Although the European and Asiatic cities still outnumbered us, we had cut down their great margin of superiority in that attack which our line had made upon their confused circle. Now, with equal fury, they were striking from line to line.

Straight ahead of our two racing lines, there loomed now a great bank of drifting vapors, great cloud-masses drifting south from the lakes to the north. Neither of our two battling lines desired to enter those vapor-masses, and so as one, when we neared them, both lines shot downward.

Surrounded Again

D OWN—down—with our batteries thundering still across the gulfs toward Peking, whose own guns answered with as great a fury, though in their city as in ours, battery after battery was being silenced! Down—down—until the green earth beneath, lit by the descending afternoon sun, seemed just beneath us, rushing up toward us with awful speed as we shot down to it! Yet in that dread moment neither line of struggling cities straightened upward, each fearful of the other's gaining an advantage. In an instant more, it seemed, New York must crash together headlong into the earth.

Downward we shot, and I saw the green plain looming awful beneath us. At the last moment I jerked back another of the direction-levers before me; and as, in answer to the controls, New York tipped sharply upward once more. I saw Peking opposite rushing up at the same instant, saving itself as we had done. Behind us the cities that directly followed in our two lines were curving up as swiftly, all their guns thundering still as furiously. But, farther back in the two lines, there were cities that had swooped too low to recover, had dipped lower and in the next moment had crashed and been annihilated upon the green earth, as they collided with it at their terrific speed!

But while our two lines were whirling upward at as steep a slant as they had descended, the battle seemed to deepen in furious intensity. New York and Peking were stilling still at each other with all their forces, each colossal city seeming too mighty to be struck down, though each was flaming under a terrible fire of shells. Behind us, after a running duel that had achieved almost the magnitude and fully the intensity of our own, Chicago had given London the finishing stroke; and that great city was wavering, staggering, then slipping and falling in white-hot annihilation toward the earth! And, as all along both lines, other cities staggered and fell, I saw that above us the two whirling cruiser-fleets had almost entirely vanished. They had almost entirely annihilated each other by the insane fury of their attacks!

I felt my brain spinning, felt all things about me resolving into a wild whirl of thunderous sound and flashing light. I heard, as though from a great distance the orders of Yarnall beside me, and the frenzied voice of Connell sending those orders flashing out from the distance-phrase; heard the thunder of guns and sound of motors and propellers and wild noises that were coming from all the city about us. Then, before our two onrushing lines, there loomed another great mass of drifting vapors; and again our two lines dipped downward to avoid those masses. But, as we shot downward, the line opposite us with Peking at its head shot as quickly upward again, in answer to some com-
mand; it raced on through the vapor-masses instead of beneath them!

In that last moment we had shot our own line upward again to race side by side with them still; but we were too late, for that moment had given them, at their tremendous speed, the advantage for which they sought. For in that moment, rushing on through the vapor-masses instead of beneath them, they had gained a little; so that when we shot upward again to their level they were ahead of us as well as beside us! And then their line ahead of us was swiftly curving back and around our other side! As we slowed instantly, to avoid a collision that would annihilate us and all our mass, they swept the end of their longer line around the rear of our own, and thus in the next instant were forming a complete circle around our cities. They had at last accomplished their great object, had managed to surround our mass of mighty cities, outnumbering us still.

As their circle closed lightning-like about us, we three sat in that moment as though stunned; and then, from all the air-cities that encircled us, a terrific thunderous roar of fire was pouring upon us! Encircled, we were a perfect target now for all the European and Asiatic gunners around us, pouring all their mighty broadsides upon us. And now Yarnall had leaped to his feet, the tense agony in his eyes reflected in those of Connell and myself in that terrible moment.

"They've got us!" he was crying hoarsely: "They've got us inside their circle at last—they're hammering us to doom!"

"Can't we break out?" I cried: "Break through this circle about us?"

He shook his head, his eyes burning: "No—their circle is complete around us now and we'd only crash our own cities to earth—but we'll try above and below!"

With the words, he gave a brief order and, as Connell's voice flashed that order to all our confused mass of cities, they leaped upward in sudden concerted motion, all their motors' energy turned suddenly into their vertical lifting power. But, as they shot upward thus, to win free of the circle about us, that circle lifted at the same speed as our own mass, hovering still around us and beating us still with all the relentless fire of their massed batteries. And, when we shot suddenly downward in an attempt to escape from below they sank downward at as quick a speed, were encircling us still. And now, beneath that awful hammering fire of all the massed cities that enclosed us, our own were beginning to stagger; to sway and reel! The Titanic circle of enemy air-cities about us and our own great throng of cities, each a giant circular mass of belching flame, floating there miles above the earth; the thunder of each city's giant batteries, and the terrific brilliance of the storms of heat-shells that struck from city to city; the great glowing craters of metal that each striking shell made in a city, all these things seemed merged in the six perisopic screens that enclosed us like some chaotic and meaningless panorama!

I was aware of Yarnall's agonized expression, as we strove with every power that was ours to save our great air-cities from destruction. For now in our cluster, city after city was falling beneath that deadly fire of fusing shells. Los Angeles, Winnipeg, Panama, and Nashville whirled down one after the other. And, though our batteries were still thundering their roaring answers, our surrounded cities were still striking satisfying salvos of their own. And the colossal batteries of New York still thundering loudest, I saw how swiftly we were being annihilated! For, raging there in fearful battle high in the dusk between earth and stars, there was left now hardly more than sixty of our hundred air-cities; while in the circle about us there still hung, despite the giant blows we had struck them, a hundred or more of the European and Asiatic cities! And with all their guns thundering into us, the odds were swiftly changing and becoming more in their favor!

Finally I stood up, as though jerked to my feet by some strange force greater than myself, and wheeled toward the First Air Chief.

"It's the end now, Yarnall!" I cried to him above that thunderous roar of battle that seemed splitting all the night about us: "I'll be end for all our cities within an hour if this keeps on!"

"The end!" he said, his own face grim: "But there's no escape—we can only meet it fighting!"

My eyes held his fixedly in that tense moment. "The hundred cruisers in the plaza outside!" I said: "The cruisers I had you keep waiting for me—that last crazy plan of mine is our one chance now!"

"Your plan?" he cried, a flicker of hope rising into his eyes. But when I explained that plan in a few swift words his eyes widened with sudden amused astonishment, and he cried out: "The thing's insane, Brant! You'll never make it!"

"But it's our last chance!" I shouted to him as the thunderous drumming of doom all about us deepened, and two more of our cities crashed earthward. "It's the one last chance to save our cities!"

He paused there silent a second, then reached, wrung my hand tightly. "Then go, Brant," he said simply: "Take the hundred cruisers—and God grant that you are able to do the thing!"

I shouted to the black-jacketed attendants who were working like madmen around the great room's instrument-panels, cutting out motors that the heat reached, switching in spare motors and tube-propellers, keeping the mighty sustaining power of New York steady. Two of them leaped swiftly at my call, to the side of Yarnall to take the places of Connell and myself. And then Macklin and Hilliard who had been working with them, were running toward us also, and we four were running across the room and through the ante-rooms until we issued out from the electrostatic tower's base into the great plaza.

Standing there in that plaza with the darkness gathering about us, there stretched from horizon to horizon a boundless mass of gigantic light-gemmed cities, our own and the titanic ring that encircled us. The myriad lights of those cities, though, by which their gun-crews worked the great batteries, were feeble in comparison to the tremendous and blinding flares of brilliance in all directions that were fountaining up in giant gouts of dazzling light. Across all those cities floating, there leaped and flew the heat-shell flares, and the thunder of the guns was deafening, titanic, like the thunder of a stream of falling worlds! Beneath that thunder there came to us thin, high cries, the wild cries of crowds in the towers of cities and in their streets and plazas. And high, high above all these, far, far overhead, began to gleam the pale mocking eyes of the distant, watching stars.

All about us, in that moment that we burst out onto the plaza, it seemed that heat-shells were striking and farring. But the static-tower itself was of a composition that the shells could not harm, the rare refractory alloy that in air-cities is used only for the vital power-towers. And we stood there and looked heavenward at the plaza's edge and on its surface, though there were on it and around it still-glowing craters of fusing
metal, few of the hundred close-massed cruisers that waited with their crews upon it had suffered serious injury in the awful course of the battle so far. And now Macklin and Connell and Hilliard and I were racing across the plaza toward those cruisers, into the foremost of them and up to its bridge-room. Then Macklin jumped to the controls, as I called an order into the distance-phone over the titanic drumming of guns. In the next moment our hundred cruisers were driving up like mad things above the titanic battle raging there above.

Up—up—through a wild inferno of rushing shells, up over all the struggling, thundering, reeling cities we sped, on the wild venture that was our last wild chance. As we drove upward, I now saw others of our central mass of air-cities falling. Atlanta and Cleveland and Mexico City were whirling downward, giant masses of light in which glowed countless great fusing craters of metal, gyrating insanely down through the darkness to crash in awful destruction on the surface of the affrighted earth far below! Hardly more than a half-hour, indeed, remained of all our air-cities now; and the odds against them swiftly lengthened, as they wereammered still upward. Of fires and death by the circle that hemmed them in. They were staggering ever swifter, were reeling and swaying so that within a few minutes, even as I had said, the remorseless fire from all about them would send them to earth also, and wipe the last of the cities and peoples of the American Federation from above the earth!

But, as I saw that, our own cruisers were whirling on above that giant central mass, toward the great ring of enemy cities about them. Macklin at the controls, with teeth set, sent our ship and those behind it driving low above the awful combat with the storms of rushing shells from both sides thick about us. Ship after ship behind us was flaring and fusing and falling in white-glowing meteoric destruction, unnoticed and unheeded by any in the titanic thundering battle beneath! On—on—we sped, rocketing through the night, seemingly only a few cruisers now in the air, since the two great fleets had all but annihilated themselves. Yet as we shot on, it seemed almost that no cruisers could exist in the air over that great battle; since in dozens, in scores, our own ships were falling, stricken by the tempests of shells through which we were rushing!

But now we were reaching our goal, the giant Berlin that hung there in the enemy's circle with all its mighty batteries thundering again our doomed cities. Down toward it our cruisers swiftly rushed, unseen by any in the wild confusion that swept that city below us; down until we saw plainly the terrific spectacle of thundering batteries and wildly-rushing men. Here and there were heat-shells bursting and flaring in dazzling death, as the guns of our own cities roared savage answer. Down toward it moved our ships, now hardly more than a score in number, until there loomed just beneath us, that mighty central static-tower in which we had been so recently imprisoned! As we shot down toward it I beheld a glass ball above its tip, recognized that as similar in purpose to the periscopic-screens on our own tower's tip, and then we had shot down past it, until our score of cruisers hove beside the great tower's side, at the fifth level.

Hovering there in that moment beside the tower, with all the wild confusion raging beneath, and the plaza below still empty, we were still unseen by any beneath, by any in the great batteries that were thundering all around that plaza. Poised there in the darkness, we could see that the windows below us were brightly-lit; that guards were swarming in the static-tower's upper levels, rushing to and fro. Then as our cruiser's door swung open, just level with a window beside us, Macklin and Connell and Hilliard and I were springing forth from that door and across the narrow gap, through that window, our heat-pistols ready in our hands! And at the same moment there burst after us our crew, and from all the windows around that level, from all the cruisers hovering beside those windows, a stream of black-uniformed Americans with heat-pistols in hands were pouring into the tower's fifth level!

Instantly the guards in that level were snapping their own weapons up toward us; but before they could fire a score of cartridges from our pistols had flicked and flared among them. As they sank lifeless in scorched, burned heaps of flesh we were racing through the other rooms and corridors of that level, killing the guards in it with our heat-pistols, the surprise of our attack taking them unawares. So awful was the drumming of the titanic battle all around and outside, that no alarm of our presence penetrated to the levels above and below us, and, now with the last of the guards wiped from that fifth level, I turned toward my three companions.

"Connell and Hilliard! Take half our men and find your places here in the tower, keeping anyone in its upper levels from getting farther down than this! Macklin, watch with our cruisers outside—at this low height the batteries around the plaza can't reach the ships, can't pivot toward you—and be ready to keep anyone from getting into the tower from outside!

As they whirled to obey my orders with the other half of our men, some hundred and fifty in number, I was running toward the cage-lifts. With swift blows we destroyed the controls that guided them from level to level of the tower, and then we rushed toward the narrow stairs that led also downward. Another moment and we were rushing down those stairs, while as we did so there came a scuffle of battle above us, and we knew that the alarm had penetrated to the upper floors of the tower and that the guards there were pouring down to battle with Connell and Hilliard and our men.

We leaped on downward, though, down until we had burst down into the fourth level. There our surprise was as complete, and before the guards there were aware of our presence, almost, we had sent our heat-cartridges flaring among them, had swept them from existence and were leaping down to the third level. And in that it went the same; and in the second below it, and then, with hearts pounding, we were rushing down into the first level!

As we poured down into its anterooms, its guards rushed toward us and their own heat-pistols came up; but they too were falling in scorched heaps a moment later, and we were dashing through the anterooms toward the great circular immo chamber that held the immo controls of this great air-city of Berlin! Through those anterooms we burst, the surprised guards falling lifeless and burnt before us, and into the immo circular room! All around its panelled walls moved green-uniformed attendants who whirled with surprise from their switches and dials at our entrance; while at the room's center there was what seemed at first to be a great dull-glass globe! We knew that that globe enclosed within itself the great table-map and controls of Berlin; and now there were bursting out through an opening in that globe, the three green-uniformed men who had been within it—the First Air Chief of the European Federation and the two officers
who with him had been controlling the movements of all the mighty combined European and Asiatic cities!

The Captured City

A S the leader saw me, his swarthy face lit for a moment with a flash of recognition, of astonishment; and then he and his fellows were leaping toward us, their hands flashing down toward the heat-pistols at their belts as the attendants around the room jerked forth their weapons also. But as they did so, our own heat-pistols flashed up and for the next instant the great room seemed full of flares of blinding light as the cartridges burst among them, sending them staggering and swaying and falling in seared heaps! I shouted to my men swift orders that sent a score of them to the great switch-panels to take the places of the attendants there; while the remainder rushed toward the great doors that opened from the tower's lowest level into the plaza outside. Swiftly they closed those doors, barred them and massed behind them, and then I was rushing toward the great dull-glass ball at the room's center.

Inside that ball stood the great table-map upon its great block, while beside it were the six levers and speed-knob which controlled the speed and direction of Berlin. As I took the seat before them now, I gazed about me, and saw that the great hall's interior was in effect a great periscope screen itself, one in which I could gaze in any direction through the other great ball above the static-tower's tip. And now, gazing into it around me there, I could see that in the outer night there stretched still the giant ring of the enemy cities, of which this Berlin was the heart, surrounding our own survivors and hammering them still with that deadly fire which would soon bring them crashing to earth. Far out over that mighty field of battle, its brilliant lights and blinding heat-flares stabbing the darkness, and its thunderous roar of guns shaking the air, I could gaze; while even at the same moment I heard, high above, Connell and Hilliard and their men engaged hereby in holding the guards in the upper tower back. At the same instant came a sudden knocking, an alarming rapping and then a battering and crying of voices against the great tower's door from outside; as the alarm spread from the tower's upper levels!

Disregarding all these things, I grasped the controls before me, watching the scene all about the great city through the periscope ball about me. Swiftly I jerked the lever in my hand and jerked down another; as I did so, I saw that the whole great city of Berlin was soaring up now above the ring of cities in which it had hovered, until it was a little above their level. And then I thrust back the lever in my hand and jerked down another; as I did so the mighty air-city of Berlin, the titanic air-capital whose controls we had captured and which lay now in my hands, was driving sidewise toward Geneva, that hung beside it in the ring. Toward it we sped, driving at top speed toward it at a height a little above it, so that our colossal base was on the level of Geneva's upper towers. And with set teeth I drove Berlin onward, its walls being shattered all the way, right across the upper towers of Geneva, had mowed down those great towers like blades of wheat before a reaper!

Then as Berlin drove on from above it I saw Geneva wavering in mid-air behind us for a moment, and then crashing down to earth through the night! I had moved away the great electro-static tower whose collection of cosmic energy held it aloft, and Geneva went crashing down to earth through the darkness like some giant comet of blazing lights plunging to doom! And then, beneath my hands, Berlin was driving still onward across and over that great ring of enemy cities, shearing now in the same way across the towers of city upon city in that ring. Stockholm and Cape Town and Bucharest fell as I mowed their power-towers from them; and to them that awful spectacle of Berlin rushing upon them and sending them to doom, crashing across their great towers, must have been utterly stunning and inexplicable in that wild moment!

On—on—around the great ring I held, almost insane with wild fury and excitement in that moment of triumph, driving through the night on our captured air-city and sending city after city whirling to death. I was dimly aware that the fighting above had ceased. Connell and Hilliard and their men had wiped out the guards in the tower above, and they had rushed down to defend the electro-static tower's doors, against which a wild battering was resounding now. Huge crowds were surging madly against the tower as they felt their great city rushing through the night and crashing in wild destruction across their fellow-cities! But, in the wild excitement that was surging through me now I paid no attention to all about me; for surely I was swaying such colossal forces as no man ever had swayed before.

The European and the Asiatic cities were breaking from me, in wild panic, disorganized and shattered; since there came now no commands to them from this city of Berlin that had held their commander. And as they broke into a disorganized mass, the half-hundred American cities massed in the center, who had seen the terrible havoc that Berlin, beneath my hands, was wreaking upon their enemies, were themselves rushing to the attack once more; and all their guns were thundering toward the disorganized mass of their enemies!

Up toward Berlin from that mass as we rushed forward there rose to meet us the giant air-capital of Peking, battered, scattered; its commander seeking to stay this crazy destruction its sister-capital was wreaking upon their own forces. Up it came; and for an instant it seemed that Berlin and Peking must crash together bodily, but with a last wrench of its speed control I sent Berlin racing higher. And then we saw we met Peking, crashed over it, that mighty capital's power-tower also, with its other clustered towers, was sheared from it by our great base. Peking was wavering for a moment and then went whirling down to death! Yet even as it wavered, slipped and fell, its great guns were thundering savagely upon us until it had crashed to earth far below!

Victory!

A ND now, down through the night upon the mass of our enemy cities, I sent Berlin slanting down toward them, at its full speed, and across them in a tremendous ramming swoop that sheared the towers from a dozen of them, even as they attempted confusedly to rise and meet the onrushing mighty city! Of that confused, disorganized and broken mass there remained of them at last hardly more than a score, still savagely belching death from their guns toward our half-hundred American cities and still sending an occasional one downward! But now as I whirled the giant mass of Berlin back toward them like a striking, gigantic bird of prey, I was aware of a tremendous battering and clanging of metal; and at the same moment Hilliard was shouting to me from the great doors that opened from
the anterooms into the plaza. "They're breaking down the doors, Brant!" he was screaming above the wild thunder of battle and the clamor of giant crowds that surged against those doors outside: "Fight on, though—we'll try to hold them back!"

"Hold them a moment longer!" I yelled back to him: "A moment more—!"

For now I sent Berlin whirling downward in another terrific swoop across the mass of our enemy cities and it sheared across half their mass, as they sought by rising or sinking to avoid that deadly swoop. But a half-score were left of them now, and now the half-hundred cities of the American Federation had gathered about them and were hammering them with terrific fire. No gun sounded now on Berlin, all its crews and soldiers were rushing wildly across it toward the electrostatic tower, as the city whirled and crashed and fought and ran there against their own allied cities! Caught in the terrific fire of the cities around them, the half-score European and Asiatic cities were going down with guns thundering into annihilation. But now I was aware at the same moment of a terrific uproar there at the tower's doors and of wild shouts and clinging blows there as our men fought to hold back the madly surging crowds outside!

Gripping the levers before me for one last effort, I jerked open the speed-control to its widest; and then, as it shot above the mass of the European and Asiatic cities, only a half-dozen in number now, I whirled the mighty mass of Berlin down upon them in one last tremendous swoop from which they sought in vain to swerve. They too were hesitating for a moment and then went whirling down to death, the last of the European and Asiatic cities save for Berlin itself about me! And then, as I brought that city to a stay, with the last of its companions crashing beneath and with the American cities hanging all about us now, there was a great clang of falling metal at the tower's doors, and back through them wild crowds without were pushing our black-uniformed defenders!

Connel and Hilliard at their head, our men were being pushed back through the anterooms, back toward the door through the room which I sat at the controls; and, as I gazed out through the opening in the great periscope ball about me, I saw that an instant more would see them overpowering the last of our men, rushing in upon me to take the city's controls once more! But as I saw that, I reached forward, slammed down the lever that sent the city whirling downward! I gripped that lever and with a supreme effort tore it completely from its socket! The next moment a wilder cry came from the crowds fighting through the door and the crowds over all the city outside, as they felt that city whirling and swaying beneath them, felt it whirling down to death through the night to annihilation!

And as they uttered that tremendous cry, as the swaying city flashed downward, their struggle at the door forgotten in that awful moment of doom, I was aware subconsciously that I was staggering with Connel and Hilliard and our remaining men, up the narrow stair. Up to the great tower's second level and to its windows, beside which hung our cruisers with Macklin and a skeleton crew, holding them there beside the tower even as the great city whirled with awful speed downward! Then we jumped through those windows into the cruisers. And the next moment, just as the cruisers with ourselves inside them drove upward like light from the falling city, Berlin had crashed into the earth just beneath us, with a terrific, annihilating shock that buckled it, broke it, made of it but a great twisted mass of rended metal!

Then we were driving up toward the half-hundred remaining American air-cities that hung still high above, the giant city of New York still at their center. Up until we had soared above those cities and they lay beneath us, giant circles of brilliant light, scoured here and there with countless craters of fused metal! Their great crowds of peoples had surged, now, from their towers, out into their squares and streets. They gazed as if incredulously stunned by their deliverance, at the empty air and night about them, where so shortly before had hung the enemy that had been sending them to doom. In that moment, as we hung there high over them, in that moment of incredible surprise and dawning joy, it seemed that all the world was silent after the terrific thuder of that wild rushing battle that had riven earth and sky so short a time before. It was as though the night, and the winds about us, and the white stars overhead, were as silent with astonishment in that moment as the crowds on the cities that hung around and beneath us.

Then suddenly, from those cities, there was coming up toward us as though from a single voice a single, mighty cry!

Dawnward

At dawn of the next day our half-hundred great air-cities prepared to separate, to move back to those positions that had been theirs before danger had brought them together. Through all of that night they had hung there together, their streets crowded with weeping yet rejoicing crowds; and, now that the dawn showed them the green plains far beneath, they were beginning to depart. And we five, sitting there within the periscope screens in the power-tower of New York, were watching them as they prepared to go.

Battered and scarred, all of them, by that titanic battle through which all had fought, many of them with great towers fused and broken, and scarred with great craters, they were crowding toward us. Washington was furthest from us, until it hung just beside our city, its great streets and plazas thronged with shouting crowds. And, in the wild shouts of those crowds, we could hear our own names, their roaring tribute. For, in their eyes, we had saved them by that last wild effort of ours. And then Washington was moving away from us, toward the southeast, speeding away and vanishing as a dark spot in the southeastern sky.

And now another was crowding beside us, and another, and still they came. Pittsburgh and Guatemala, Tacoma, Chicago and Philadelphia, Rio de Janeiro, Kansas City and Vancouver—one by one they were driving beside us, their giant bulls hanging beside New York, their mighty cheers reaching us. They moved away to north and south and east and west, to vanish as dark, dwindling spots in the skies, until New York alone of them remained hovering there high above the earth. And then, Yarnall's eyes returned to the screen beneath us, where there were revealed the great shattered wrecks, laying half-buried in the green earth far below.

"We win," he said, slowly: "The American Federation wins; but at what cost? Two-thirds of the world's cities have crashed to annihilation and death, and a half of our own."

"It's so, Yarnall," I said, gazing down with him: "yet it was our necessity, and not our will. They at-
tackled us without warning; attacked us with mighty weapons which they had devised especially to annihilate us all—and we could but defend ourselves.

"I know it, Brant," he said: "We could do nothing else—but I am glad—glad, man!—only that this greatest of all wars is the last."

"Earth's Last Air War!" It was Macklin speaking, thoughtfully: "Now, the war lords of our enemies have gone, their people will join with us to end all wars, to forget all our enmities. . . ."

"We will," I said, as I turned toward the controls, "but we five can never forget what has happened."

And then, as the others sat silent at my words, I was opening the speed-control before me, moving over one of the great levers, and sending New York, with its great motors droning and its tube-propellers hissing, away to the east; toward the sunrise; faster and faster; rushing eastward over the green plains that were now rolling swiftly back far beneath. On all the mighty city around us, in all its streets and plazas, its great surging crowds were shouting still, a great, rejoicing clamor. But we five there at the city's controls, in the great tower, sat silent and unmoving. Gazing out into the blue cloudless heavens before us as our city rushed downward, we looked into the face of the morning sun. It was the sun rising on a world at peace.

THE END

The Greatest
Interplanetary Story
of All Time

is to our minds

"THE SHOT INTO INFINITY"

By Otto Willi Gail

During the past few years, the Germans have progressed rapidly in serious attempts to solve interplanetary travel. In the present story by one of the greatest German science fiction authors, Mr. Otto Willi Gail has given the world a real story on interplanetary travel, not based upon the usual fiction, but upon real science.

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Flight of the Eastern Star

(Continued from page 507)

in the way of tense, gripping thrills in the form of near catastrophes and mid-air rescues, although I enjoyed every moment of it. And it was with pleasant memories that I finally entered again the office of my friend Jackson Worthington in Los Angeles. He was as pleased to see me again as I to see him. He at once informed me that I had "promenaded some of my paunch" away, and that I looked as fit as the proverbial fiddle.

"By the way, Jack," I said during the course of our discussion, "did Captain Markson deliver the consignment in Peiping on time?"

Jack laughed pleasantly.

"Certainly, Tom," he said: "He piloted the Eastern Star himself all the way from Tokio to Peiping and arrived well ahead of schedule. He held up the ship an hour, and with Madden saw personally to the delivery. But somehow, reports had reached China's underworld that a consignment of bullion would be delivered to the government at that hour; and Madden and Markson had one helluva time. They were raided shortly after they departed from the anchoring tower in a machine; but leave it to Madden to fight his way clear! He got a dirk thrust in the arm and a bullet crease across his neck; but they delivered the goods nevertheless!"

"Damn it!" I exploded: "And I had to miss all that just to watch a few crazy Japs showing off in airplanes! Markson wasn't hurt, then?"

"No," Jack replied: "Markson is the luckiest fellow I ever knew! He has had a lot of ups-and-downs, but I've never known him to get up too high or down too low! He's immune to danger either personal or public! As for Madden, he's too modest to tell anyone how he got his neck in a sling. What a cowering good half-buck he'd have made on our old Bingham team, Tom!"

"Madden?" I said: "Why, Jack, what he couldn't do to those gayle men physically would have been made up by one look at him. When he scowls the world ought to tremble in fright! But let me tell you, he's a he-man to the core—and one of the finest, despite his looks!"

"Yep! But our new globe-circumnavigator, the Comet, is going to part Markson and Madden. Madden has been elevated to a captaincy and will command the Eastern Star. The Comet is designed to be the finest ship ever built, and will slice eight hours off our usual round-the-world time. You ought to book passage on her now, Tom! With Markson in command of such a ship, you're bound to see some excitement!"

"Maybe I will, Jack! Maybe I will!"

And with that we parted.

THE END.

TO LOVERS OF THE BEST THAT THERE IS IN SCIENCE FICTION

If you are a lover of science fiction you must certainly read the December issue of SCIENCE WONDER STORIES, sister magazine to AIR WONDER STORIES. Here you will read in most thrilling stories the future of the world—stories of future civilization, travels to other planets, stories of biology, medicine, chemistry.

Contents of the December Issue

THE CONQUERORS
By DR. DAVID H. KELLER

THE SUPER VELOCITOR
By S. C. CARPENTER

THE LOST MARTIAN
By HENRY HARBERES

THE TIME OSCILLATOR
By HENRY F. KIRKHAM

And other stories, as well as Interesting and Educational Features, Science News, Science Questions and Answers, Letters from Readers
The Phantom of Galon

(Continued from page 517)

"You know the rest of the story. When I saw your static supercharger, I knew that my days were numbered; so I persuaded you to go to Europe with a purpose to kill you on the way. But my good instincts had not been completely submerged; I could not kill the boy that I had dandled on my knee. When I saw that you were failing in love with Miss Huntington, I became intensely jealous of her, for she might take you from me. The 'friend' who had plotted your death now wished to preserve you for himself. I decided to kidnap her without delay. But in doing so, for the first time in my criminal life, my plans were upset; and I barely escaped with a whole skin, thanks to you. Later, however, I successfully accomplished the abduction of your bride and her servant."

"Did you kill her, too?" broke in Manning at this point. He waited, dreading the answer which would verify the death of the one he loved. There was a breathless pause, then Herrick spoke again:

"No, I did not kill her. I intended to do so; but something has stayed me."

The sudden relief was too much for Manning. He broke down and cried like a child.

While Manning was getting his emotions under control, Herrick spoke some strange words to the Malay, who immediately left the room.

"The body which you thought was mine," Herrick continued, "and which lies buried back home, was specially prepared by me for the purpose. It was my wish that Richard Herrick should drop forever from the sight of the world. Just a week ago the demon that had so long dominated my mind, suddenly left me for a time. I realized with horror what I had done. Then came your pursuit; I tried to stop you by paralyzing your motors, but I did not wish to harm you. I wanted only to escape. I have decided to give up, confess everything, and send you home with your bride."

"But what will become of you?" broke in Manning.

Herrick laughed coldly:

"My doom is sealed. The demon has gone for a time only; I am a sane man now; but I cannot tell how long that will last. If the devil again possessed me, I would become a raging maniac; but that shall never be. Five minutes after you leave this ship, I will die and my secret will go with me. No trace of this satanic invention shall remain. I have had myself bound to my chair, lest the fit return on me before you escape."

A door opened on the far side of the room and the huge Malay entered, followed by Margaret Huntington! "Dick!" she cried, and ran into his arms.

When the reunited lovers at last turned from each other and looked questioningly to the master of the Phantom, the latter said:

"You two must go now, and you will never again return to Galon. I wish you all the happiness in the world. You must try to forget Richard Herrick."

There was a pause, then he continued: "Will you bid farewell to an old man, who has wronged you deeply?" His hand was outstretched. There was such a pitiful note in Herrick's tone that Manning could hardly keep the tears from blinding him. After all, he could not forget what Herrick had been to him.

"We forgive all, Uncle Dick," said Margaret.

Herrick smiled, "You are a wonderful girl, Margaret," he said: "Make Richard a good wife."

"Good-by, Uncle Dick," said Manning huskily.

"Good-by and God bless you both," Herrick replied.

The two slowly walked from the room. At the door Herrick turned and looked back; there sat Herrick, looking weak and forlorn, but smiling faintly. He raised his hand in a farewell salute and the two young people passed out into the world of sunshine.

For almost five minutes the two who had been so joyfully reunited followed the narrow trail which led toward the Skyrocket. At length they came to the top of a hill and looked back; there in the clearing they could see the Phantom, shining black in the tropical sunshine. Suddenly, as they watched, there burst from the great craft a cloud of dense brown smoke that rolled out over the clearing in huge billows. A dull rumble shook the ground, and a great explosion reverberated through the air. Then the smoke began to settle in a fine brown dust, over all the clearing. When it had completely cleared away, there were to be seen, where the Phantom had rested, only an irregular crater and shattered fragments. Richard Herrick was, at last, truly dead, and the Phantom of Galon was no more.

Manning sighed, wiped a tear from his eyes, and, taking the hand of his bride in his own, led her down the other side of the hill, to a new day and a new life.

THE END.
“You have learned how many of these to each plane will make it capable of destroying a city?” he asked.

Fred nodded: “Issue each pilot five of those tablets,” he directed. The Grand Master nodded to the orderly, who hurriedly seized the carton which had contained the gold, and departed on his mission. The Grand Master continued to smile.

“Now,” said he, “the other package is for your own use on the Great Mission. Let me see its contents.”

Brettner opened a smaller package, and revealed a layer of white tablets each about the size of a pea, lying amid wrappers of cotton wool.

“You will retain these for your own use,” the Grand Master said: “You will rest for two hours; after which you are to depart in our fastest plane to the capital of the greatest nation in the world”—he spoke ironically—“and destroy it.”

Fred winced: “Does that constitute the Great Mission?” he asked.

The Grand Master nodded: “Indeed! And until you have destroyed Washington completely and returned here you shall not see your Nadia. She is safe now; but, unless you carry out this mission in good faith and return here, you shall never see her again, and—and she shall die a horrible death!”

Fred parleyed for time: “Is there no way out of this—cannot we take this city without destroying not only the government of the United States, but all the people who live there?”

The Grand Master’s eyes blazed. “None!” he said firmly. “It is your mission to end their lives. The leaders of the nation must be killed, to demoralize it. Blow the city to the four winds, and make yourself one of the greatest conquerors of all time!”

Fred bowed his head obediently.

“Go, then!” said the ruler.

“Before I go,” Fred whispered, “I have some information for you which I can give you only in the utmost privacy.” He looked significantly toward the brawny bodyguard of the Grand Master, standing at the door through which Brettner had come. The Grand Master looked surprised. He pondered for a moment, then—“Granted,” he snapped. He turned to his guard.

“See that we are not disturbed until I ring for you,” said the Grand Master.

The guard bowed and walked out.

When they were alone the Grand Master turned to Fred. What he saw made his face turn a ghastly white. Brettner held the Radium-Ray pistol in his hand pointed toward the potentate. His hand went out for the bell-button, but Fred’s voice stayed him. “One move means death, Mr. Grand Master. I will teach you that one man cannot control the world. If that can be done, I’m the man! From now on you are to do as I say!”

“You may die any minute,” said the Grand Master, his face pale, but still smiling.

“No bluff!” Fred barked. “You will die first. One overt move and you die instantly!”

“Well?”

“Call in an orderly and tell him to release Miss Nadia Deneen and bring her here. If she is already dead, God help you.”

The Grand Master pushed the button on the desk, Fred was watching him carefully, his keen eyes alert. As the orderly came in, Fred stood in a position which concealed the gun, while the Grand Master ordered the man to bring Nadia to the office. When he had gone Fred gave further orders.

There was a tense ten minutes of waiting before she came, her face terror-stricken. She stood staring between the two men. With a smile Brettner waited for the Grand Master to give his other orders to the henchman.

“Have all planes take off with the explosives and cover all the cities,” the Master said. “Then return to accompany this lady to a plane, and see that it is one airworthy for a cruise ashore.”

Nadia’s eyes leaped with understanding. With a loving look at Fred, she ran toward him. When the orderly had disappeared Brettner snapped at the Grand Master, “Get over there in the corner, traitor to humanity! Stand where I can keep my eyes upon you and still kiss this young lady!”

Nadia then saw what had happened. She flew into Fred’s arms. “You won’t suffer any longer, darling,” he assured her: “I’ve just conquered the Conquerors of the World!”

She held him close, while he kept free his right hand holding the Radium-Ray pistol pointed at the Grand Master. The latter at last realizing his position, demanded, “What are you going to do now, Captain?”

Fred grinned and walked closer.

“I am going to send Miss Nadia ashore for the help of the air service who shall hand you over to the arms of justice. True justice for you would mean the torture of waiting days until you should enter a disintegration room, such as you invented for the destruction of innocent men! But as it is, you will get your deserts. Then I shall retire from the air and become—maybe a grower of flowers which I shall use to brighten the Light and Love of my Life!”

The Grand Master interrupted: “Have you thought of all those planes of destruction, Captain, which you just dispensed with to the greatest cities in the world?” he said, laughing madly.

Nadia gave a start. Fred smiled as he told her of the terrific explosives and how he had sent those planes of destruction out to deal their worst.

Nadia was amazed and terrified that this could be true. But now she trusted him.

“Have they—have they departed?” she asked breathlessly.

Fred’s face suddenly became solemn. The Grand Master continued to laugh madly. “Aha! Splendid, Captain!” he said. “You are also an outlaw. I could not have done better myself. Your best move at present is to remain here and take over my great program!”

Nadia was persistent. “Have they gone—to to kill people—all over the country?” she asked.

Fred’s face was solemn.

“Yes, they’ve gone,” he said: “They’ve gone to fly over the greatest cities in the world.” He turned to the Grand Master, then, and his face broke into a smile.

“But just think of all your planes dropping atomic tablets over the country like a fleet of advertisers, and no one with the sign of a headache! You’re a fine Conqueror. You have the whole world in your power, eh!”

He would have gone on, but Nadia was kissing him.

THE END
**CONSTRUCTION**

**R-101 Most Luxurious of Airships**

THE R-101, the world's largest airship, is a commando as a marvel of luxury by those who inspected it just before completion at Cardington, England. The test flight will be under the command of Major G. H. Scott, who crossed the Atlantic on the R-9. The two-birth compartments compare favorably with those of a steamer. It has a smoking room, and ash trays are placed beside each berth; this is a divergence from the "no smoking" on the Graf Zeppelin, adopted. It will be possible to accommodate five persons from the main floor to the dance floor provided for their entertainment. A spacious lounge extends the ship's width. It is large enough for a double decker to turn one reverse. It will be capable of travelling at from 70 to 80 miles an hour. It is only 22 feet long, as compared with the Graf Zeppelin's 363 feet. The 276 feet planter will carry gas with a capacity of 5,000,000 cubic feet, as against the Zeppelin's 2,700,000. The diameter is 131 feet, whereas the Zeppelin's is 190. The craft will be able to travel the air route an England-Egypt-Yemen.

**Beryllium Foreshamed as Aircraft Metal**

A PREDICTION of Dr. W. H. Gillett, director of the Battle Memorial Institute, Columbus, Ohio, that beryllium, now worth $200 a pound, is likely to find commercial application in future aircraft construction, is contained in Science Service. Beryllium is noted for its great lightness, but it has been weighed down by its light weight—a fact that of aluminum—it would considerably decrease the weight of aircraft. It is estimated by designers that it is worth forty dollars to reduce the weight of airplane one pound. Dr. Gillett declares, however, that although beryllium is so expensive that the shipyard will not be able to obtain it in quantity at a price of about $25 to 35 a pound, the high price of aluminum is as much beryllium by weight in the earth's crust. Dr. Gillett believes that because of its present high cost, little is known of its potential in fabrication and because as it is known to have a higher modulus of elasticity than other metals, the properties of metals that are of equal that of steel, promises to allow aircraft designers to design new planes for which the metal is now possible. It would be well, Dr. Gillett declared, for aircraft manufacturers to investigate the possibilities of this metal.

**800 Miles an Hour with 100-Ton Planes Predicted**

PIGOR SIROKOS, aircraft builder and designer, has predicted that in a few years we will start building airplanes weighing 100 tons; a carrying capacity of 200 persons; that these will be a regular first-class service on the trans-Atlantic transport service; and that planes will be able to arrive at New York from Paris in from 800 to 900 miles an altitude of 25 miles. Mr. Sikorsky states that the only reason that air liners do not exist today is the reluctance to invest so much capital in a single flying unit. The Sikorsky planes, they say, will revolutionize commerce, as the cost of a flight will be reduced by 20 to 30 per cent.

**"Pin Bubble" Has Successful Flight**

NEITHER stride forward has been made in lighter-than-air aeroplane by its successes cross-country trip from Detroit to Lakehurst, N. J., of the all-metal dirigible ZMC-2, at an average speed of forty miles an hour, Captain William Keener, U.S.A., was its pilot. A new composition of plates called slided (having a base of duramal coated with a thin layer of rubber), in order to give the necessary strength of this ship. Two Wasp H-2-Helium motors are used; and the ship has a capacity of 200,000 cubic feet of gas. The ZMC-2 is being used for the United States Navy, and as the ship is a successful flight, it is of its kind, may be the precursor of larger dirigibles made of similar materials, and artificially maintained internal pressure, it will be possible to reach this in the way.
OPERATION

Two Parachutes Used

THE advisability of aviators having two parachutes was voiced by C. Allen in *The New York World*. By such a provision, a pilot in distress could secure one of them, even if it is especially true of "smut" or exhibition jumpers. The army and navy have long been interested in making such equipment available to be carried by their exhibition jumpers, one strapped to the abdomen and the other attached to the chest. An incident cited to prove the utility of this plan as practiced at the 1926 world meet was the national air races at Philadelphia, when an exhibit jumper, flying low, crashed into a telephone wire, and drove the telephone pole to the ground. The pilot was injured and had to have recourse to the emergency chute to bring him safely to earth.

Flight Made Solely by Instruments

TAKING off from the ground, making a short flight, and again landing very close to a marked spot on the ground, Lieutenant James H. Doolittle, while working under the auspices of the Guggenheim Fund, made a successful flight only by means of instruments at Mitchel Field, New York. This flight, in the opinion of Harry F. Guggenheim, president of the Fund, is a great step forward in the art of flying. Doolittle was in a fully-equipped cockpit with all the instruments that could be embedded in a small instrument which indicated the longitude latitude. It was the first time that the pilot was able to land directly on the field. This means that the instrument is now accurate enough to take the pilot to within four miles of his field and to enable him to land safely from that distance. With these and other devices that were used for the first time in this flight, it is possible now for the pilot to land with ease, and in fact, the plane will be more independent of weather than any other form of transportation.

Lighting Doubt ed as Menace to Aviation

THAT lightning is a menace to aviation is now a question of dispute. It is stated that there has been no decisive proof that airplanes destroyed by fire during storms have ever been struck by lightning. Many other causes might be brought forward. According to Dr. Joseph E. Woodman, professor of geology at New York University, there is evidence that the lightning which caused the famous fire at Carranza was killed, was destroyed when he was attempting to land. The lightning that killed Carranza was charged by a pilot who was flying over the field. If a pilot could be found to say positively that his plane had been hit by lightning, other matters would be different. A body must be heavily charged, the lightning strike must have a large intensity. On the other hand, Professor William Jackson Humphreys of the University of Chicago, asserts that the danger of a lightning being struck by lightning is 100 times as great in the air as on ground.

New Epoch of Air Transportation Predicted

CONSIDERING the successes scored by both airplane and dirigible, it is clear that in the near future a new epoch of transportation, says T. J. C. Martin in *The New York World*. The dirigible and airplane are to be pitted against each other for supremacy as a means of transportation. The airplane will be able to develop into one of the most important of the different types of passenger transportation. The most important type of this is the dirigible. On the other hand, the dirigible can go longer distances than the airplane, and can be more versatile and luxurious, but the faster speed of the plane will permit it to outstrip a storm faster than the dirigible and to land more readily. A dirigible is apt to become helpless in a bad windstorm, but in the case of engine trouble it is much safer than a plane, which must land, whereas the airship may remain aloft until repairs have been effected. The writer predicts an airship that will be as luxurious and as well appointed as a steamship.

Airplane Speed to Be Doubled in Ten Years

GERARD BLERIOT, the first man to fly across the English Channel, predicted recently that within the next ten years it will be possible to attain a speed of 140 miles an hour for an airplane. He recalled that, when he flew across the Channel, his speed was 60 kilometers (37.3 miles) an hour, whereas to-day the speed is nearly 460 kilometers (286 miles) an hour. On such progress, he said, we may have an expectation that today's speed will be doubled in the next ten years. He expected to offer a Liberal Cup for speed contests, between land planes just as the Schneider Cup is for seaplanes.

Tandem-Winged Monoplane Has Successful Flight

A SUCCESSFUL test flight of the tandem-winged monoplane built for the Fernie Air Craft Company of Canada was made by George Fernie, its inventor, at the controls. It stayed aloft for twenty minutes with a gross weight of more than 8,000 pounds, and attained an altitude of 3,500 feet. It descended with a new type of three-point landing: the tail first touches the ground, followed by the wheels, with the tail high in the air and the plane in flying position ready to take off again. The machine is said to stall in the air; although the test did not take in the full phase of its design, it has a carrying capacity of 3,000 pounds and has two Wright 350-horsepower radial engines. The Monoplane has a cruising radius of 5,000 miles and a speed in excess of 130 miles an hour. The plane is scheduled for a non-stop flight to Roumania, Fernie's native land.

"Aviation News of the Month"

portrays in plain, yet concise language every important aviation advance during the month. Nowhere can the average reader get so much a week of accurate and vital information condensed into such a small volume. Some 40 aviation correspondents of the world are utilized by our editors in the compilation of this department. The publishers welcome short contributions to this department from the various scientific institutions, laboritories, makers and distributors of planes, etc.

Experimenter s Work on "Flying Wing"

GERMAN airplane constructors are evolving a new kind of airplane, which will have a tall, rudderless plane and the plane will be fuselage that houses the cabin. One of these planes, built by the Karl-Rosen Company, and equipped with an engine of less than 15 horsepower, recently made a successful flight and attained a speed of over 70 miles per hour. The plane is basically a wing and possesses four-wheel landing gear at the ends of the wings, stabilizer and rudder at the nose. It is propelled from behind, and the main advantage of the invention is the reduced air resistance, due to the absence of the fuselage or tail, which is also experimentally in use with a "flying-wing" type of plane. This plane is composed of two large wings, one of which will contain the engine, pilot's seat, passengers, all necessary equipment, and that it is hoped, will greatly lessen air resistance. A factor which will have to be solved in connection with the plane is whether it would be better to have the propellers in front of the plane, or be limited to the rear. Advantages and disadvantages. Propellers placed at the rear of the plane have nothing to estirct their airflow streams, but on the other hand, they will have to do their work in "disturbed" air, because of the wing in front and away from the edges, and other planes, and it is also thought that, if the speed of the airplane is increased, the propellers would form a tail and this would compel the pilot to use a special steering apparatus.

Air Corps Has New Parachute

A REVOLUTIONARY type of parachute that may ultimately take the place of the standard type in use is now being developed by the Army Air Corps at the experimental laboratories at Wright Field, Dayton, after more than a year of study. Though the materials, general size and principle of operation of the new parachute are much like the standard "umbrella" type, the new parachute has a different construction that gives it a greater stability and safety of operation; and a unique method of activation.

Instead of the circular main sail, there has been fitted a large, flat, rectangular sail divided into two, with the uppermost corners rounded and the third square, straight across. The lower part of the paper is the standard "chute, except across the squared-off corner, which has now been replaced by a strip of metal. The parachute is open, this corner forms a tail and helps to balance the airplane. More than a dozen jumps and a hundred sponges have been made with the new "chute. These indicate a decreased oscillation, the pilot will be able to pull the parachute up or down, and arresting the rotation of the airplane, and completing the pull-up, the "chute is ready for release to hold the airplane in place on the field.

Bell Telephone Has Flying Radio Laboratory

THIS largest and most complete radio laboratory in the United States, the Bell Telephone Laboratory. This is a large flying laboratory, equipped for the development of radio apparatus for air devices. The laboratory is divided into four main mental stages through the final testing of the finished apparatus under actual flight conditions. The planes are equipped with large laboratory benches and a number of antennas. The laboratory will be used for the transmission of the mounting of various types of experimental air telephone transmitters. Generators and storage batteries will supply the power.

Catapult Practical Method of Launching Planes from City Roofs

A PRACTICAL way of launching airplanes from the restricted areas of city roofs is suggested by Linton J. D. Clark, U.S.N., in the New York Times. The projects is borrowed from earlier modes of warfare, and has proved its practicability in the navy since its first test in 1915. The plane is shot into flight by a catapult, a smooth, curved track that is attached to a large, movable, in one hour or in half a second. This method is now under development by the navy, and to date there has been no fatal accident connected with it. The record on record was when a land plane took off in the wake of a warship's propellers, and the plane was the side by the air blast from the leading plane. Planes operating from city roofs could be even more simple than from carrier decks of the battleships, and offer a new and strong to withstand the blast of airplane landings, he says, because of the rubber-wheeled wheels, which have the planes below the building. Future construction of buildings could provide for the additional weight of a roof airport.

European Airmen Praised

MAJOR CLARENCE M. YOUNG, who is now Assistant Secretary of Commerce for Aeronautics, praises the uniformity of airplane ports in Europe. In Croydon the airport, including buildings and equipment, is owned and operated by the state. The direct administration of the airport is under an airmaster or chief officer of aircraft. The buildings, including administration, hangars, workshops, etc., are placed by the government and the space in them is leased to the various companies. There are five different airlines operating from the Croydon Airplane. Each arriving passenger receives a check which he shows at a platform or taxi a platform or "laurase", and report in. Departing planes through the signal the end of the signal from the tower before taking off. Croydon, instead of allowing the pilots to strike, is adhering to the International Convention of Air Navigation. The above are adopted at the convention, and planes approaching the point of the point of the time of opening, such as the airframe is in the Pete before the same is accomplished, mainly the two planes are ready to land at the same time, the one flying at the highest altitude must maneuver to avoid the other.
GENERAL

Investors Warned Against Aviation Swindles

A NOTE of warning is sounded by the Better Business Bureau in New York, the Republic of Businessmen, and in a number of other organizations. It is estimated that millions have been lost in the last two years to investors in companies that have no airplanes at all.

The Bureau states that the average investor should invest no more than 25 per cent of his capital, and that he should be prepared to lose it all. The Bureau also advises that investors should be wary of any scheme that promises a quick return on investment.

America's Great Field for Aviation Expansion

HARRY F. GUGGENHEIM, president of the Daniel Guggenheim Fund for the Promotion of Aeronautics, has just returned from a recent trip to Europe, where he has been able to observe the rapid development of the aviation industry. He states that the United States has a tremendous opportunity to lead in the development of the aviation industry.

Guggenheim points out that the United States has a vast amount of air space, and that there is a great need for aircraft to transport goods and passengers. He also states that there is a great deal of interest in aviation among the public, and that the United States has the resources to make it a leader in the industry.

Preference Given American-Built Planes in Foreign Countries

FOREIGN countries seem to show a preference for American-made aircraft. The American-Built Aircraft Corporation, a division of the International Air Corporation, has received orders for aircraft from a number of foreign countries.

This preference is due to the fact that American aircraft are known for their reliability and performance, and are considered to be the most advanced in the world. The American-Built Aircraft Corporation is also able to provide better service and support to its customers.

ROCKETS

Moon Rocket in Forefront of German Experiments

THE German rocket that can penetrate outer space and possibly travel to the moon is being developed by a group of scientists in Germany, according to guides Enderloch and Ernst. The rocket is being developed by Professor Hermann Oberth, Max Valier, and Fritz von Opel, who are working with the German government.

Professor Oberth is a renowned rocket scientist, and the others are working on the project under his direction. The rocket is designed to reach a speed of about 20,000 miles per hour and to travel to the moon after a journey of about three months.

Oberth is cautious in his estimates, but the project is still considered a significant step forward in the development of space travel.

Opel Makes Flight in Rocket Plane

THE first successful flight of a rocket plane was made recently in Germany by Fritz von Opel, manufacturer and sportsman, who flew a mile and a quarter in a rocket-powered airplane.

The airplane was about seventy seconds in the air, weighed about 500 pounds when fully loaded, and was equipped with two two-wheeled, passive steering mechanisms that were positioned on the tail of the plane.

The flight was a success, and the pilot, a former German pilot, took advantage of the opportunity to fly in the air for about forty seconds. He had to make a landing, however, and the rocket was damaged.

The pilot was not injuured, and the rocket was repaired. He then made another flight, but this time the rocket was not equipped with the passive steering mechanisms.

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Why Not a Motor Under the Wings?

Editor, Aviation Forum:

I have read your Air Wonders Stories of September, and would like to know why the idea of Lowell H. Morrow in his "Air Terror" of having the motor under the wings, is not used.

FRED ROYCE
Detroit, Mich.

It is a great many ideas that are first from a general scientific standpoint do not work technically. The business of the scientist is to outline general laws of nature and to indicate a possible application for them. It is the job of the engineer to design and actually build the machine, and to weigh its advantages and disadvantages before a technical or engineering standpoint we believe that the stability added to a plane would be offset by the disadvantages. The analogy of a plane with a bird is somewhat fallacious, for a bird's power plant (Neutronium is not known to be an actual substance in existence. It is a possible substance that will come into existence under certain conditions. It has been recognized that even the most dense of our elements are relatively porous in volume than the bits of material. Now it is believed and calculated that, if the empty spaces between the atoms could be filled with substance, then a material which would weigh much more than the same mass of iron, might be the result. This hypothetical substance is known as neutronium. It would be much more dense than the earth's crust could support it. As yet no such substance has been made.

Why Not the Jupiter Invisible?

Editor, Aviation Forum:

I have just finished reading the current issue of Air Wonders Stories. I class stories as follows:
1. "The Robot Master."

The upper illustration shows the proposed method of giving a motor entirely smooth and silent operation. It would necessitate raising the motor onto a level plane higher off the ground and at the same time make an air-perfect danger of the propeller snapping into the side of the fuselage while landing or taking off.

The lower illustration shows the inner arrangement of the motor and the power plant by having the motor mounted on the fuselage of the plane which would be built as a separate unit.

BILLY FINCH
West Palm Beach, Fla.

(An explanation must be made in the question asked here, on the nature of invisibility. There is no absolute invisibility. An object can be made invisible to us by placing substances between and the plane of vision by the eye of the observer.

The invisibility of the plane would be determined by the use of a transparent screen, there being no plane invisible. By other persons, however, the plane would be visible.

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What is Neutronium?

Editor, Aviation Forum:

In various articles that you have written and the story, "Where Gravity Ends," you have spoken of Neutronium as the heaviest substance known. I would be very grateful to you for any information that you could give me concerning this substance and proof of its existence.

NORMAN MENSORIAN
Redwood City, Calif.

Higher Altitudes by Gear Shift

Editor, Aviation Forum:

If it is possible, by adding a gear shift (and can a gear shift be added to a plane) to keep the engine working at a constant speed, it is a possible plane higher by speeding the "prop" faster to get the plane to a higher altitude and the consequent thinner air? If the difficulty is in arranging the gear shifting, as its weight and size, would it be likely to lift the plane to a sufficiently greater height? If not, why not?

The ideal arrangement for serials is: One serial per issue, and no serial unless exceptionally run to in three issues. In four issues, never.

JERRY NOONAN
30 Ave. Aphra, N.Y.

The Valley of the Sonnets.

(What is proposed here might be scientifically feasible, although it is not a technical idea. It is possible that it will solve the problem of higher altitude, but it is a question of how to get the necessary power to the plane for the take-off, and why the idea is not so much a question of weight as it is in the engine development. If the plane is already on high ground, it might be possible to obtain more power from the engines at high speeds.

The result would be a better plane and an easier way of obtaining sufficient power for the take-off, and a suitable plane for the atmosphere. For instance, the plane has been used in experiments and so far they have been sufficiently successful. There is some doubt as to whether there is enough oxygen in the atmosphere, but Mr. Noonan must not think that by speeding up the propeller he will obtain more power; he will merely divide the power between a greater number of revolutions. From a technical standpoint, however, his idea is very interesting and we should like to see Mr. Noonan develop it further. — Editor.)
The great number of communi-
tations we have received in re-
sponse to J. K. Simmons’ letter in the October issue, is not only greater than expected, but more than exceeds our expec-
tations. We have received several hundred letters on the broad topics discussed in the letter, and many more on the specific points it mentioned. Consequently, we are unable to publish all the letters we have received. Those interested in the topics discussed should be sure to keep their letters to the point and concise. We will do our best to select the most interesting and relevant letters for publication.

Wants Interplanetary Stories
Editor, AIR WONDER STORIES:

I have just finished reading my October issue of AIR WONDER STORIES, and I think I would like to see some more interplanetary stories. I have always been interested in the possibility of space travel and exploration, and I think it would be fascinating to read stories about adventures in other worlds. I would be interested in seeing more stories about alien civilizations and their cultures. I believe that these stories would be very interesting and informative. Thank you for considering my request.

HARRY J. MILLER

Doesn't Mind Waiting a Month
Editor, AIR WONDER STORIES:

I am writing to express my dissatisfaction with the current issue of AIR WONDER STORIES. I have been a loyal subscriber for many years, and I am disappointed with the recent issues. I understand that you are moving to a new facility and are experiencing some delays, but I think it is unacceptable to wait a month for my issue. I am willing to wait, but I would appreciate it if you could provide an estimate of when I can expect my issue to arrive.

JOHN DOE

Women Have Patience Too
Editor, AIR WONDER STORIES:

I am writing to express my opinion about the recent issue of AIR WONDER STORIES. While I appreciate the stories and the artwork, I think there is a lack of diversity in the characters depicted. I believe that women should be represented in a more positive light, and I think it would be beneficial to have more female characters in the stories. I would be interested in seeing stories that feature strong, independent female characters who are not stereotyped in any way.

Susan Smith

Short Stories an Insult to Magazine
Editor, AIR WONDER STORIES:

I am writing to express my dissatisfaction with the recent issue of AIR WONDER STORIES. I have been a loyal subscriber for many years, and I am disappointed with the short stories included in this issue. I believe that the magazine is capable of much better, and I think it is a waste of time to include such material. I would be interested in seeing more in-depth stories that are more engaging and thought-provoking.

Robert Johnson

A New Issue in Town
Editor, AIR WONDER STORIES:

I am writing to express my excitement about the new issue of AIR WONDER STORIES. I have been a loyal subscriber for many years, and I think this issue is one of the best yet. The stories are well-written and thought-provoking, and I think they will be enjoyed by all readers. I particularly enjoyed the story about the alien civilization, which was well-developed and had a lot of detail. I think this issue is a great addition to the magazine.

Mary Brown

THE READER AIRS

ROUTES

THE READER AFR

IT department shall publish every month their opinions. After, in the Department, we fall down, on the choice of our stories, or if the editorial, generally, it is up to you to decide whether your letter is complimentary, critical, or whether it contains a good old-fashioned brickbat. Due to the large influx of mail, no communications will be individually unless 95c in stamps to cover time and postage is remitted.

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Grandfather Walked—Father Motored—

If the sound of ROARING motors, or the very thought of racing through the sky makes you "tingle" with joy, then you are among the lucky ones for whom Fame and Fortune await!

The present demand for trained flyers is so overwhelming that a Pilot can easily command a starting salary of $5,000 a year. This is not a mere statement—it is a POSITIVE FACT—and comes from reliable authority.

A time is coming—and it is not far off—when airplanes will be as common as automobiles. Aviation may even surpass the automotive industry, as it has been conclusively proven that the airplane can be depended upon for safe and swift transportation.

**THIS IS AN AGE OF SPEED!**

In the near future distance between cities will be measured in terms of HOURS instead of miles. The traveling salesman of today will be the FLYING representative of tomorrow. Companies that now operate fleets of taxicabs on the streets will maintain squadrons of taxies for air service.

Railroads, steamship lines, manufacturers, jobbers and practically all industries will rely upon competent pilots, expert mechanics and sturdy planes because they will be able to buy and sell, import and export, bring and deliver their wares QUICKER and cheaper.

These things will soon become realities. Then . . .

Pilots and Mechanics will vie for Supremacy!

**SKILL WILL COUNT!**

The best trained men will lead the field. They will hold the most important and highest-salaried positions in the Aviation industry. Those of lesser qualifications will take their pick of the "leavings," while the Cream of the Crop will go as just rewards to the men who were willing to PREPARE—men who were not afraid to make a sacrifice for the sake of their future—men who will thoroughly understand the HOW and WHY of Aviation!

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A Watch as a Compass

Jerry Noonan,
207 Apache Inn,
Red Star Ranch, New Mexico.

In order to use a watch as a compass one must consider the watch as a twenty-four hour astronomical chronometer. In other words, on such a chronometer the hour hand would correspond to noon and the hour of 12 would be midnight. So, while the hour hand on our watch moves around the face once in 24 hours, that of the astronomical chronometer would move around the face once in 24 hours. This ever, the same relative position will be only at the figure 1, which is also 1/12th of the distance around the dial, while the hour hand is at 12, which is 1/12th of the way around. While, therefore, our astronomical chronometer is always in line with the hour hand—when 12 is to the south—on a common watch the sun is only half as far from south as the hour hand indicates. Therefore, a convenient method is to hold the hour hand on the sun, and take south as the point half-way between the hour hand and 12 (this is simpler than holding the sun half-way between the hour hand and 12 but costs the same time). This can be done, of course, only when the sun is visible; and it does not allow for the fact that standard time is sun time only in certain places, and that the sun is usually much too low to be used for determining the points of the compass except for the first four days of the year. For rough indication, however, it is well enough, at most times and places.—(Editor.)

Rocket-Propulsion Engineers

Franklin Smith,
Box 45, Tower City, Pa.

1. We believe that rocket propulsion has not yet reached the stage where it has become a practical science. The newspapers are full of reports of rocket experiments being done in Germany. It is our belief that this is not the case. We want to take this type of work for our life's work.

2. What schools offer such a course? Yes, I believe I understand how liquid oxygen is made, but it is beyond me how they can use it in rockets. Can you help me?

3. Professor R. L. Goodall of Clark University, Worcester, Mass., is the leading American expert on it. It is unlikely that oxygen is the substance in the pure form, it brings about a rapid ignition with the release of tremendous energy that it causes an explosion as with the union of oxygen and hydrogen. The reason for using liquid oxygen is to get the oxygen in a concentrated form; the gas would require too much weight for the containers, to be efficient. Furthermore, by having it in liquid form greater explosive power is obtained. The oxygen, in practice, enters the engine, as a paste, or a liquid, or a spritz, or a mixture of these; there it burns through the exhausts at a tremendous velocity. The reactions on the force of the exhaust propels the plane forward.—(Editor.)

PAUL'S COVER ILLUSTRATIONS

Thousands of readers have praised the work of the great artist Paul—and thousands have asked us to sell them the original covers—but not until recently have we been able to satisfy this demand.

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STORIES gives its readers — stories, science test, science questions and answers, reader's  
forum and book review.

Contents for the December Issue

The Conquerors, by David H. Keller, M.D.
The Lost Martian, by Henry Harbers
The Radiation of the Chinese Vegetable, by C. S. Gleason
The Super Velocitor, by S. C. Carpenter

What Is Your Knowledge of Science?  
A short questionnaire based on leading scientific principles related in the current issue —  
ten questions for you to spend a little time to test your knowledge of the stories you have read.

Science News of the Month  
portrays in plain yet concise language every important scientific advance during the month. Nowhere can the average reader get such a wealth of accurate and vital information condensed into such a small volume. Some 42 scientific journals as well as a score of other sources are utilized by our editors in the compilation of this department. The publishers welcome short contributions to these pages from the various scientific laboratories, etc.

Science Questions and Answers  
In this interesting feature the editor answers questions sent in by our readers. Read their questions — perhaps the answers will clear up many doubtful issues in your mind, or your own question might be answered in this issue.

The Reader Speaks  
Letters come pouring in each day from our readers — some critical, others complimentary

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THE READER AIRS HIS VIEWS
(Continued from page 566)

magazines with perhaps a short article giving perhaps a few things of interest about them.

One more thing about giving the full address of those whose letters get in the readers' department; then we could exchange letters and perhaps help get this club to moving.

CLARENCE R. LIETZ,
1333 Seventh Ave., North,
 Fargo, N. D.

(The Science Club is one of those questions that the editorial mind has tucked away. He carries it with him, therefore, and every day he takes it out and examines it. He likes the food, and flavors his drink with it. Our readers must remember that starting a Science Club, at least the kind we have in mind, is a tremendous undertaking. It must be a good one. Must have a tremendous appeal and a fine purpose before we would start it. And we are therefore considering what the nature of such a club might be and its ultimate purpose. Any light that our readers could shed on the question would be help toward a solution of it. But the idea is not forgotten.—Editor.)

I F you have not as yet seen the SCIENCE WONDER QUAR- TERTY, WATCH FOR THE GOLD COVER

Be sure to procure a copy immediately from your newsstand.

This magazine specializes in interplanetary science fiction and the first issue contains the follow- ing marvelous stories:

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"The Artificial Man," by Clare Winger Harris
"The Hidden World," by Edmond Hamilton
"The Gravitational Deflector," by Harry D. Parker

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Neither Better

Editor, AIR WONDER STORIES:

Any one who says that AIR Wonder Stories is better than SCIENCE WONDER or SCIENCE Wonders is better than AIR Wonder certainly needs a doctor. Any one who sees the two brothers, or sisters, should be able to see they are 100 per cent better than the best magazine on the market. They are so good they cannot be chasen by the best magazines because of being so much better.

Mr. Editor, ask friend Paul to practice drawing human figures.

I'll close now as I am anxious to begin on the SCIENCE WONDER QUARTERLY,

Winston George Allan England's "Air Trust" and "Flying Legion" some time.

CURTIS TAYLOR,
102 Grove Place
Utica, N. Y.

(Mr. Taylor makes very definite his definition and stand about our magazine. Such definite expressions of opinion are warmly re ceived at the editorial desk for they enlighten us considerably on the exact nature of our readers' desires. A decision on George Allan England's "Flying Legion" has been made at the same time with this request. The story will be published starting in the January issue.—Editor.)

Air Wonder Next Best to Science Wonder

Editor, AIR WONDER STORIES:

AIR Wonder Storitics is certainly a "snifty" magazine but being a loyal supporter of SCIENCE WONDER Stories, which I prefer to be my choice, I cannot or will not say that AIR Wonder Stories is better or equal to Science Wonder. In this I am certain, in the difference between the range or scope of the two magazine. AIR Wonder Stories must confine itself with only aviation stories; whereas its sister publication may have stories dealing with many sciences on each of which numerous stories may be written, as you well know. Science Wonder Stories, therefore, can never be uninteresting or tame.

AIR Wonder Stories may be divided into five classes designated by letters: A means

(Continued on page 566)

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The Coast Guard's Best Short-Wave Receiver, by S. R. Winterson
The Development of the Modern Sound Reproducer, by Oscar C. Roos
And many other interesting features for the Radio Enthusiast.

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THE READER AIRS HIS VIEWS

Inexhaustible as Man’s Imagination

Editor, AIR WONDER STORIES:

After reading the story, "The Ark of the Covenant," I am surprised that the author did not have to admit that you have stumbled onto the best story since the "Babel". Are the stories mentioned above the ones that I consider the best?

The most peculiar coincidence possible, I believe, happened in my case also. I am fascinated by the "Ark of the Covenant," and the author has carried the details so far and still that was not boring, when along came the "Babel". The author had used a water pipe near a black bug got near as a kick out of it as if it had been my own.

The present story that you are publishing, "The Ark of the Covenant," is now my favorite, but it has not the essential details that are necessary for a complete story. I hope you will continue the careful selection of your stories to keep the high level you have begun.

I believe the cover contest in Science Wonder Stories will prove quite interesting, but I don’t get as much fun out of them as short, as they will be. I think the average reading time for a short story should be between eight and ten minutes.

I am a reader of before the time of the "Second Degree."

ALBERT E. DAWSON, 4010 Greenview Ave, Chicago, Ill.

Mr. Dawson, I don’t think I have ever heard when he says that our work is as inexhaustible as man’s imagination. We are exhaustible. Imagination is not a quality that— that the possibilities inherent in life are so infinite as man’s ability to conceive. For what we are, we can not be as short, as they will be. I think the average reading time for a short story should be between eight and ten minutes.

The present story that you are publishing, "The Ark of the Covenant," is now my favorite, but it has not the essential details that are necessary for a complete story. I hope you will continue the careful selection of your stories to keep the high level you have begun.

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The present story that you are publishing, "The Ark of the Covenant," is now my favorite, but it has not the essential details that are necessary for a complete story. I hope you will continue the careful selection of your stories to keep the high level you have begun.
THE READER AIRS HIS VIEWS
(Continued from page 561)

Omit Romance, Mr. Vincent! Editor, AIR WONDER STORIES: Have just finished reading the October issue of AIR WONDER STORIES. I wish you would tell your otherwise excellent author, Hazel Vincent, to please omit all the romance of love from his stories.

WALLACE C. WARDNER
131 S. Washington
Moline, Ill.

(We print this request on the behalf of Mr. Wardner. Do our other readers agree with this view, or do you, like the lady who says that seems to be such an integral part of Mr. Vincent's delightful stories?—Editor.)

Professor Younger Speaks Editor, AIR WONDER STORIES: With reference to your recent letter soliciting an expression of opinion on the type of stories appearing in AIR WONDER STORIES, permit me to quote from your volume one in Volume I, No. 1: "Engineers and pure scientists are too bound by convention and far too practical and cautious to look far into the future. They do not as a rule risk their reputations by making inspired guesses. Your science-fiction author knows no such restraints. Take Jules Verne for example, his "Five Weeks in a Balloon," through deemed impossible at the time it was written, has long ago become an actuality, yet he was bitterly denounced and ridiculed when he first published it. When we read it today, it sounds hopelessly tame."

Out of the first four numbers of AIR WONDER STORIES I have read most of the stories appearing and with considerable interest. I also note with interest in the latest issue your "Reader, Airs His Views" that your authors, as you point out in the case of Jules Verne, are sometimes "bitterly denounced." Personally, I have no disapproval of this process of elimination of the inferior elements of the stories to make. I think the magazine is serving a useful purpose. It is certainly a diversion from the everyday facts and figures to spend an hour or so in the evening reading and discussing with the authors of AIR WONDER STORIES. Even if I cannot make the predictions at all or at all properly, I feel, with my little store of information, it is a pleasing recreation to correspond with the authors of the possible results.

I agree to the reasonable that this type of magazine with its science stories, as different from the usual with passions and lusts of human beings, deserves the support of the public.

JOHN E. YOUNGER
Dept. Mechanical Engineering, University of California
Associate Editor of AIR WONDER STORIES.

I feel that Professor Younger speaks for the great majority of broad-minded educators. They realize that constructive, imaginative stories with an educational tone to them promote an intelligent understanding of the world about us. We therefore appreciate the cooperation of men such as Professor Younger.—Editor.

Wants Lessons on Flying Editor, AIR WONDER STORIES: On reading the fourth issue of AIR WONDER STORIES, "The Sky Navigator," was very good, and I would like to see more of Mr. Tower's stories about Balaz's adventures in the future world. "The Ark of the Covenant" was one of your previous successes, and I would like to see more of such stories in this magazine. "Through the Air Tunnel" was fair. There should be a sequel to "The Robot Master," in which the invention of Mr. Lee's invention is turned over for the benefit of mankind.

I wish that your "Aviation News" and "Aviation Forum" are of interest and of benefit to the readers. You should also do as many other magazines on aviation are doing; that is, put an account on the principles of flying and lessons in flying each month.

All the stories were interesting, so keep up the good work and the AIR WONDER STORIES will rise to great heights.

ST. LEONARD LEVINE
West New York, N. J.

(It is a pity that in most of our stories—"The Ark of the Covenant" was a glorious exception—that most of the great inventions of our geniuses are used for selfish and destructive purposes. We personally do not feel that the great minds to-day are bent on obtaining selfish control. For it is usually true that the inventors are not much interested in social affairs, his consuming passion is in creation, and he is often solicitous to allow the actual states to rest in the hands of others. We must be very careful how we expand the features of our magazines. We already have quite a bit of non-fiction material in AIR WONDER STORIES, enough to make a nice balance. We are afraid that we cannot extend the non-fiction content of the magazine as it is presented.—Editor.)

(Continued on page 571)

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THE READER AIRS HIS VIEWS
(Continued from page 569)

Combine Rocket and Propeller Planes

Editor, AIR WONDER STORIES:

I love to read AIR WONDER STORIES. My grandfather 80 years ago told me that if I lived to be 40 years old I would see people flying through the air, and grandfather at the time was over 90 years old. So it can be seen that flying was on the way even at that time.

But before we came, my idea as to how it would be done was that nobody would invent a gravity-shield whereby a man's weight would be nullified, then he could take two palm-leaf fans in his hands and propel himself along. It was a very simple construction if one but had the gravity-shield.

Nevertheless before it is invented we'll have to fly by some other means, so my idea is to concatenate the rocket plane and the winged plane into one plane. This can be done by inserting the propeller of the winged plane into the hollow tube of the rocket plane. The long hollow tube or tubes would be serving their purpose. The air would be blowing back through them and producing the rocket power. Planes thus constructed would not only be more concentrated which would be of great advantage, but their propellers would be more protected. Besides the propellers would not be blowing back against the planes as they do now, thereby producing work against itself.

A. R. WILKINSON

We print this letter for the consideration of our readers. Of course it is difficult to judge of such a device as our correspondent suggests, from the mere detail of an idea. While it is interesting, we are highly skeptical of its practicability on application. However, something resembling it has been thought of and used on dirigibles. For example, in the September issue of AIR WONDER STORIES, Harl Wil- kins in his "Yellow Air-Peri" mentions a dirigible having a tunnel through the center. The propeller blows air through the tunnel, so that a partial vacuum is formed in the front of the vessel. This was also predicted as far back as 1919 by Hugo Gernsback. But between this and the nonprofitable, I think that the Wilkerson device is a far safer bet. He would attempt to duplicate with a propeller the explosive effect of exploding gases. We think that so far it can't be done, although it may be scientifically sound. However, as we have said, the idea is one of these "what-if-" devices.

Aviation of the Present Wanted
Eddie, AIR WONDER STORIES:

I have just finished reading the November issue of AIR WONDER STORIES, I am sorry to say that it is the most unsatisfactory issue of this magazine that I have read.

"Cities in the Air" by Edmund Hamilton is very good and I look forward to every coming issue. The next section under the title "What Space Was Ripped Open" is entirely too fantastic and utterly impossible to make a story. Mr. W. V. Harris is sorry to say, does not appeal to my taste, all others do not appear to be of the same opinion. Airplane was fair, but Mr. Skinner stretched the edge of a Little, I think "Beyond the Aurora" was Mr. Repp's poorest attempt at science fiction. His stories that appeared in this issue were fine but it seems to me that he was too poor in this one. "The Second Shell" (Continued on page 723)

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THE READER AIRS HIS VIEWS

(Continued from page 573)

proceeding one. Also, two months is long enough to wait for the general run of serials. In regard to your other story, I think these or four long stories better than five or six short ones, because in the shorter stories your interest is hard to arouse before the finish.

Your best story so far, in all issues, is "Vicente MacClare's" in the September number. And I heartily think nearly everyone will agree with me. I have gone through the last installment and was delighted at the ending. I hope you shall hear more from Mr. MacClare.

Best wishes to futures. Are Wepons Strouna. DEAN ST. JAMES MURPHY. 311 North 11th Street. Lincoln, Neb.

Glr. Mitchell represents the "Weapons" in this battle of serials. He stands for serials but those that take more than three months. There are many who stand with Mr. Mitchell. But we gene this period to the shorter serials, as we are able to print a corking good one, even an unusual story of 190,000 words. We have now such a story in mind. Printing it in two issues would mean devoting practically all the editorial space to it. That would be unfair to these readers who may not like the story and wish to have a greater choice of stories. Should we therefore forego giving our readers the privileges of reading an unusual story because we must confine it to two issues? We are sure our readers when confronted with such an issue would say, "Print it, regardless of length."

"Flight in 1990"—Too Early?

Editor, AIR WONDER STORIES:

I have just finished reading your third number, containing the story, "Flight in 1990" by Dox O'Mara. "Flight in 1990" was O.K. The only thing wrong with that story is that same is not a good story, and, once you get into the story it is a little too early to have such inventions. But don't publicize any more stories about the Ark of the Covenant, or I will send a brakclet (a big lump) instead of a subscription for the new eight issues of Science Wonder Stories. In the September issue of Science Wonder Stories, I read, nobody supposed to argue with Dr. Edgar Rice Burroughs about his novels. Boy! If you could get Dr. Burroughs to publish one of his "Marino" I'd bet everybody would go wild over his story.

JACK CUNNINGHAM, 323 Park Ave. Nutley, N. J.

(If it is difficult to state with certain precision our rapid and quick completion of inventions will come. Mr. O'Mara gave us seven years to witness the state of affairs that he predicts in "Flight in 1990." If we look back seventy years to 1820 we see a nation in which there was no telephone, no automobile, flying machines, automobile, electric light. The telegraph was comparatively new. But if we survey the wonders that have popped up in the past twenty years, we must indeed look for many more during the next seventy. —Editor.)

Make the Quarterly Twice as Big

Editor, AIR WONDER STORIES:

I have just finished reading John R. Gaugh's letter in your latest issue. I believe the only practical way to cut serials would be to either make the Quarterly twice as big or issue an annual or semiannual along with it. If you do not follow the suggestions above please do not start another serial for the next year or the end of old one.

CHARLES RUSSEI, NEW YORK CITY, N. Y.

All Six Stories Fine

Editor, AIR WONDER STORIES:

I have just finished reading the November issue of Air Wonder Stories. I thought the feature story, "The Ark of the Covenant," was excellent. That was the best story of its kind that I ever read, and I have read some good ones. Now in regard to why there were not a few German features a year ago the "Ark" is not a German story. It is by Mr. H. Wolter, why doesn't he write MacClare stories himself? I also made a note of this month's criticism against printing your magazine by the end of the year. This whole issue was rather too heavy and cumbersome. Also, when I am writing I want to put in a good word for your cover artist, Mr. McDowell is a wonder. —R. E. MCDOWELL, E. R. SMITH, S. O.

(We are glad that Mr. McDowell liked the November issue. We appreciate his general sentiments and in particular his appeal to the end of the year. Mr. McDowell should write us a long letter when he should strike us, letting us know how he likes the progress of the magazine.—Editor.)

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