

L E C O R B U S I E R

AIRCRAFT



LE CORBUSIER AIRCRAFT

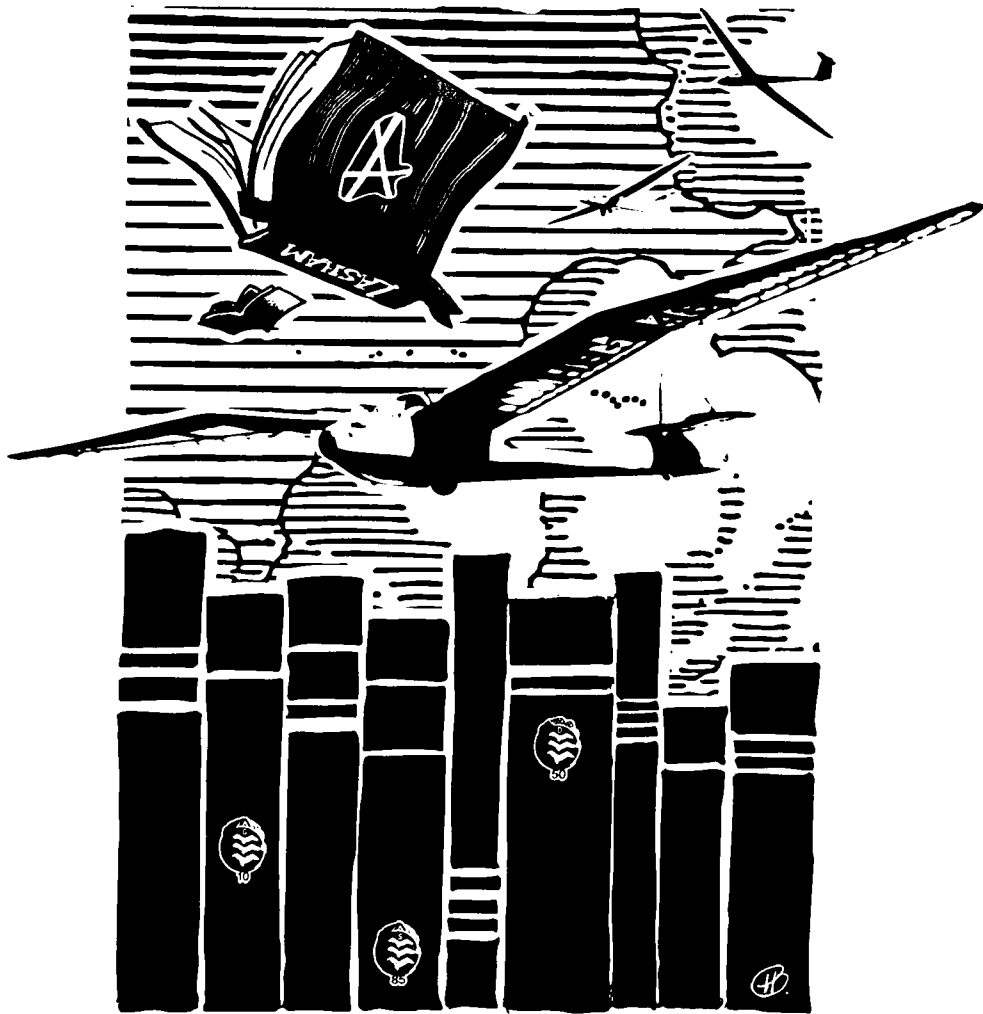
'The airplane is the symbol of the new age', declared Le Corbusier in the introduction to this book, first published by The Studio in 1935: 'A new state of modern conscience. A new plastic vision. A new aesthetic.' In its paean to the 'joyous and productive impulse of the new machine-civilisation' this book, written by the master architect of Modernism, explores two themes. Firstly, it celebrates the sheer beauty of the airplanes themselves and the 'functional' sparseness of their parts and elements – wing-spars and propellers, engine frames and ailerons are contrasted with the godlike qualities of the aviators – 'once in the air, they exult in the daring of their departure.' Secondly there is the discovery of the aerial images, the bird's eye view as 'a new function added to our senses, a new standard of measurement, a new basis of sensation.' With unconscious irony, Corbusier predicts that the airplane 'indicts the city': 'cities must be extricated from their misery, come what may. Whole quarters of them must be destroyed and new cities built.'

The commanding vigour of the text is matched by a dynamic range of illustrations, selected and laid out by Le Corbusier himself; a dramatic image of an aircraft carrier bears the title 'and Neptune rises from the sea, crowned with strange garlands, the weapons of Mars'. The result is a book that encapsulates the enthusiasm and excitement of the first aerial age, and the stimulus the aeroplane gave to the visual and intellectual ideas of the time.



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Wally Kahn

THE NEW VISION

AIRCRAFT



Forthcoming
LOCOMOTIVE
by Raymond Loewy

“L’avion accuse”

AIR CRAFT

by Le Corbusier

ACKNOWLEDGMENTS

THANKS are due for the interest shown and help given by the director and staff of the magazine "L'Aeronautique," 55 Quai des Grands Augustins, Paris. The following illustrations are taken from their files : 1, 4-7, 10, 11, 15-23, 25, 27, 33, 34, 49-55, 57-60, 66, 76-81, 91, 95-97, 99-101, 103-107, 113-121. Thanks are also due to the Italian Air Ministry, Rome, for Nos. 13, 29, 32, 56, 68, 82-85, 87, 88, 90 ; to the magazine "Flight" for Nos. 2, 3, 61-63, 86, 89, 93 ; to the magazine "The Aeroplane" for No. 94 ; to the British General Post Office for Nos. 24, 28, 35-38, 40-42, 45 ; to Paul Rotha for Nos. 42, 45, 48 ; to Alex Stöcker for Nos. 49, 57-59, 76-81 ; to Chas. E. Brown for Nos. 12, 14, 92 ; to "The Times" for No. 1 ; to Fox Photos for Nos. 43, 44 ; to E. Michaud for Nos. 27, 97, 115 ; to the Associated Press for No. 91 ; to Branger for No. 66 ; to Aerofilms Ltd. for No. 102 ; to K. L. M. Amsterdam for Nos. 65, 105, 120 ; to J. B. Collingburn for No. 30 ; to British Instructional Films for Nos. 39, 48 ; to V.O.K.S. (the Russian Society for Cultural Relations with Foreign Countries) for Nos. 26, 64, 124 ; to the Aero Service Corp. for No. 101 ; to "The Aeropilot" for the illustration used on the dust jacket ; to Imperial Airways Ltd. for Nos. 30, 39, 43, 44, 46 ; to the Fairey Aviation Co. Ltd. for Nos. 2, 3, 12, 86, 89 ; to the Blackburn Aeroplane & Motor Co. Ltd. for No. 14 ; to Airspeed (1934) Ltd. for the illustration used on the dust jacket and for No. 61 ; to Pan-American Airways for No. 75 ; to Eastern Airlines for No. 98 ; to the Percival Aircraft Co. for No. 31 ; to the Cierva Autogiro Co. Ltd. for No. 92 ; to the Westland Aircraft Works for Nos. 93, 94 ; to Short Bros. Ltd. for No. 9. Nos. 69-74 are reproduced by courtesy of the Director of the Science Museum, South Kensington, London.

THE Studio has informed me of its intention to publish a book on Aviation, the desire of the publishers being to inform the general public, questions of technique apart, as to what stimulus there may be in it for contemporary society, divided at the moment between a desire to retrace its steps and to embark on the conquest of a new civilization.

I accepted the task and so that there should be no ambiguity I headed the opening pages with this modest sub-title: "Frontispiece to Pictures of the Epic of the Air." Being neither technician nor historian of this amazing adventure, I could only apply myself to it by reason of that ecstasy which I feel when I think about it.

This ecstatic feeling dates from the first Aviation Exhibition at Paris after the War, at which time I was helping to run the *Esprit Nouveau*, a review which strove to remove the veil which still largely obscured the new era of machine civilization. We gave our labours this confident heading: "*A great period has just begun.*"

During the publication of *L'Esprit Nouveau* I used with a timely impatience the phrase "Eyes which do not see! . . ." and in three articles I cited as evidence, steamships, automobiles, and airplanes.

The point then was that *our eyes* did not see. . . . Did not see the budding of a new feeling for plastic beauty in a world full of strength and confidence.

But to-day it is a question of the airplane eye, of the mind with which the Bird's Eye View has endowed us; of that eye which now looks with alarm at the places where we live, the cities where it is our lot to be.

And the spectacle is frightening, overwhelming. The airplane eye reveals a spectacle of collapse.

Being indissolubly connected in all the fibres of my being with the essential human affairs which architecture regulates; having waged for a long time, without fear of hatred or ambush, a loyal crusade of material liberation by the all-powerful influence of architecture, it is as an architect and town-planner—and therefore as a man essentially occupied with the welfare of his species—that I let myself be carried off on the wings of an airplane, make use of the bird's-eye view, of the view from the air, to which end I directed the pilot to steer over cities. And, justly stirred, advised moreover by my friend the poet Pierre Guéguen, to whom I showed the draft of this book, I have added my own title

"The airplane indicts."

Thus the stirring work of the men in the air will in no sense be tinged by my technical ignorance. I seek only to crown their prodigious effort by a salute addressed to the heads of countries and cities, an appeal to them to weigh up the misery they have allowed to establish itself.

And inciting them—finally to take the steps which will provide an attainable amount—materially realizable—of happiness: of "essential delights." The *dwelling* of modern times, a dwelling in harmony with the state of modern conscience, to which a hundred years of sensational developments have brought us

FRONTISPIECE TO
PICTURES OF THE
EPIC OF THE AIR

Suddenly, by the effort of a generation and the cumulative effect of the discoveries of the century, we have been endowed with THE BIRD'S EYE VIEW.



The airplane takes possession of the sky—the various skies of Earth.

The airplane, symbol of the New Age.

It is high enough, up there in the sky. You must lift your head to suit.

Lift head and look above.

The airplane, advance guard of the conquering armies of the New Age, the airplane arouses our energies and our faith.



One night in the spring of 1909, from my student's garret on the Quai St. Michel I heard a noise which for the first time filled the entire sky of Paris. Until then men had been aware of one voice only from above—bellowing or thundering—the voice of the storm. I craned my neck out of the window to catch sight of this unknown messenger. The Comte de Lambert, having succeeded in "taking off" at Juvisy, had descended towards Paris and circled the Eiffel Tower at a height of 300 metres. It was miraculous, it was mad! Our dreams then could turn into reality, however daring they might be.

It was a great joy, that night in Paris.

In spring, 1909, men had captured the chimera and driven it above the city.



For some years scattered madmen in the flat fields of lucerne, had given up their energies to a chimerical pursuit. Santos Dumont, the brothers Wright, Voisin, Blériot, Latham, Farman, etc. My memories have no historical precision. Whoever were these obstinate folk lost in the plains? What remoteness was theirs, who remained absurdly on the ground with their swallows crazily constructed of wood and canvas? Every day the sun imperturbably traced its mighty course from one horizon to the other, dazzling them from its zenith.

They, the obstinate ones, began over again, as soon as it was dawn, to remain on the ground! Indifference of the City—gentle pre-war Paris, lined with easy-going cabs; "Gee-Whoa!" intoned the cabbies with their papier-mâché top-hats, painted blue in summer. The few taxis with their two-cylinder engines which went "teuf-teuf" on the roads were already bothering us a bit. They were the first death-dealing instruments to be installed in the street. Motor-buses here and there were called *fireballs* and looked at askance. Otherwise, omnibuses drawn along rails by resigned horses. Perched on the "upper deck" we agreed that there were some handsome girls in the town. One was constantly trying to make them smile.

However, the course of events began to take shape and public interest grew. For the gaping multitude, it is no mediocre diversion to see human beings aspiring to fly. One day the men of the airplane deemed the time had come to show themselves. The "meeting" of

Juvisy was organized. The Lathams and Voisins, perhaps the brothers Wright (I am not sure, from memory), announced that at two o'clock in the afternoon, one Sunday, they would fly off. The sky was blue. It was spring. We must go to see that! 300,000 of us went to see it.* The railways had not thought of this contingency, which proves that people never think about true realities. From nine in the morning the trains on the P.O. line were packed. The stationmaster said, "The sky is blue, it is spring; Parisians are going out of town to-day!" He put on extra coaches. But there were 300,000 of us. He ran trains in duplicate. We were 300,000. All this turned out very miserably. I myself, for example, got in the train at noon. Juvisy is 15 kilometres from Paris. We arrived at seven o'clock at night. In the meantime we amused ourselves. Along the track, where we were camped like nomads, were returning coaches. We conscientiously demolished them with stones. We had broken everything breakable in our own train. The trains that followed, hastily pressed into service and waiting behind us in a straggling queue, were inspired by our methods. We also demolished the signals. Towards four o'clock the massed officials of the suburbs mobilized the firemen to intimidate us. Finally we arrived at Juvisy. It was already dark. Our vernal sport had given us an appetite. We tried to get out of the station for something to eat, but a surprise was in store. The station gates were closed and guarded by soldiers with fixed bayonets. "Fools," the soldiers said to us. "You want to get out? Look outside, then: there are 300,000 trying to get back!"

300,000 trying to get back! 300,000!

"Well," said the soldiers, "hurry up and take your seats in the train that brought you, unless you want to spend the night on the station platforms."

There was then a beautiful manifestation of the human intelligence, human solidarity and the collective spirit. The mob, one knows, generally becomes inspired when it is necessary to take action (this the great poets of the great epics have celebrated in song). As our train did not leave and other trains arrived in the night, filled with would-be spectators for the "aviation meeting," we set to work to demolish the station. The station at Juvisy was a big one. The waiting-rooms went first, then the staff offices, then the stationmaster's office. I still see that room with its overturned furniture, its innumerable electric wires in wild strands: a gentleman armed with a cane, indomitable, carried on javelin-play at the centre of each mirror, methodically. . . . At eleven we returned to Paris. The restaurants were already closed. We went hungry to bed.

Everything was prodigiously accelerated. The newspapers announced that Voisin had made an ascent, that Latham had flown, that

One sunny afternoon Auguste Perret, with whom I was working, burst into the atelier, brandishing a freshly printed *Intransigent*. "Blériot has crossed the Channel! Wars are finished: no more wars are possible! There are no longer any frontiers!"



*This number has perhaps increased with the passage of time; there may be some question of a nought; besides, deflation in so many things has impaired the significance of numbers.

Icarus, a long time ago, broke his limbs.

Leonardo da Vinci (I tested it at the magnificent Aeronautical Exhibition at Milan, 1934) understood everything about aviation. He was tireless in designing machines that are astonishingly of to-day. The solution was in his grasp. But the internal combustion engine was lacking. The automobile of 1900 has made contemporary aviation because of the combustion engine.

It must not be forgotten that a learned man devoted himself to the study of the flight of the great gliding birds in the Himalayas. He wrote a report on this subject for the Paris Academy of Science. The great gliding birds traverse the sky by means of the supporting plane of their wings ; but these wings are neither flat nor rigid : they are tilted, and it is by imperceptible modifications of the supporting plane that these great gliders keep in the air for hours without moving their wings.

What a beautiful lesson for those who cling a little stupidly to the extreme materialist theory of to-day which lays down that every solution derives strictly from " deductive " (as they say) analysis.

Here we have (a) the automobile jolting along the hundred-year-old waggon roads of France ; (b) the savant studying the Himalayan sky and its vultures.

What makes life is the spark which lights up in *vigilant* beings, in sensitive beings, in beings sympathizing with all things, in those who are animated by creative power—that magistral gift which is cultivated and developed by modesty, disinterestedness, and perseverance.



All was accomplished ! Man (heavier than air, with his machine heavier than air) had flown.

This was before the Great War.

There was no precise aim ! There was no idea that one day a purpose would be served, or that such a purpose would become the very symbol of the new age. It is well to ponder on this essential, this fundamental fact. The great discoveries are disinterested, their consequences not being predictable. The inventor, the creator, pursue a chimera of the spirit : it so happens that they come on it unawares at a cross road, and then their eyes must see it and their hands grasp it. Again and always, I say that *we must hold ourselves in readiness*, throughout life and at every moment, to seize hold of the miracle inherent in things.

Everything, then, was accomplished.

There remained only the consequences.

And afterwards, now, to-day, the rest consists in measuring the event, its realities, and its possibilities, and in conceiving boldly and with a high aim in view, what we will make of it and whither direct it.



The *Great War* came. Man had acquired " the bird's-eye view." What an unexpected gift to survey the armies in front from above ! But the bird can be dove or hawk. It became a hawk. What an unexpected gift to be able to set off at night under cover of darkness,

and away to sow death with bombs upon sleeping towns. But the hawk swoops on its prey and seizes it in its beak and claws. What an unexpected gift to be able to come from above with a machine-gun at the beak's tip spitting death fanwise on men crouched in holes.

The war was a tremendous lever for aviation. In a feverishly accelerated rhythm, at the command of the State, the order of Authority, all doors were opened to discovery. Success was achieved, the aim reached, astounding progress made.

All this was to kill and to destroy. Authority was filled with a great conviction. If the war had not happened, aviation would still be pottering in poor little workshops of mechanics, in the fields of lucerne. Parliaments would be declaring that the country has other fish to fry than to bother with ambiguous beings who aim to "poison our beautiful sky of France, our beautiful sky of 'Ile de France,' our beautiful sky of Paris—the sky of the Patrie, so pure and virginal, etc." Eighty years ago, did not Thiers, an intelligent man presiding over the Parliament, declare that there were more serious questions to occupy the deputies' attention than the bizarre ambition of some visionaries to link one town with another by a railway—yes, gentlemen—a railway!

War was the hellish laboratory in which aviation became adult, and was shaped to flawless perfection.

The war also brought into being the dynasty of airmen whose daily sustenance was reckless courage, foolhardiness, contempt for death. "Aces" they were christened.



Peace. Nothing more to destroy. So aviation becomes unemployed. The aviation works stop turning out airplanes and make automobiles. I still constantly use a car which carries on its bonnet two unfolded wings and the words, paradoxical but full of hidden tenderness, "Avion Voisin." They cut Icarus' wings and put four wheels underneath him. It is useful to recall that when peace came the airplane was abandoned, left there without purpose, unused and unusable.



And when some madmen (new madmen, madmen again, always madmen) in the course of time began to say and write: "The airplane must carry passengers, deliver the post, dispatch goods, become a domestic implement, etc.," the impression existed that this was a new freak. A good aunt of mine, for whom I had affection and infinite respect, used to say, "The airplane is a temptation to Providence."

Still, there were these obstinate people.

And the commercial lines were created. Without the sympathy of the authorities airlines came into being this time! They flew from capital to capital "commercially" for years, without beacons, without intermediate airports, without safe landing grounds—rashly. The public was entirely indifferent, not being able to comprehend "that one day this would be something to their advantage." This is contemporary history, the "advanced to-day." See, discern, propose, seek to achieve: "Sir, you are a madman, a Utopian, etc."

This is the way of the world. In spite of which the madmen, century after century, lead the world by the nose.

We are all the same, myself included. For example in 1928, before setting out for Moscow, I thought I would shorten the journey by taking an airplane. I discovered the airports at Le Bourget, Cologne, and Berlin. I perceived that persons by dint of faith and determination had little by little, higgledy-piggledy, equipped hangars, instruments, buildings, and staff. And that the airports were stations like railway stations. One set off at a given time and, lo! one arrived with chronometric exactitude. We believe only in what we see, *when the thing is done*. Hence the unfortunate life of creative beings.

In particular, I arrived one day at the airport of Amsterdam, the meeting-place of several great lines. I was invited into the look-out of the commandant of the airport. I saw a station full of traffic. There is the Paris plane : look, there's the London plane. There's the Basle plane, there the Berlin plane. There's the plane from Sweden. They come to rest at the entrance to the station : they unload passengers and luggage. They take up position for departure. A signal, a colour here, a flare there, the airplane is off again, they are all off but new ones are landing.

One night at Paris, the wires announced that Lindbergh was flying over French soil, that at a given hour, in the darkness, he would be at Le Bourget. Paris hastens by all roads towards this wonder man. What an ovation! What joy! The masses do not want facts, reasoning, calculation, theorems : sulkily they turn their backs. They must have sensational demonstrations that are symbolic as they conceive symbolism. Then they applaud unanimously! It is somewhat belated. Suffering, despair, delays, mishaps have preceded it, while the masses remained indifferent. They must have a spectacle.

Lindbergh and his cat, leaving a cinema at midnight in America and coming to rest at Paris, is a spectacle. People say, "What a fine adventure."



I say it is not a fine adventure. It is luck. I will give a summary statement of my idea, so as to express a thought which is worth emphasizing. In so doing I depreciate a little the no doubt admirable effect of Lindbergh.

I prefer the crossing of Coste and I say that this is "fine adventure."

Dieudonné Coste resolved to cross the Atlantic, with Paris as starting-point. The winds are more adverse in this direction.

He prepared for his enterprise. He made ready his airplane, and kept it ready. He prepared his route, scientifically. Then every day for months he studied the weather chart. He watched the play of the winds. The winds on this route play a game that has cost the life of many a daring soul already. Coste does not want to die ; he wants to cross the Atlantic. Night after night was spent in watching, in tabulating the reports of all the points on the route. The dawn paled. "Let's go to bed, we are not starting, winds unfavourable." Weeks and months passed. The public began to snigger, "Will he, won't he?" Friends, rivals, everybody. Mastering nerves, susceptibilities, vanity, and pride, Coste did not start. At night he waited for the propitious moment, the correct and only admissible moment, that meant success and not an heroic (?) death and extinction.

Suddenly there it was. "Off he goes."

The airplane took off. It arrived. New York was *en fête*. Splendid celebrations, a splendid crossing, a splendid adventure.

A splendid adventure means: "I want to do this. In order to do it I shall get everything ready. I shall wait for the right moment. I shall carry out what I have decided to do. I shall succeed. I shall arrive. I shall arrive at the intended time, at a given spot, calm and smiling, a conqueror and not a corpse." The true heroes are trim and smart, masters of themselves. They are not hirsute, dishevelled, covered with blood. The gods smile. Such is strength of character.



Mermoz is like this in all respects, a man who in the face of every difficulty, insult, and hostility made the aerial crossing from France to South America. He has had his full burden of struggle with elements and events; but his life is—calm and mastery.

So should we be—we *who also desire to change something in the existing world*.

So there it is: every day and in every part of the world, the heroes of aviation accomplished their work. An imposing total. Beautiful and noble lives given up with stoicism. Destiny for certain human beings.



We desire to change something in the present world. For the bird's-eye view has enabled us to see our cities and the countries which surrounds them, and the sight is not good.

We knew quite well that our cities were steeped in indignities abhorrent to men; that our cities made martyrs of men, and that we are deprived of "essential delights," huddled and shut up in tanneries which at every day and at every hour are undermining us, ageing us, destroying the species, and making us serfs.

The airplane is an indictment.

It indicts the city.

It indicts those who control the city.

By means of the airplane, we now have proof, recorded on the photographic plate, of the rightness of our desire to alter methods of architecture and town-planning.

There is a degree of error that cannot be exceeded. It is the moment when the conditions which have plunged persons and society into apathy, misery, and misfortune, must be revolutionized. The brief and rapid history of aviation, so close to us, explains to us the hostile elements surrounding us, and provides us with the certainty that soon the very laws of life will justify us.



With its eagle eye the airplane looks at the city. It looks at London, Paris, Berlin, New York, Barcelona, Algiers, Buenos Aires, São Paulo. Alas, what a sorry account! The airplane reveals this fact: that men have built cities for men, not in order to give them pleasure, to content them, to make them happy, *but to make money!* Thus all that is dearest to the heart, the very atmosphere of daily activity, love, friendship, sorrow—the house and the view on which its window opens—all this is a morose and brutal environment without character or attraction.

The smallest effusion of idealism has not been granted it. There has been one devouring passion alone : to make money. You get tired of walking amidst this depressing outlook of the streets of innumerable districts : you are overwhelmed ; you return home quickly and shut your door on the oppressive memory. But millions of men and women, young and aged, here slowly pass the joyless days of their lives. The airplane itself scrutinizes, acts quickly, sees quickly, does not get tired ; and more, it gets to the heart of the cruel reality—with its eagle eye it penetrates the misery of towns, and there are photographs for those who have not the courage to go and see things from above for themselves.

Such are the great cities of the world, those of the nineteenth century, bustling, cruel, heartless, and money-grubbing.

The airplane instils, above all, a new conscience, the modern conscience. Cities, with their misery, must be torn down. They must be largely destroyed and fresh cities built.



With my friend Durafour, I left Algiers one sun-drenched afternoon in winter and we flew above the Atlas towards the towns of the M'Zab in the third desert to the south.

The M'Zab is the land of thirst and death. The Mozabites, persecuted heretics, driven in exile from Islam, arrived at length in territory so far off and so terribly barren that they were left alone. They were no longer hunted down, for it was assumed that hunger and thirst would finish the work of destruction. This was a thousand years ago. They made the seven cities of the M'Zab and the seven oases—winter cities and summer cities.

I knew the summer city—one of the oases—Ghardaia. I had gone there in August : the heat was terrific. But as soon as one stepped among the date palms, and the foliage of apricot, peach and grenadine one felt a sensation of well-being and freshness. A delightful spectacle of water and verdure. Four thousand wells hollowed in the rock to the depth of 80 to 120 metres ; 90,000 date palms planted to provide daily food ; not to speak of the houses of the oasis, made of earth shaped by hand and constructed according to plans of a striking efficacy and responsiveness to the sensitive desires of the soul.

The winter city, on the contrary, under the implacable sun, gave the impression of an inferno of stone ; simply narrow, steep streets, silent walls, impassivity. You said to yourself : “ Winter is the season of contrition, of reversal, of lethargy . . . pity ! ”

Durafour, steering his little plane, pointed out two specks on the horizon, “ There are the cities ! You will see ! ” Then, like a falcon, he stooped several times upon one of the towns, coming round in a spiral, dived, just clearing the roofs, and went off in a spiral in the other direction ; then, high in the air, he started farther off. Thus I was able to discover the principle of the towns of the M'Zab. The airplane had revealed everything to us, and what it had revealed provided a great lesson.

Behind the blind walls of the streets were laughing houses, each opening with three ample arcades on an exquisite garden. The women had dashed under the arches on hearing the noise of the engine. The whole town was under the arcades, watching the airplane make

its spiral : then there were signs of joy and surprise when we passed like a whirlwind just above the roof level. The lesson is this : every house in the M'Zab, yes, every house without exception, is a place of happiness, of joy, of a serene existence regulated like an inescapable truth, *in the service of man* and for each. Up in the air this can be clearly seen. The many arcades of the town open out on as many gardens. In the M'Zab it is not admitted that any family should be without arcade and garden.

Such is the gulf which separates the natural creations of desert people from the cruel and inhuman creations of white civilization ; this civilization which a thirst for money has brought to twilight, this civilization which a new civilization will soon replace.

For one day soon the implication of the bird's-eye view, that nobility, grandeur and style should be brought into the plan of our cities, will be a fact.

The airplane, flying over forests, rivers, mountains and seas and revealing the supremely powerful laws, the simple principles which regulate natural phenomena, will arrive at the cities of the new era of machine civilization.

Dignity, strength, the conscience of things will be manifest in the appearance of the city. It will be like a spiritual symbol proclaiming a victory and no longer a catastrophe. The exact image of the town will be expressed in an entirely new sort of ground-plan. These small plots, these doors placed at intervals of 10 or 15 yards one from another, these streets in sinister confusion, full of noise and squalor, will have ceased to be. A new scale of grandeur will animate the architecture of the city and the scope of its undertakings. The era of great works *for the public weal* will be crowned with radiant success. Every one in his new home will have acquired, as a matter of ordinary right, the happiness of intimate joys, and the pride of collective work brought to a satisfactory conclusion.



The airplane is the symbol of the new age. At the apex of the immense pyramid of mechanical progress it opens the NEW AGE, it wings its way into it. The mechanical improvements of the fierce preparatory epoch—a hundred years' blind groping to discovery—have overthrown the basis of a civilization thousands of years old.

To-day, in front of us : mechanical civilization, the reign of the NEW AGE.

The airplane, in the sky, carries our hearts above mediocre things. The airplane has given us the bird's-eye view. When the eye sees clearly, the mind makes a clear decision.

May, 1935.

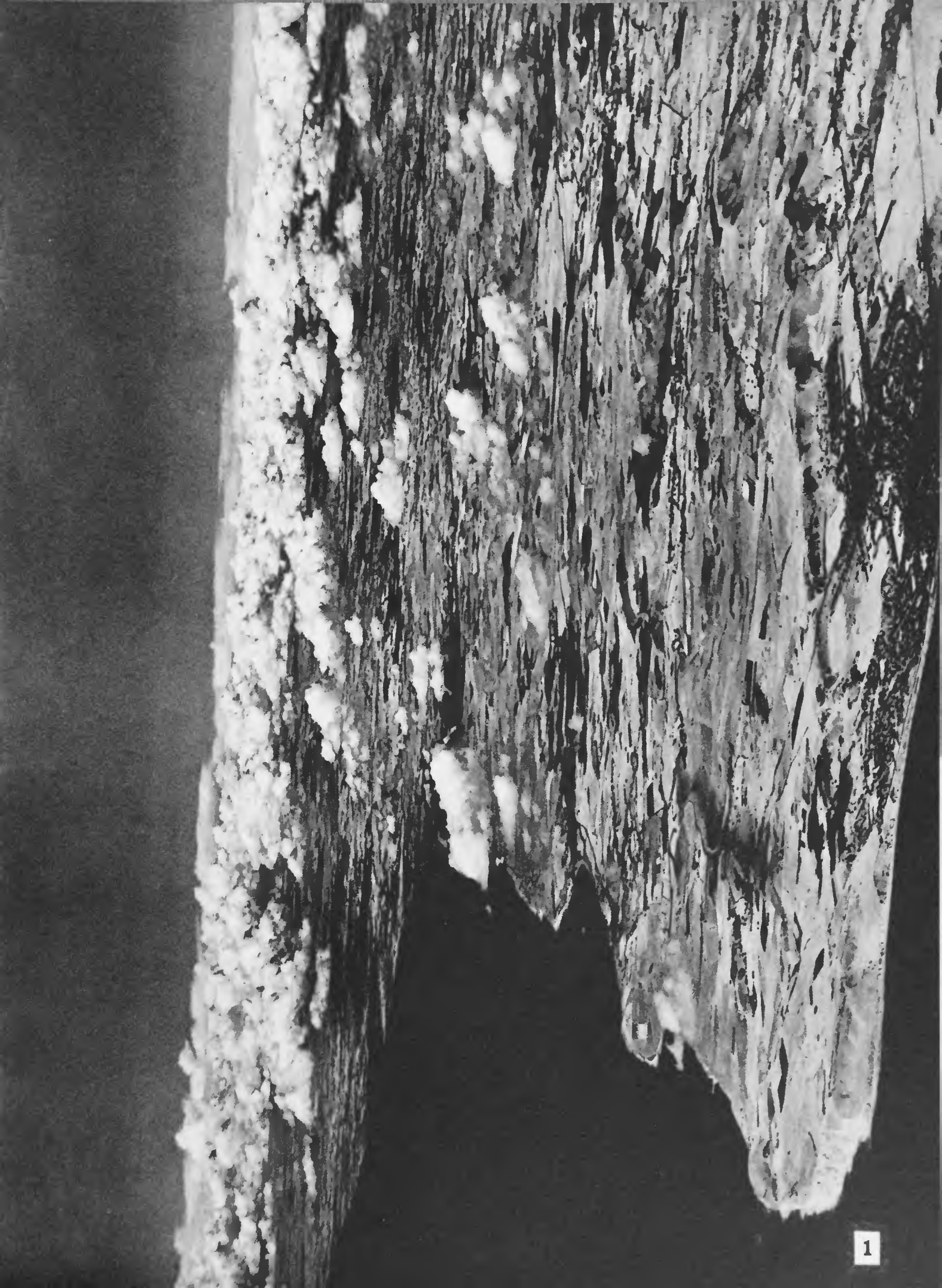
DETAILS OF THE ILLUSTRATIONS

- Dust Jacket* Airspeed "Courier" type A.S.5. Commercial single-engined, low wing, cantilever monoplane with retractable undercarriage. Seat for one passenger alongside pilot and four seats behind. The cantilever wing is in three pieces; centre section built into the fuselage. Wooden two-spar construction fabric covered.
1. An Aerial View of Eastbourne and Beachy Head taken by means of the Ilford Infra-Red Process.
 - 2 and 3. Fairey Long-range Monoplane.
Built to the order of the British Air Ministry for long-distance research work. Attained record for straight line flight without refuelling, February 1933. Cranwell to Walvis Bay, Africa (5,309 miles). Span 80 ft.; Napier Lion XI engines, 600 h.p. Cabin in fuselage. Oil, fuel and water tanks in wings. Automatic pilot installed.
 4. Aerial View of Dutch Landscape.
 5. Flying Boat of Air France.
Gnome-Rhone K. 14 engines.
 6. Bréguet Flying Boat.
 7. Another View of 5 (see above).
 8. Curtiss A-12, All-Metal Attack Monoplane.
Known as "The Flying Fortress," this machine is equipped with 5 machine guns and carries a bomb under the fuselage. The 9-cylinder 700 h.p. Wright "Cyclone" engine, weighs only 1.22 lbs. per horsepower.
 9. Short Flying Boat, R6/28.
Of all-metal construction it has six engines with a total h.p. of 5,580. Maximum flying weight: 33 tons.
 10. Another View of 6 (see above).
 11. A Group from the Air France Fleet.
Wibault planes of the Cie. Air-France at Le Bourget. Each with three Gnome-Rhône K.7 engines.
 12. The Fairey "Hendon" Night Bomber.
Metal construction throughout. Span 101 ft. Wings accommodate bombs, fuel and engine installation. Rolls-Royce Kestrel VI engines, each 535 h.p. Fuselage accommodates 5 men, but the plane can hold 25 men in lieu of bomb load. Weight $9\frac{1}{2}$ tons.
 13. Savoia-Marchetti Flying Boat.
 14. Blackburn "Shark." General purpose coastal protection airplane for torpedo operation, bombing, fleet gunnery spotting and reconnaissance. Can carry a torpedo or load of bombs weighing about 1,500 lbs., crew of two, and fuel for about 600 miles.
 15. American Aircraft Carrier "Saratoga."
 16. British Aircraft Carrier.
 17. A Dornier Flying Boat belonging to the Lufthansa about to be catapulted from a ship.
The Dornier "Wal" on the "Westfalen," relay-boat stationed in the middle of the South Atlantic on the Germany-Brazil postal service.
 18. The American Aircraft Carrier "Lexington."
 19. A Sound Detecting Apparatus used in Sweden for Anti-Aircraft Defence.
 20. The Cockpit of a Farman Machine.
 21. Structural Detail of Bréguet "Bizerte."
 22. Detail of Construction of the Bernard 82.
Wood construction supporting the various controls in front of the pilot.
 23. Structure of the Shell of the Hydroplane Blériot 5190 "Santos Dumont" of the regular France-South America postal service.
 24. Master Connecting Rod and other parts of a Bristol "Pegasus" Engine. [From the film "Aero Engine" (1932). Photography by Elton and Noble.]
 25. Latécoère Flying Boat 521. "Lieutenant Du Vaisseau Paris."
 26. Two Views and a Sectional Drawing of the "Maxim Gorki," the World's Largest Land Plane, built in 1934, which crashed to destruction in June, 1935.
In the illustration at the top of the page Rossinski, known as "The Grandfather of Russian Aviation" (dressed in white), stands before his first plane, which is overwhelmed by the gigantic bulk of the "Maxim Gorki." Beside him stands Gromor, the pilot of this great propaganda plane, which numbered amongst its fittings a printing press and a cinema theatre.
 27. Dervoitine 332.
With 3 Hispano-Suiza 550 h.p. engines and accommodation for 12 persons.
 28. Armstrong Siddeley "Panther" Engine. [From the film "Aero Engine" (1932). Photographed by Elton.]
 29. A View of the Engines of a Savoia-Marchetti Flying Boat.
 30. Imperial Airways Air Liner "Heracles," built by Handley Page, Ltd.
Four Bristol "Jupiter" engines each of 555 b.h.p. Span 130 ft.; length 89 ft. 9 in.; height 27 ft. 3 in.; weight fully loaded, 13.4 tons; speed 130 m.p.h. There is seating accommodation for 38 passengers.
 31. Percival "Mew Gull" Single-Seater, Low-Wing, Cabin Monoplane. Top speed 202 m.p.h.
In the 1934 King's Cup air race this machine set up the fastest speed—191 m.p.h.—ever achieved in this race up to that date.
 32. Tail of Savoia-Marchetti Flying Boat.
 - 33 and 34. Farman 221, Long Distance Bomber.
With four Gnome-Rhône K.14 engines.
 35. Wing Section. [From the film "Aero Engine" (1932). Photography by Elton and Davidson.]
 36. Armstrong Siddeley "Tiger" Engine. [From the film "Aero Engine" (1932). Photography by Elton.]
 37. The Nose of the Fairey Long Range Monoplane. (For details see 2 and 3.) [From the film "Aero Engine" (1932). Photography by Elton.]

38. The Nose of the Imperial Airways Air Liner "Atalanta," a monoplane used for the South African, Indian and Eastern Services. [From the film "Aero Engine" (1932). Photography by Elton.]
39. A Head-on View of "Astraea," one of the same Class of Machine as 38 (see above). [From the film "Contact" directed by Paul Rotha.]
40. Another View of 37 (see above), from the same film.
41. Bristol "Pegasus" Engine. [From the film "Aero Engine" (1932). Photography by Elton.]
42. Cylinder Heads of "Heracles" Type Engine. [From the film "Contact" directed by Paul Rotha.]
43. Tail of Imperial Airways Liner "Scylla."
The "Scylla" Class has span 113 ft. ; speed 130 m.p.h. ; weight fully loaded, 14.3 tons.
44. Another View of the same air liner taken from the tail looking forward, with the photo placed on its side.
45. Wheel of Imperial Airways air liner of the "Atalanta" Class.
The "Atalanta" Class has span 90 ft., speed 155 m.p.h. and weighs fully loaded, 8.9 tons.
46. Imperial Airways air liner "Britomart."
47. Drawing by Le Corbusier of Via Imperiale, Rome.
48. Tail Float of Flying Boat, "Scipio" Class. [From the film "Contact," directed by Paul Rotha.]
49. Glider "Fafnir."
A German Glider in flight over the Rhône valley, 1934.
50. Aero- and Hydrodynamics.
Movement of viscous fluid behind a stationary cylinder.
51. Hydrodynamics.
Movements of a fluid behind an obstacle studied by Bénard-Karman.
52. Aero- and Hydrodynamics.
The passage of a viscous fluid round wing and spherical forms.
53. Nieuport 122 Ci Monoplane.
Pilot's seat allows great visibility.
54. Wing Section of Bernard Hydroplane.
55. Nieuport 122 Ci Monoplane.
Pilot's seat and attachment of wing to fuselage.
56. Controlling Manœuvres.
The megaphone "directs" the movements of an Italian squadron. The machine shown is a Savoia-Marchetti hydroplane, with two Isotta-Fraschini "Asso" engines, 700 h.p.
57. German Glider.
Participating in the Rhône contest, 1934.
58. German Glider.
Rhône contest, 1934.
59. German Glider, Taking Off.
Rhône contest, 1934.
60. Glider K.W.7, belonging to the Austrian pilot, Kronfeld.
61. Airspeed Courier Civil Monoplane.
Retractable undercarriage, shown extended in photograph. Accommodation for crew of two and four or five passengers. Siddeley-Lynx engine, 240 h.p. Maximum speed 162 m.p.h.
62. Junkers G-38 Commercial Monoplane.
One of the largest landplanes in the world. Span 144 ft. ; weight 52,900 lb. ; Junkers Juno compression-ignition type engines ; each 750 h.p. ; cruising speed 129 m.p.h.
63. Bristol Single-Seater Day and Night Fighter.
Monoplane of all-metal construction. Bristol Mercury VI S engine, 645 h.p. Carried four machine-guns, two mounted in the wings. (Destroyed in crash).
64. Airplane KHAI 1, of the Civil Air Fleet of the U.S.S.R.
65. Map of the direct Amsterdam-Copenhagen-Malmö Route of the Scandinavian Air Express.
66. American Glider in Flight.
67. Leonardo Da Vinci, Precursor of Flight. Self-Portrait in the R. Academia, Venice.
68. The Aeronautical Exhibition, Milan, 1934.
View showing enlargements of da Vinci's drawings and calculations which led him to discover the principles of flying.
69. Henson's Flying Machine Model.
Built by W. S. Henson and J. Stringfellow, 1844-5, from a design patented by Henson, 1842, based on an attempt to imitate soaring birds. The motive power was to be steam.
70. Replica of Stringfellow's Model, 1848.
Original constructed 1846-1848.
71. Pilcher Glider "The Hawk," 1896.
The fourth machine constructed by Percy S. Pilcher, pioneer of gliding. With it he made glides up to 250 yards, control being effected by moving the body.
72. Wright Aeroplane.
The first man-carrying flying machine on its first flight, December 17, 1903.
73. Weiss Model Glider.
A development of a glider shown in Paris by José Weiss in 1905, designed with a view to automatic stability. Patented in Great Britain, 1906.
74. Voisin Biplane.
Model of the aeroplane built in 1908 by Voisin Frères. The pioneer of the Farman biplane. Engine 50 h.p. E.N.V. with two-bladed propeller.
75. Italian Squadron Flying in Formation.
76. German Gliders in Flight.
Rhône contest, 1934.

DETAILS OF THE ILLUSTRATIONS

77. German Gliding Camp.
Aerial view during the Rhône contest, 1934.
78. German Gliders Taking Off.
The starting point in the Rhône contest, 1934.
79. (a) Testing Gliding Conditions.
(b) Gliding "Fans."
80. Waiting for a Favourable Wind.
German gliders at the Rhône contest, 1934.
81. German Glider about to Take Off.
Rhône contest, 1934.
82. Italian Airplanes putting up Smoke Defence.
Protection of factories during air manoeuvres.
83. Italian Airplanes Tracing Smoke Rings.
84. Italian Airplanes Looping the Loop in Formation.
85. Italian Fiat C.R. Air Squadron Flying in Formation.
86. Fairey Gordon Two-Seater Biplanes, Flying in Formation.
(See 89 for further particulars.)
87. Italian Air Squadron Stunt-Flying.
Fiat C.R.30 machines giving a display.
88. Italian Bombers Flying in Formation.
Savoia-Marchetti hydroplanes, each with two Isotta-Fraschini "Asso" engines.
89. Fairey Gordon Two-Seater Biplanes, Flying in Formation.
No. 40 (Bomber) Squadron, Royal Air Force. Siddeley Panther 14-cylinder radial engines, 525 h.p. Each carries 500 lb. load of bombs.
90. Italian Air Squadron Over the Alps.
91. Caudron-Renault Airplane Taking Off.
Pilot Delmotte competing for the Coupe Deutsch de la Meurthe, 1935. Speed reached 450 k.p.h.
92. Cierva C.30 Autogiro. Maximum speed 112 m.p.h.; minimum horizontal speed 20 m.p.h. This machine can take off with a run of only 20 yds. and land in its own length. 140 h.p. "Genet Major" engine. The latest model Autogiro can lift itself directly off the ground without any forward movement at all.
93. Westland-Hill Pterodactyl, Mk. IV.
One of the series of Pterodactyl tailless machines. D.H. Gipsy III engine, 120 h.p. See 94 for larger and faster machine of this type used as fighter.
94. Westland-Hill Pterodactyl, Mk. V.
An experimental two-seat fighter, developed from civil craft of similar type. Tailless design gives stability and control at slow speeds, also improved field of fire for rear gunner. Rolls-Royce Goshawk engine, 600 h.p.
95. Experimental Airplane of the Italian Engineer, Luigi Stipa.
96. Old Dutch Fortress, enclosing Village of Naerden.
97. La Garde de Guerin en Lozère, France.
Village, 800 m. up, with ruined fortifications and now abandoned.
98. Douglas Air Liners over New York.
99. Jewish Quarter of Teruan from above.
100. Native Huts on the Banks of the Chatt-el-Arab.
101. Air View of Philadelphia.
102. London, the Bank, etc., from over Victoria Street.
103. Paris, Vertical View of the Place de l'Étoile.
104. Vertical View of Amsterdam.
Taken at a height of 3,000 m.
105. Air View of Dutch Village.
"Brock in Waterland," near Amsterdam.
106. Native Camp near Acar, French East Africa.
107. "Bidon V" in the Middle of the Sahara.
Filling station for airplanes and automobiles.
108. Demolition in the Boulevard Haussmann after the War.
109. Urbanization of the Left Bank of l'Escaut at Antwerp by Le Corbusier et P. Jeanneret, 1933
110. Urbanization of Algiers by Le Corbusier et P. Jeanneret, 1932.
111. Rio de Janeiro.
112. Sketches for the Urbanization of Rio, made by the Author in an airplane.
113. Above the French Alps.
A Bréguet 27 machine, with Hispano-Suiza engine, 500 h.p.
114. Massifs of L'Oisans and Pelvoix (French Alps).
115. Air View of the Vallée de la Durance (French Alps).
116. Drawing by the Author.
117. Vertical View of the Lake of Ôo (French Pyrenees).
118. Region of Kelchuk, Alaska.
Due to heavy rainfall, lowlands near the coast are tropical in growth.
119. Vegetation on the Banks of the Middle Gambia, French East Africa.
120. Air View of the "Hollandsch Diep."
In the background is the Mverdijk bridge, the longest in Europe.
121. Vertical View of the Atlantic Coast of Africa near Rio del Oro.
122. Desert of Boghari. Drawing by the Author, showing a meandering watercourse.
123. Desert of Boghari. Drawing by the Author, showing another form of watercourse.
124. Parachutist leaping from Soviet Machine.



1. **C**LEARNESS OF FUNCTION. THE WORLD'S MISERIES ARE DUE TO THE FACT THAT FUNCTIONS ARE NOWHERE DEFINED OR RESPECTED.

A STOCK OF OLD FUNCTIONS, ANACHRONISTIC OR CONFUSED—RESIDUE OF A CIVILISATION IN THE THROES—CLOGS THE WHEELS AND SLOWS DOWN THE JOYOUS AND PRODUCTIVE IMPULSE OF THE NEW MACHINE-CIVILISATION.

2

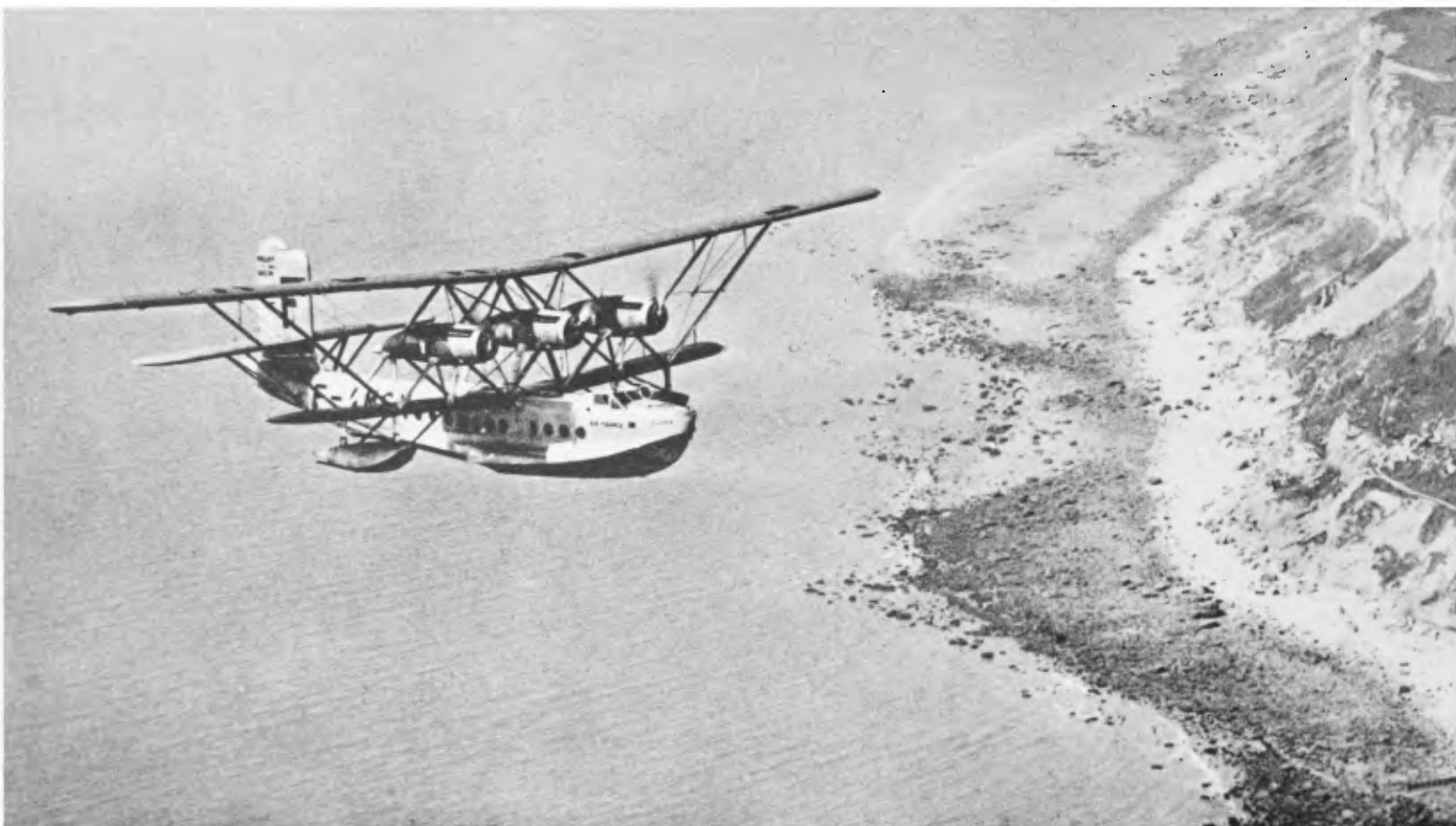




“ The officials still believe that aviation could be introduced into our lives by a nice juxtaposition, modestly settling down into a small corner, while in fact it is bursting through everything : our customs, our law, our economy. The soldiers also have tried to persuade themselves that aviation would politely adapt itself to the old rules, while in fact it compels the general revision of previously accepted values.”
(From a letter, dated March 5th 1935, sent to Le Corbusier by Colonel Vauthier, a member of Marshal Pétain’s staff attached to the Aerial Defence Service.)



4 For centuries the "windmills" of Holland have worked night and day. **Wind, water, earth, sea,** such are the given factors of the problem. And for centuries, with-
out ceasing, the water of the 'polders' (land below sea-level) has been pumped into the canals (above sea-level).





6



7

The precise new **anatomy** of architecture.
Source of bewilderment to the 'modernists'—the new academy.
Clearness of function must be achieved. It applies to everything.

• • • •

In general economy : work to live.
In sociology : let each one live and enjoy "essential delights."
In finance : riches are not an arithmetical sum (the tale of acquired fortunes).
Riches pour out of work like a cataract. To waste them is a catastrophe which
destroys collective wealth. Wise planning is the source of riches.
In politics : politics is simply the execution of a sound plan.

• • • •

The airplane is nothing except a supporting plane—a means of propulsion.
CLEARNESS OF FUNCTION !
The airplane flies direct from one point to another indifferent to the contours of the
earth.

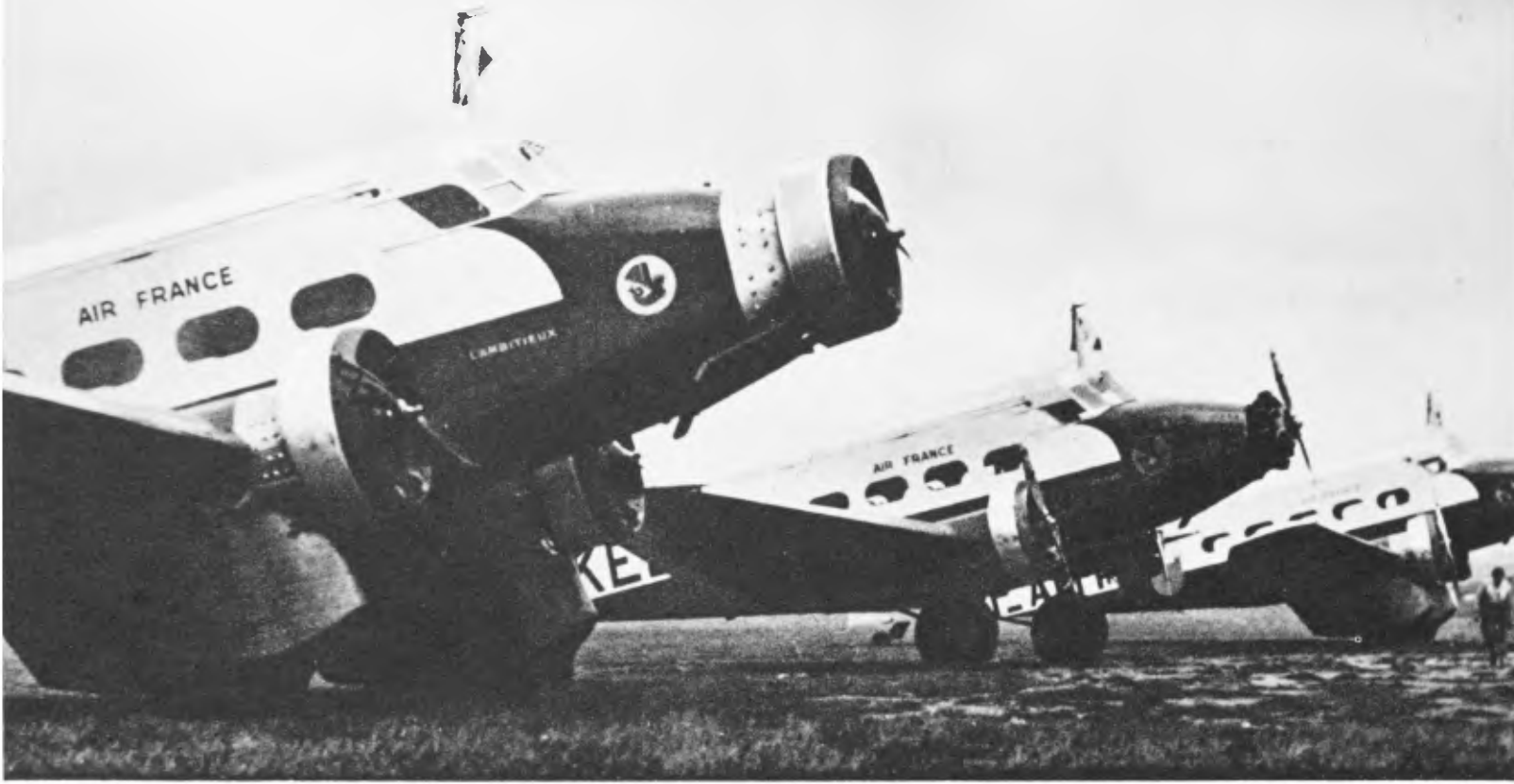


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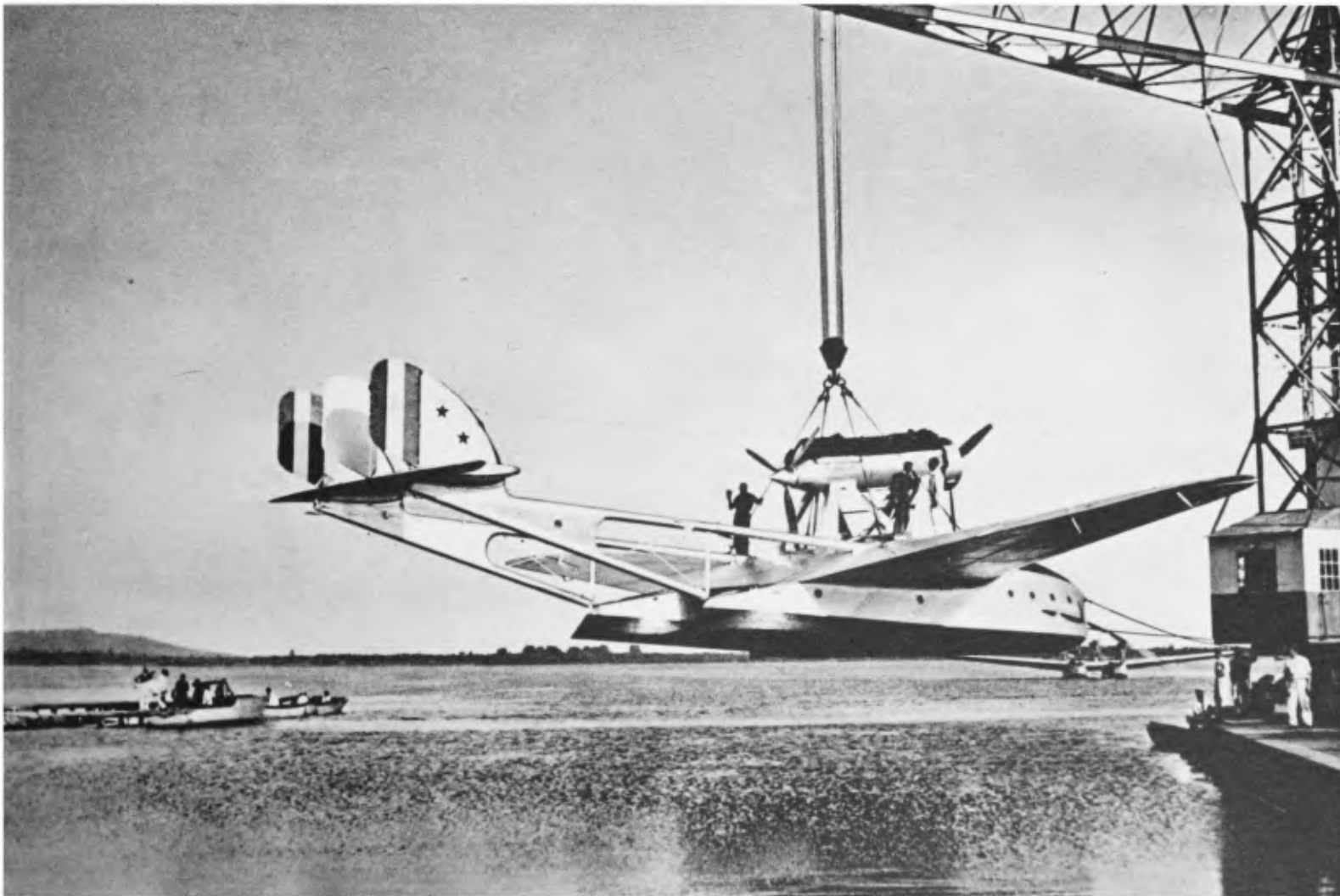


11 The new " diligences." Transport of passengers and goods. The new rails are in the air, straight from one continent to another.

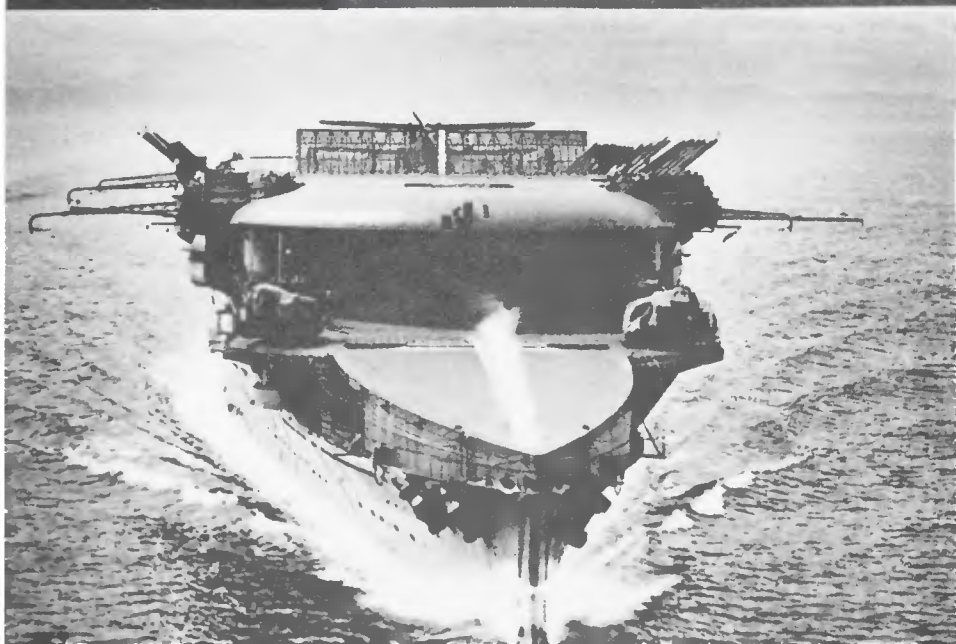
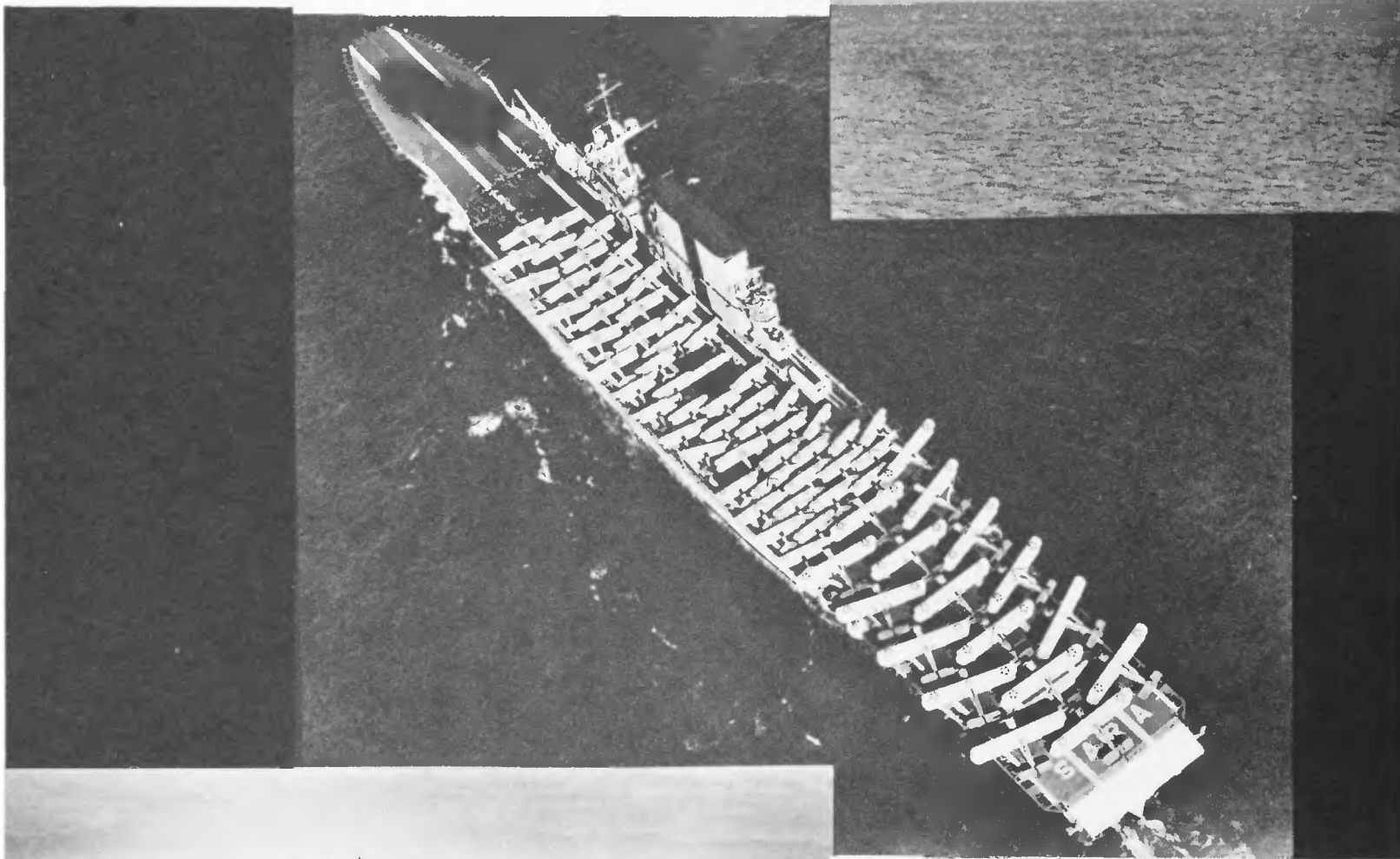


12 The new artillery whose range is unlimited. The gun is the bomb-carrying airplane.

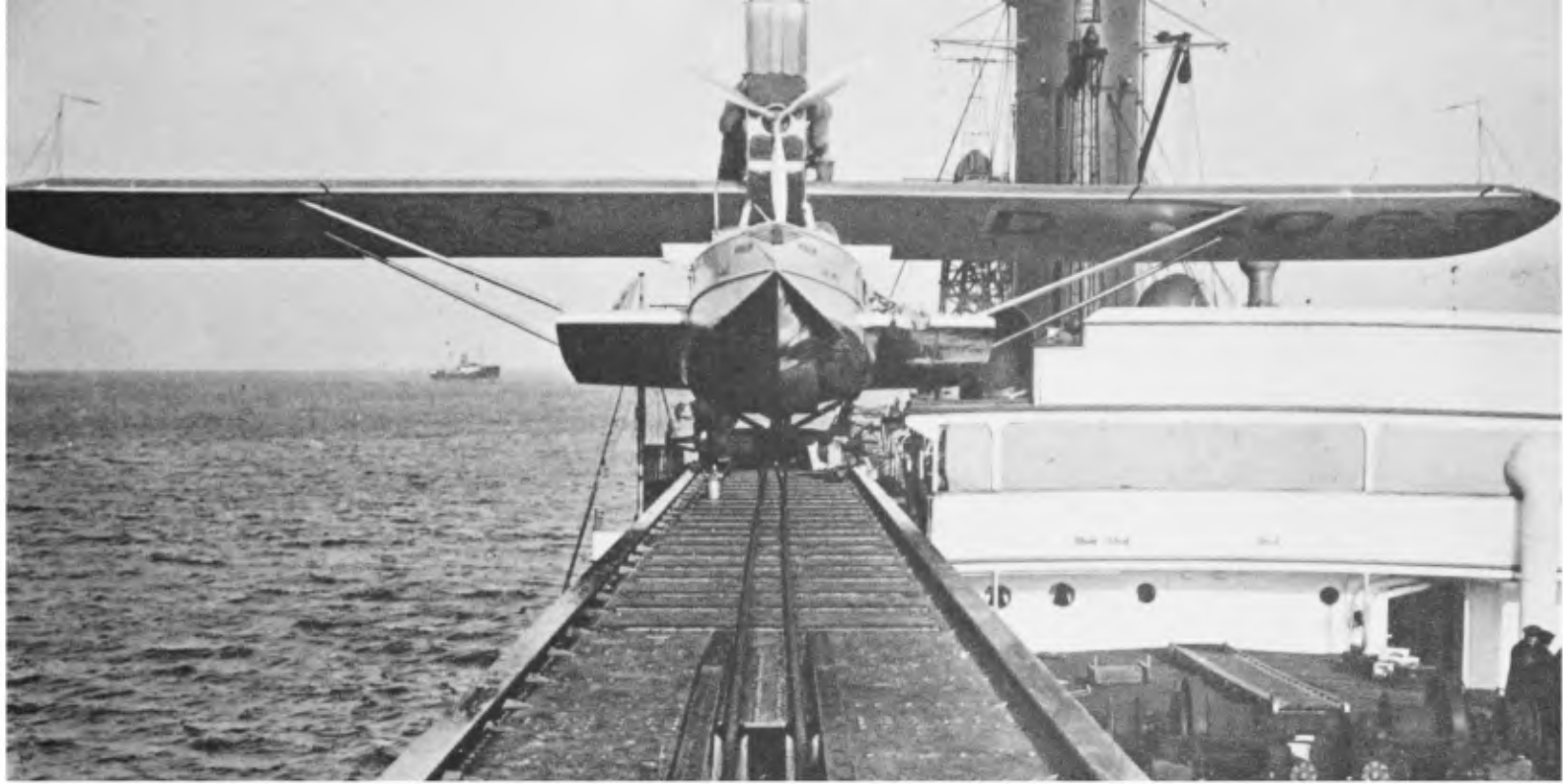
**The Nation is an administrative term, consequently artificial.
The Native Land is a sentimental term, consequently natural.
The Nation has fixed frontiers (conventions established by wars, treaties, victories and defeats). A material fact.
The Native Land converges on one centre, one heart.
There are no frontiers to the Native Land.
It is an act of faith, a spiritual conception.**



The floating island, the shifting airport. The airplane finds its way back secretly to the shifting airport by wireless. The high seas are no longer a refuge. This time it is man who hurls thunderbolts from the sky above.



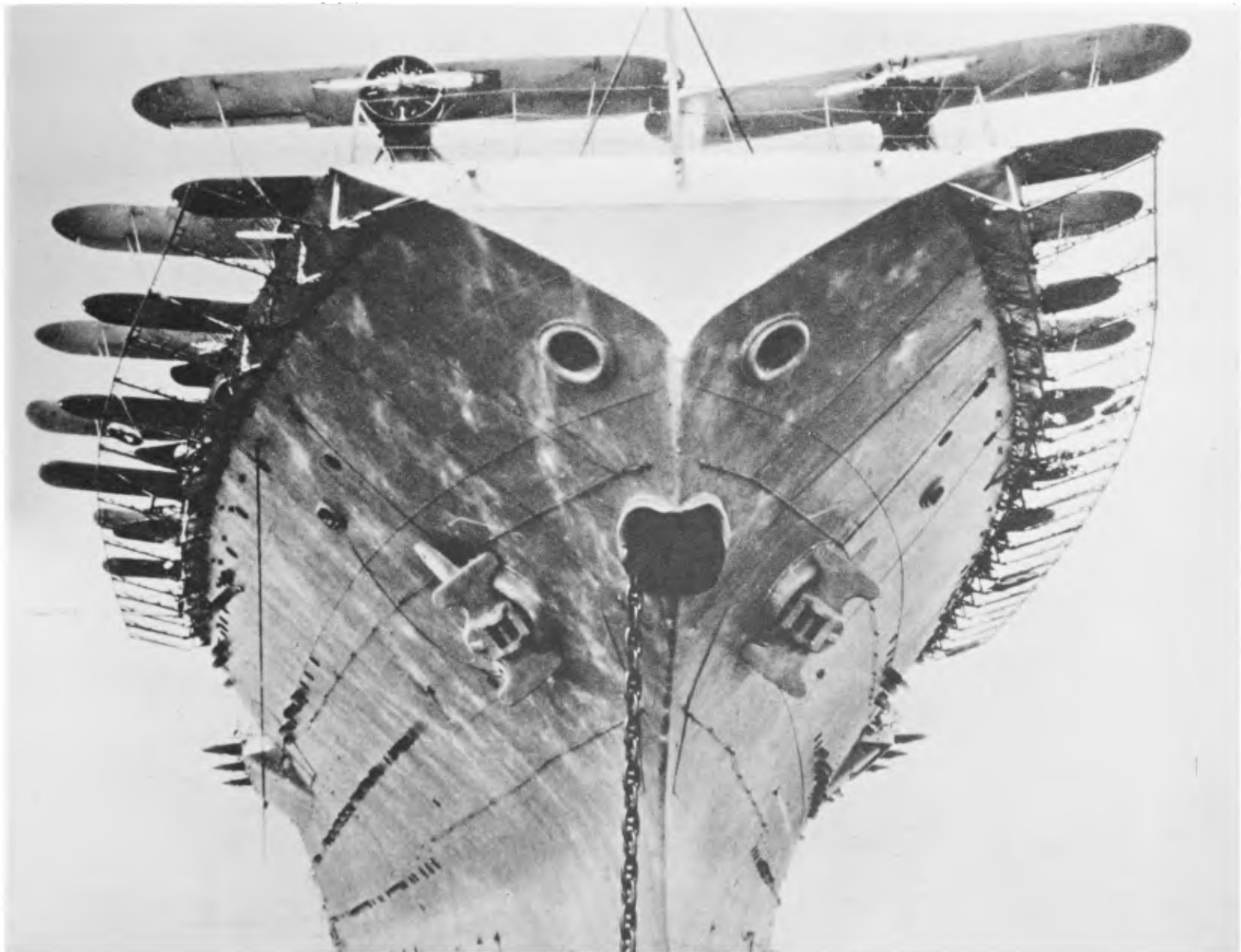
Here is the new Army.
Floating ground.
Sea.
Sky.



And Neptune rises from the sea, crowned with strange garlands, the weapons of Mars.

17

18



2. **R**EFORM IS IN THE VERY ESSENCE OF THINGS.
IT LIES AT THE HEART OF CRAFTSMANSHIP.
REVOLUTION IS ACCOMPLISHED BY THE CUMULATIVE EFFECT
OF DETAILS.



19 The most exact laws of acoustics will help in aerial defence. Like the ear of a dog or of a horse the three sounding conches turn their tympana to various quarters of the horizon. The marvellous mechanical devices of human beings are only a reflection of the mechanism of nature.



False move of the 19th century.

Schools were set up everywhere, for everything.

And craftsmanship has been made a laughing stock.

Teaching is only possible in the very centre of a craft.

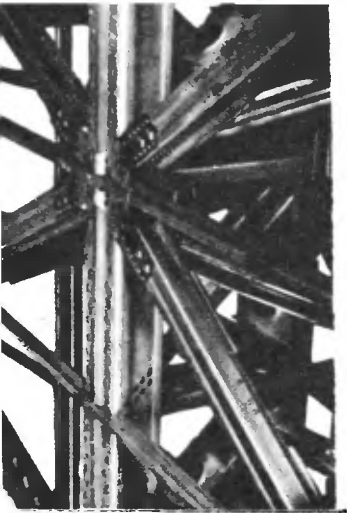
Arithmetic and handwriting can be taught in schools. But an invention originates only in the workshop.

The door of the workshop opens upon life. The practical application of created things produces an immediate verdict as to their worth.

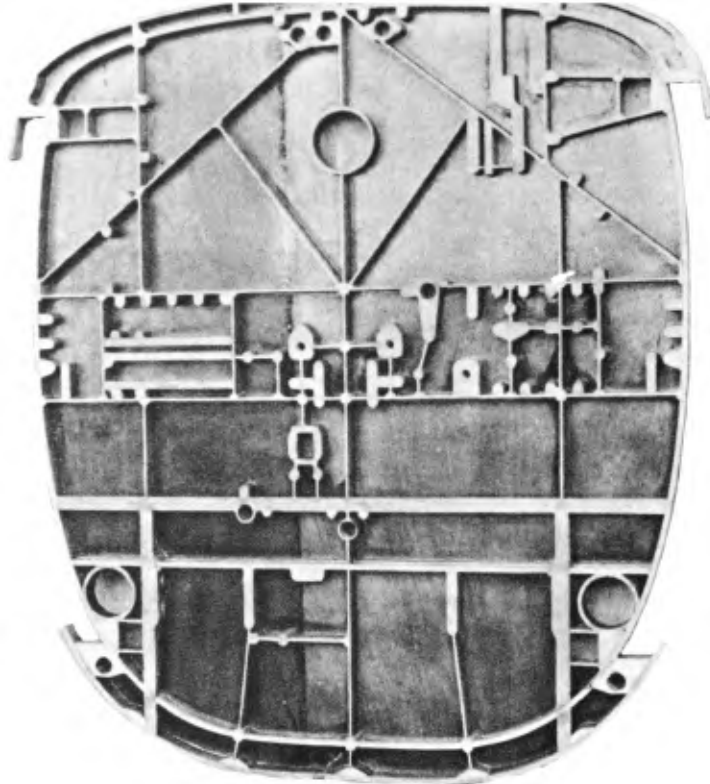
Thus have airplanes been enabled to fly.

Architecture was killed in the 19th century by the Schools. The Schools must be closed down.

(Let us come to a definite understanding : the Schools in which Academies dictate methods of creation must be closed down).



21



22



23

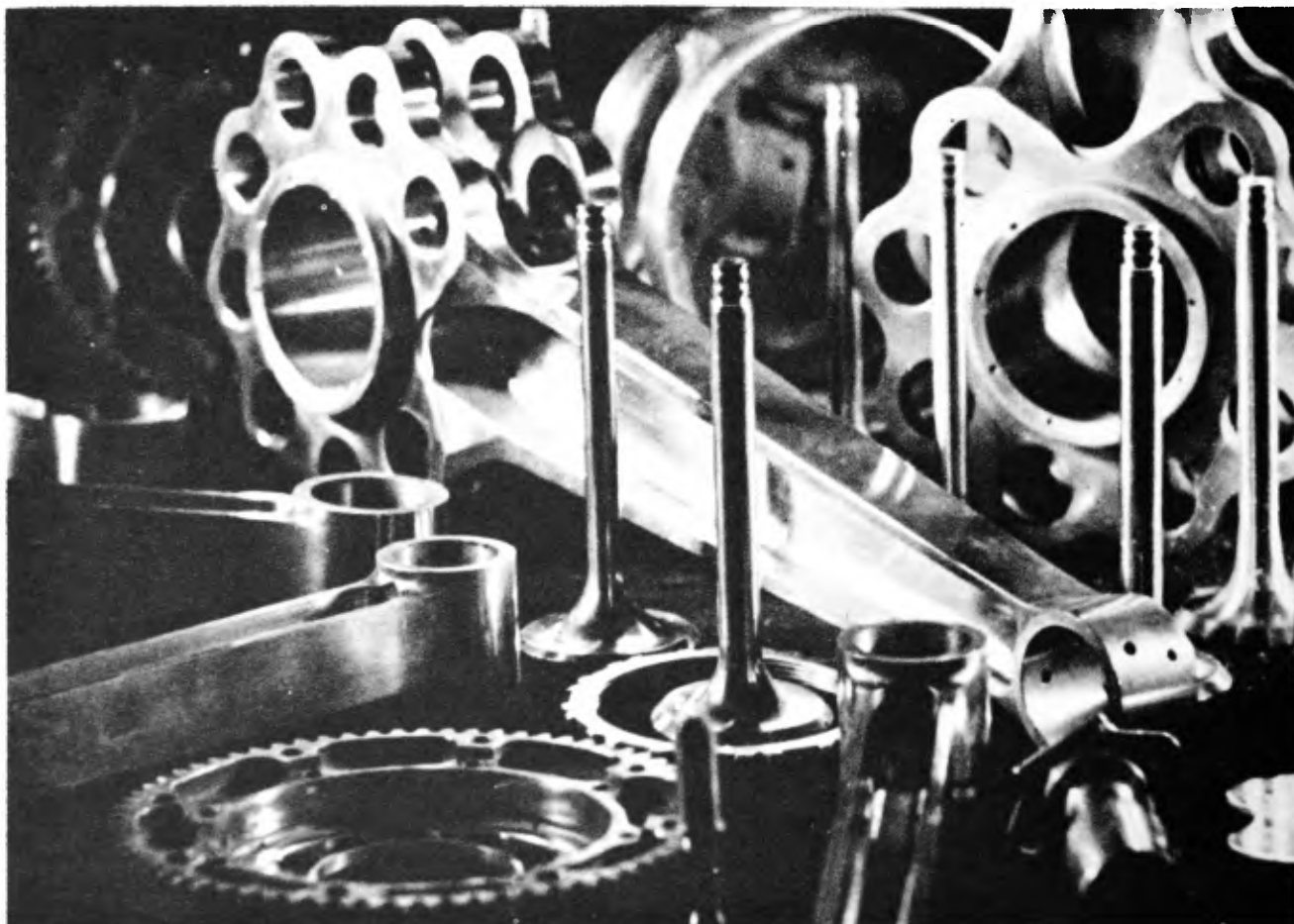
Three tie-frames placed across the carling of the airplane to fix the struts of the engine. Poet, ponder a moment on the truth of these objects !

Eiffel Tower ? Or giant bridges ? The aluminium framework of an airplane—search for economy of material, for lightness, always the fundamental, the

essential law of nature.

Similarly in the marrow of our bones, the same fibres " of equal resistance " exist.

There are no " details." Everything is an essential part of a whole. In nature microcosm and macrocosm are one.



24

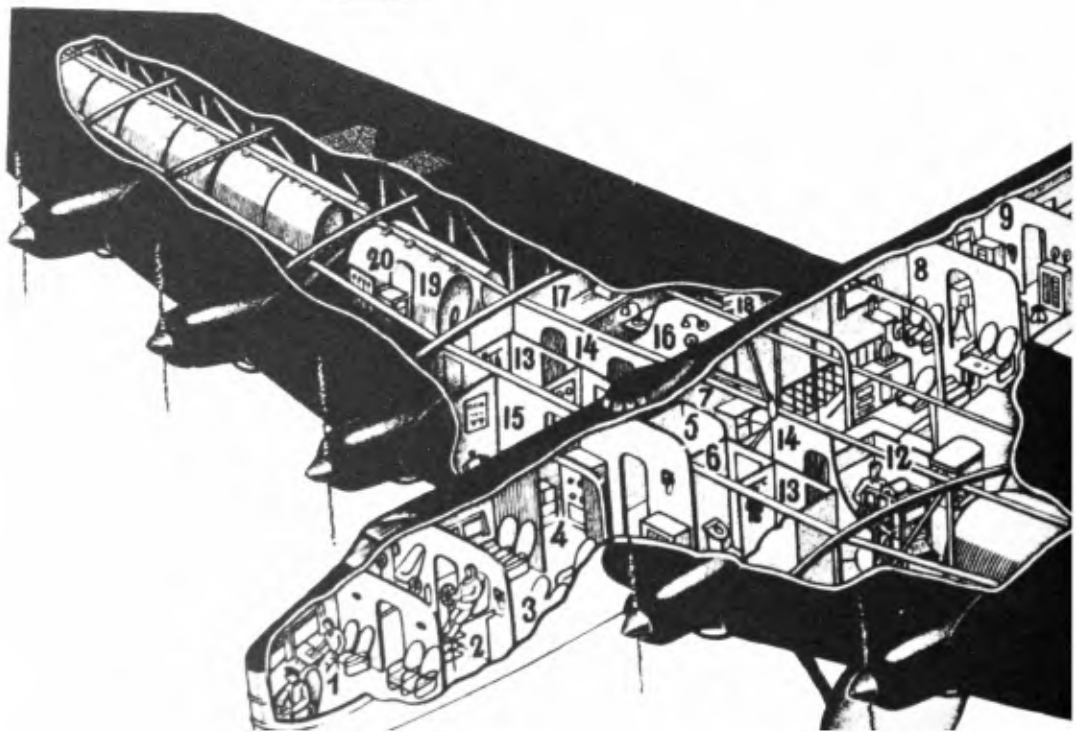
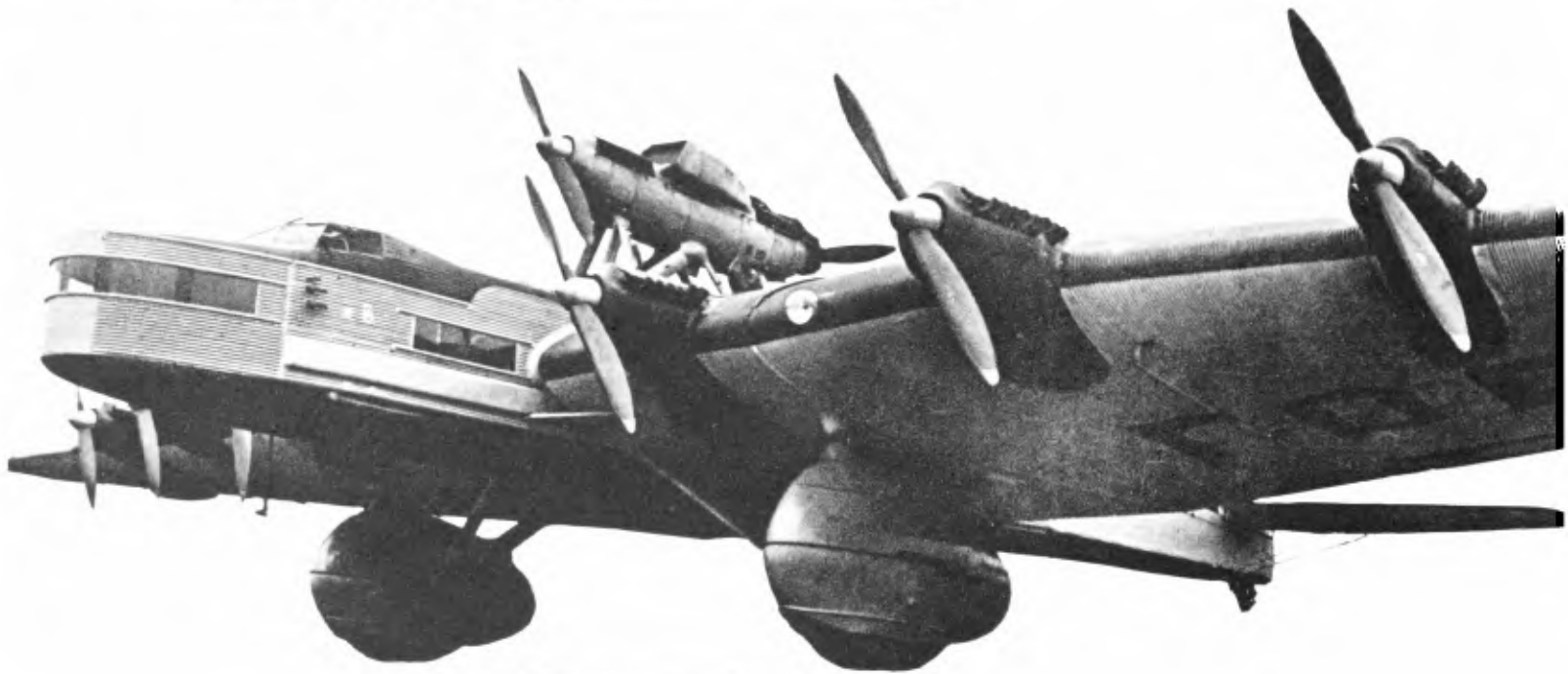
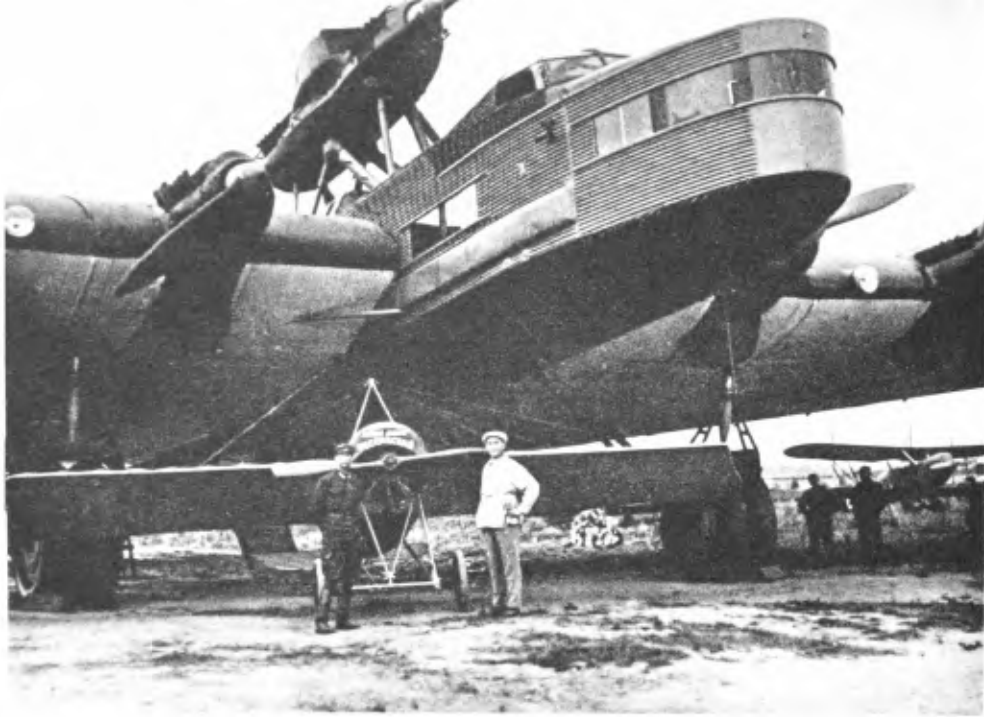
3. EYES WHICH DO NOT SEE . . . (" Vers Une Architecture " 1919-1920.)
ART WAS " UNIVERSAL " UNTIL " ARTISTS " WERE
INVENTED AND " ACADEMIES " ESTABLISHED.

. . . .

" A COUNTRY'S AVIATION CAN BE GREAT, AVERAGE
OR SMALL, ACCORDING AS THE PUBLIC CONSCIOUSNESS
OF AVIATION IS GREAT, AVERAGE OR SMALL"
(MUSSOLINI. Foreword to the Aeronautical Exhibition, Milan, 1934.)

This is an appeal to **participate**, and the Milan Exhibition a spell, alert, conquering
and joyous.





Elementary laws of statics governed Greek art : an orthogonal art, square plan, square section, square facade : the **three orders** of architecture.

The three orders of architecture ?

A pretention which the Greeks themselves would never have insisted upon !

It is a classification of Greek things, nothing more.

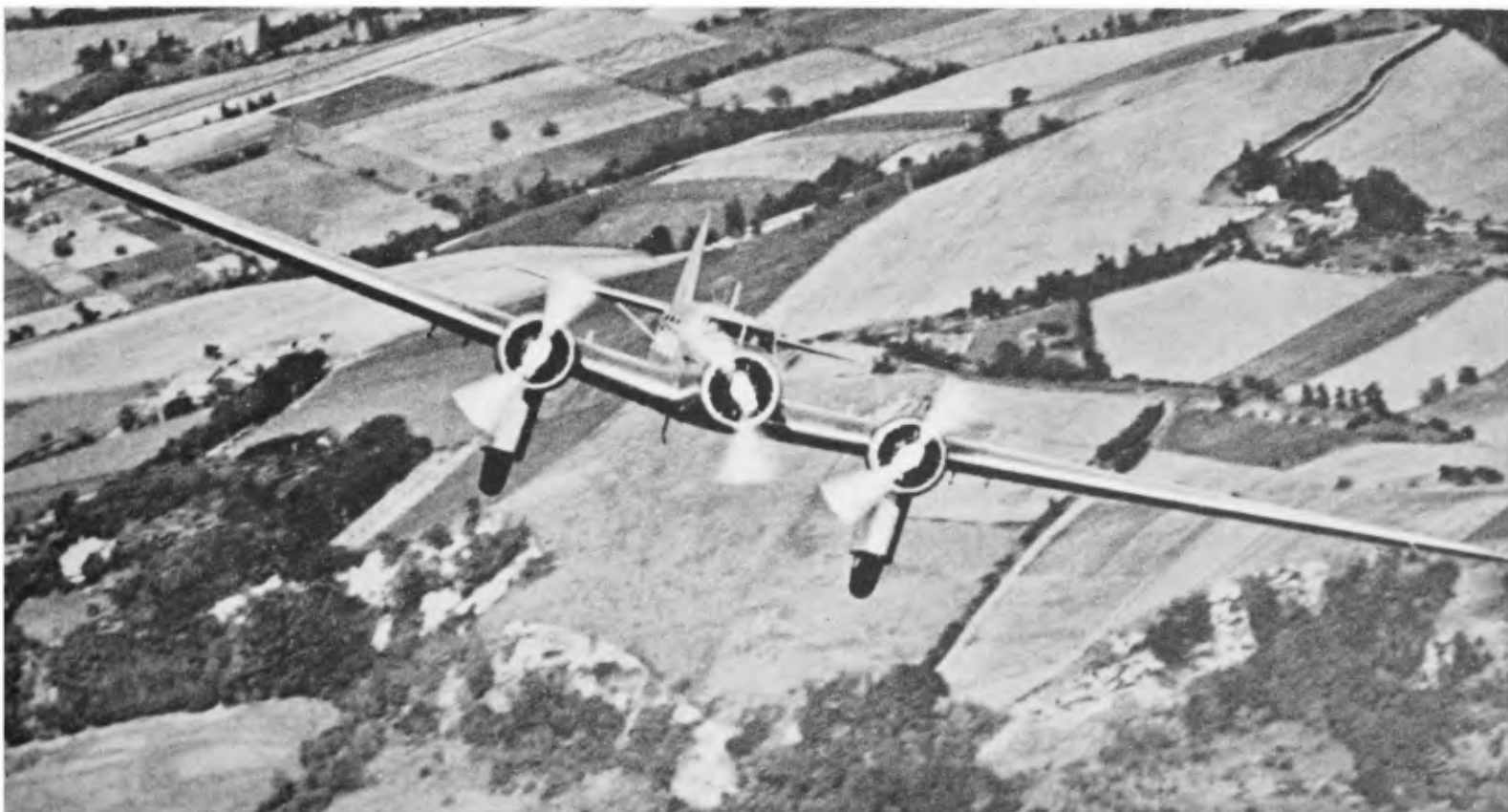
The Persians had something different—the parabolic dome.

The Romans something else again—the hemispherical dome and the vault (Roman cement).

The Gothic builders no longer knew anything of the past, they were embarked on an exciting and violent adventure, a bold innovation . . . which was to finish badly, it is true (flamboyant Gothic), but which left that evidence of mastery : Notre Dame de Paris (and others).

The architectural education of the Ecole des Beaux Arts at Paris (which its pupils will later have ample opportunities of denying, when they face the realities of the profession), and of the Ecole Polytechnique, inculcates in those who are to **mould the destinies of the country** (the heads of industry and of government) a nauseating and cadaveric conception of the **spirit** of Architecture. Untold harm is thus inflicted upon the nation in its very flower. These busy people in control of public economy—confronted with innumerable grave decisions—carry around with them and about them this unpleasant architectural odour with which they have been injected—in a course lacking any deep aim—and which gives the lie to architecture. Suppose that they had been told just the opposite : “ Architecture is the manifestation of the spirit of an age, seizing upon its technical conquests. It imparts to what is to become the face of the land that aspect of youth and honesty which revives the spirit, stimulates creative activity, and constitutes the new links of that unbroken chain of tradition, that chain whose every link was at one time an act of creative optimism, a forward step, a constructive effort.

This educational system, when confronted with airplanes, has stiffened itself for some years against them, demanding the abolition of these new arts, proposing a respectful return to old usage and ways of thought already dead. The senile listen and applaud, the wealthy provide funds so that a craft may be saved which is in its death throes—dying in face of the airplane and the spirit of the airplane.

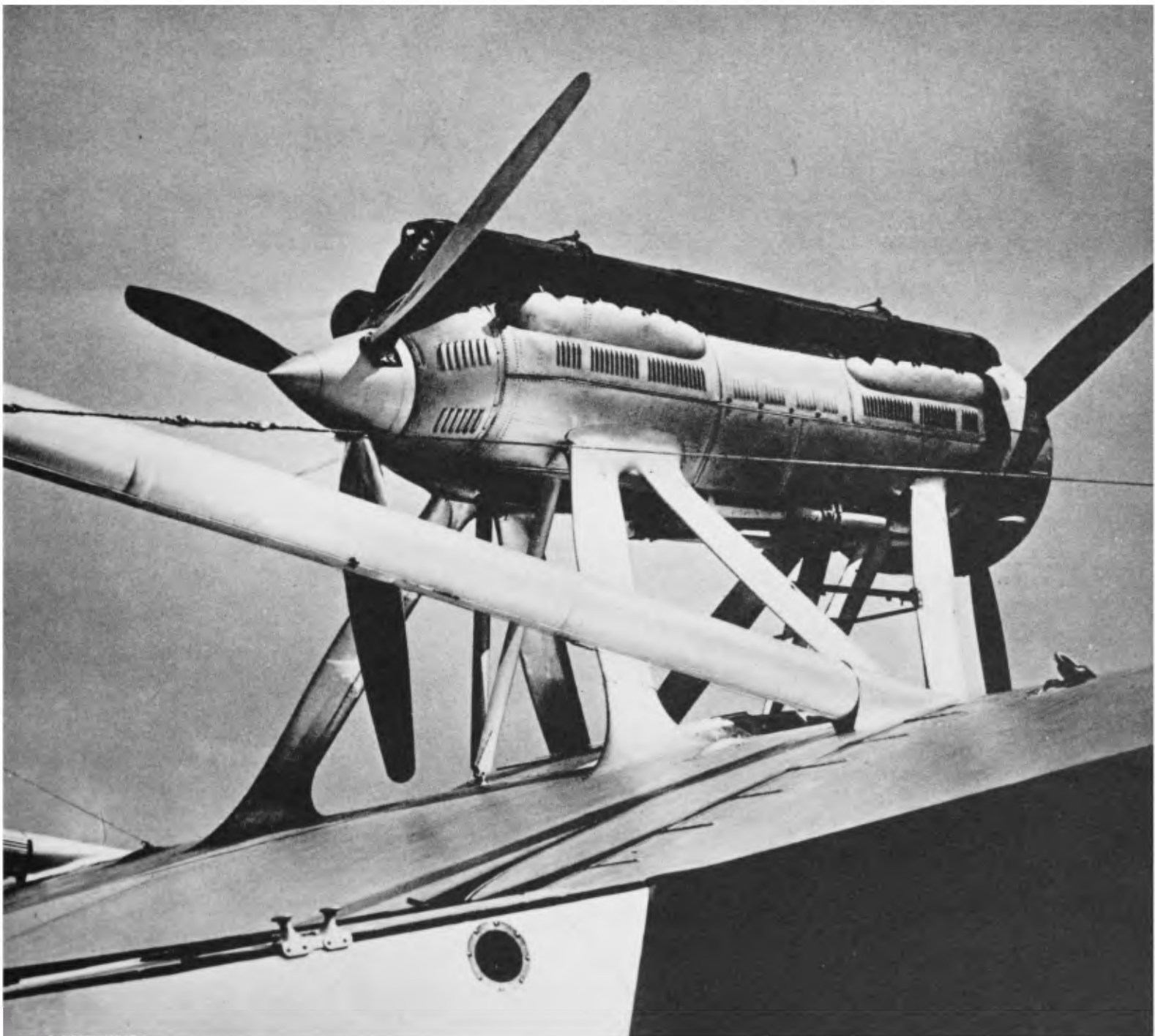




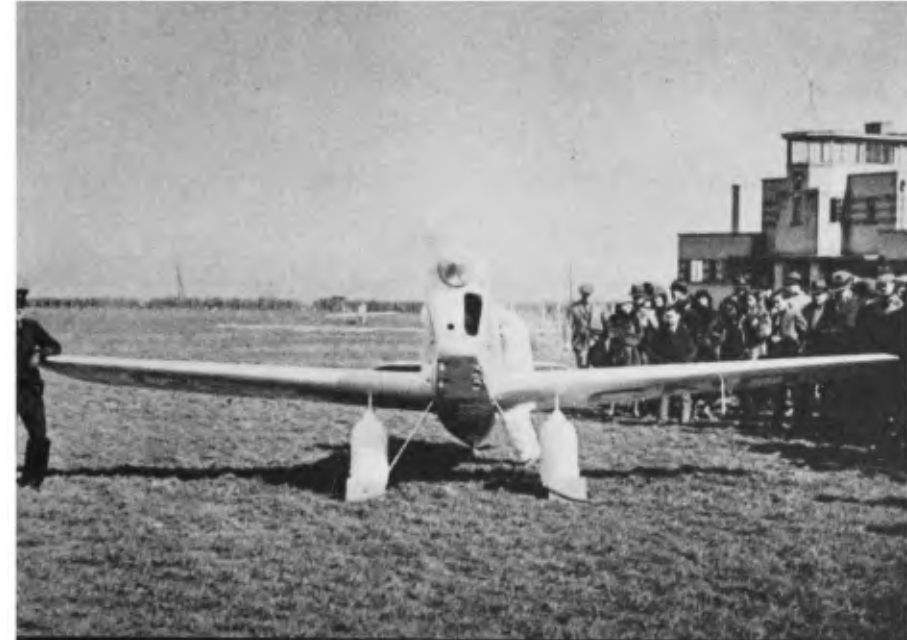
The Fourth International Conference on Art, organised by the League of Nations International Institute for Intellectual Co-operation, and held in Venice :

“ The basis of contemporary culture is threatened with ruin. It is a return to barbarism ! ” (a speaker).

Thursday at 12.15 p.m. Discussion at the Doges' Palace. July 1934.

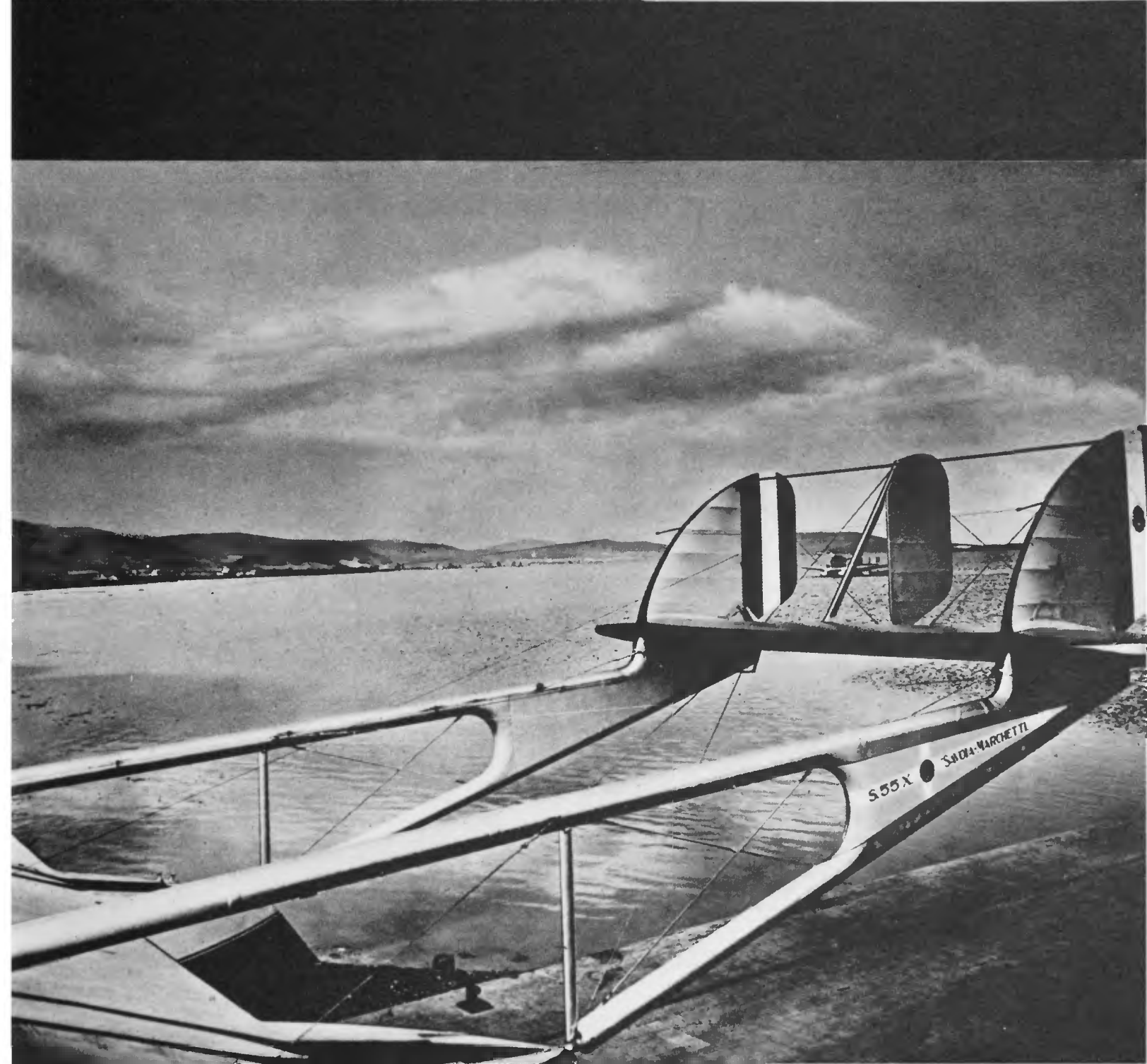






31

32



" Chambers of Commerce " finance a campaign against modern architecture.
Because the crafts are dying.

And craftsmanship is disappearing.

But new crafts have been born which absorb an enormous amount of labour.

These crafts develop new artisans of astounding skill, intensely interested in their work, just as in the past.

. . . .

Venice 1934. Fourth International Conference on Art at the Doges' Palace.
Interruption by Le Corbusier.

Art was " universal " until " artists " were invented and " Academies " established.
The houses, the little bridges, the quays and the piles of Venice were made without
" architects." Everything was rooted in the environment. Then came the
" architects " ; with them the great palaces of the High Renaissance. They are
all without roots (architects and palaces).

. . . .

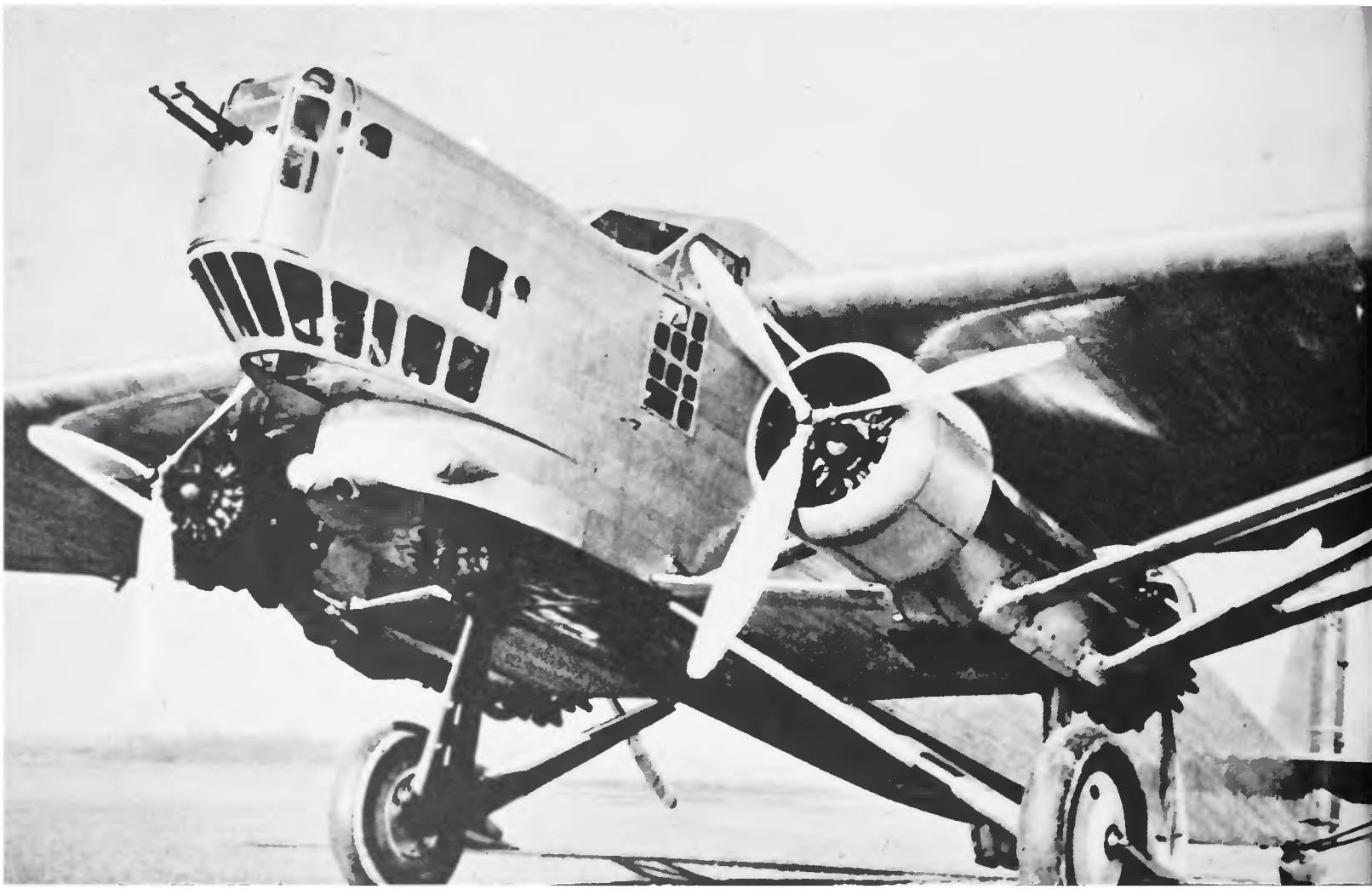
These are what the exegetists have given us to study and the ushers imposed upon
our schools. Life has suddenly ceased to be real in this vanity fair.

. . . .

We have broken the bounds of a narrow, passive and unassimilating curiosity, and
extended our **sympathetic understanding** so that it includes every part of the
world and every period.

We have rediscovered life and the source of its wonders.

We are no longer spectators ; we are participants.





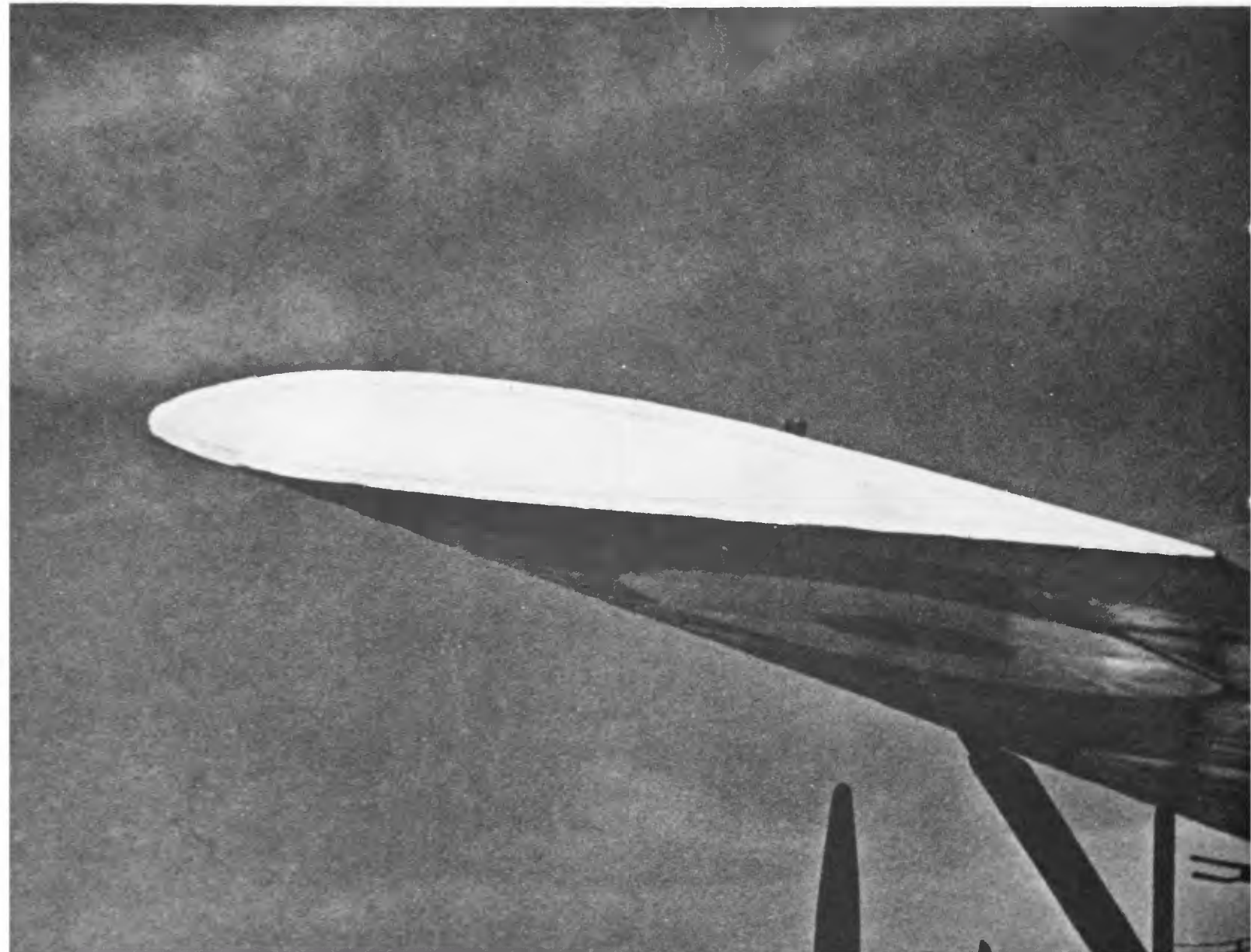
4. **A** NEW STATE OF MODERN CONSCIENCE.
A NEW PLASTIC VISION.
A NEW ÆSTHETIC.

. . . .

THE EARTH BEHOLDS SPLENDOURS EMERGE WHICH ARE
CONTEMPORARY TRUTHS, THE PRESENT BEAUTY WHICH WE
LOVE.

. . . .

THE HARMONISING INFLUENCE IS LACKING.



The plasticians of the world are everywhere full of activity, energetic, innumerable, unlimited.

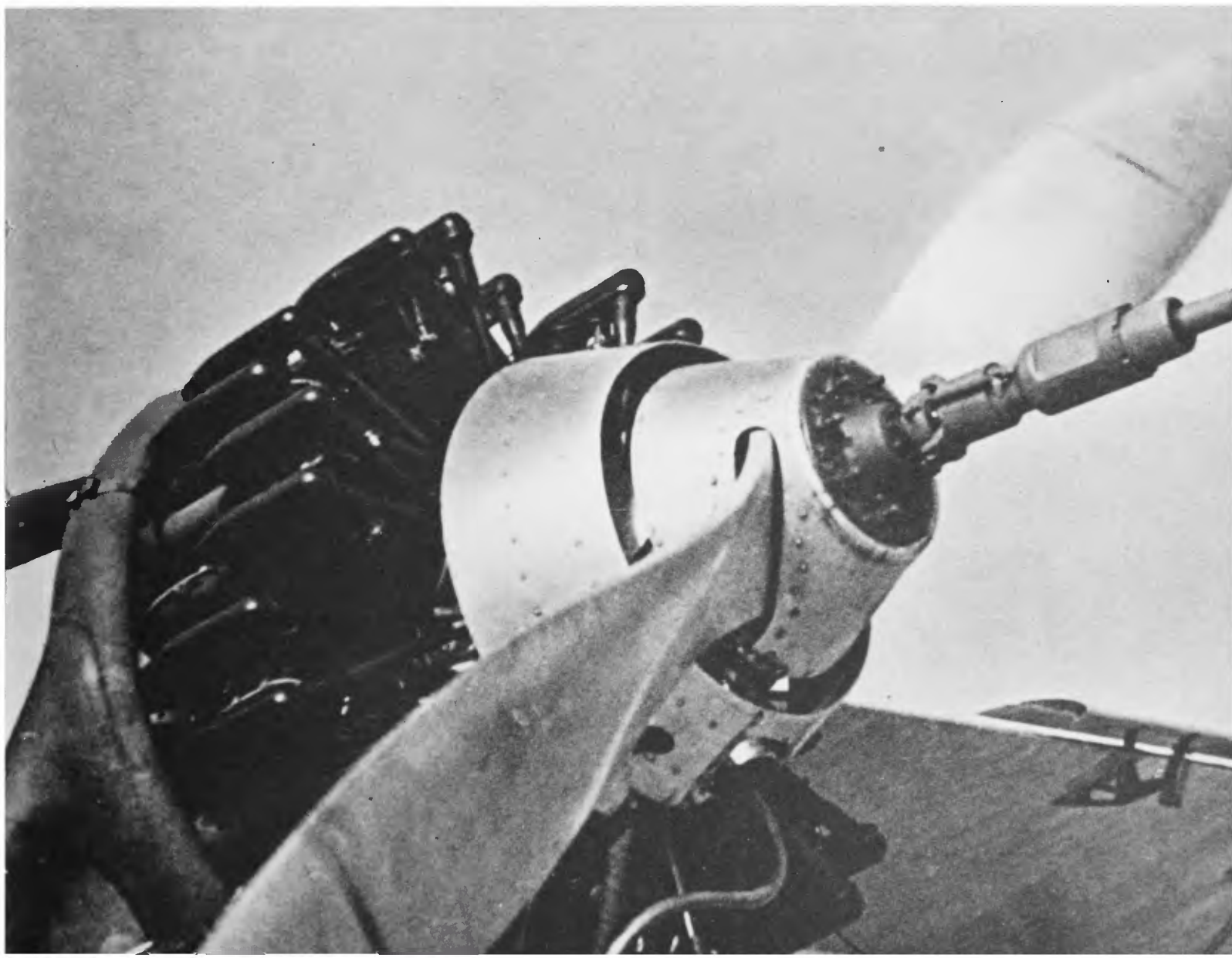
The earth beholds splendours emerge every day, at every moment of the day, which are contemporary truths, the present beauty which we love. This beauty may be fleeting ; it has nevertheless been enjoyed, and formed the plastic base of our emotions.

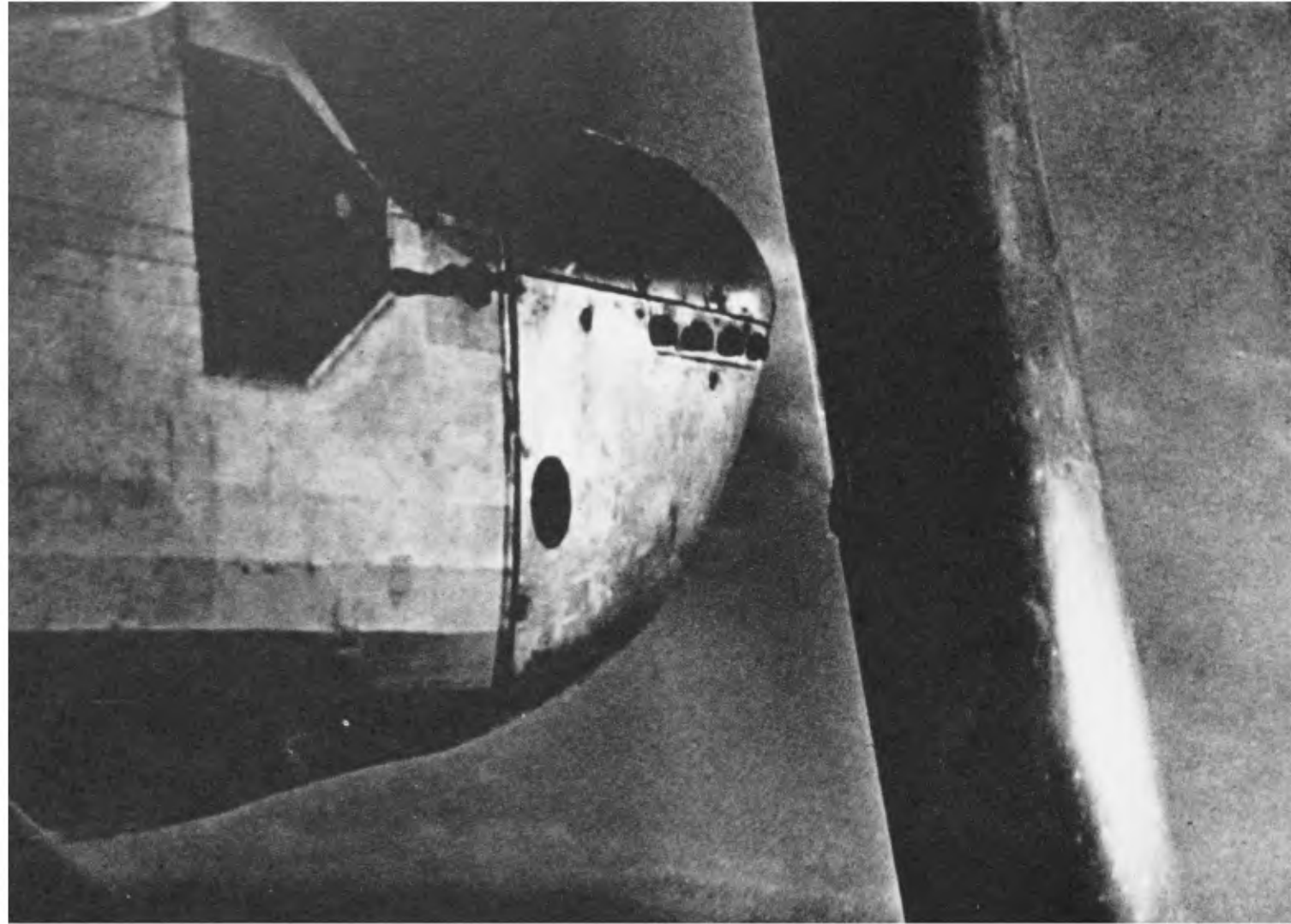
Tomorrow there will be new beauties, new truths.

The day after tomorrow.

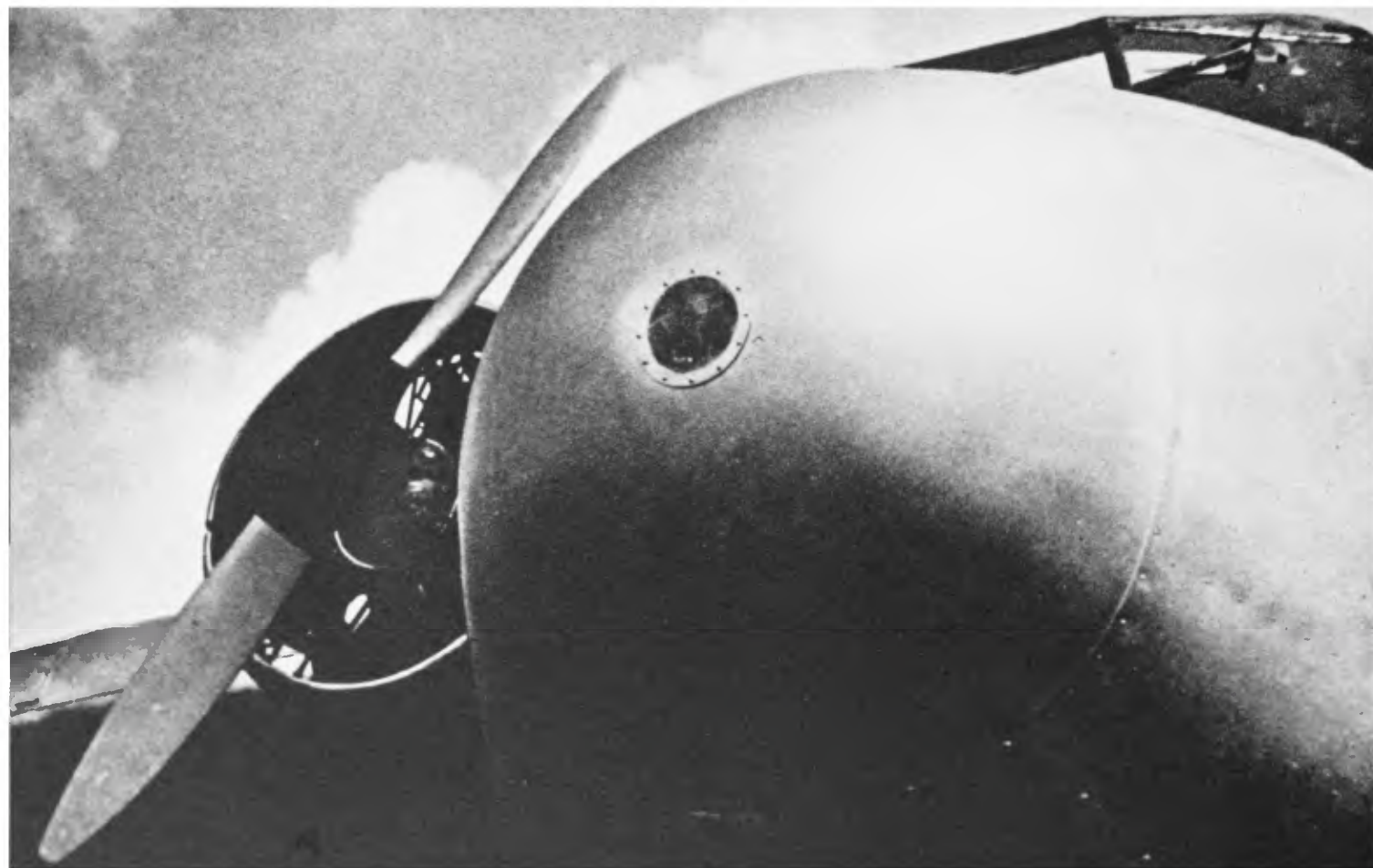
But in this way life is full and beautiful.

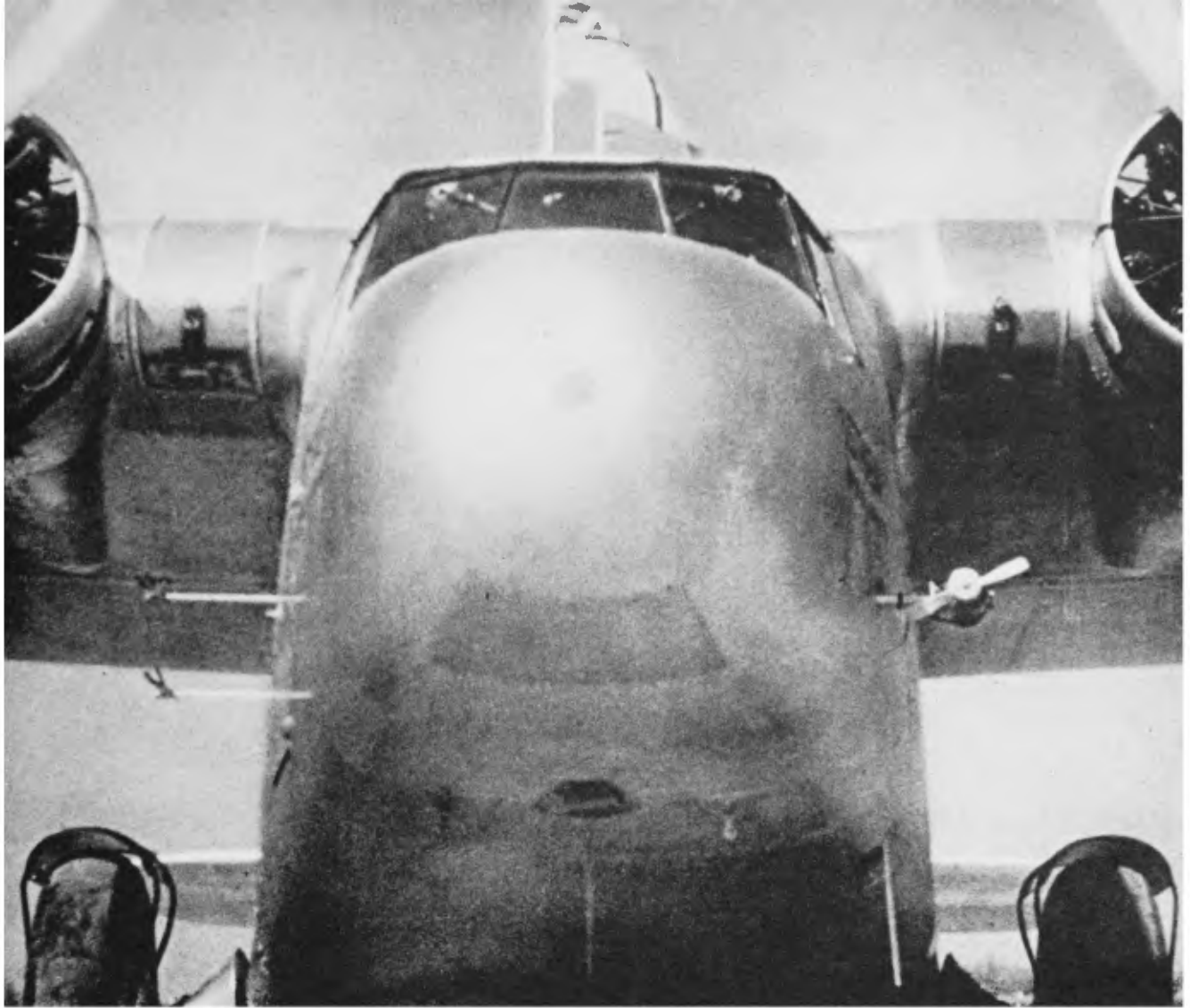
We do not presume to dictate the course of imperishable things of the future.





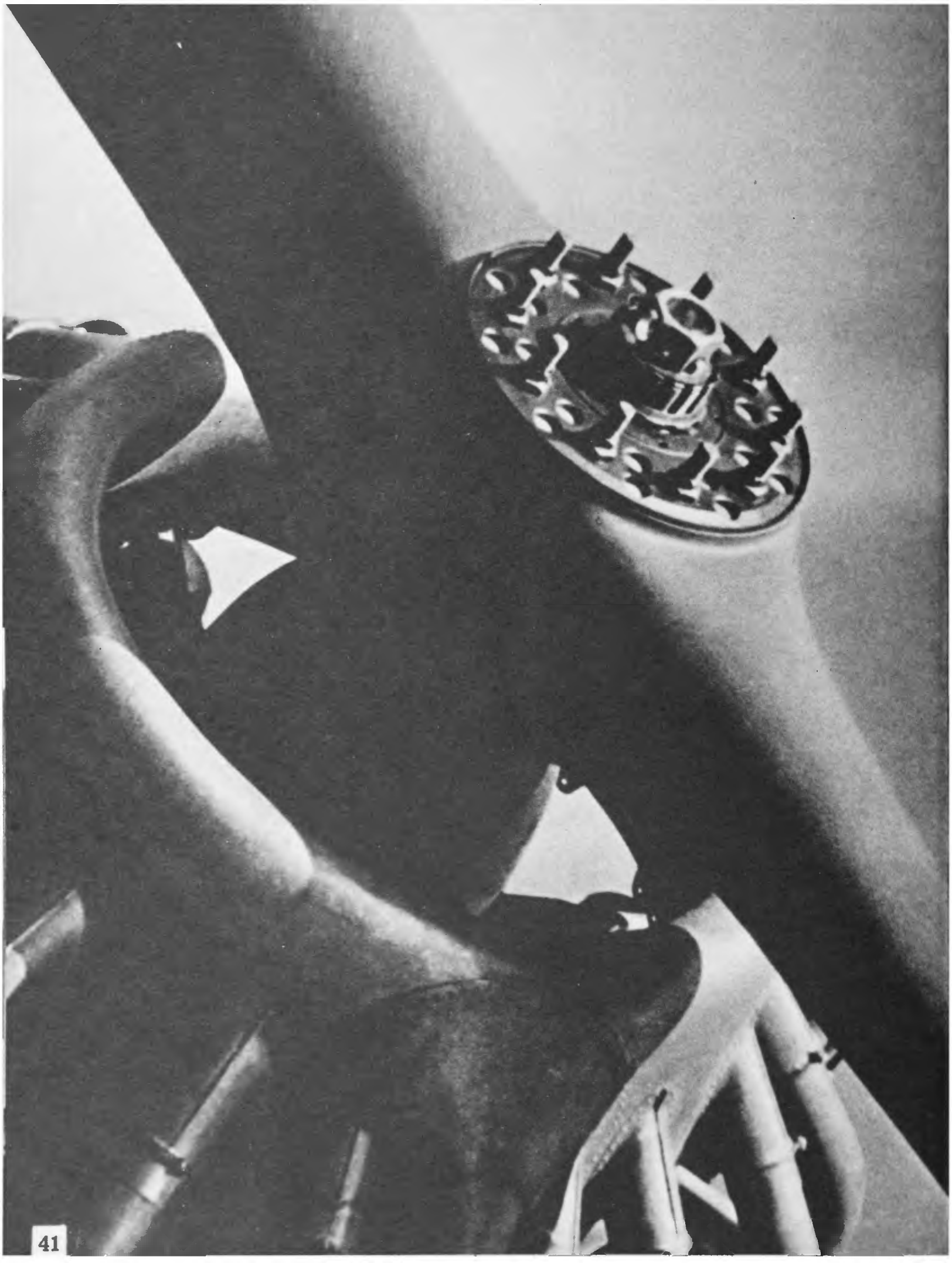
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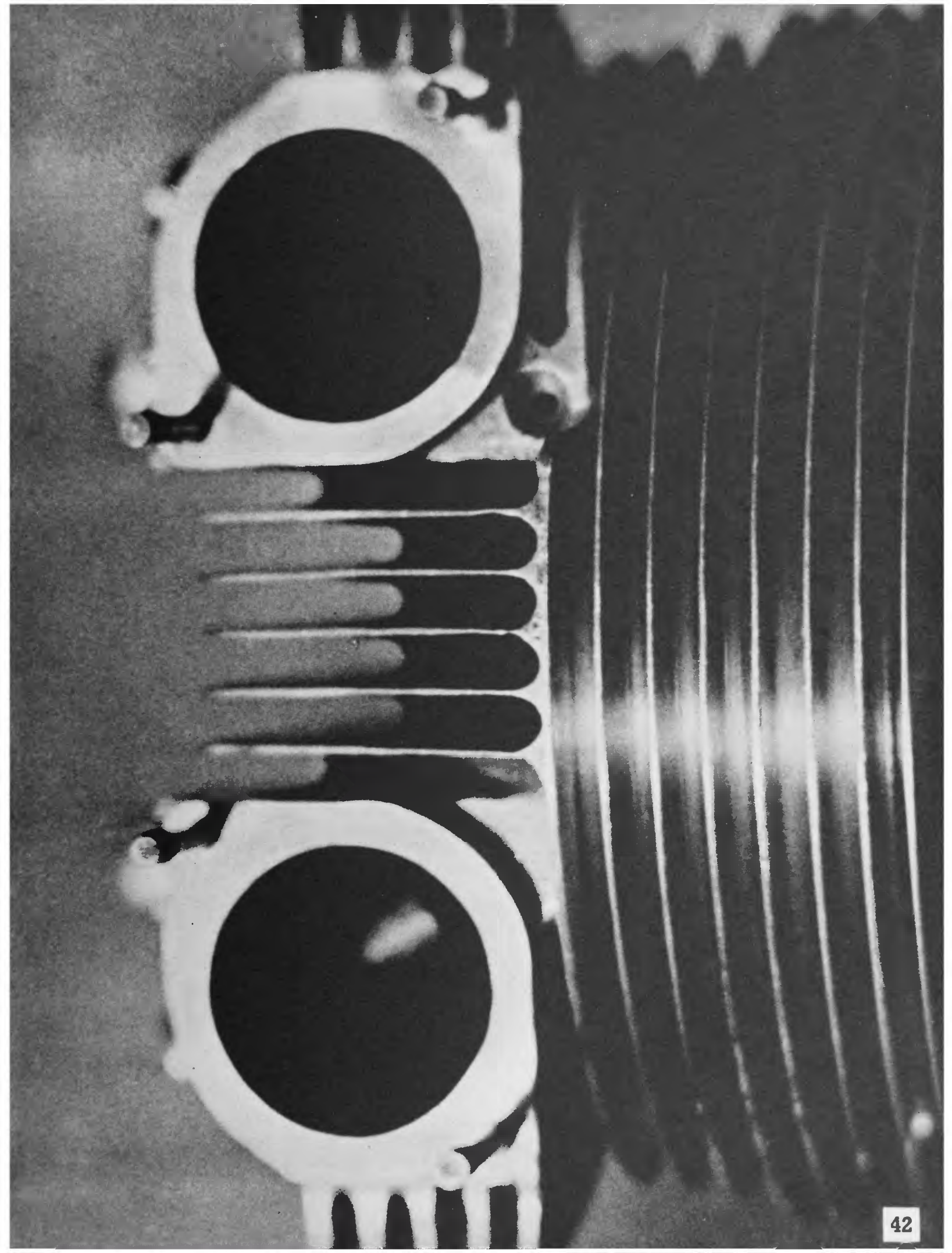


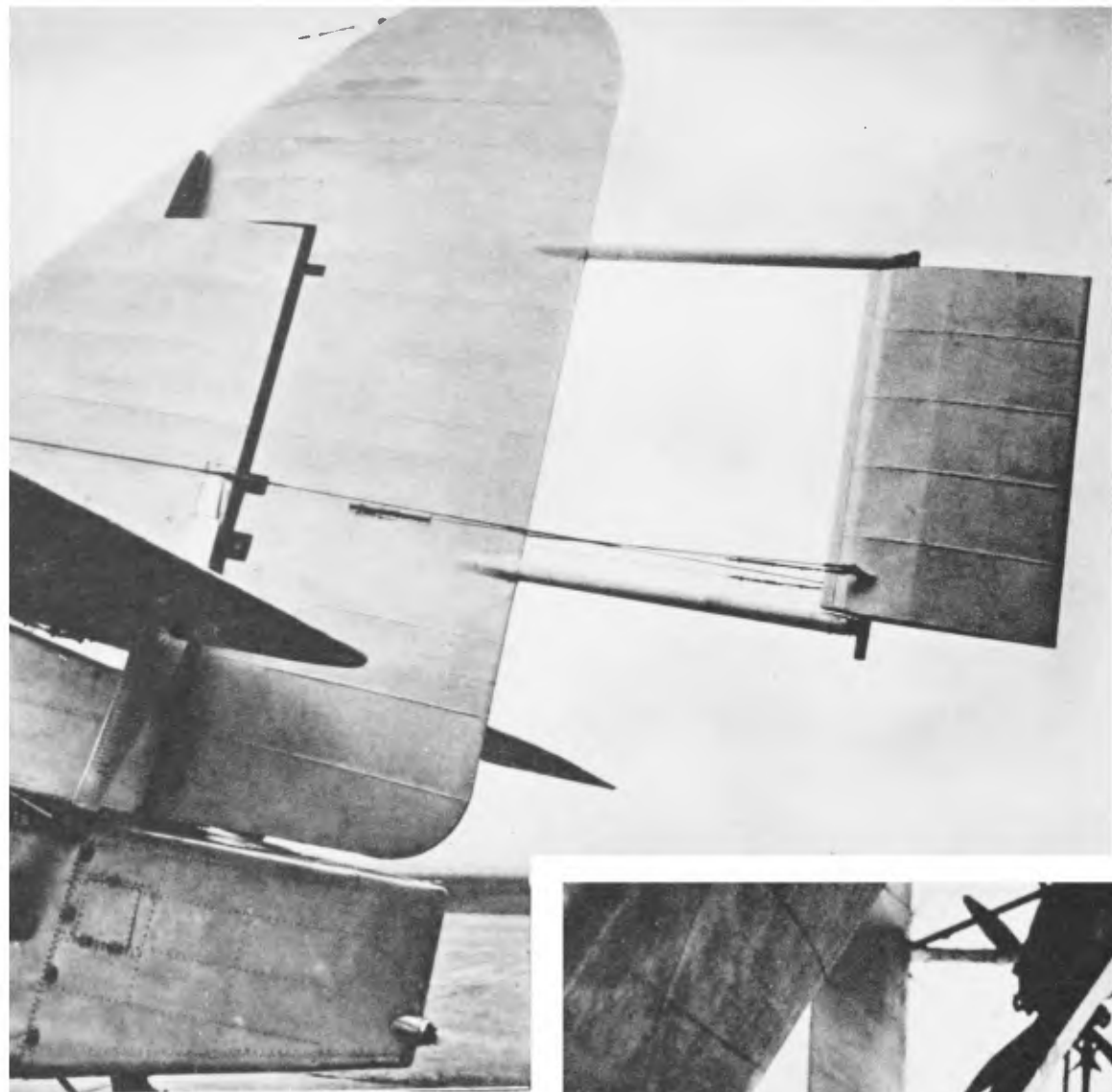


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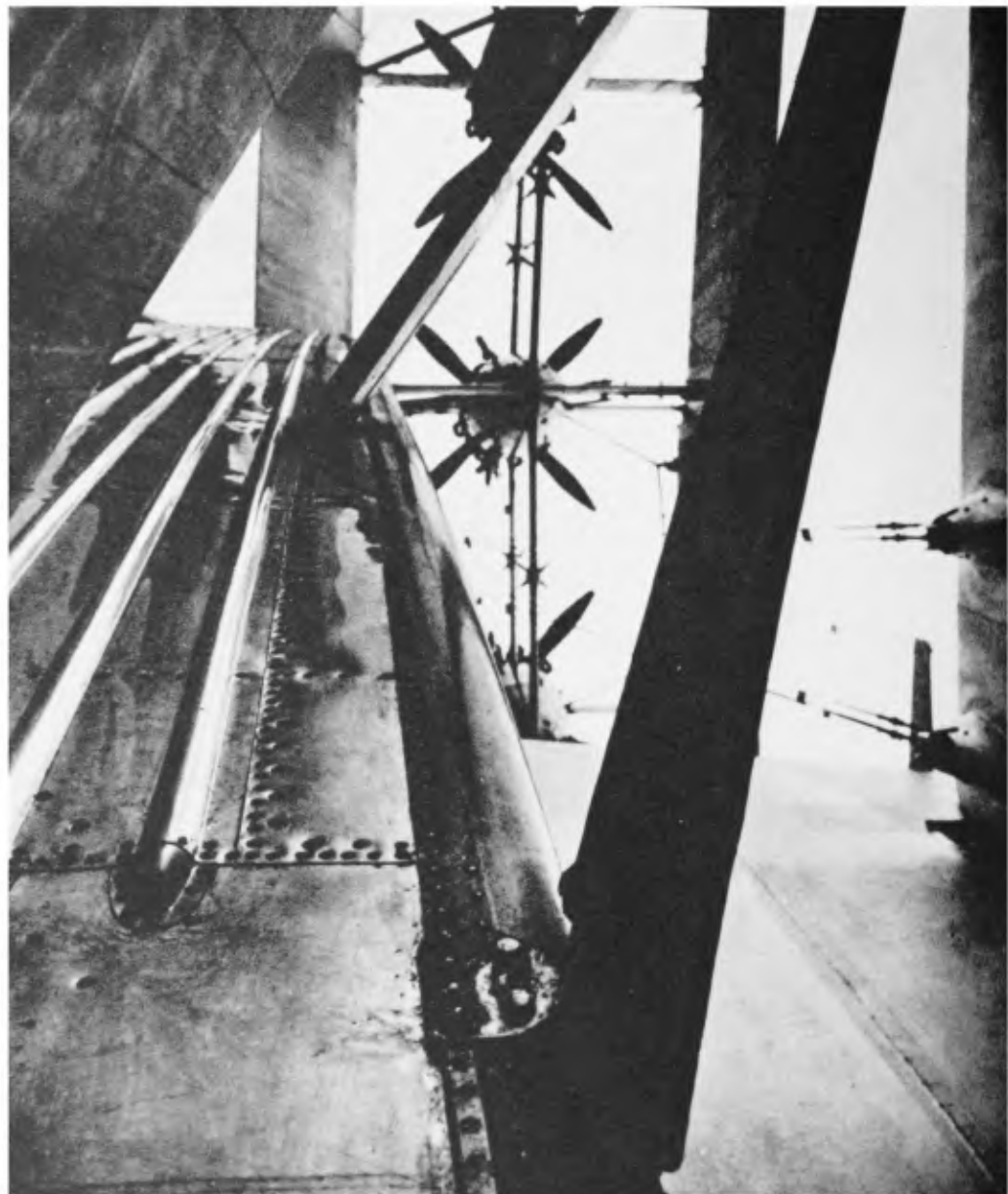




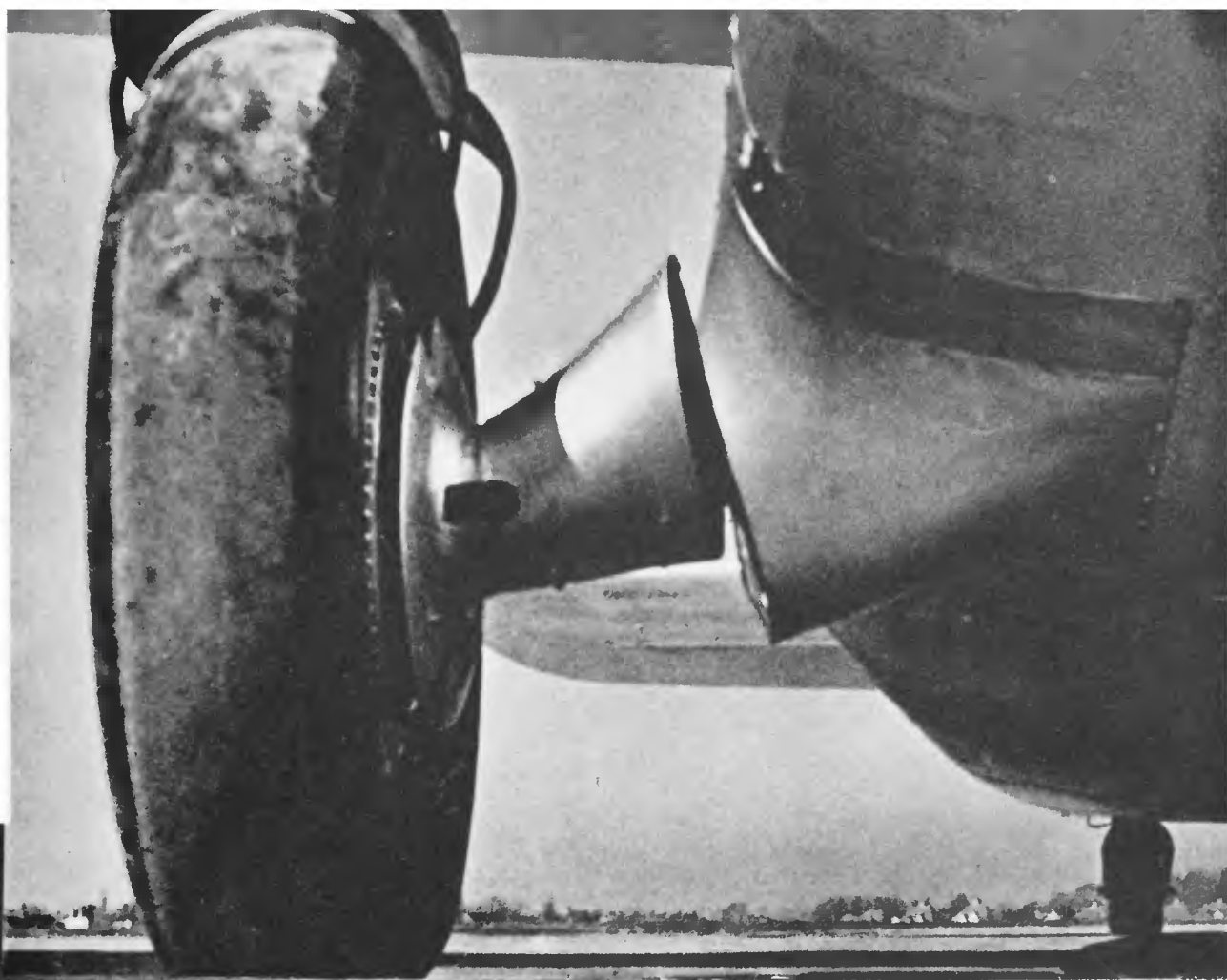




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44



45



46

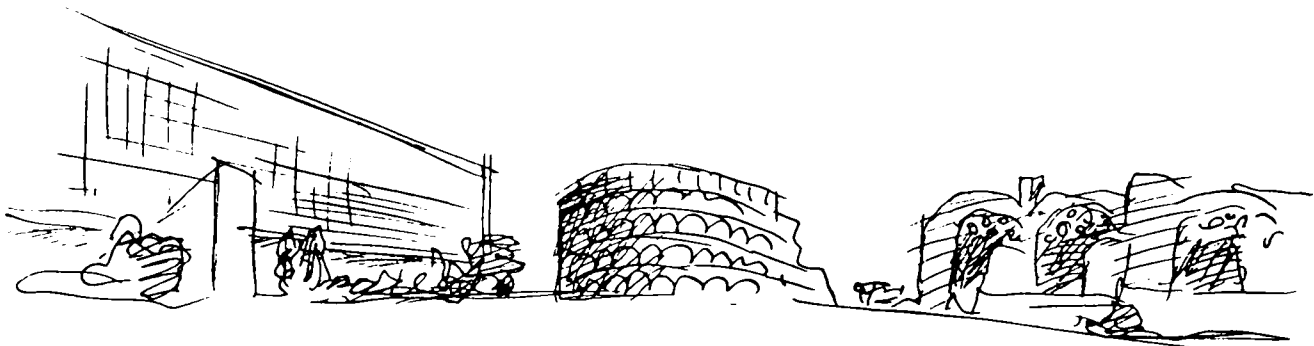
Countries lack the **harmonising influence** which would make the **humane beauty** of modern times palpable.

47

acier et verre

piere

Grèce



VIA impériale 1934? Rome.

Colisée

Basilique de Constantin

Nouveau Palais Littorio

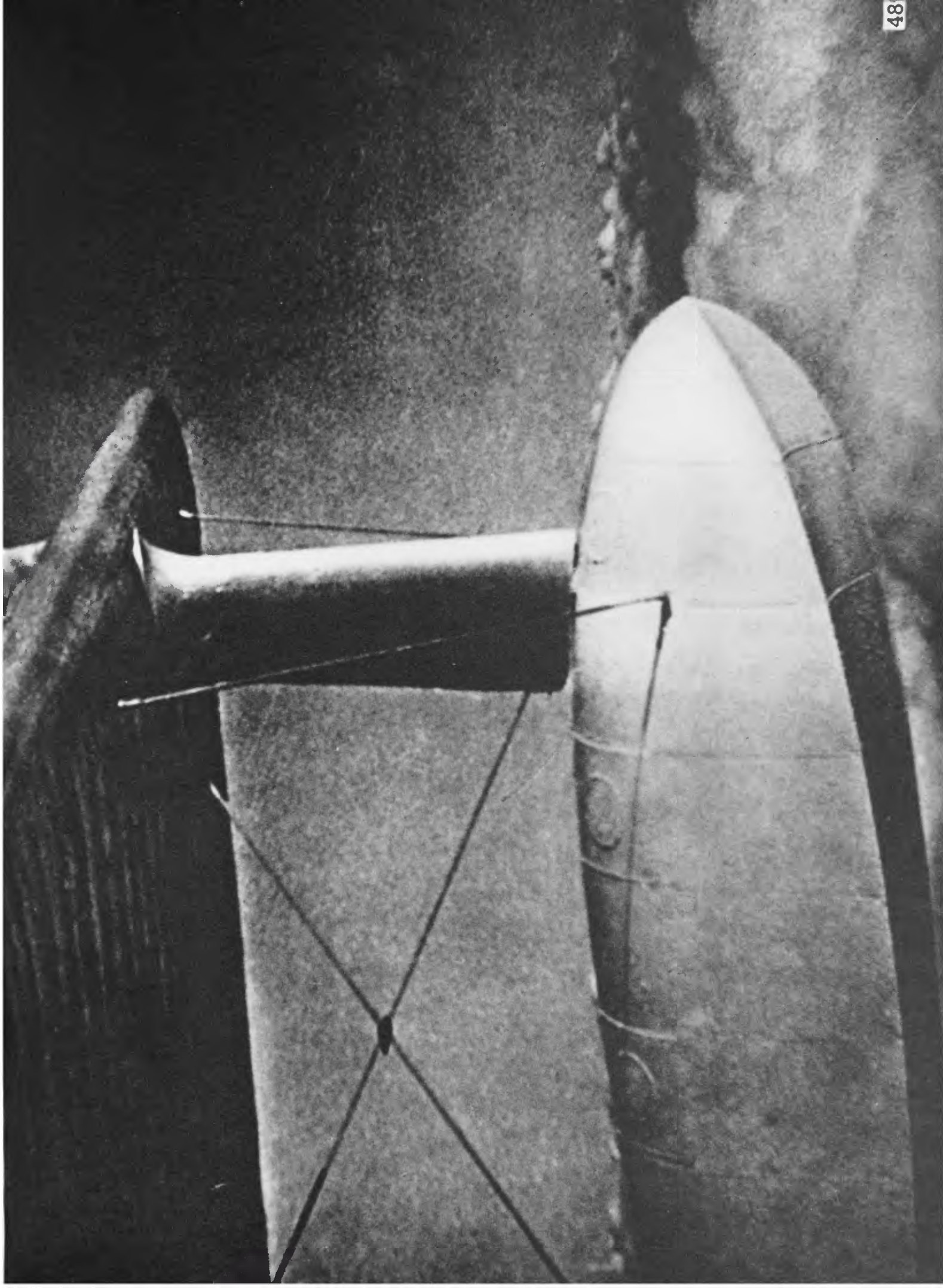
↳ Harmoniser

Il y est me comme mesure,
un commun dénominateur
c'est l'échelle humaine



est le potentiel de puissance
créatrice

↳, est l'UNITÉ, à travers les âges



5. **A**LL THINGS IN LIFE ARE "ORGANISMS."

. . . .

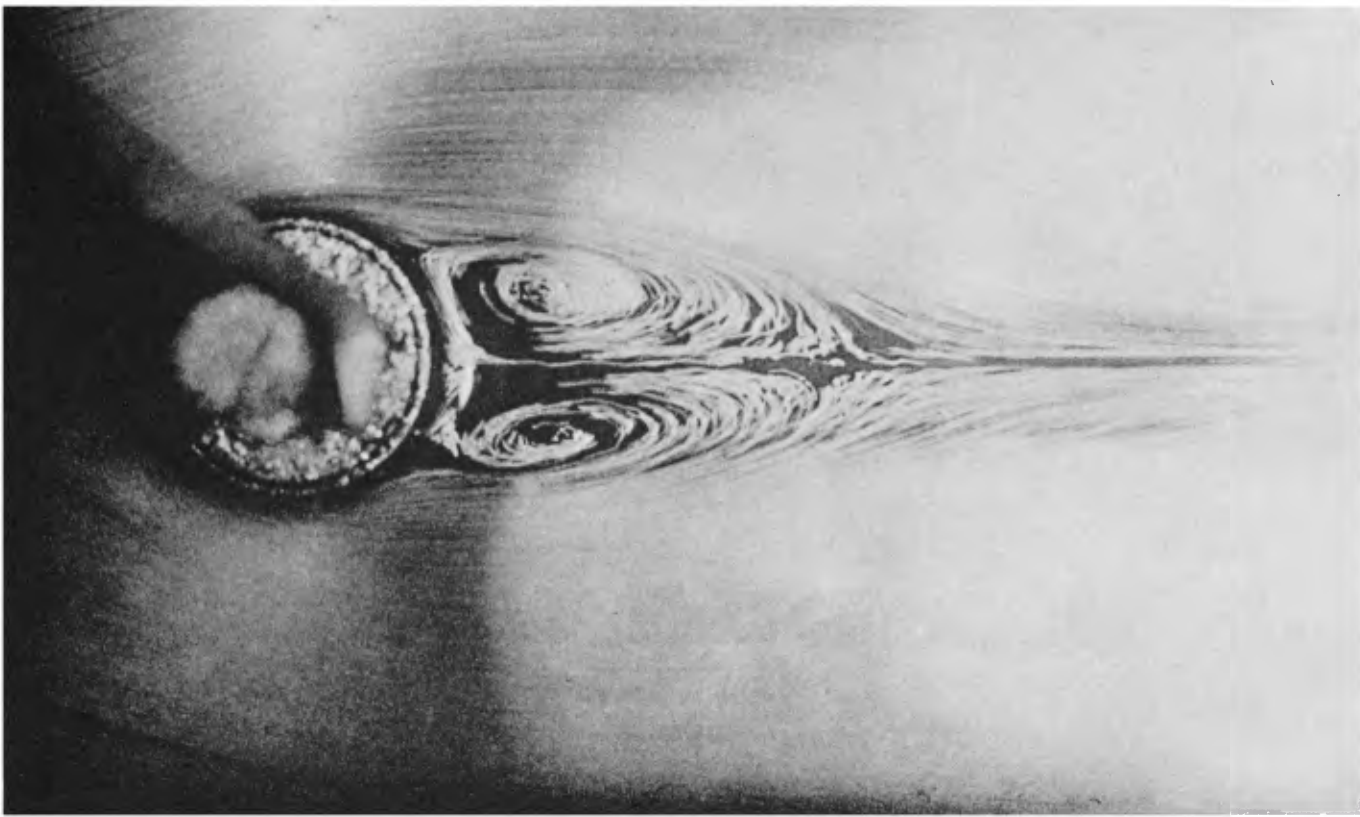
THE SCHOOLS OF THE 19TH CENTURY HAVE DESTROYED
THE HUMAN SCALE AND ABOLISHED RESPECT FOR MATERIAL.

. . . .

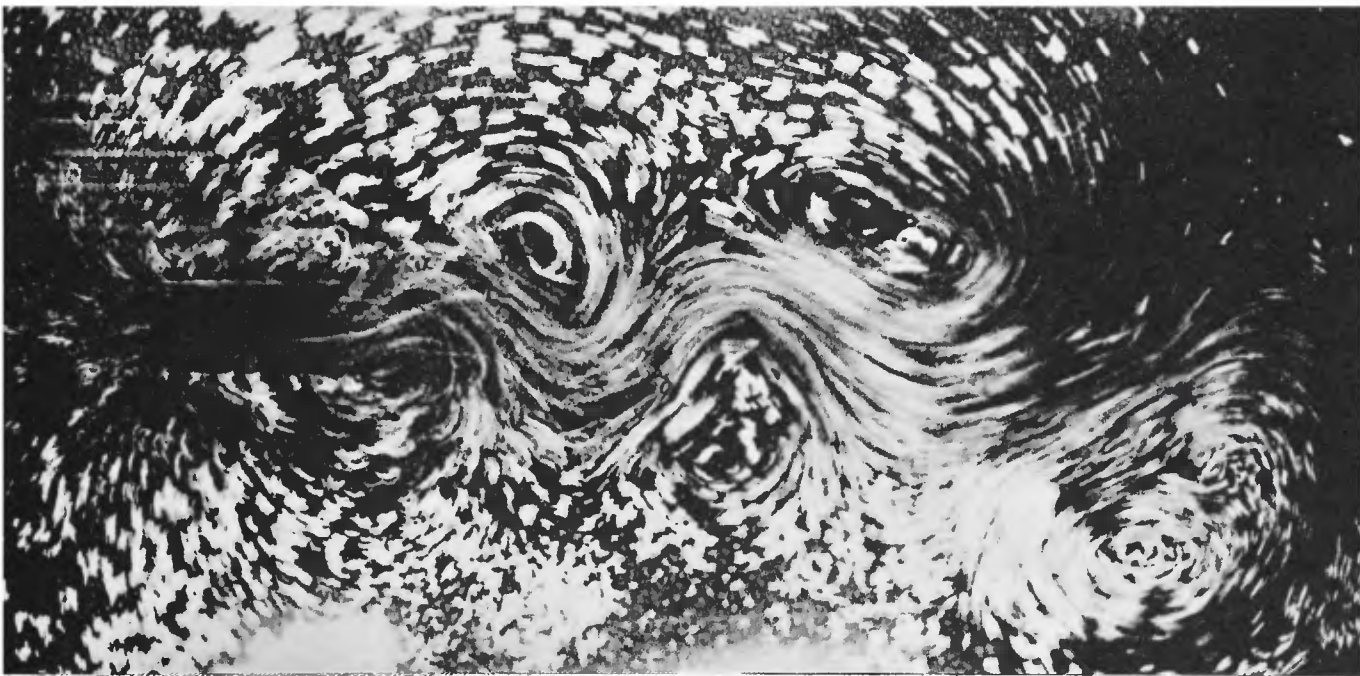
THE NEW ARCHITECTURE IS THE WORK OF REBELS.



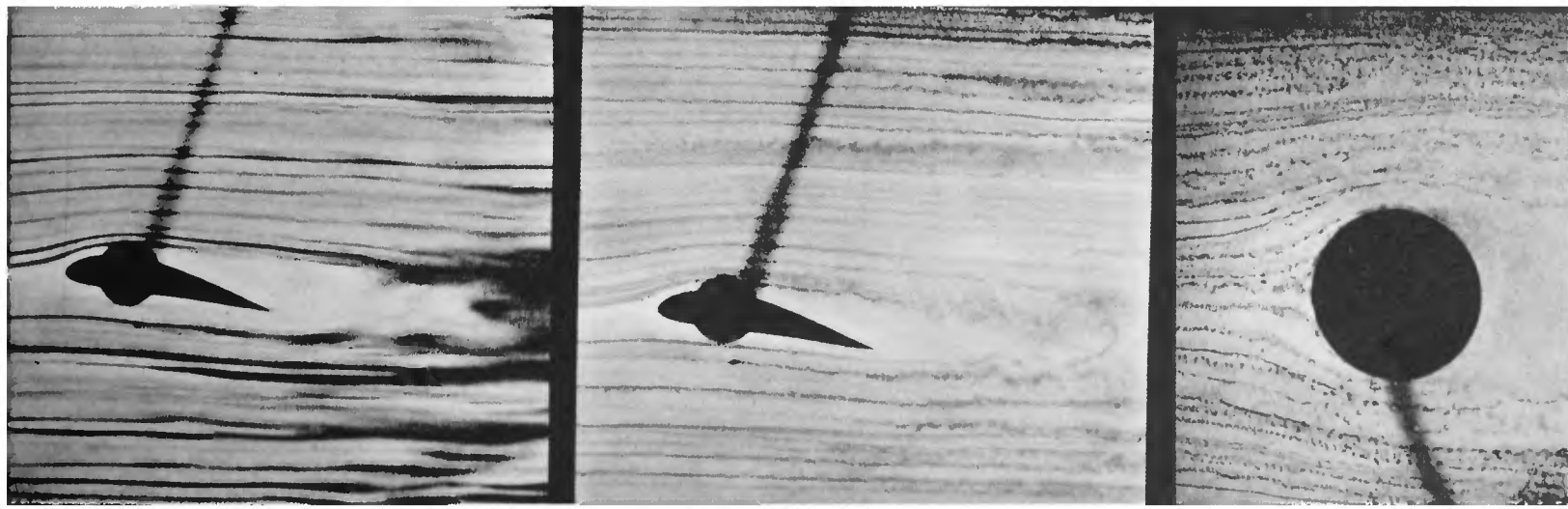
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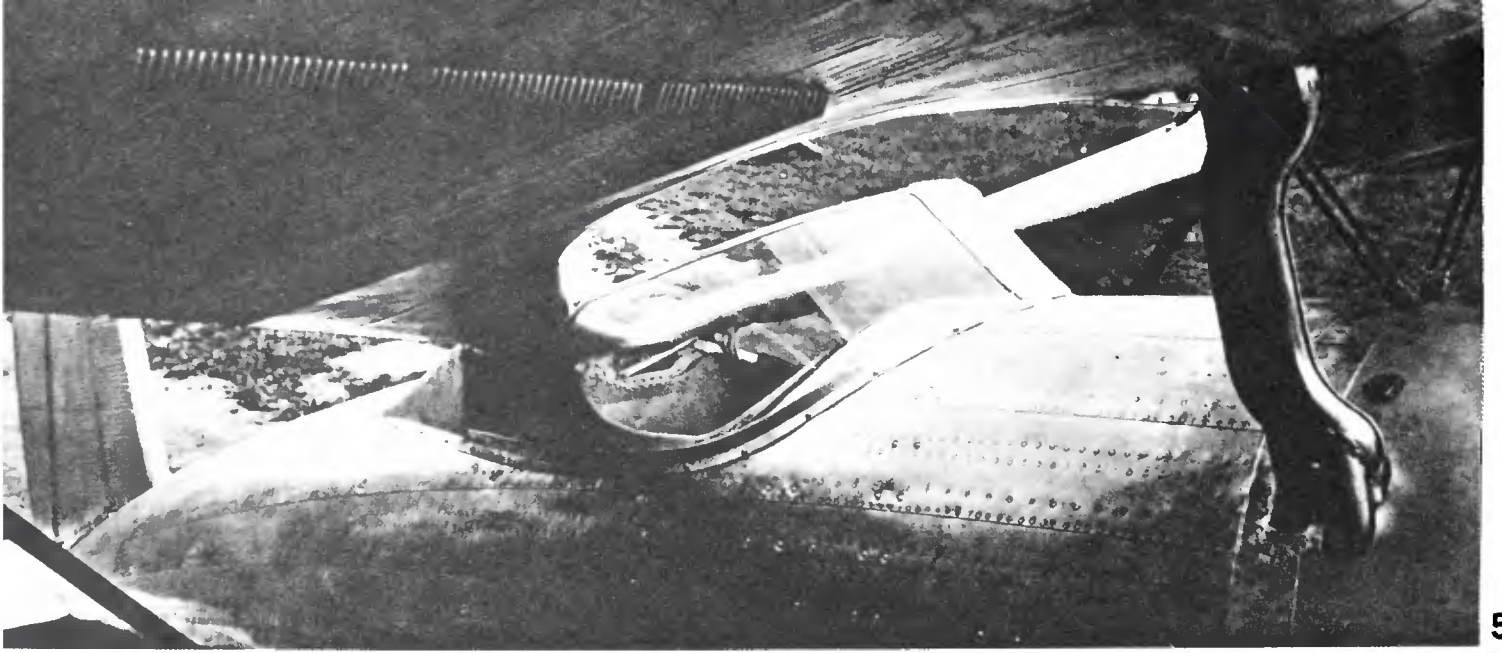


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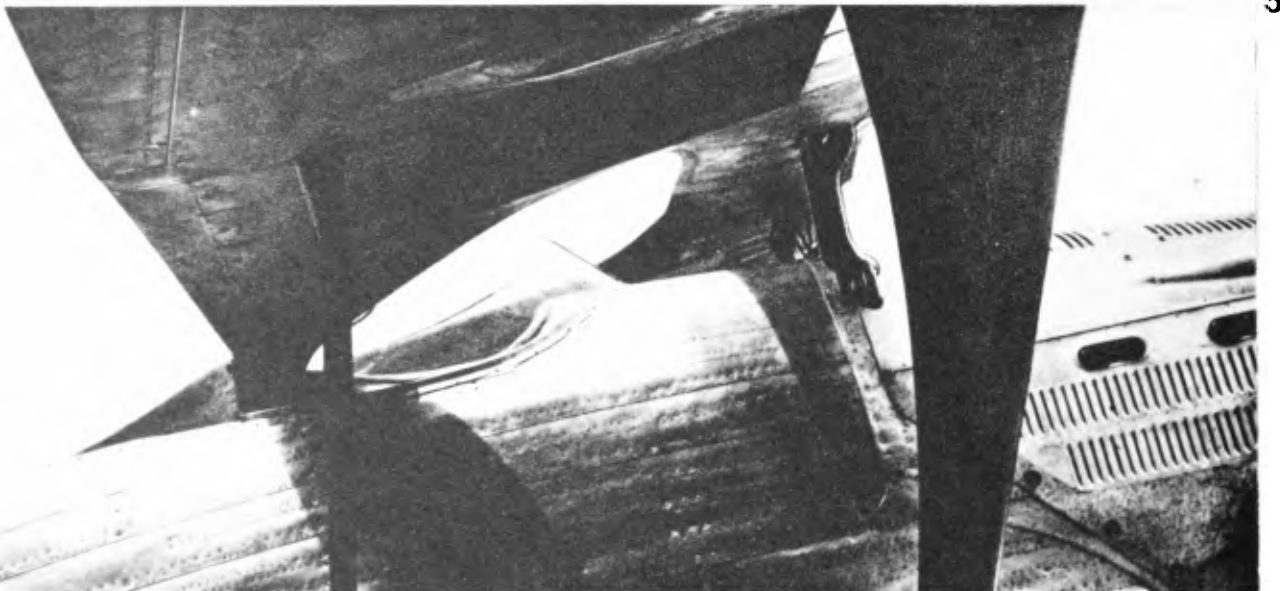




53



54



55

[December 14th, 1931. Lecture before an audience of 3,000 which booed and hissed.]

“ The inauguration of the Salle Pleyel at Paris was the concise demonstration of a revolution. **The styles have been destroyed!**

“ Collapse of the lay academic organisations. The styles? **The Orders of Architecture?** None of them can oppose the laws of acoustics.

“ A scientist established them, after forty years of laboratory work. A scientist who had the necessary power and enthusiasm to wish to embody the destructive and creative power of his invention in a great architectural portent.

“ Death of the Greco-Roman styles—academic falsehoods.

“ Birth of the new **biology** of contemporary building—steel and concrete.”

• • • •

1935. This Salle Pleyel alone to-day serves as a fundamental premise for the construction of concert halls throughout the world. The invention of an individual, Gustave Lyon.

A hall is built for seeing, speaking and hearing.

An airplane is built to fly.

• • • •

A revolution at the proper time.

Truth drives out falsehood.

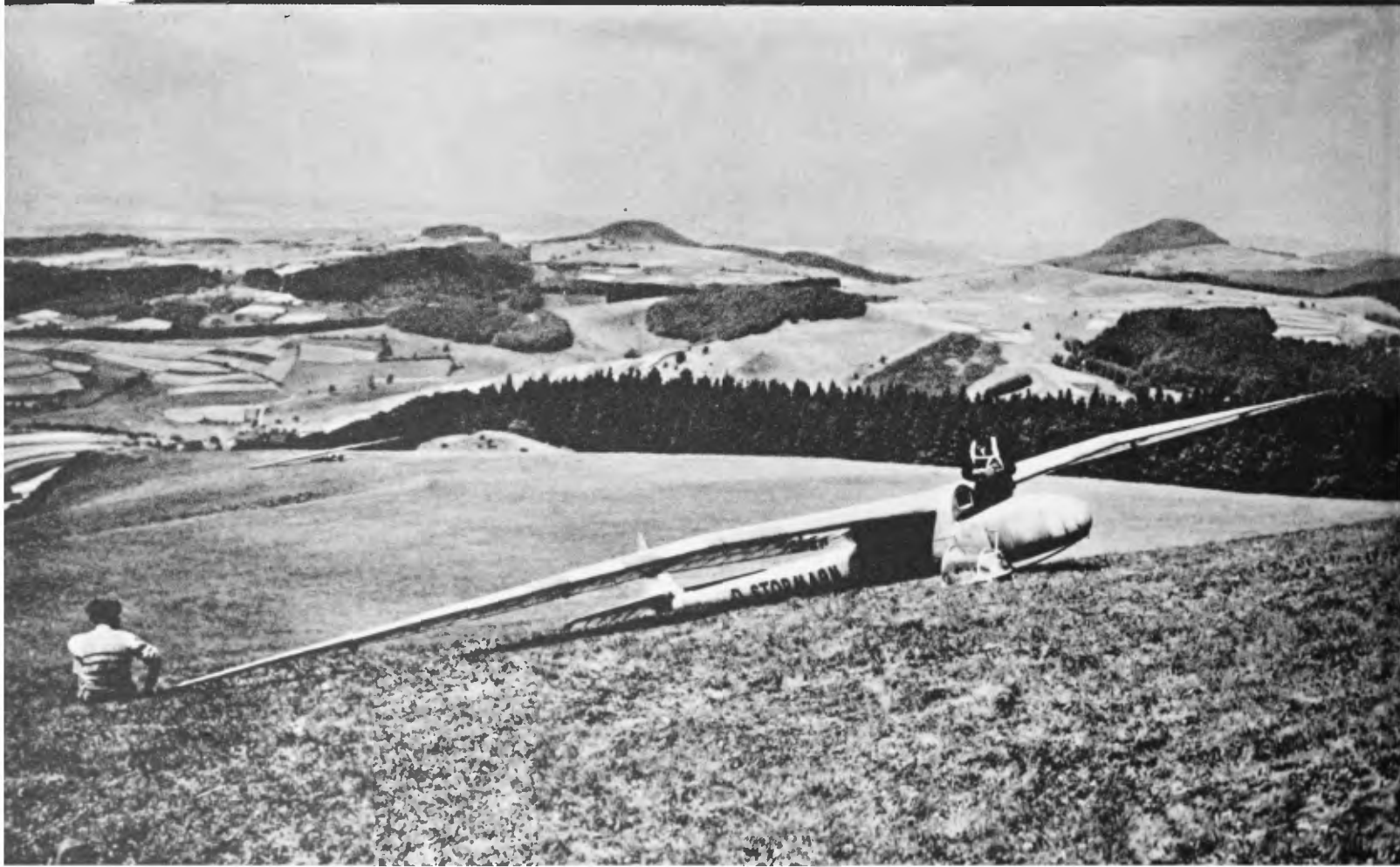
New age.





57

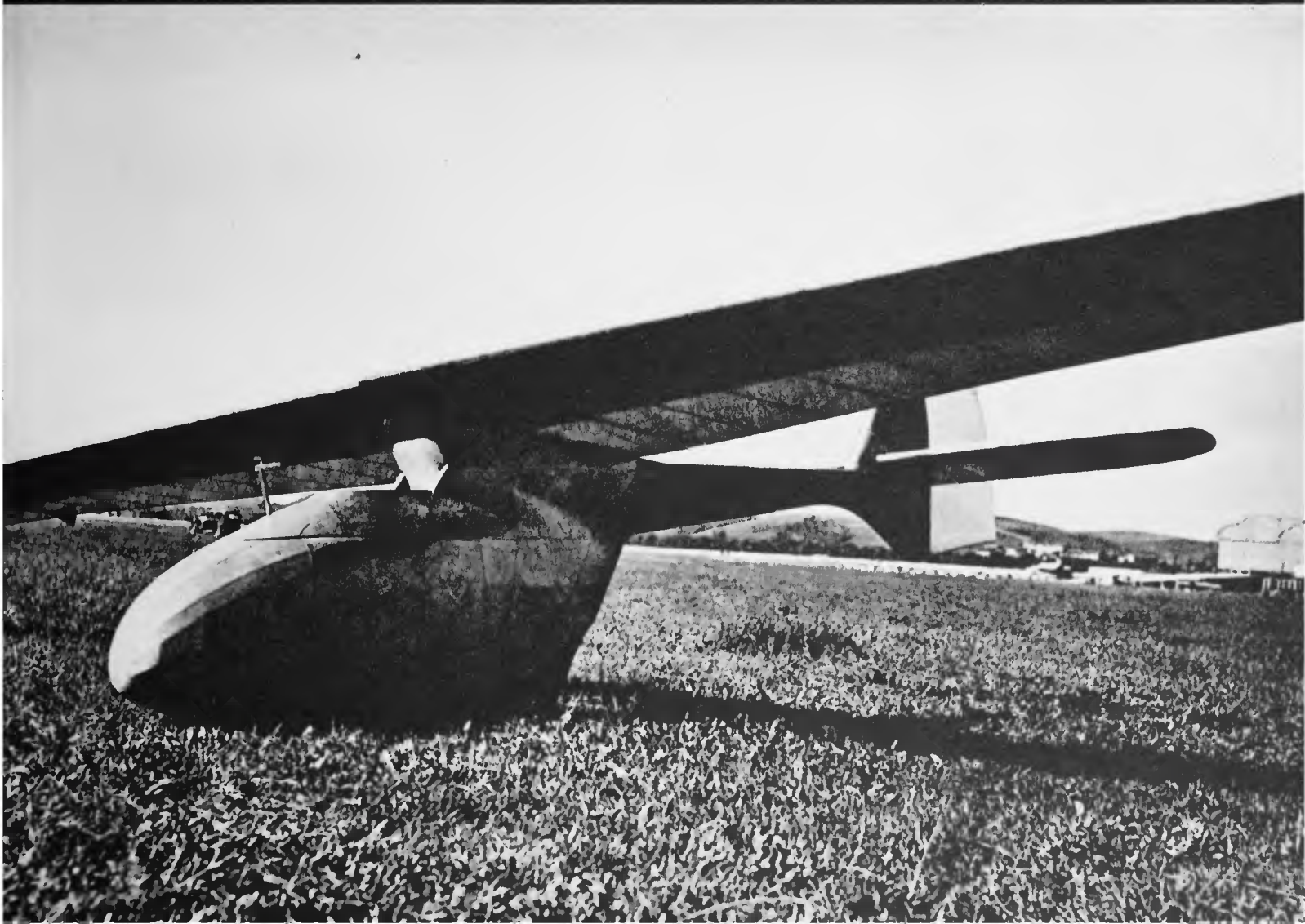
58





59

60



The schools of the 19th century destroyed the "human scale" and destroyed "respect for material."

The airplane, on the other hand, embodies the purest expression of the human scale and a miraculous exploitation of material.

The schools are run by "professors" (the very definition of a school). The professors teach according to the prescribed programme. The programme is prescribed by authority. Is this authority in touch with life? Occasionally only. Has life a programme? No, life is explosive.

The head of the workshop is in touch with life, in the middle of his machines and materials.

The materials are around him, under his hand—hard or soft, brittle or elastic, fibrous or crystalline, thick or thin, heavy or light, their characteristic properties constantly demonstrated by the way in which they repel or combine.

The workmen are constantly thinking about materials. The drawing and the plan by which these materials will be set to work is only a shorthand note of their intrinsic character.

But the **drawing** of the schools is without bone or sinew: it has neither facets, weight, nor energy. It is amorphous.

That is why architecture was destroyed by the schools in the 19th century, and why the new architecture is the work of rebels.





62



63



64

6. THE AIRPLANE FLIES STRAIGHT FROM ONE POINT TO ANOTHER.



This picture enables us to appreciate the extent of an almost miraculous emancipation. Likewise in our own undertakings of today we can set ourselves high aims and attain them by dint of intelligence and the freedom produced by technical knowledge, character, and will-power.

7. HEROIC DEEDS . . .

. . . .

LIVE HEROICALLY ! BELIEVE AND ACT ! LET US SHAKE
OFF LETHARGY AND THE DUST OF EARTH FROM OUR FEET !
TAKE RISKS, ADVENTURE . . . ! TO FAIL PERHAPS ? WHAT
DOES THAT MATTER !

. . . .

IT IS A VICTORY TO HAVE STARTED !





67

The obsession of Leonardo da Vinci—painter, sculptor, architect, hydraulic and military engineer, town planner—was that man could fly.

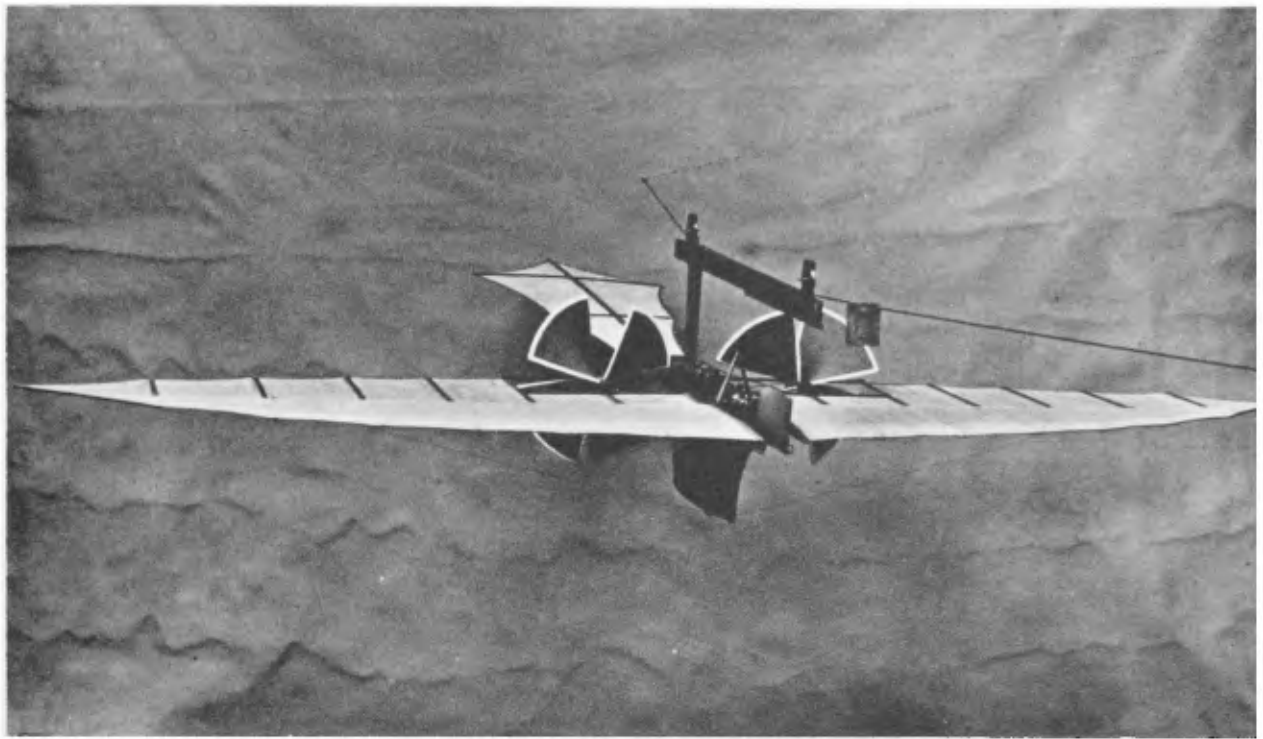
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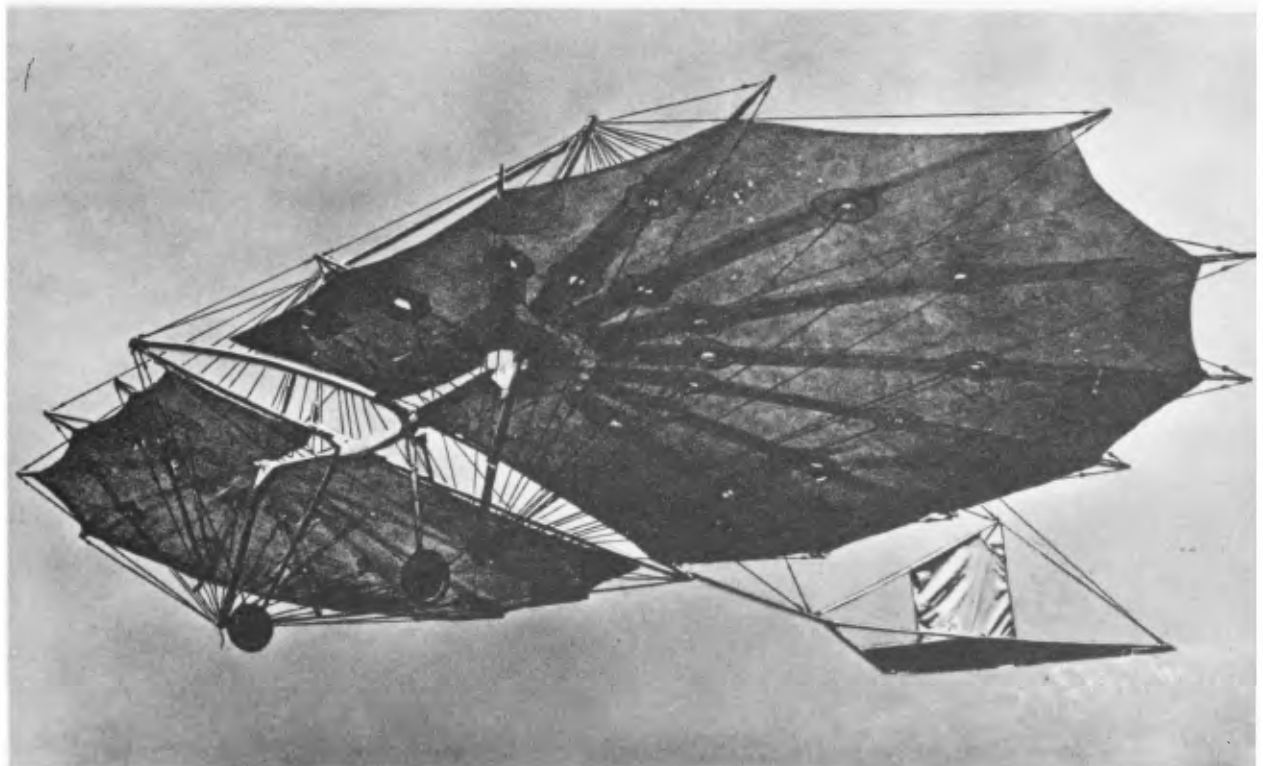
1842

69



1848

70



1896

71

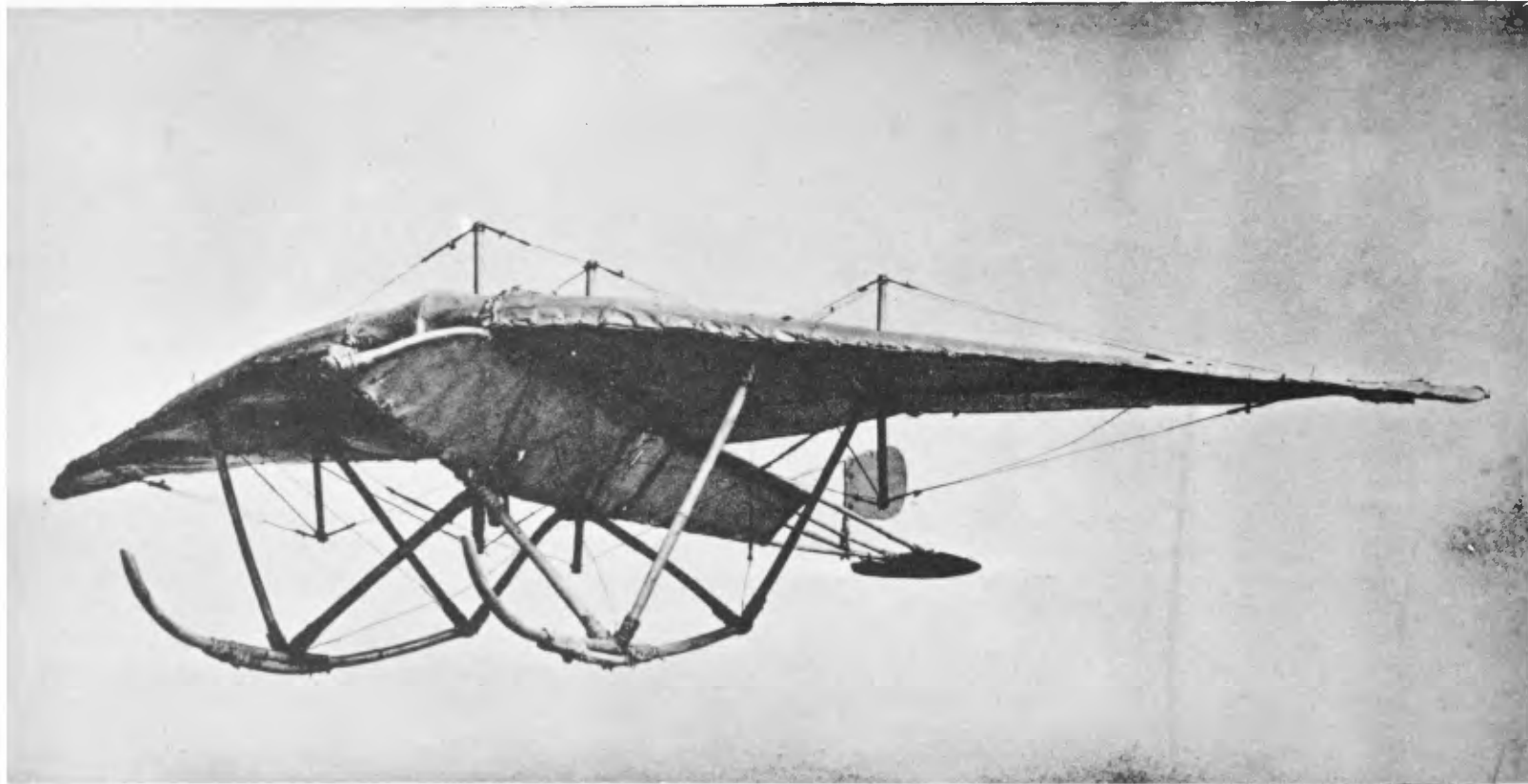
They went on searching!
In every country . . .
The essential principles were already settled. But the combustion engine, the muscular power of the airplane was to seek.



72

1903

In these scant frameworks the pioneers realised Icarus' dream. They rose from the ground and flew. Man had burst the bounds of age-old destiny. He was flying !

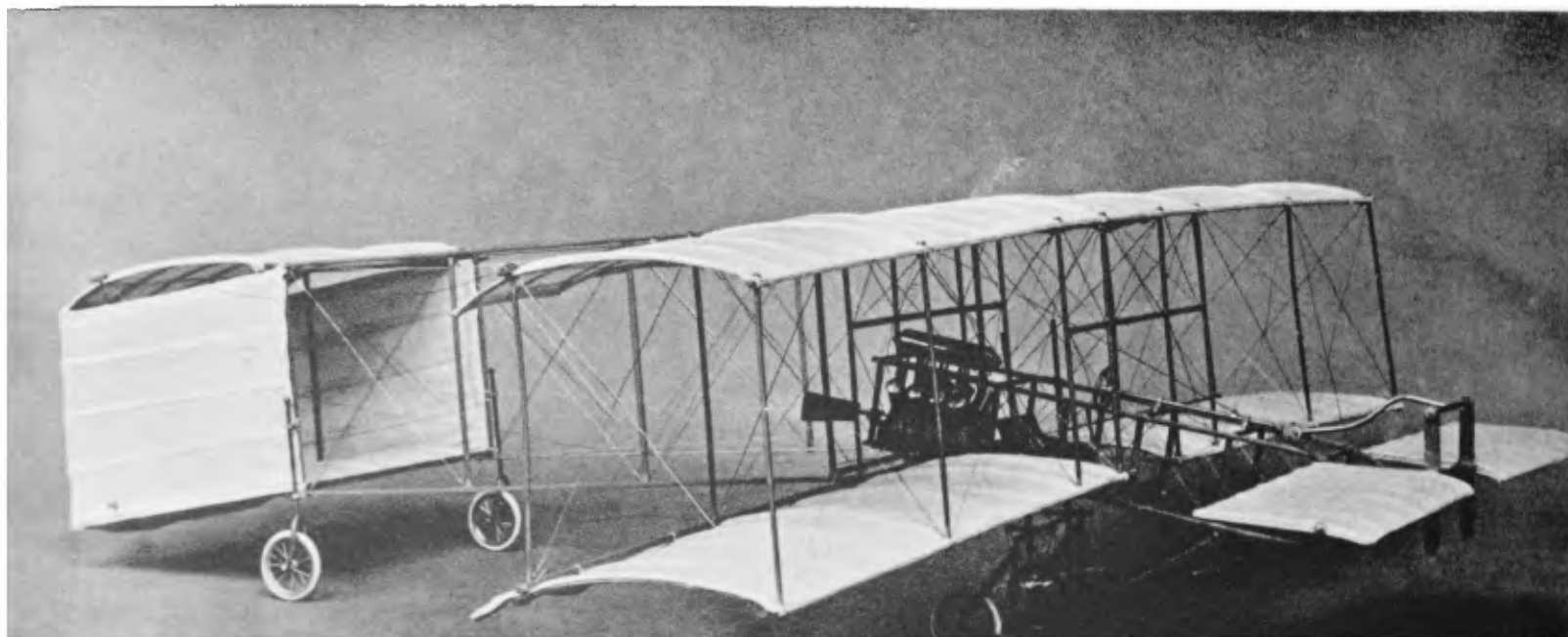


73

1905

74

1908



September, 1930.

The present moment is pathetic :

There are those (the Americans) who have become enslaved by economic law and the violence of machines and cry to us : " Don't drown yourselves as we have done ! "

There are those (in Europe) who appreciate acutely with what desirable wealth two thousand years of work, observation, and intellectual research have endowed us, and who cry : " We are lost, we are going to our doom, we shall be ground down by the brutality of the machine." (A new Millenary terror.)

. . . .

But the Americans, having lost their money (1935) have realised that they still have their hands, and that they are as rich as ever. See them setting happily and vigorously to work again, laughing at the misadventure which has befallen them and seeking more noble aims in their youthful need of life.

And there are those (in Europe) who, after the present day millennium, are sensitive and many-sided, energetic and ardent, who feel, who desire, who act and are positive : " Have confidence in life, for it is strong ; you who have felt the terror of the monster ' **Money-Machine,**' believe in the Machine-Liberator-Creator. There is no need to die. A new civilisation has begun."





76



77



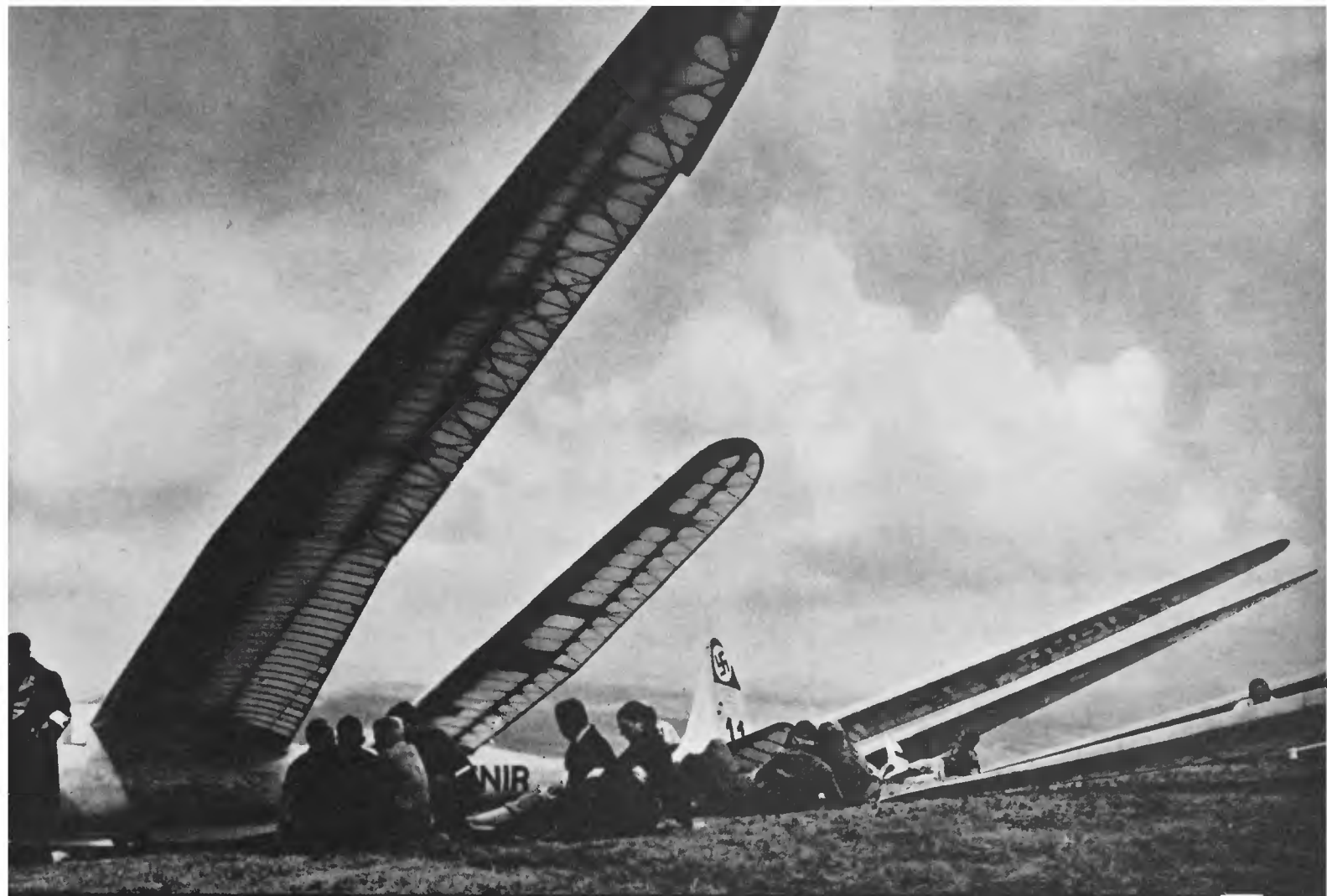
78

79



New machines, new men. They are filled with enthusiasm, the pleasures of daring, of breaking with current stupidities.

Once in the air, carried along by the wind, they exult in the daring of their departure.

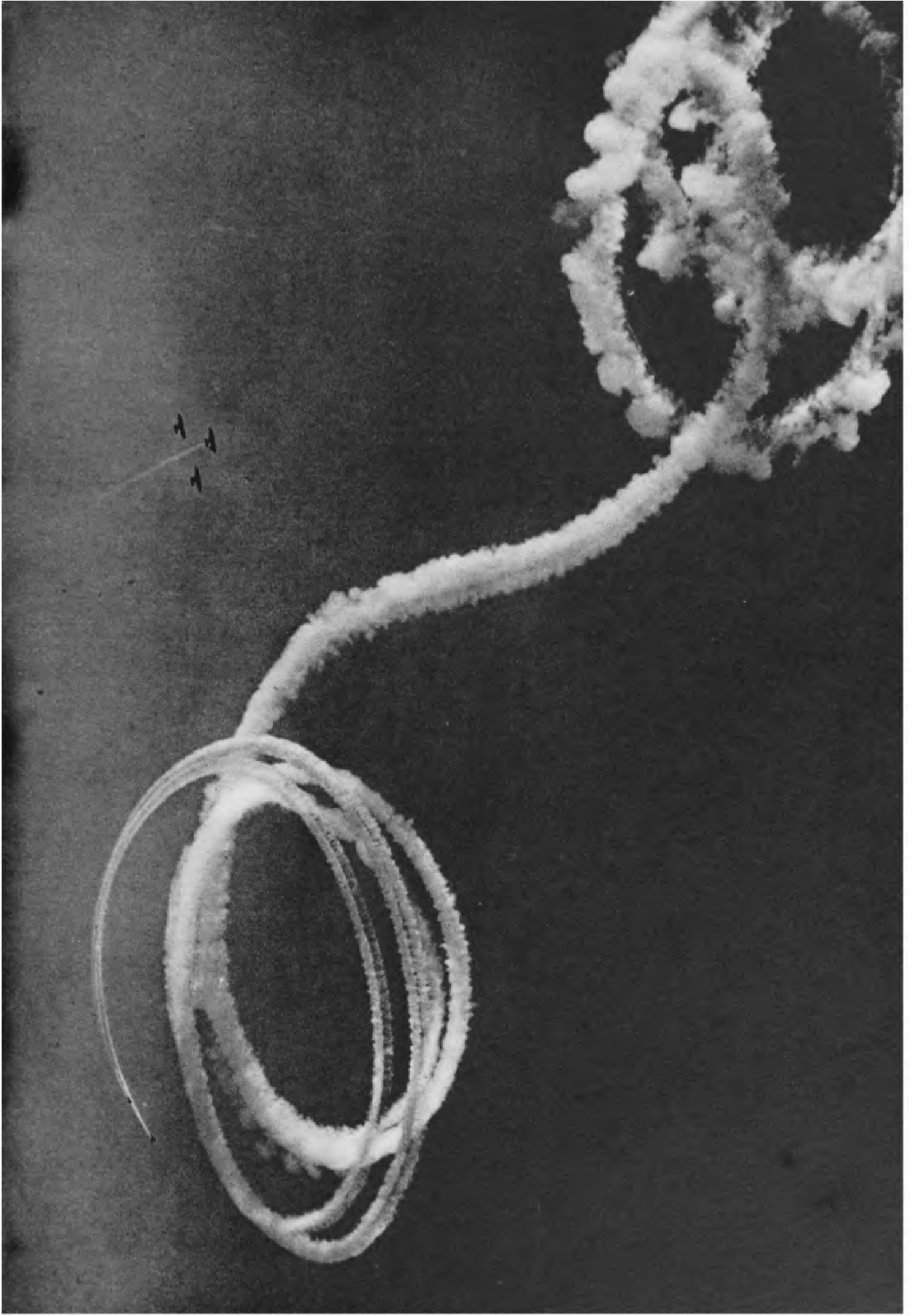


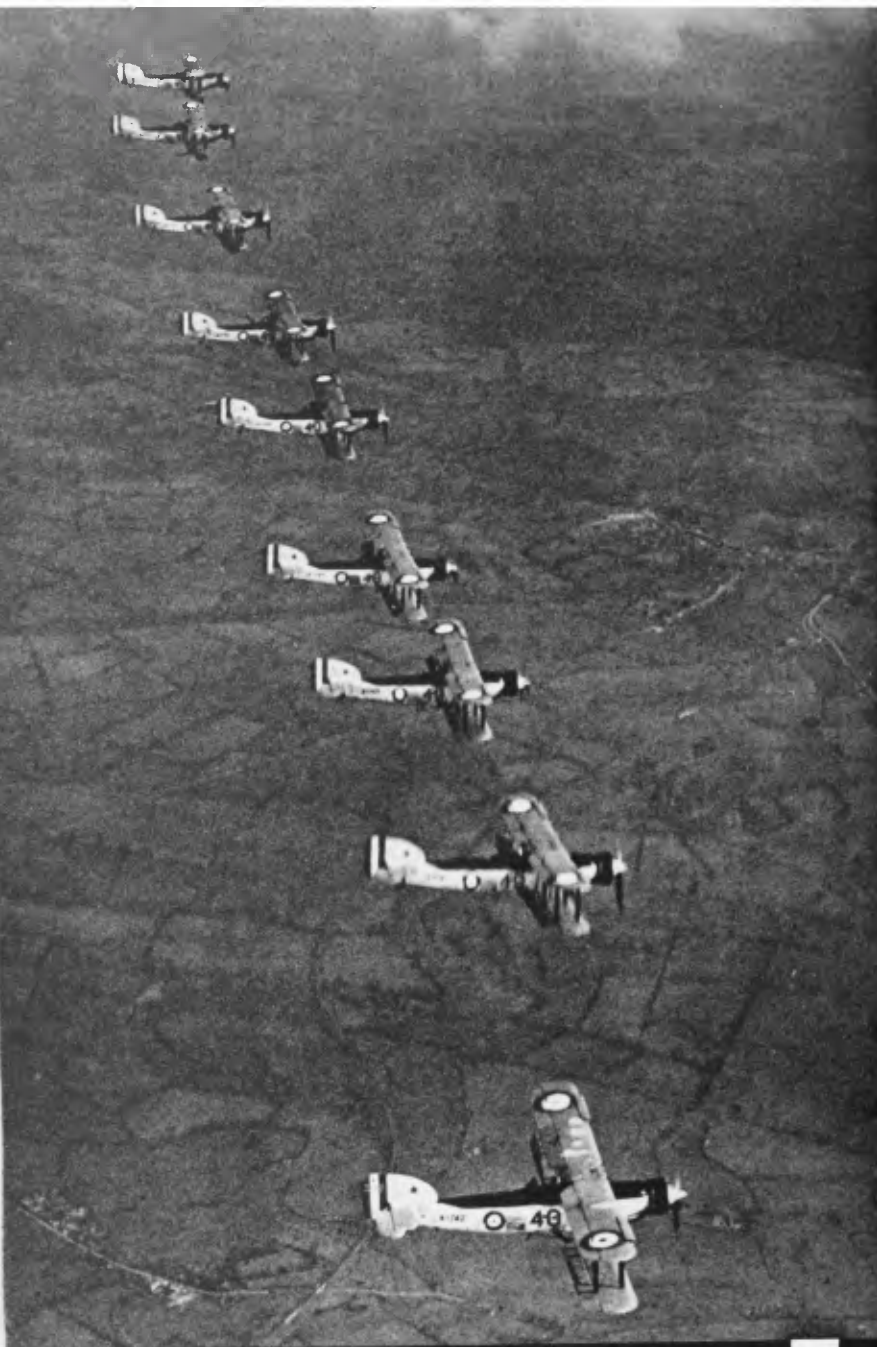
80
81





Black and sinister tasks, acts of desperate courage ; moribund nightmare.

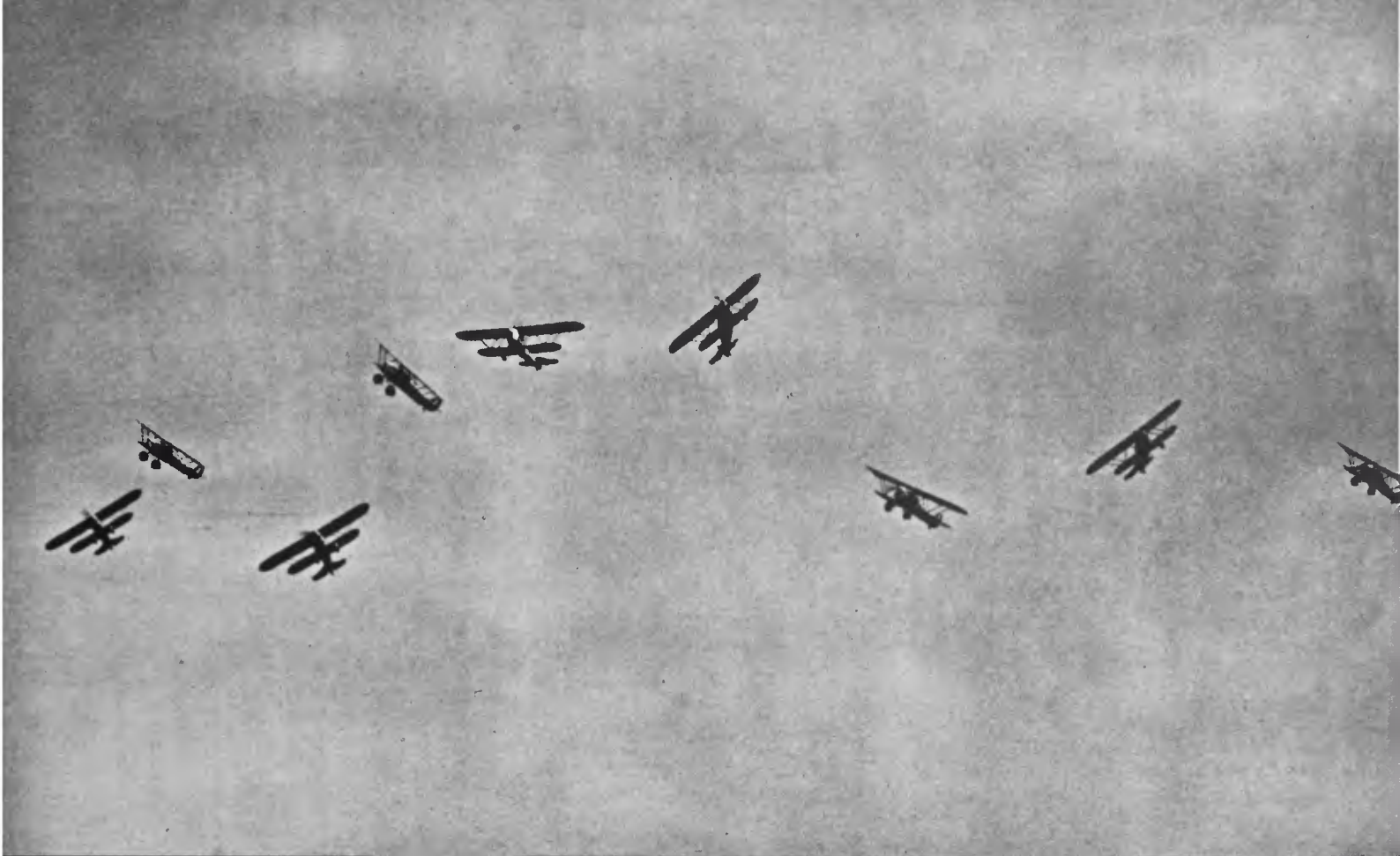




84
85

86





87
88





89

90



The period from the year 1000 to the year 1300 marked the erection in the contemporary world (Europe) of cathedrals which grew higher and higher.

• • • •

From 1830 to 1930 the machine carried aspirations higher and higher throughout the world (the whole Earth).

Higher and higher . . .

Aspirations which are constantly being realised . . .

Calculation, machinery, hypothesis . . .

• • • •

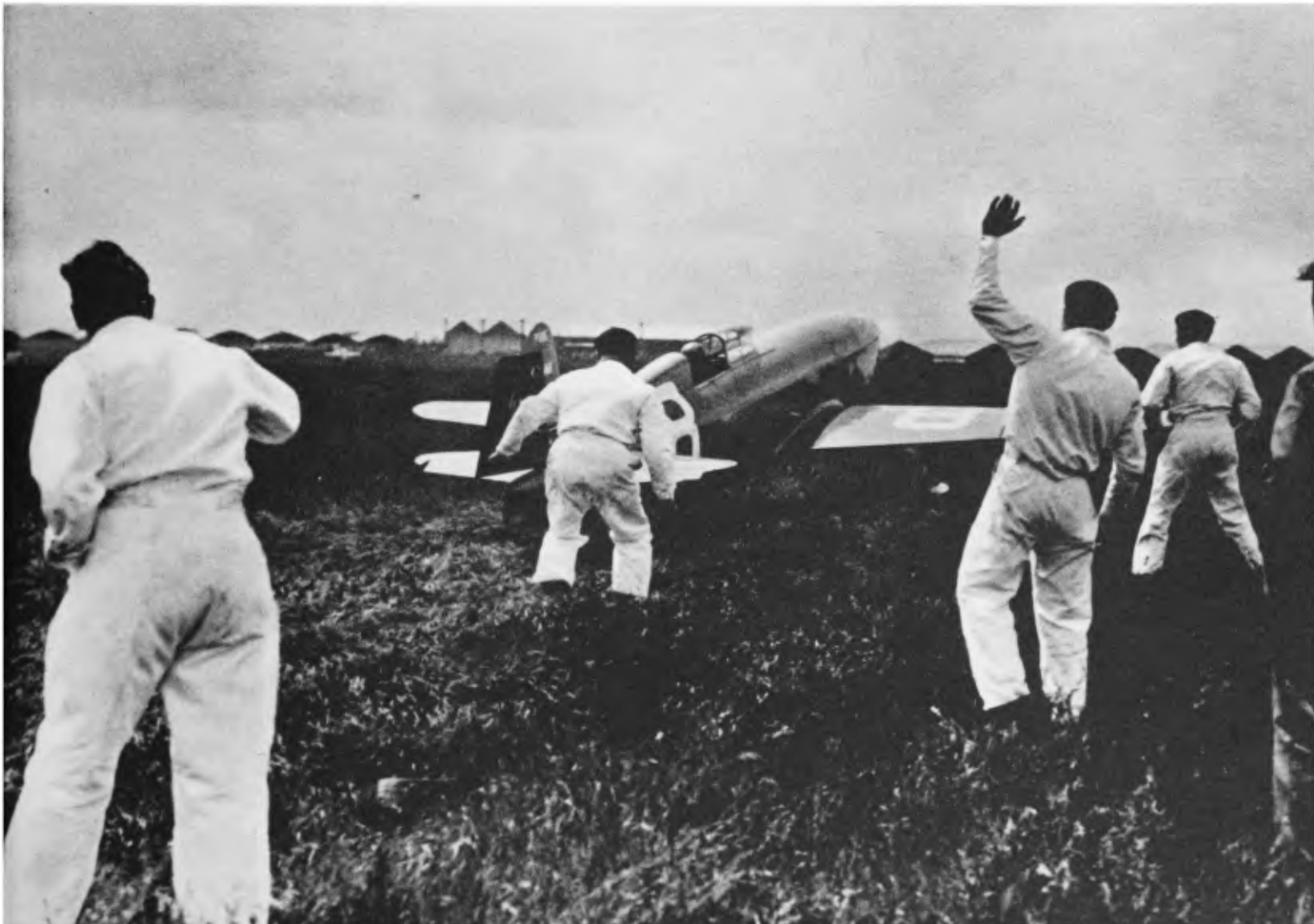
Ever higher, greater.

And not: **SMALLER AND SMALLER !**

FORWARD, not BACK !

Out to break the record.

91



8. **N**O DOOR IS CLOSED.
LIFE GOES FORWARD
MAKE NOTHING ACADEMIC, NEVER SAY : THAT IS THE END !

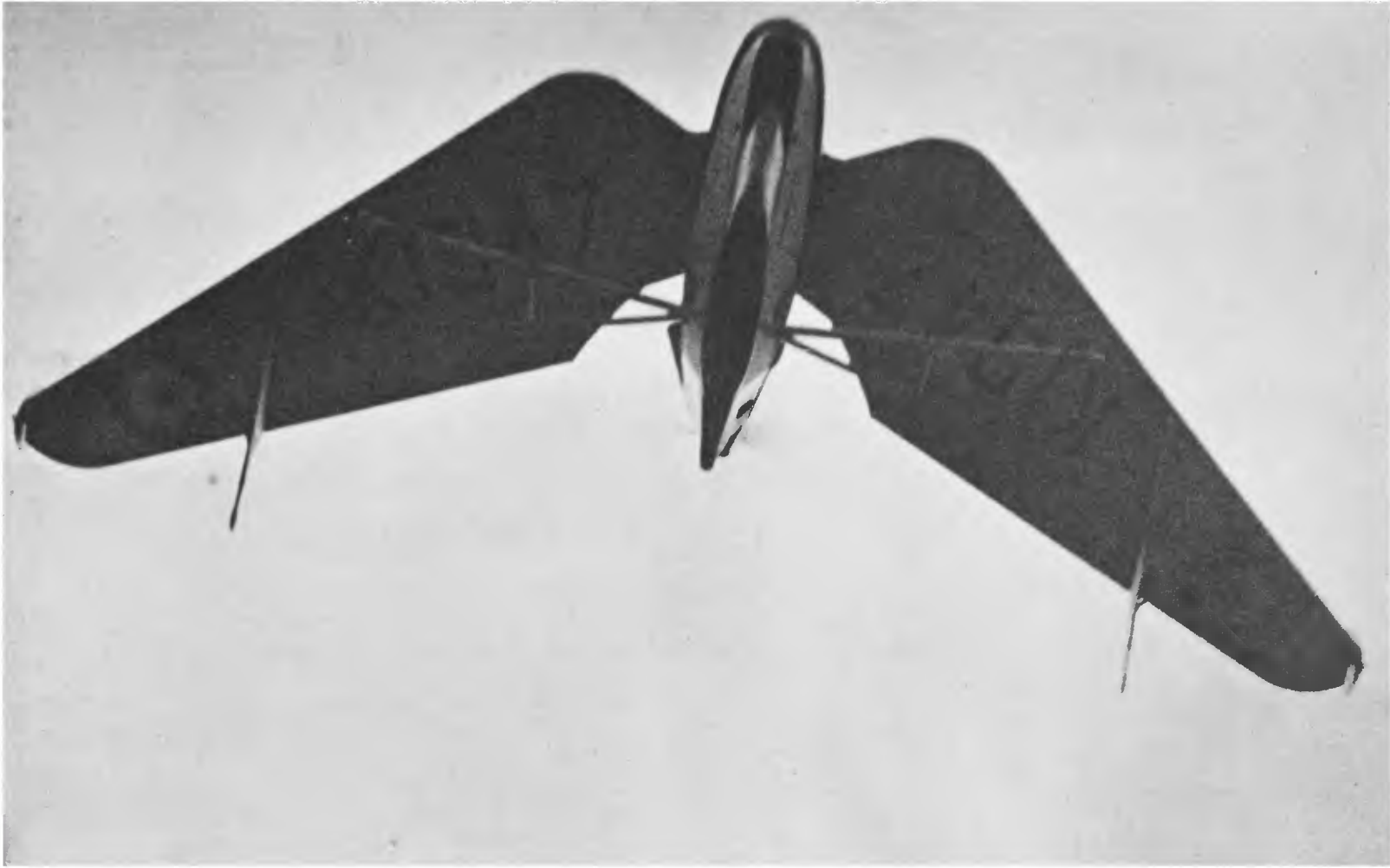
. . . .

EVERYTHING IS RELATIVE.
IF A NEW FACTOR MAKE ITS APPEARANCE, THE RELATION
ALTERS.

. . . .

IT IS A QUESTION OF HARMONY.
"IN AVIATION EVERYTHING IS SCRAPPED IN A YEAR."





93

94



Never has there been an epoch so diverse, so multiform, so rich.

We are arriving daily at a complete understanding of the world.

Does uniformity threaten ? No.

I have travelled a great deal and I have taken note of the diversity which is the very essence of things—different characteristics : climates, races, costume, history, topography, degrees of culture.

Spontaneity is the very essence of human nature. The point of departure is some specific detail which is the definite manifestation, unconscious and imperative, of individuality. Hypothesis is thus poised on idiosyncrasy and consequently performance rests in its entirety on this individual character. And its bearing each time is new and unexpected.

Only the Academies profess to codify human creativeness and to confine it to beaten tracks. (Academies are as rigorous with the " Left " as with the " Right.")

It would seem " rationally " that the airplane should have a single and unique form. Not at all. There is a differentiation of " harmonies " arising from an individuality which is not to be gainsaid (creation) and resulting in diversified organizations of shape and structure.

The only monotony is created by the " Academies." Life is multiform.

The stifling grasp of the " Academies " once shaken off, the world will be filled with a passionate and joyous symphony, made up of individual passages of the intelligence according to the cosmic order.

Variety in unity.



9. THE BIRD'S EYE VIEW.

. . . .

THE EYE NOW SEES IN SUBSTANCE WHAT THE MIND FORMERLY
COULD ONLY SUBJECTIVELY CONCEIVE.

. . . .

IT IS A NEW FUNCTION ADDED TO OUR SENSES.
IT IS A NEW STANDARD OF MEASUREMENT.
IT IS A NEW BASIS OF SENSATION.

. . . .

MAN WILL MAKE USE OF IT TO CONCEIVE NEW AIMS.
CITIES WILL ARISE OUT OF THEIR ASHES.





97

98





99

100



10. THE AIRPLANE INDICTS THE CITY.

. . . .

THE CITY IS RUTHLESS TO MAN.
CITIES ARE OLD, DECAYED, FRIGHTENING, DISEASED.
THEY ARE FINISHED.
PRE-MACHINE CIVILIZATION IS FINISHED.

Were Railway Companies forbidden to launch their enterprise ? Yet the total disorganization of the political, social and economic order was threatened.

Were printing machines forbidden ? Yet the Daily Press was to group peoples in mass at the bidding of partisanship. They were to have power to incite wars and to declare them, to feed war with men, munitions and enthusiasm.

Was the cinema forbidden ? Yet it was to arouse covetous desires, to instil the ostentation of wealth into simple souls, to break down the social barriers and open the flood gates of society.

Was the radio forbidden ? By its means the voice of the world was audible to every ear, filled the woodcutter's hut, the solitude of the settler, the cramped dwelling of the town.

The voice of the world : orchestras, impassioned orations by leaders of men, public rejoicings, and propagandist poison. Everything was allowed.

Events have always been suffered to work out their destiny.

Then why do the " Academies " endeavour to bar the path to-day, and to prevent us from bestowing on man the pleasures of living : decent dwellings, dwellings magnificent and happy—cities which perform their function, cities calm and purposeful ?

Why ?

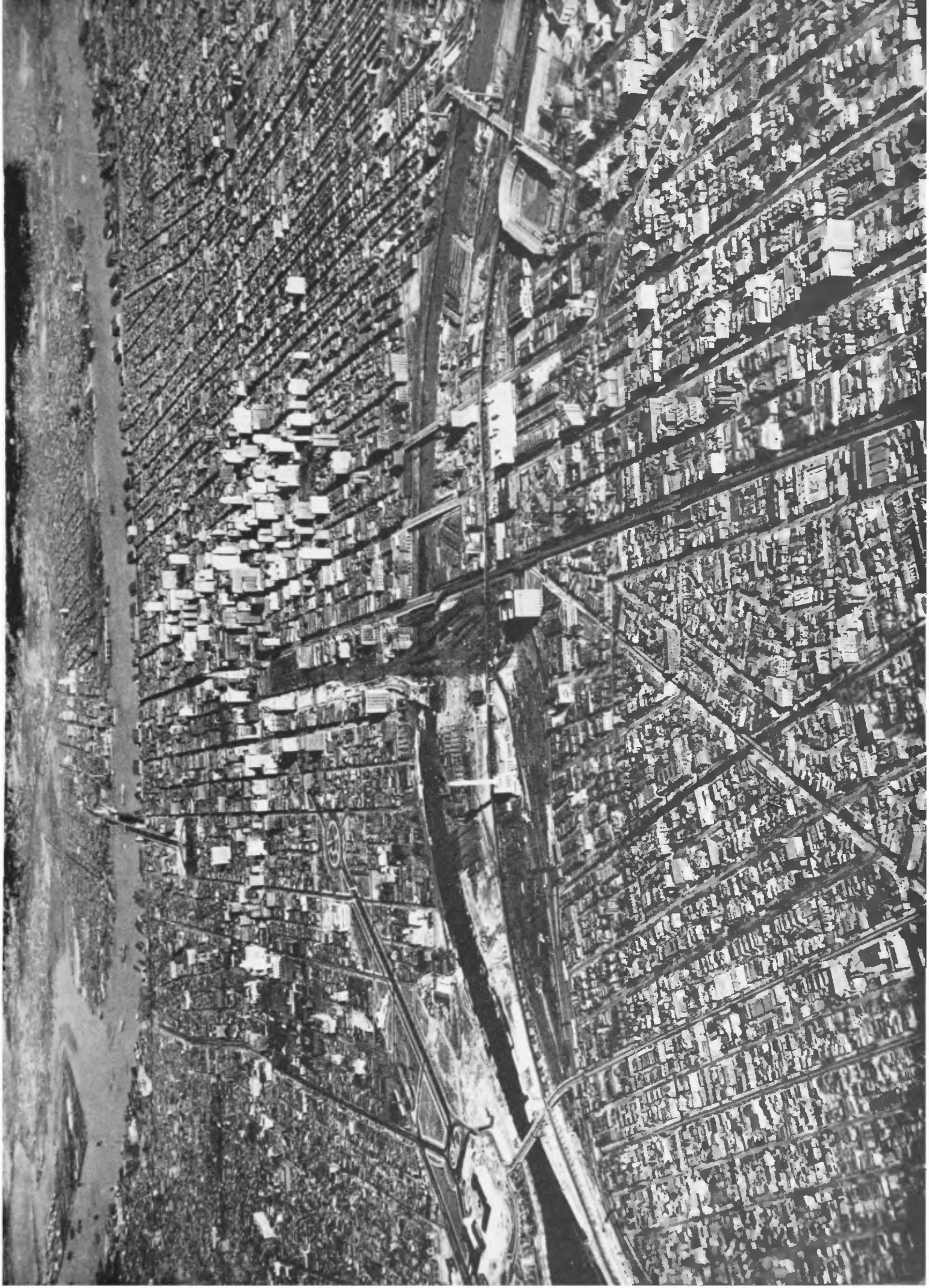
Let us turn over a new leaf. Having done so let us set foot forward. We must turn over a new leaf and advance into the New Age.

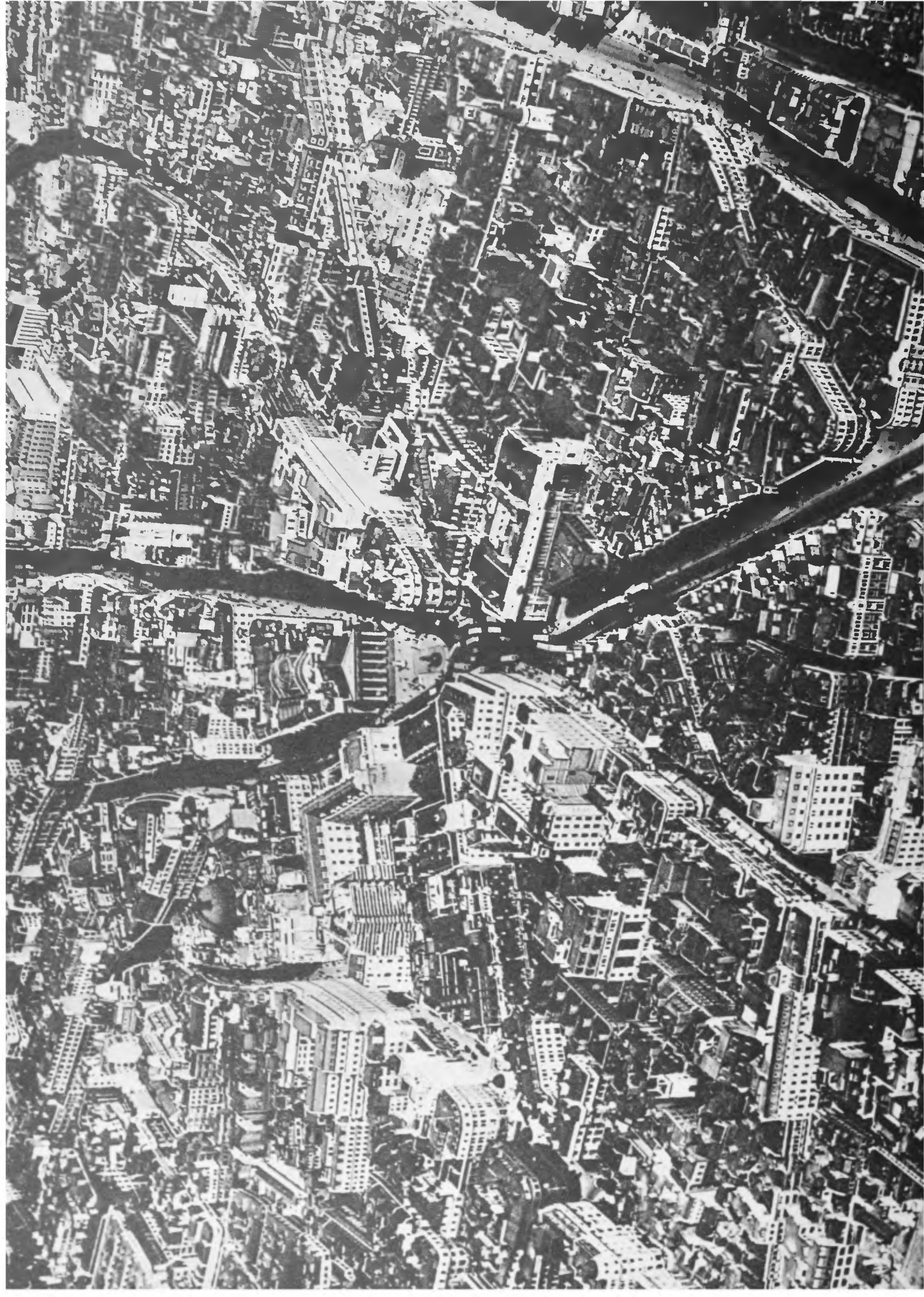
11. CITIES ARE WELL OR ILL BORN . . . THEY TURN OUT WELL OR ILL.

. . . .

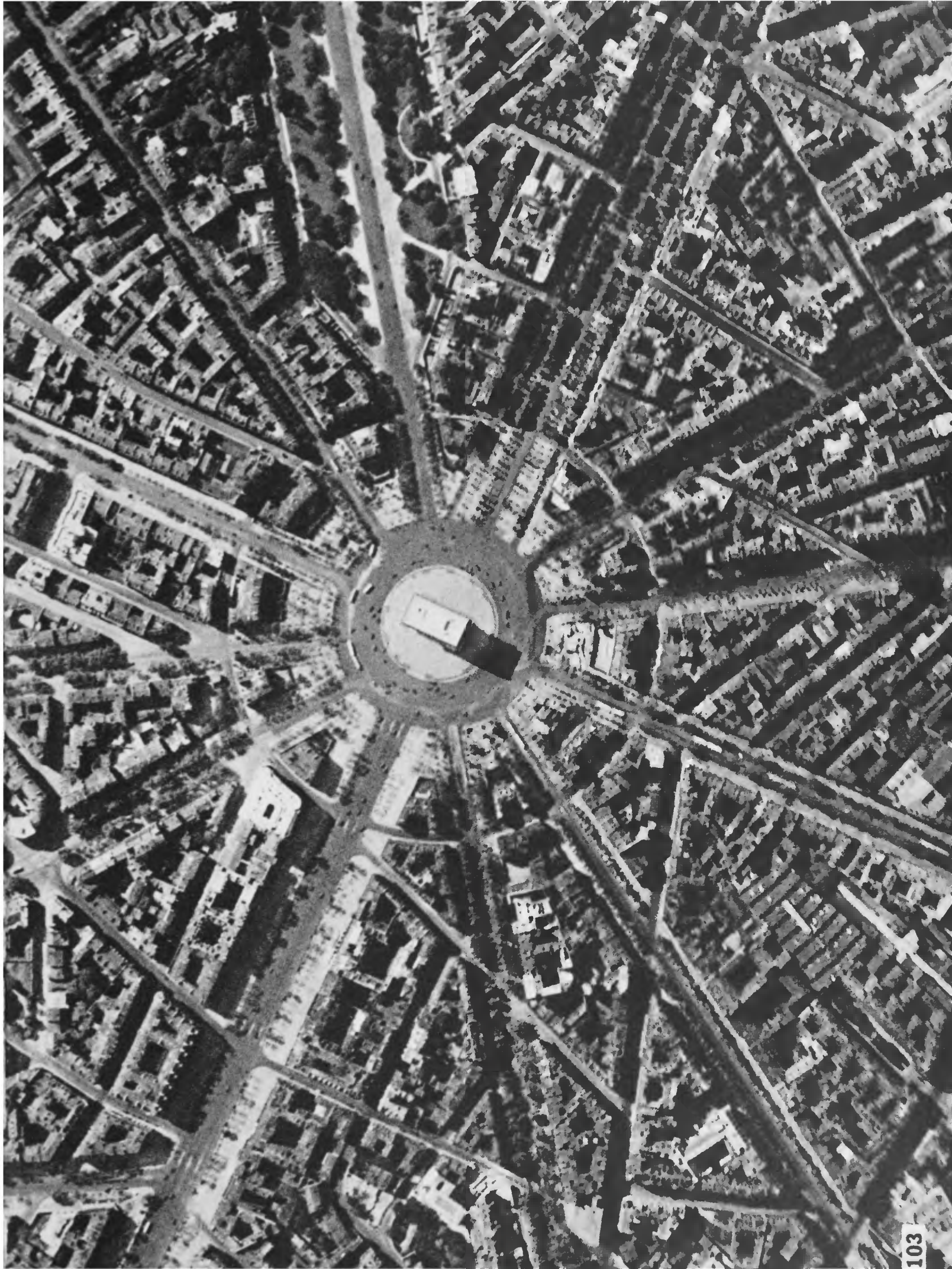
FORMERLY—OFTEN—THEY CONTRIBUTED TO HAPPY LIFE.
FOR A HUNDRED YEARS THEY HAVE BEEN BASELY GIVEN
UP TO MONEY.

Philadelphia. The business quarter is to be seen in the heart of the city.





The eye of the airplane is pitiless. This time we have the actual record of reality. What an appalling thing !
Do human beings live here ? Do they consent to do so ? Will they not revolt against it ?





104 Here is the trade of sea and river, main routes of commerce in former times.

105 Here the soil has been rescued from the elements. The water is thrown back to the sea and man instals his minute strips of cultivated marshland.





Here a water-hole ; nomad's outpost (strategy). **106**

Here finally " Le Bidon 5," nerve-centre on the imperial highway. The white **107**
race goes its conquering way. The filling station is a symbol of white civilization.



12. CITIES MUST BE EXTRICATED FROM THEIR MISERY, COME
WHAT MAY. WHOLE QUARTERS OF THEM MUST BE
DESTROYED AND NEW CITIES BUILT.



The end of decay and of arbitrary interests.

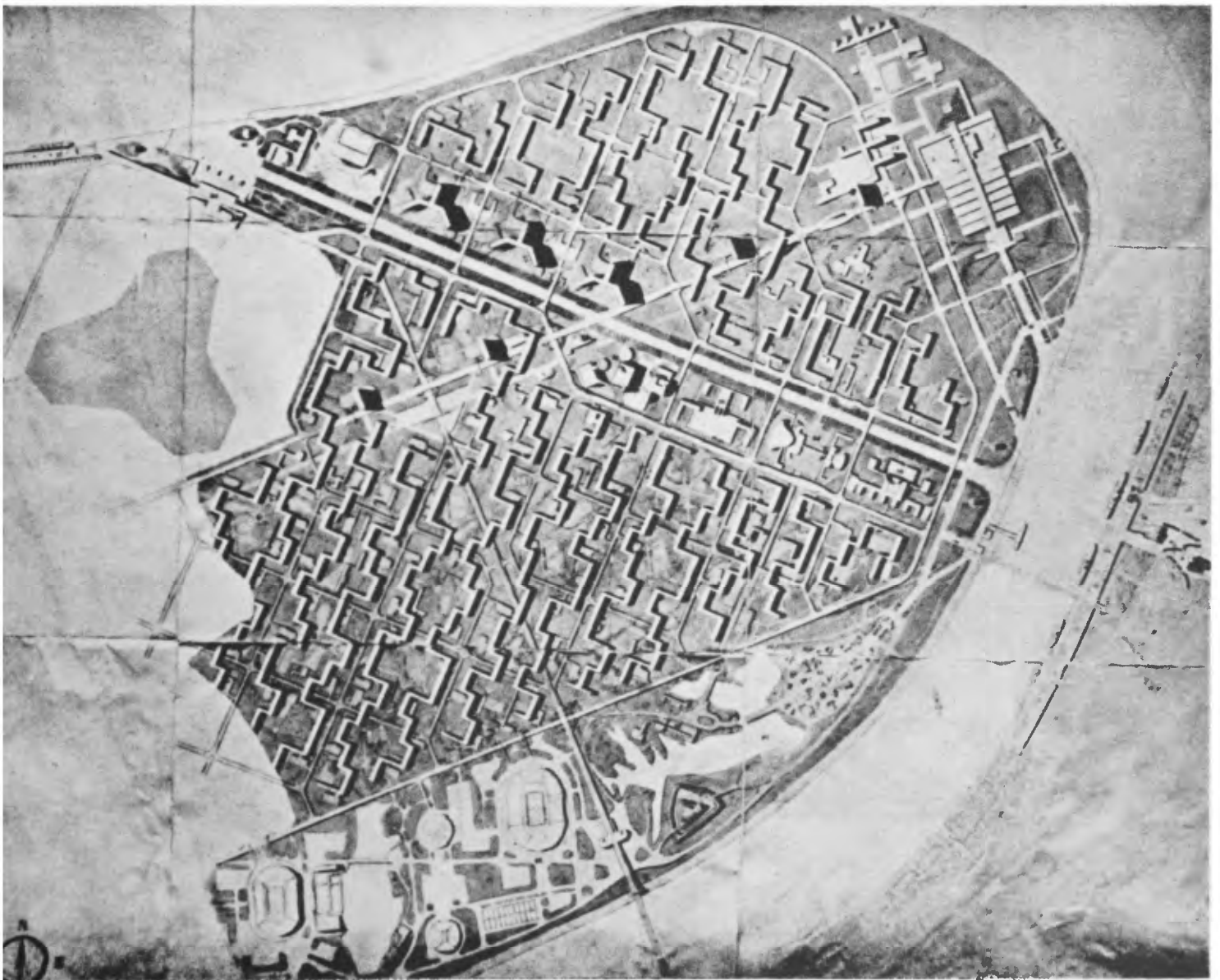
The birth of the organic.

In its methods of parcelling out plots of ground and cutting them up into irregular shapes the Western world has brought cities to disaster, and private or collective undertakings to a halt. The houses or other buildings which are put up in our cities are shapeless and contrary to nature. Contrary to nature and to their purpose. Wasting effort, invention, money. At the end of it all is sterility and impotence. The time has come to create the **organisms** of modern society ; dwellings, cities, buildings of determined function.

It is the time for organic architecture that shall be sane, clear-headed, logical, harmonious, and beautiful. The problems are upon us. **The piecemeal allocation of property bars the path.**

In order to create the organic architectural entities of modern times, **the soil must be re-divided, made free and available.**

Available for the undertaking of the great works of machine civilisation.



Consider these events whose origin seems spontaneous, these unexpected happenings, these new and astonishing facts.

Volcanoes everywhere.

Let us say rather the buds of a spring that has come.

Well ?

Well, we are not ready. We are not ready to be ready. Nothing is ready, there is nothing to take advantage of the sudden advent.

There is feverish haste to cope with the event—a host of spurious solutions.

To those who love life, I say prepare plans. **MAKE YOUR PLANS ! . . .**

Technicians of every contemporary activity be not dismayed nor discouraged.

Make plans, make plans. There is no such thing as rash or chimerical plans : plans are truths.

The synthesis, the symphony, will be manifest one day, when the hour of maturity has come.

But it is essential to be vigilant, to watch and work, and constantly to prepare plans.

It is essential to create. It is the joy of man and his good fortune.

Harmony will prevail when the plans have been made.

Peace among men will come with the undertaking of great works of machine civilization : from country to country, continent to continent, from farm to village and from village to town. The undertaking of the supremely urgent task : **for the love of mankind and not through the hate of mankind.** Works which will bring essential wealth and not destruction and despair. The machine as servant and not as the oppressor of our lives. Freedom by the wise economy of planning and no more enslavement by waste.

Set every machine to work ! All to a work unanimously agreed, seeing that it will bring joy to the hearth in city and village, in farm and port, collaboration in a task of benefit to the whole human race.

The joy of common action is due rank and discipline.

The objects will be clear and serviceable to all.

There is everything to do, to undertake. Wealth is not the arithmetic of money, but the product of daily toil, of the hands, the brain, the machine : an inexhaustible wealth results from work itself.

An economically sound plan, fertile and wise.

Sweep away the refuse with which life is soiled, clogged, encumbered.

Let us undertake the great tasks of the new machine civilization.





Rio de Janeiro, enclosed.

111



112

Two sketches made during a flight in 1929, just when the conception of a vast programme of organic town-planning came like a revelation.



13. CONTEMPLATION OF THE EARTH FROM ABOVE CONDUCTS
TO MEDITATION.

113





114
115



[With Durafour across the Atlas (Algiers—Ghardaia), March 18, 1933.]

The Earth :

a bony structure (rocks) product of matter in fusion cooled on the surface and having undergone shrinkage, contraction, splitting and tearing apart, etc. . . .

And above :

the immemorial play of water—water vapour. Rivers or erosion or infiltration.

Water, that patient rodent ; or leveller.

Lastly, the sun, which makes the winds blow.

Water : erosion (active eating away).

Water : alluvium (levelling, seeping, interment, rest).

Annihilation of wealth or creation of wealth.

Thus God, looking down on things from above, is assured of having delivered Earth to fate—to its fate.

And man, introduced into this unrelenting, impassive, careless game of gigantic forces out of all proportion to himself, man with his human years, human seasons, and human span, is forced to bow before the unforeseeable moves of the elements which play their own games, and go their own way without heed. A mere sigh, a faint shiver, the slightest frown indicating their activity is a frightful catastrophe to him.

And for his use in cities geometrical engineering and glass are tutelary deities enabling him to make to his proportion the cube with exact right angles which is his niche, his cell, his shell, his haven : man in a cube.

Another destiny is ours.



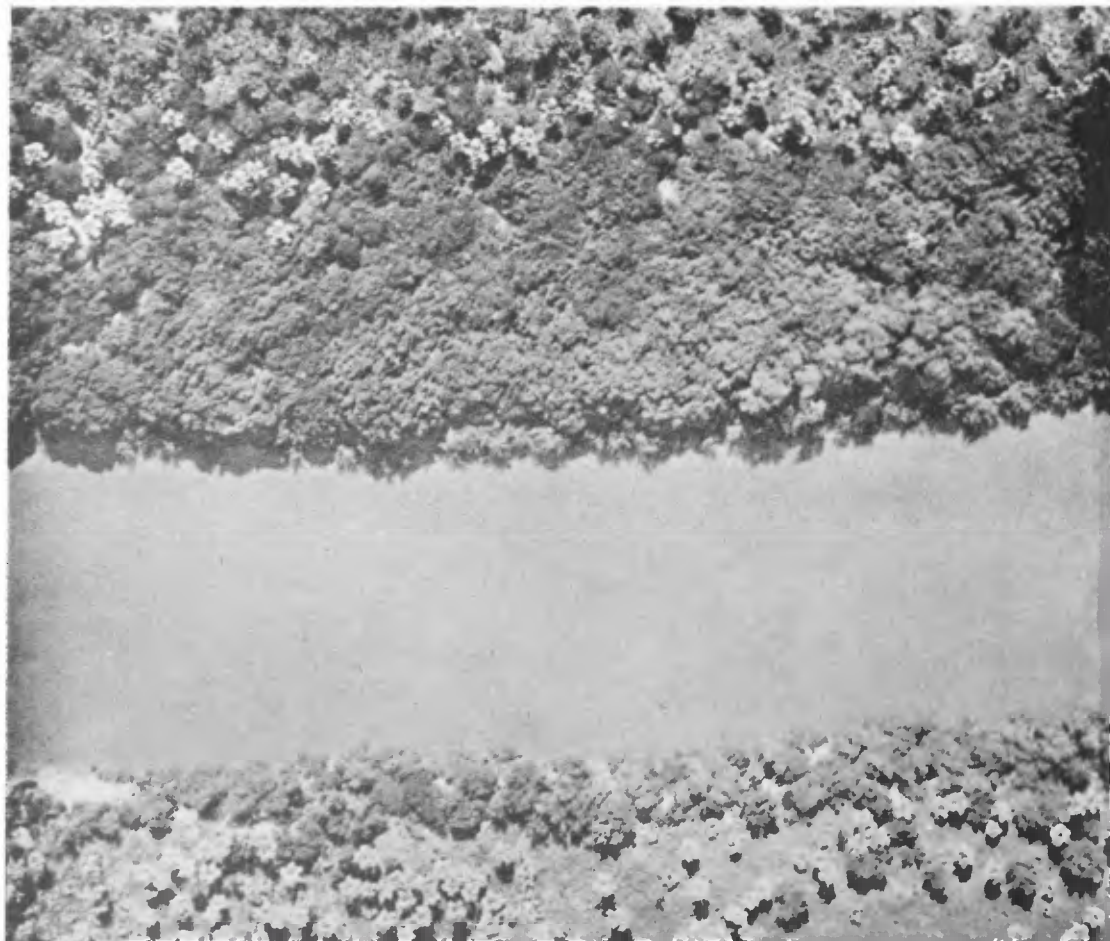




118

The vast primeval forest—
(above) in the North,
(right) in the Tropics.

119

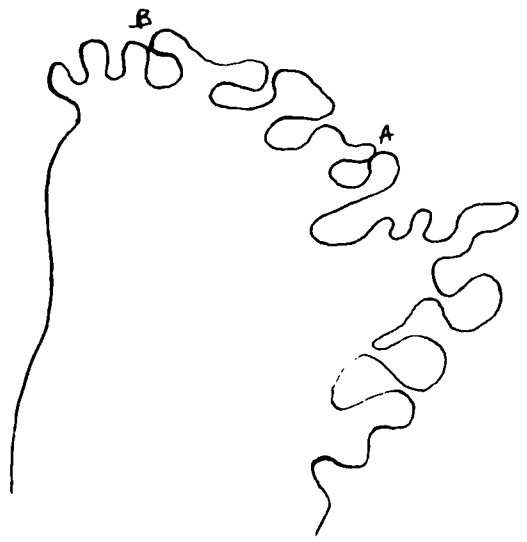


120 Water returns to water. Dispersed as vapour in the air, the winds drive it back to the earth, and brook, tributary and river return it to the sea. A complete cycle.



121 Reader, look at this picture. It is the edge of the sea on the shore of the continents.





desert de Boghari
la courbe de l'eau. le méandre
(En A et B, il touche et se recroise.)

The flight of a plane provides a spectacle with a lesson—a philosophy.

No longer a **delight** of the senses.

When the eye is five feet or so above the ground, flowers and trees have dimension: a measure relative to human activity, proportion.

In the air, from above? It is a wilderness, indifferent to our thousand year old ideas, a fatality of cosmic elements and events.

The huts of the Arab shepherds, clinging to the awesome heights of the Atlas, terribly isolated in a strange game, are in their starkness a revelation of natural violence.

The elements are a frightening incubus.

From the plane: there is no pleasure . . . but a long, concentrated, mournful meditation.

122

I feel myself unapt at this sort of unattainable delight.

I understand and ponder, I do not love; I feel I am not attuned to the enjoyment of these spectacles from above.

Everything escapes me. I no longer possess an instrument which gives dimension, which makes form finite, complete, entire: my feet on the earth and my eye five feet or so above the ground.

The non-professional who flies (and so whose mind is empty) becomes meditative: he can take refuge only in himself and in his own works. But once he has come down to earth his aims and determinations have found a new scale.

(Flight over the Atlas and the Desert, 1933.)

The world lacks **harmonisers** to make palpable the humane beauty of modern times.

One can be lulled and reassured by saying to oneself that in spite of everything a stirring unity will come to prevail by degrees.

But there should be no misunderstanding about the value of individual effort, which must be granted its rightful place.

Sometimes in the course of the centuries a man has sprung up here and there instinct with the power of genius, establishing the unity of his time.

A man!

The flock needs a shepherd.



au désert:
entre Chelmin, nord
de l'Alg.

123



First published fifty years ago, this masterpiece of image, design and commentary is republished for the centenary of Le Corbusier's birth, and forty-five years after the offices of the original publisher were themselves destroyed by aerial bombardment. But it is a tribute to the quality of Le Corbusier's enthusiasm that the book today seems as original and fresh a statement of belief as it did in the 1930s, when 'the earth beholds splendours emerge, which are contemporary truths, the present beauty which we love.'

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