War at a Distance

Body, Space and View in the Image-Guided War

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Harun Farocki, *Erkennen und Verfolgen,* essay film, Germany, 2003.

The World Landscape

The Amalgam Space

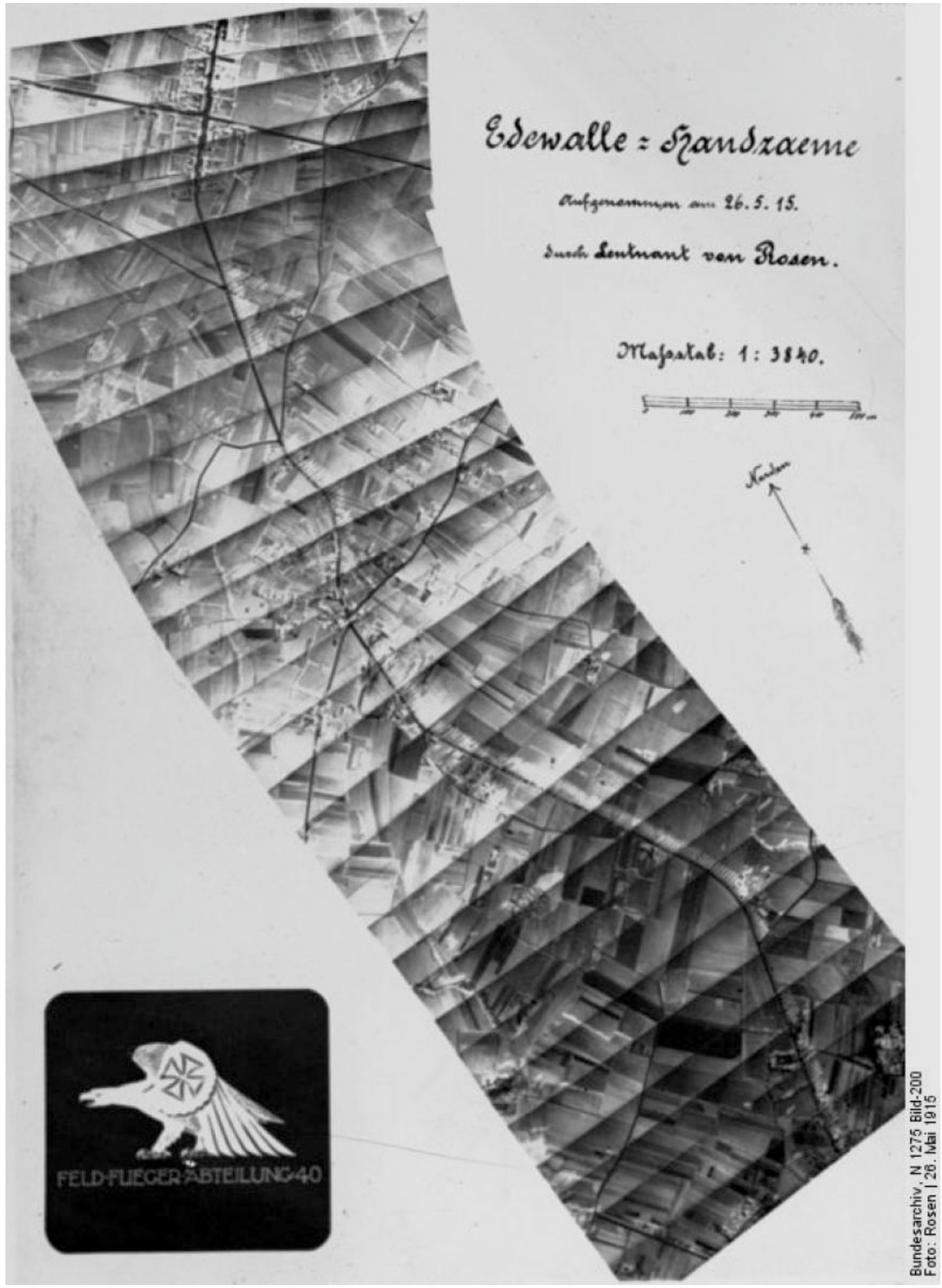
The Secure Ground

Albrecht Altdorfer, The Battle of Alexander at Issus, 1529. Oil painting on panel, 158,4 x 120,3 cm.

Félix Nadar, Aerial photographs of the Quartier de l'Étoile, Paris, from a balloon, July, 16, 1868, 23 x 28,7 cm.

The view from above is like a view to a map, because the differences in elevation are not apparent.

Félix Nadar, 1868



Oskar Messter, Series of photos of Edewalle-Handzaeme by Lieutenant von Rosen, May 1915.

das biologische als regulator schlechthin

die letzte und höchste stufe der raumgestaltung ist offensichtlich ihre erfassung vom biologisch möglichen her.
in der praktischen auswertung:
es kommt nicht auf eine „plastische", bewegte außengestaltung an, sondern nur auf die raumverhältnisse, die die für einen gestaltungsplan nötigen erlebnis-inhalte festlegen. dabei kann nach außen unter umständen eine strenge groß-flächige begrenzung geschaffen werden, da bei der architektur nicht plastische, bewegte figurationen, sondern die räumlichen lagerungen das bauelement sind. so wird das innere des baus durch seine räumliche gliederung in sich und mit dem außen verbunden.

die aufgabe endet nicht beim einzelbau. schon heute zeigt sich die nächste stufe: raum in allen dimensionen, raum ohne begrenzung.

die grenzen werden flüssig, der raum wird im fluge gefaßt: gewaltige zahl von beziehungen.
das flugzeug hat in diesem zusammenhang eine besondere aufgabe:
vom aeroplan aus tun sich neue sichten auf. (abb. **194**—**198**)
ebenso von der tiefe in die höhe. (abb. **199**)
aber das wesentlichste für uns ist die flugzeugsicht, das vollere raumerlebnis, weil es alle gestrige architekturvorstellung verändert.

sogar die beschränktere raumgestaltung des industrie- und wohnbaus macht vorstöße, die das früher erlebte rasch überfluten. (abb. **200**—**208**)

ähnliches kann von der verwendung künstlichen lichtes gesagt werden. das ist schon heute bei reklamebeleuchtungen bemerkbar. starkes licht zerstört das detail, zerfrißt unnötiges beiwerk und zeigt — wenn es mit dieser absicht, also richtig verwendet wird — nicht die fassade, sondern nur raumbeziehungen.

von hier aus bahnt sich auch ein weg für die zukünftige architektur:
das innen und das außen, das oben und das unten verschmelzen zu einer einheit. (abb. **209**)
öffnungen und begrenzungen, durchlöcherungen und bewegliche flächen reißen die periferie zur mitte und stoßen die mitte nach außen. ein stetes fluktuieren, seitwärts und aufwärts, strahlenhaft, allseitig, meldet dem menschen, daß er den unwägbaren, unsichtbaren und doch allgegenwärtigen raum — soweit seine menschlichen beziehungen und heutigen vorstellungen reichen — in besitz genommen hat.

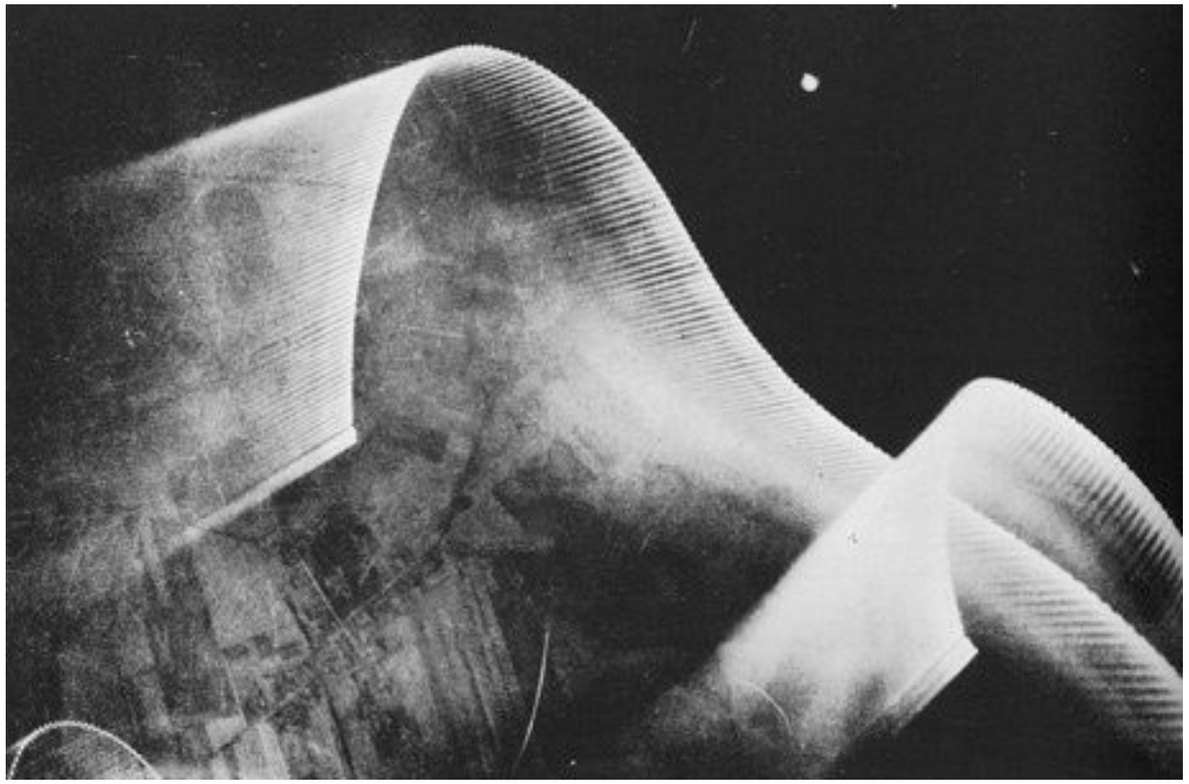
abb. 194 new yorker straßenkreuzung

foto: weltspiegel

für den flugzeugführer ist heute die vogelperspektive der landschaft eine orientierungsmöglichkeit. in der nächsten zukunft werden die sichten von oben in darstellung und natur einem jeden geläufig sein müssen.

László Moholy-Nagy, *From Material to Architecture,* 1929.

Focke-Wulf Fw 189, a reconnaissance aircraft of the German Air Force, 1938–44.



Long-exposure photographies from an aircraft of the British Royal Air Force over Berlin and Hamburg, 1943.

Fig. 334. Henri Toulouse-Lautrec, 1864-1901
Painting

(approximately the speed of a horse and buggy); the other, a contemporary poster, was moved at fifty miles per hour (the speed of an automobile). Both posters could be read easily. Then Carlu accelerated the speed of the Toulouse-Lautrec up to fifty miles per hour, and at this speed the poster could be seen only as a blur. The implications are obvious. The artist, architect, advertising and display man, must count with the quickly moving vehicles requiring a new orientation toward spatial organization and communication. A new viewpoint in the visual arts is a natural consequence of this age of speed which has to consider the moving eye. (And what an improvement it would be if the signmakers of streets and highways were also aware of this fact.)

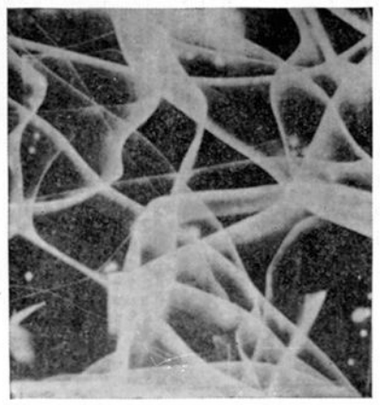


Fig. 335. John H. Stickell, 1942
Action photo of a bomber in a searchlight hunt
With an open camera shutter, the film recorded this picture of a flight over Germany. The broad waves are searchlights hunting the moving plane. The waves result from the combined movements of the lights and the diving of the bomber. The dots are anti-aircraft batteries firing at the plane

Jean Labatu (Princeton University) had the task of preparing effective outdoor advertising for a factory site half a mile long, situated along a highway with heavy motor traffic. Studying the problem, he found that the required water displays, fountains, light, even the shape of the pool which had to mirror the buildings, had to be related to the speed, that is, the rapidly changing position of the spectator at the wheel. On the basis of calculations as to time and vista, he suggested a "time facade". It consisted of continuous mobile light and water displays placed so that they could be perfectly seen in 30 to 60 seconds, the time it took a car to drive along the site at 30 to 60 miles per hour. Such an approach translates the static meaning of advertising into a kinetic process, "shooting at a moving target".

Photography, motion pictures, the speed studies of futurism and cubism handled such aspects intuitively, anticipating the vision in motion of a motorized world long before an actual need existed for a new visual education based upon scientific standards. Safe air travel, for instance, is greatly dependent upon the skill and visual alertness of pilot and navigator. Their vision in motion—especially at landing—the flashquick ability to identify small details within vast areas, has to be conditioned to the new validities of speed since even radar or other mechanical equipment can fail.

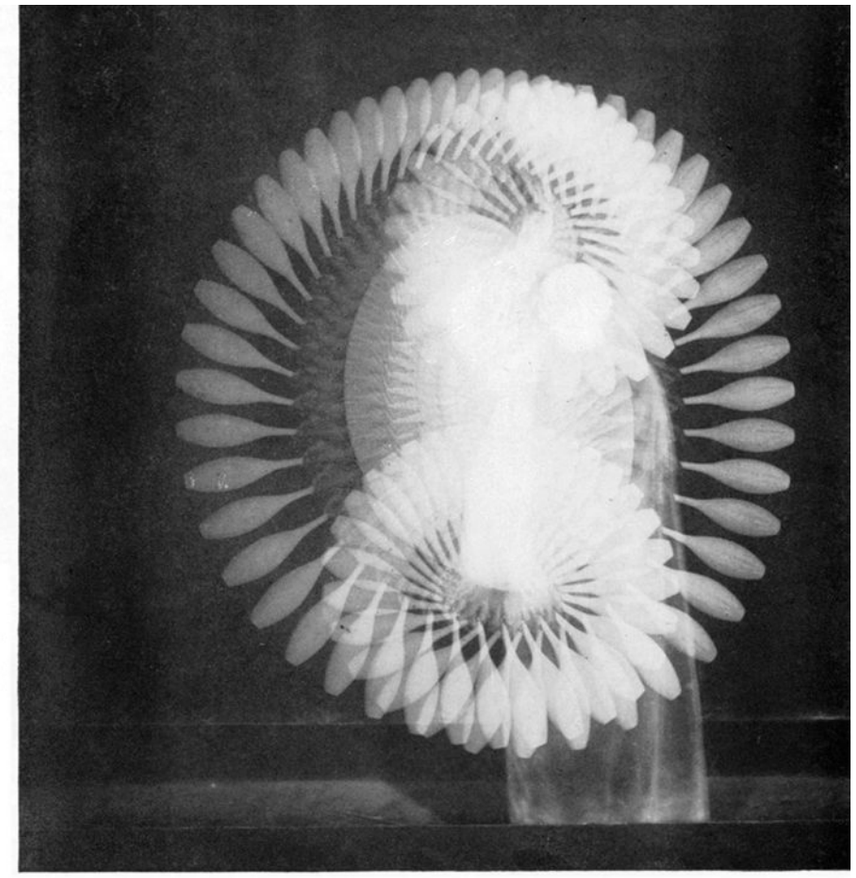


Fig. 336. Harold Edgerton, 1937
Indian club exercise
In such a stroboscopic photograph the velocity of the motion can be read through the various distances between the single shots of the club, since they all have the same time measurement of exposure

From the manifest of the futurist painters, 1912:
"Indeed, all things move, all things run, all things are rapidly changing. A profile is never motionless before our eyes, but it constantly appears and disappears. On account of the persistency of an image upon the retina, moving objects constantly multiply themselves; their form changes like rapid vibrations, in their mad career. Thus a running horse has not four legs but twenty, and their movements are triangular".

analysis of speed

Speed itself can become the subject of a visual analysis. We know of innumerable photographic shots of arrested motion such as sport scenes, jumps and dives. On the other hand we can observe slowly unfolding buds, moving clouds taken at intervals; similarly the effect of time exposures of moving objects on streets and merry-go-rounds. Experiencing speed that can be arrested, rendered, stretched and compressed, in short, articulated, we can state that we have possession of it, that we are approaching a new vocabulary of space-time.

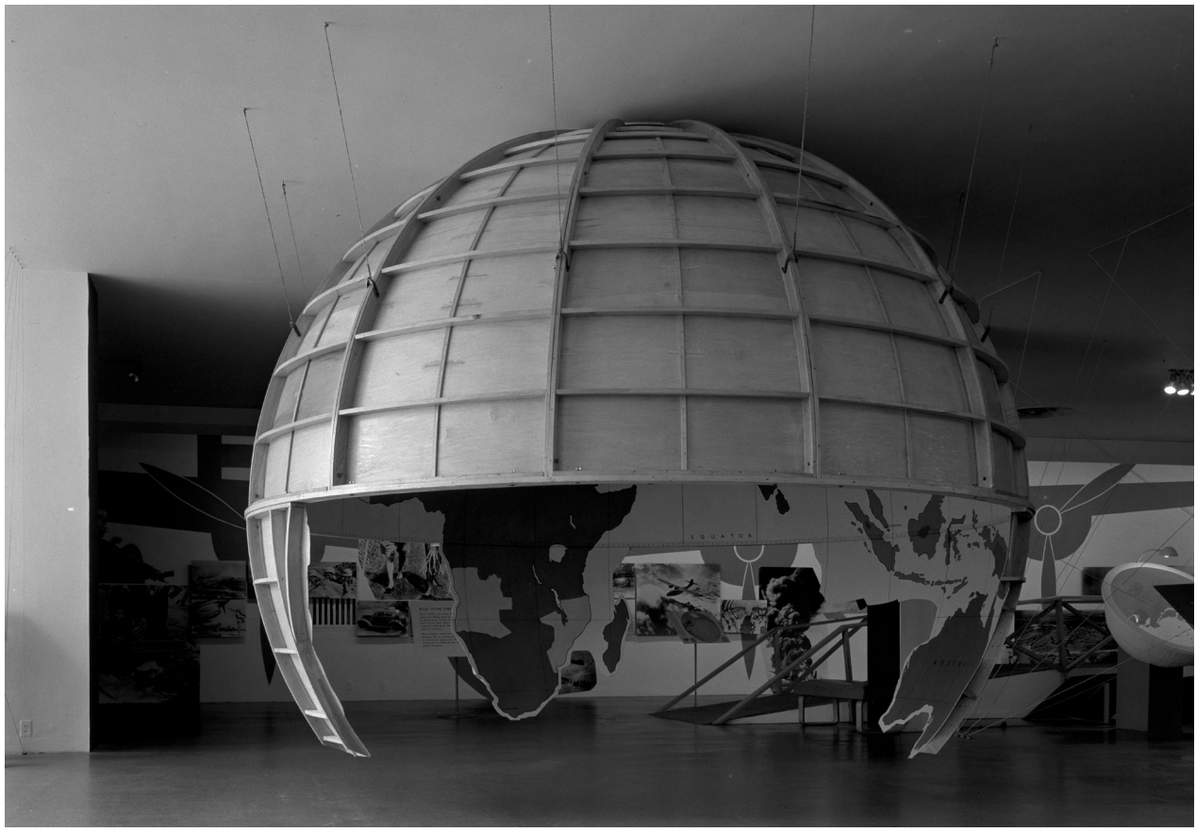
Harold Edgerton (M.I.T.) found a new way to render speed in stroboscopic photography.• The relationship between the velocities of the dissected movements gave him the clue to improving the action of golfers, turbines, spinning wheels and various kinds of machinery. These pictures are juxtaposed details of frozen move-

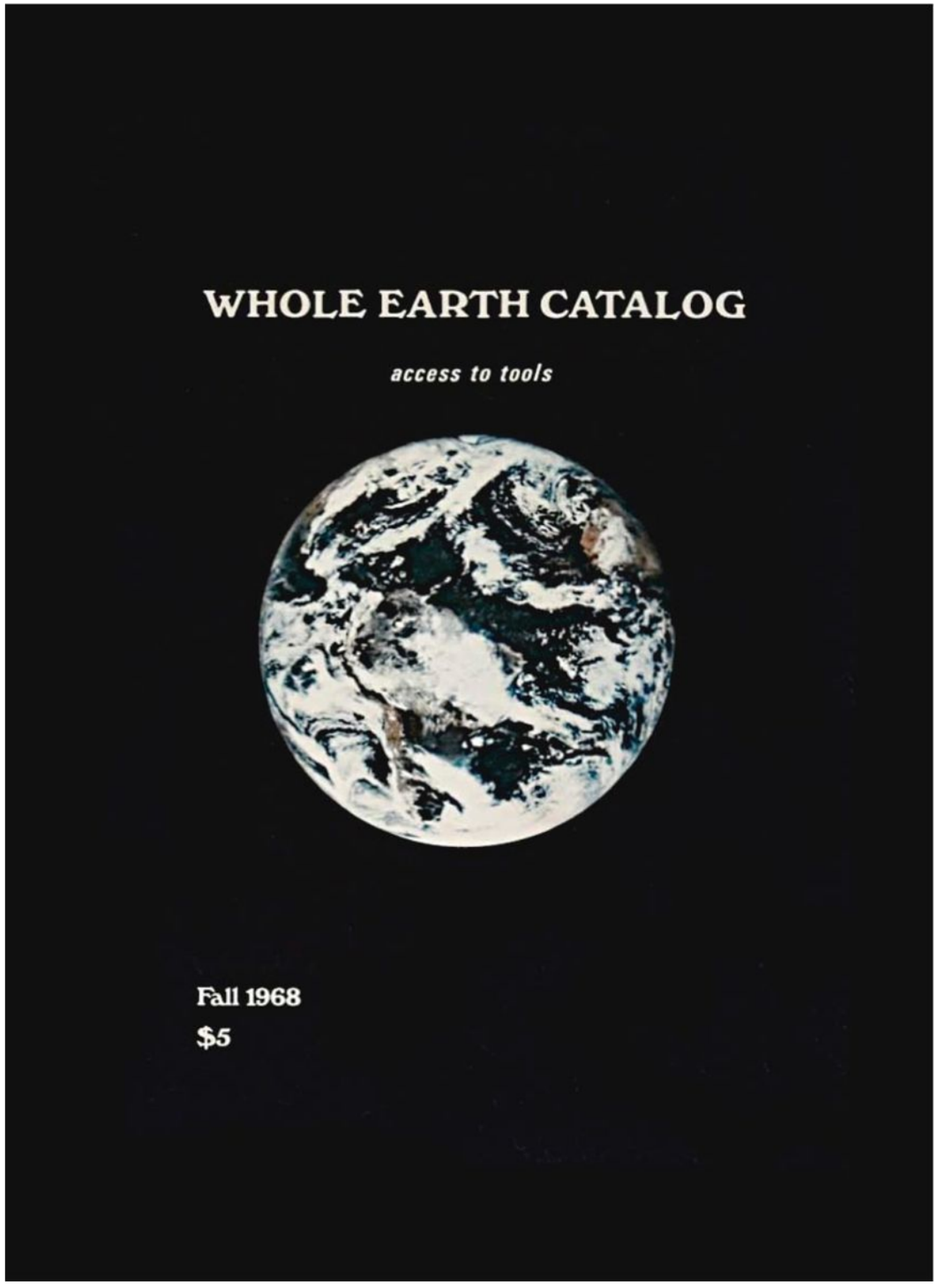
• *Thomas Eakins, American painter, when collaborating with E. Muybridge in recording speed, made similar photographs as early as 1881-84 as Charles Bregler reported in the "Magazine of Art", January, 1943.*

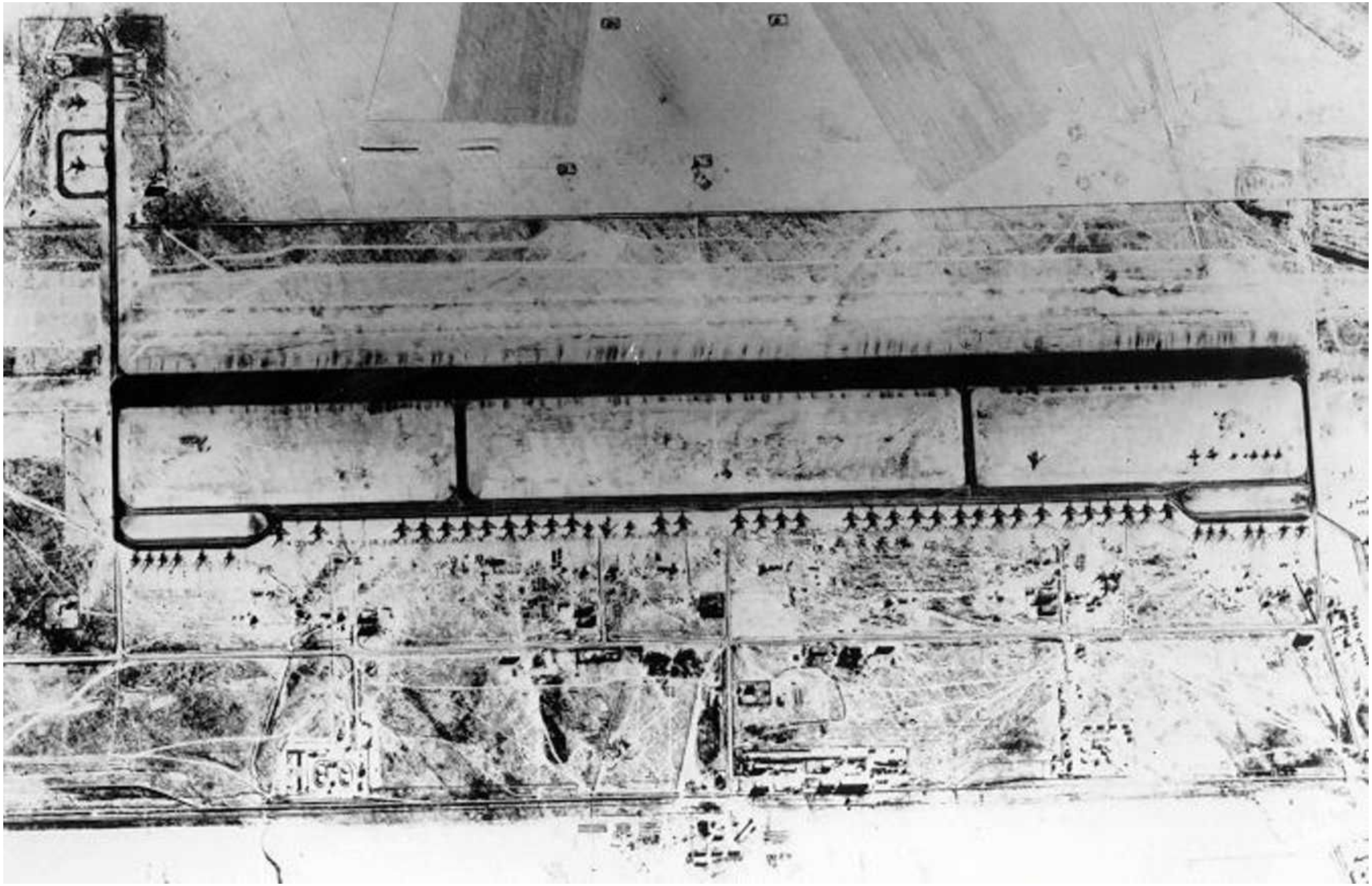
László Moholy-Nagy, *Vision in Motion,* 1947.

Herbert Bayer, Exhibition *Airways to Peace,* Museum of Modern Art, New York, 1943.

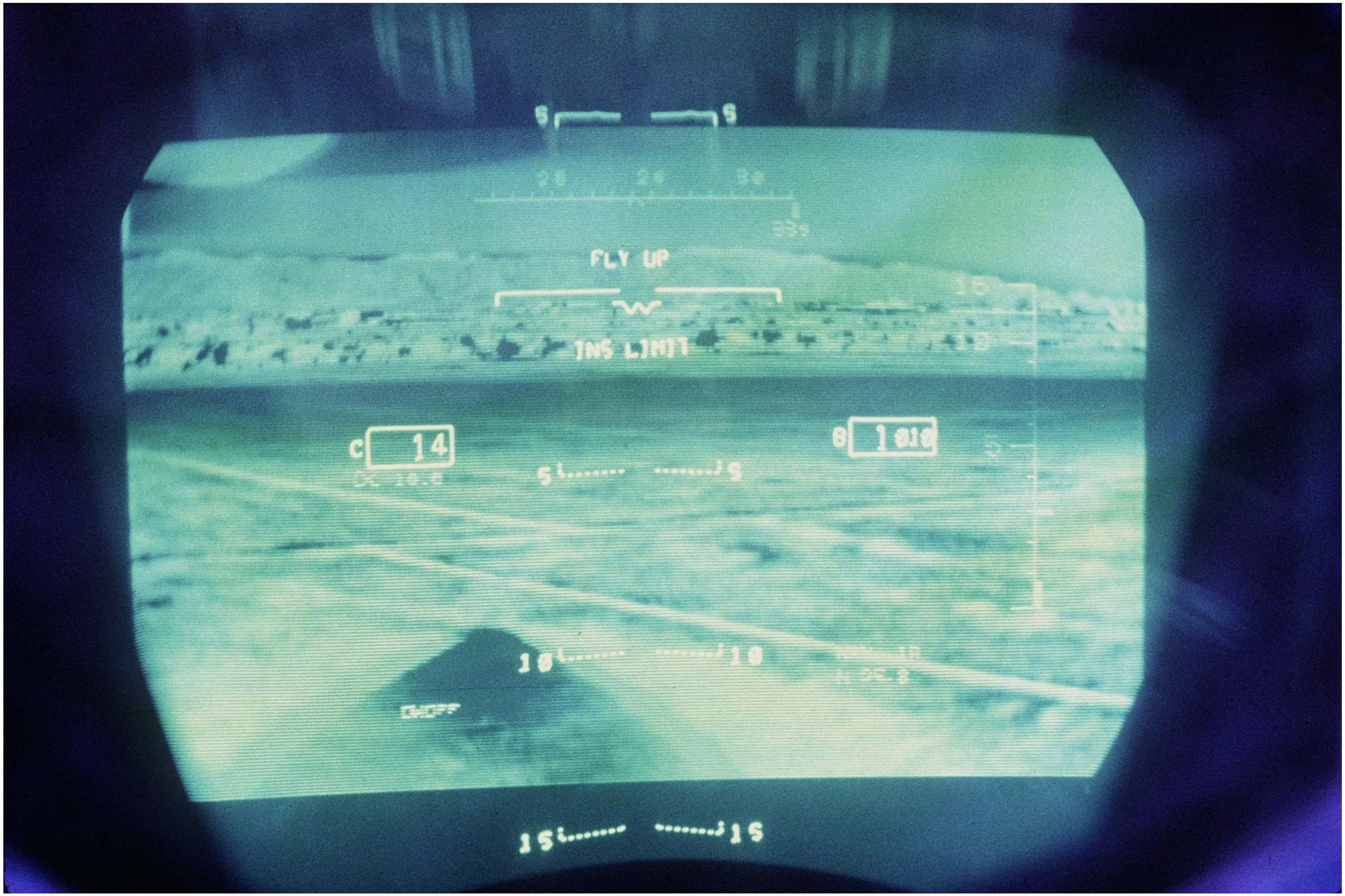
The satellite images of the whole earth supported the idea of a special world-view. They begun to replace the world map of nation-states by a one-world-geography of the media.




WHOLE EARTH CATALOG
access to tools
Fall 1968
$5



Photograph of an airfield in the Soviet Union from a Lockheed U-2 (equipped with a large-format and a thermographic camera, electronic sensors), 1960.



Infrared image projected onto the heads up display of an F-15 E Eagle aircraft, USA, 1989.

The World Landscape

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The Secure Ground

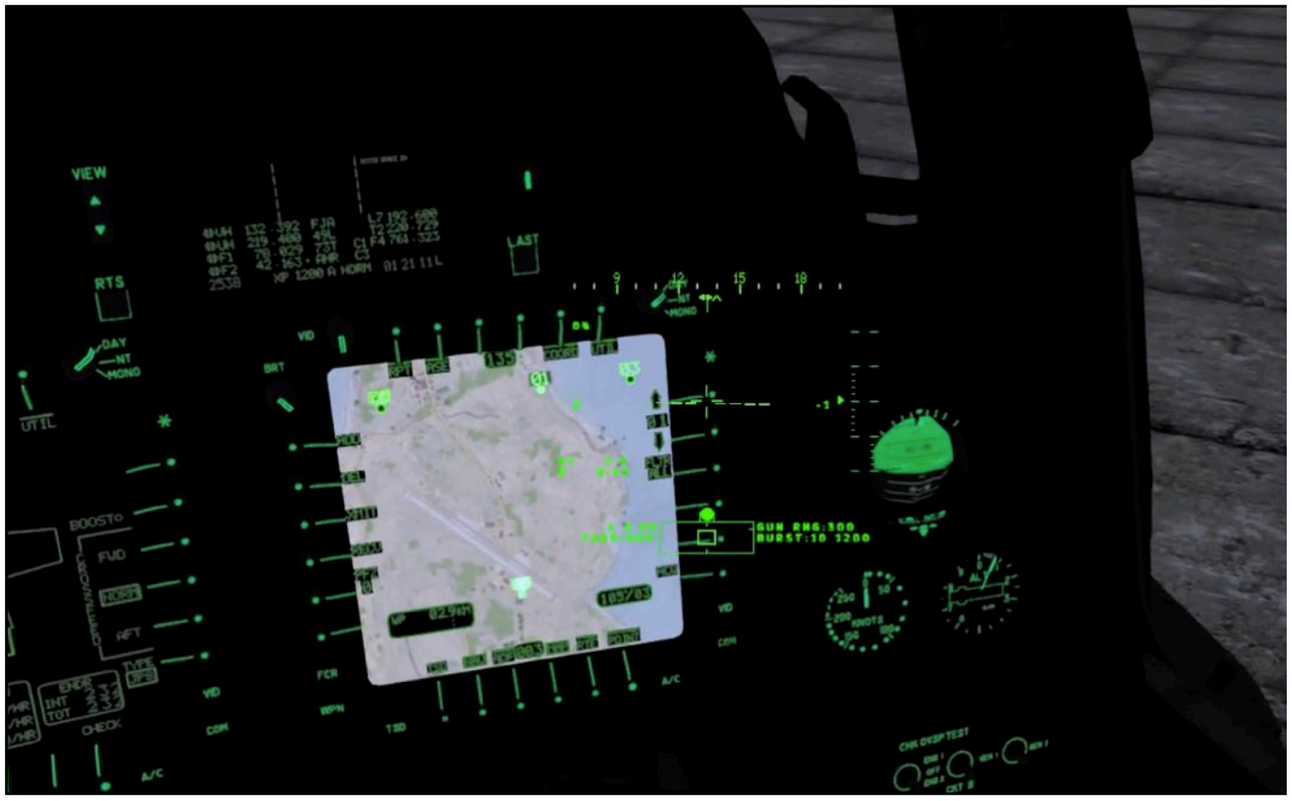
AH-64D Apache Longbow with a radar dome mounted to the mast.

Cockpit of the AH-64D Apache Longbow.

Pilot and copilot/gunner in a AH-64D Apache helicopter.

Apache helicopter's pilot looking at a radar screen.

Apache helicopter’s pilot with monocle in front of his right eye.



https://www.youtube.com/watch?v=euo566iW6kU

A demonstration of cockpit interaction in the AH-64D pilot seat.

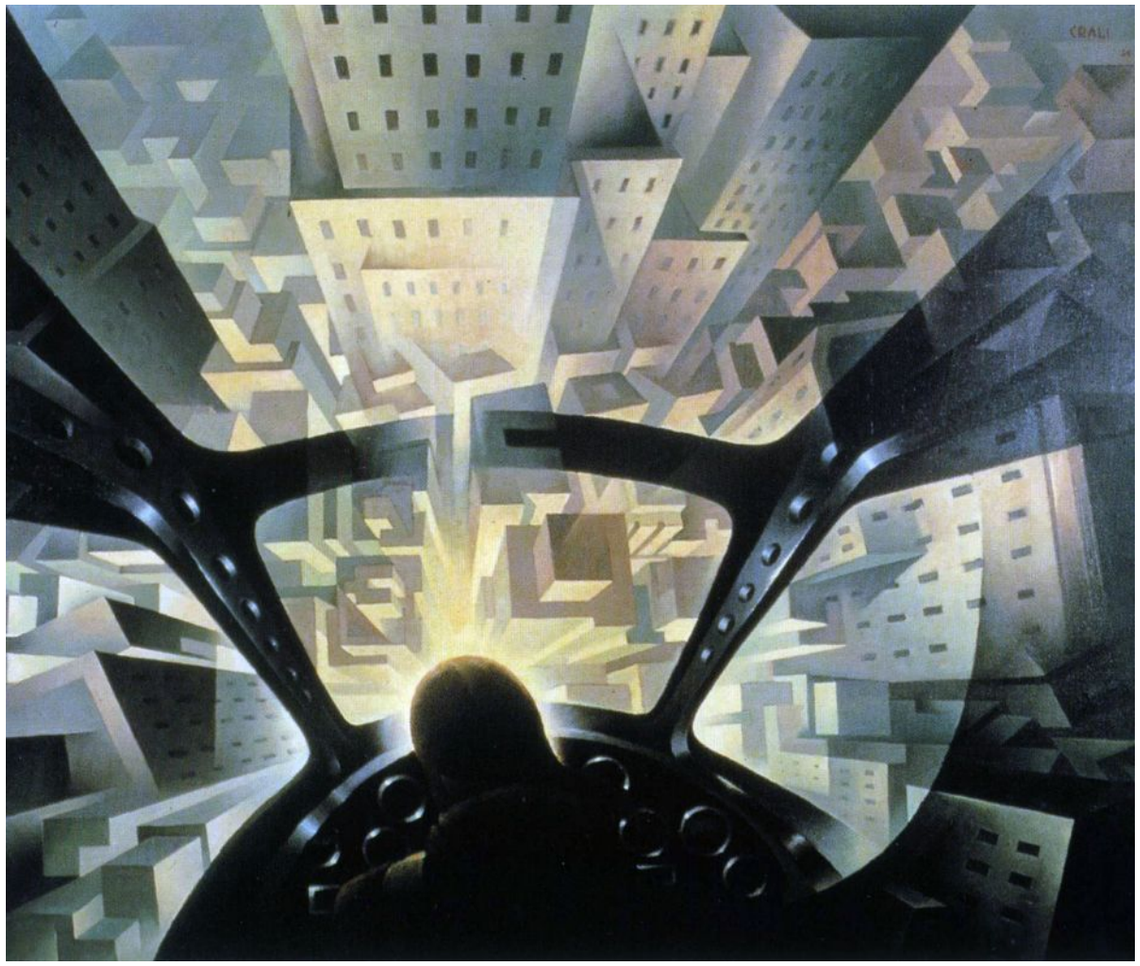
In this way, the real-physical and medial space are combined to form a hybrid space. Within the new landscapes of ‘hybrid’ the view from above is formed by highly complex machine processes.

A MQ-1 Predator of the United States Air Force in training.

Ground control station for controlling a Reaper drone.

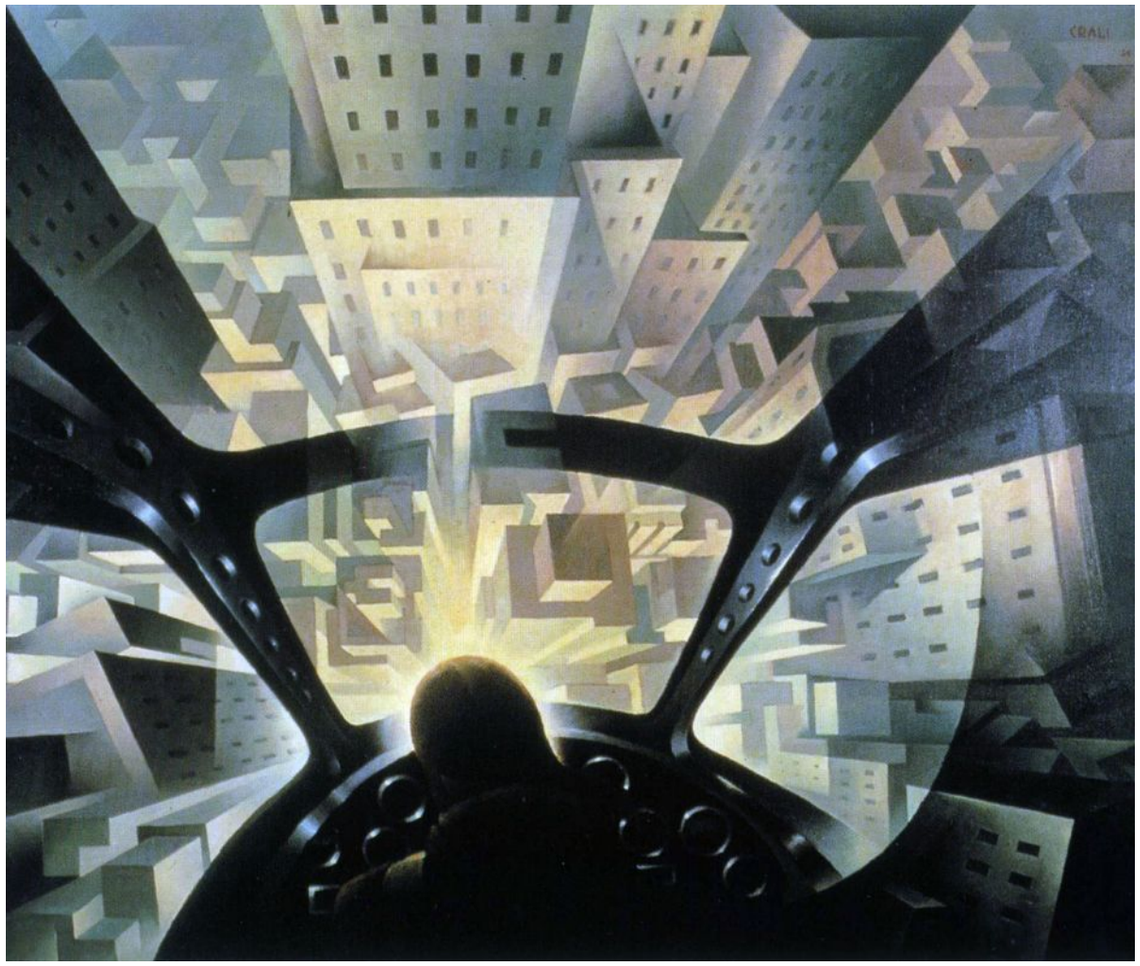
Drone pilots are the opposite to Kamikaze pilots. On the one hand, there is the total self-sacrifice, and on the other, total distance. While the body of the Kamikaze pilot merges completely with the body of his weapon, the drone provides radical separation. Kamikaze means: My body is my weapon. Drone means: My weapon is without a body. For the Kamikaze pilot, the death is inevitable. For the drone pilot, the death is impossible.

nach: Grégoire Chamayou, *Théorie du drone,* Paris 2013.



Tullio Crali, Nose Dive on the City, 1939.

Ground control station for controlling a Reaper drone.



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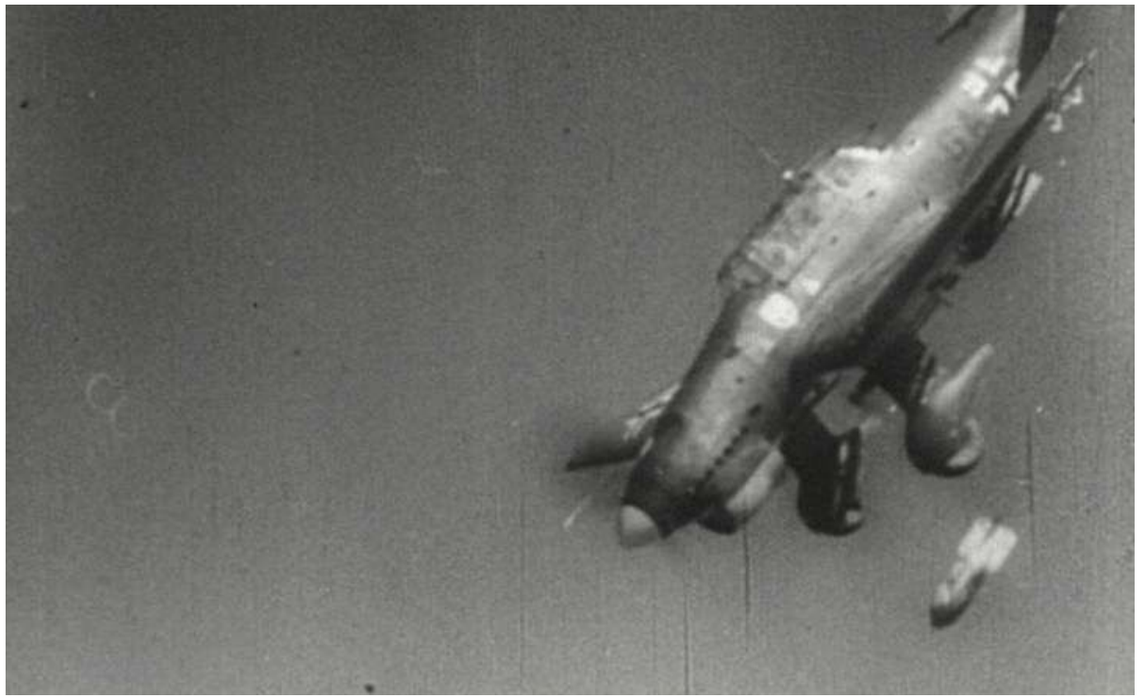
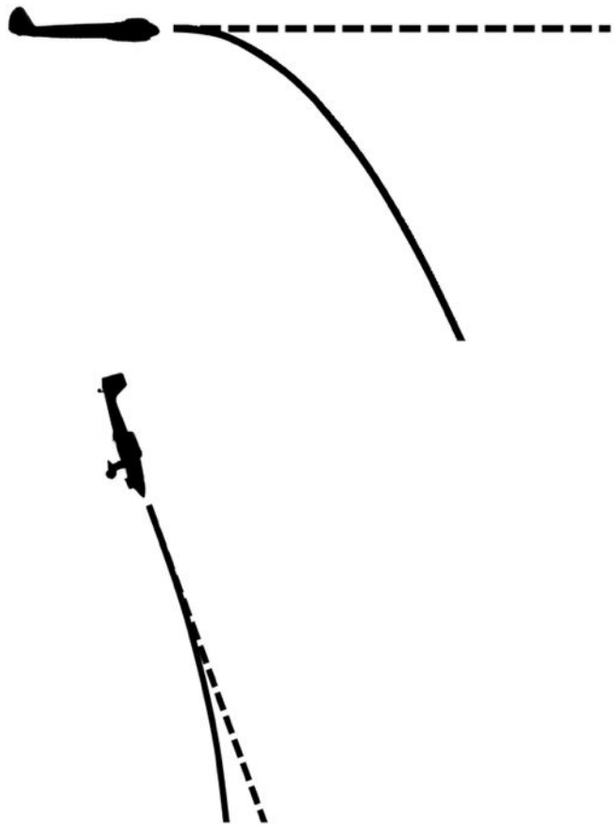
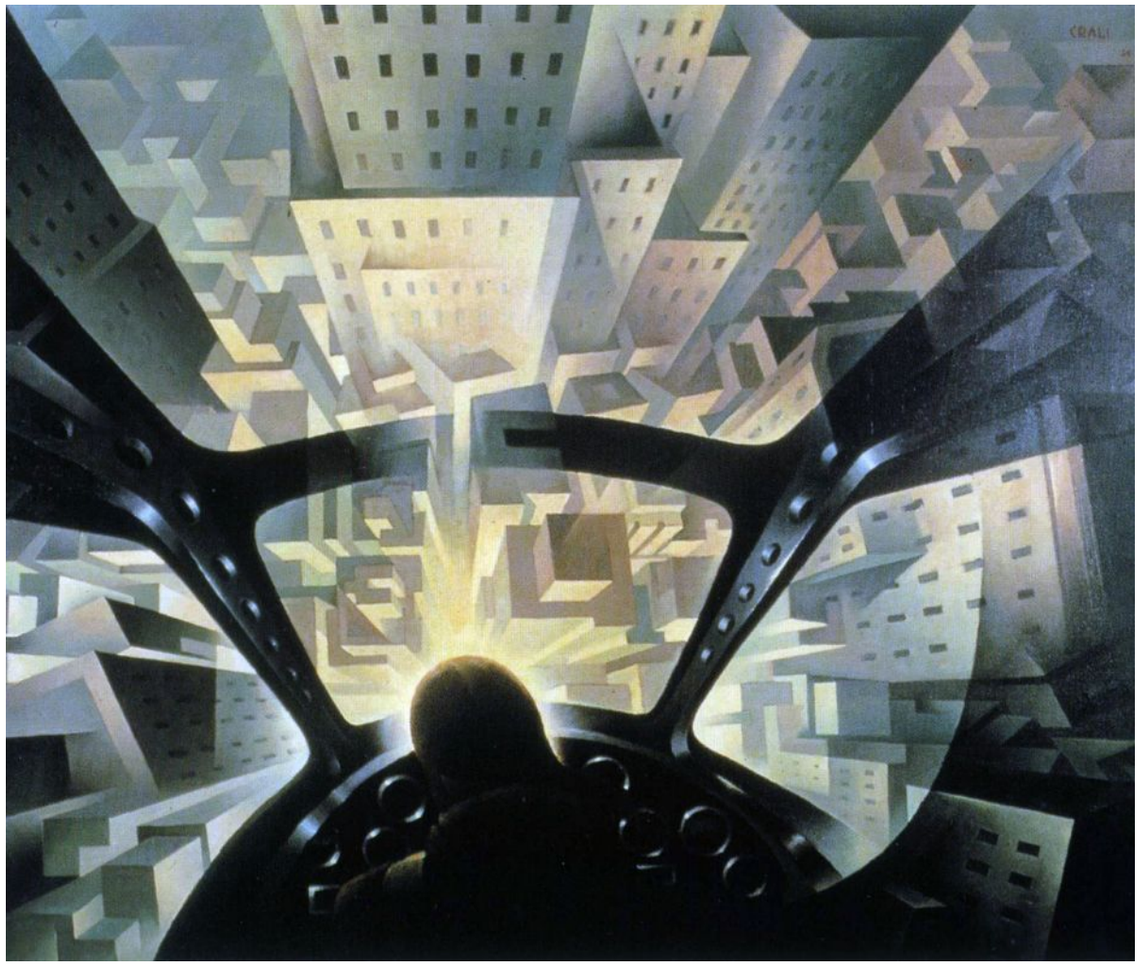




Nose Dive of a JU 87, 1937–44 | Horizontal and dive bombing.



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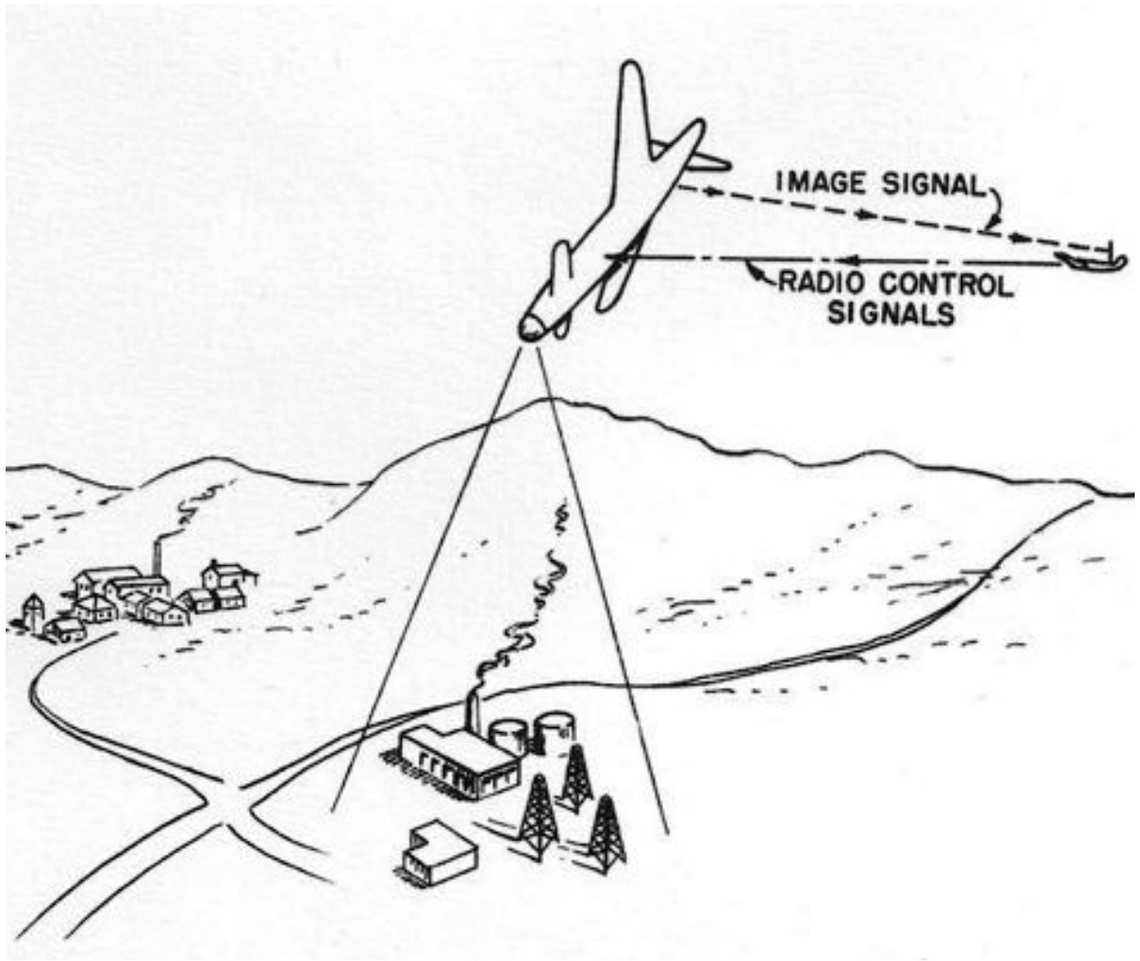
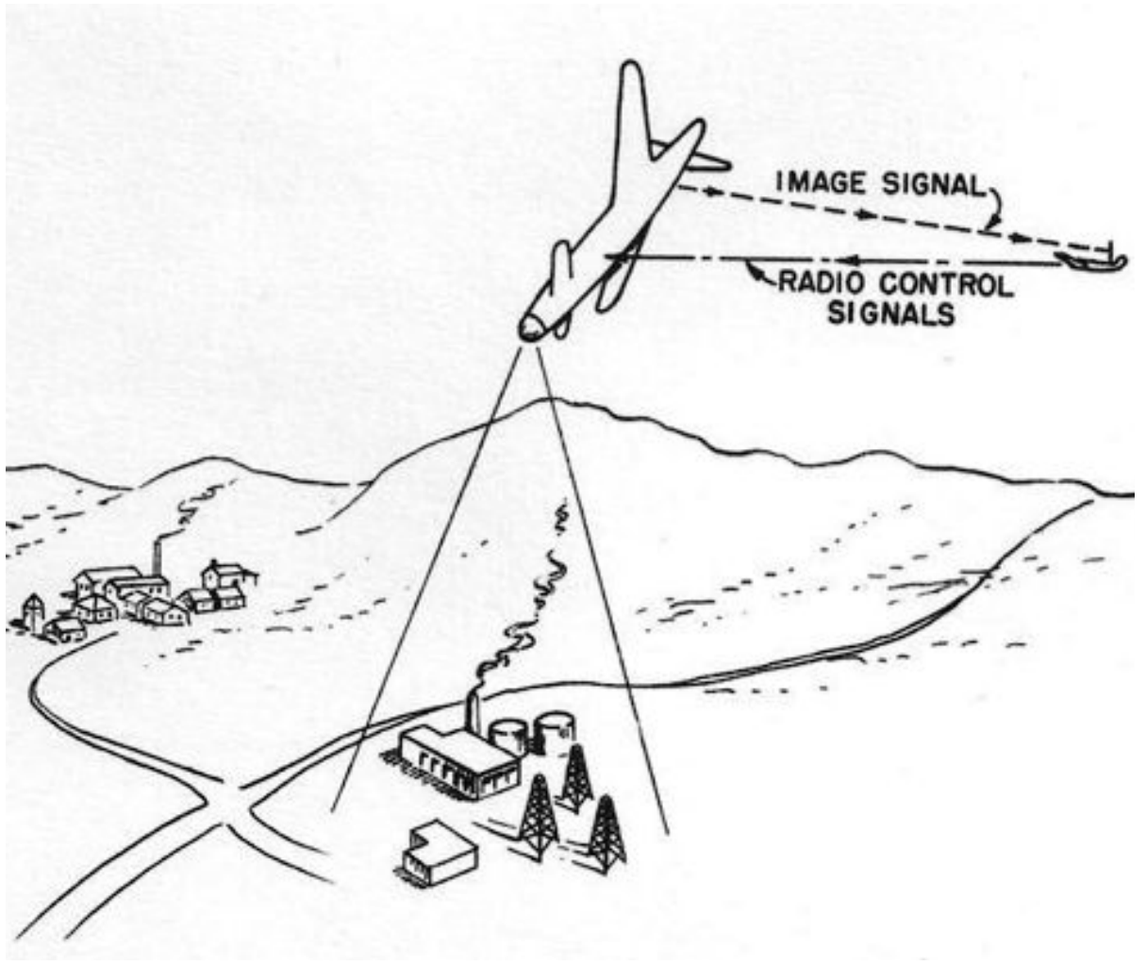


Vladimir K. Zworykin, Flying Torpedo with an Electric Eye, 1934.

Target acquisition element of a Reaper drone.



Vladimir K. Zworykin, Flying Torpedo with an Electric Eye, 1934.

Advertising of the Junkers-Luftbild-Zentrale, 1926.

http://vimeo.com/71414748.

Omer Fast, *5000 Feet is the Best,* short film, Germany/USA, 2011.

Charles and Ray Eames, Powers of Ten, experimental film with the financial support of IBM, 1977.

https://www.youtube.com/watch?v=unv9C2t7f5c

Manual evaluation of aerial photographs of Hamburg, 1943.

A drone pilot und a sensor operator in a ground control station, 2009.

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Camouflaged Binnenalster and Outer Alster, Hamburg, aerial photographs by the British Royal Air Force, July 1941.

Lockheed Air Terminal, Burbank, 1940.

Camouflaged Boeing Aircraft Factories, Seattle, 1941.

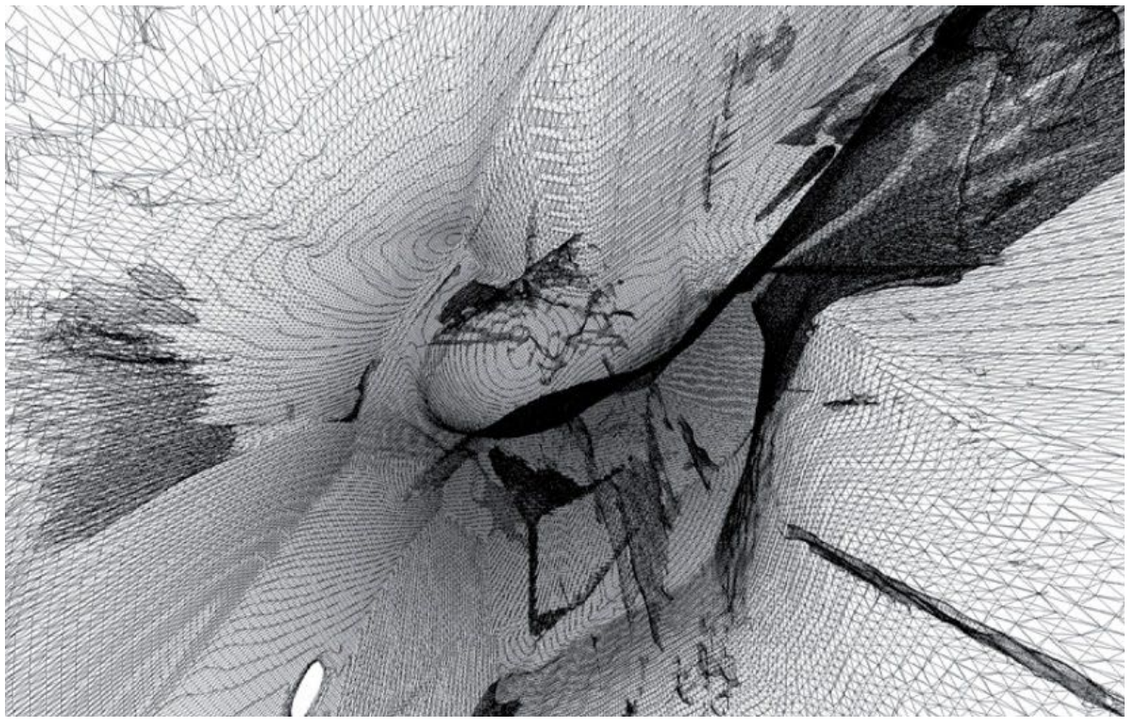
Camouflaged Lockheed Air Terminal, Burbank 1941.

Frank O. Gehry, New Facebook Headquarters, California, 2014–17.

U.S. Federal Highway Administration, Smart Geotextiles, 2013.

Toshio Shibata, Constructed Landscape, 1989.

G-Max Security, Buried Cable Intrusion Detection Sensor, 2013.

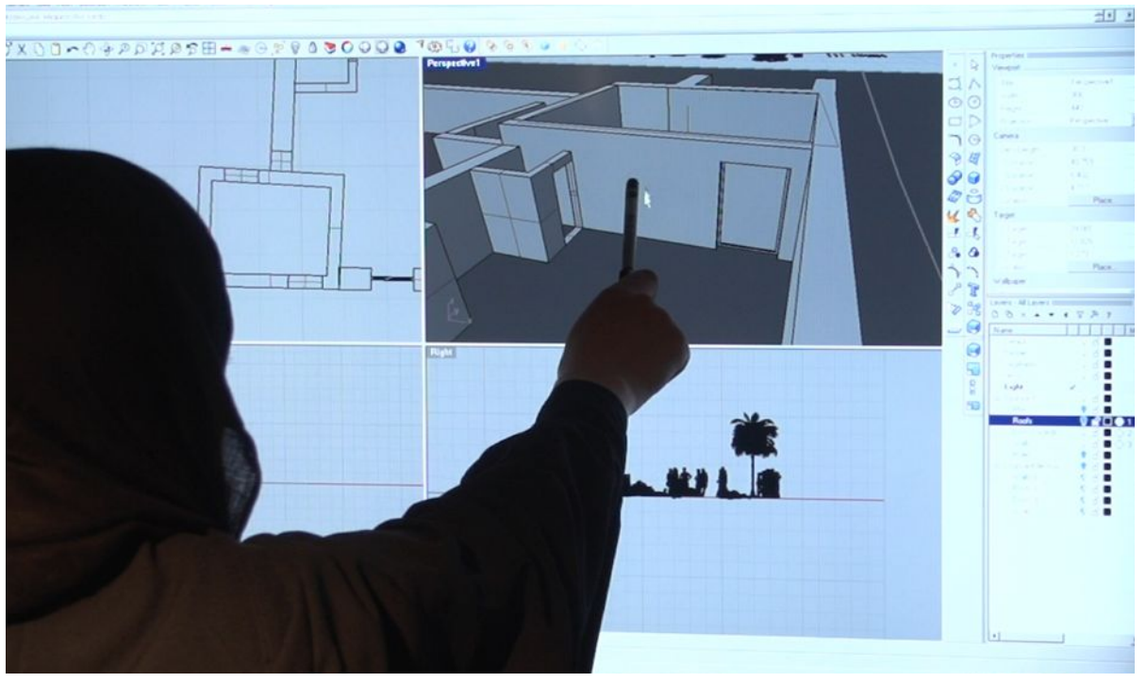


ScanLAB, Subverting the Light-Detection-and-Ranging-Landscape, 2011.

ScanLAB, A hypothetical „stealth object“ resistant to laser-scanning, 2011.

The view from above no longer sets an all-round borderless, continuous, and abstract space into the image. The imagined space is rather a fragmented, a discontinuous space that oscillates between abstraction and – as a result of the extreme close-up – a new concreteness. The desire to protect from the drone views forms the earth’s surface into a single sensitive electronic interface. The aim or the result of this form of protection is the total militarization of civil space.

Prospects The Forensic View



Forensic Architecture, Reconstruction of a drone strike, 2014.