

## Adolf Reichwein (1937)

### Human Flight<sup>1</sup>

#### *With Annotations by Heinz Schernikau*

##### Source:

Adolf Reichwein. Tiefenseer Schulschriften 1937–1939. Pädagogische Schriften. Kommentierte Werkausgabe in fünf Bänden, Band 4, herausgegeben und bearbeitet von Karl-Christoph Lingelbach und Ullrich Amlung. Bad Heilbrunn: Klinkhardt 2011, pp. 25–185; extract here pp. 26f., pp. 33ff., pp. 80-93

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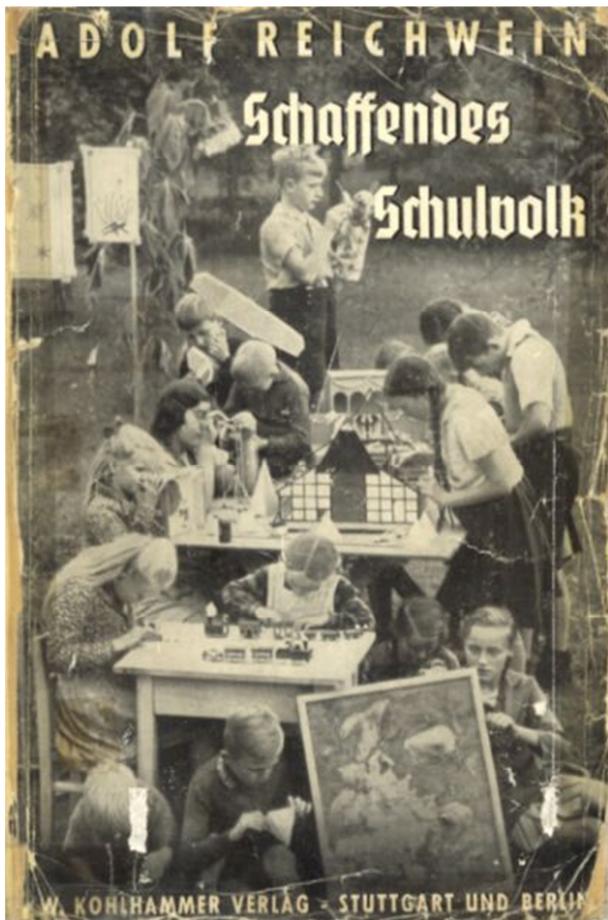


Figure 1: Title page „Schaffendes Schulvolk“ (SSV)  
[bbf.dipf.de/hans/hansphoto/reichwein/reich-0275/reich-0275.jpg](http://bbf.dipf.de/hans/hansphoto/reichwein/reich-0275/reich-0275.jpg)

##### Foreword (WA Vol. 4, p. 26f.)

The purpose of this manuscript is not to present a plan or a suggestion of how something should be done but is instead a report on the reality of how it was done. It describes a completed endeavor rather than a hypothetical educational situation. However, it is more than mere description in that it invites reflection on the reasons and thought processes which led to its implementation. It represents an attempt both to report on a pedagogical practice and to consider its significance....

Apart from those who actually experience them, very few people understand what country schools are really like. Many still consider them to have remained as they were in the past. In a time, however, where renewal is to come from country people, urban dwellers should not be exempt from understanding the country school. Therefore, these words are for all those who have a share in the active education of future generations, not just educators.

Tiefensee, Autumn 1937, Adolf Reichwein

##### I. Conceptualization (WA Vol. 4, p. 33ff.)

Rather than leading our young people into well chartered waters we are leading them towards a blank canvas of a future they must help to create for themselves. What an enviable fate! How uncertain, how many questions dependent entirely on our response for their resolution! ... Children should be enabled and encouraged to use their skills and competencies independently not just when they are instructed to do so. They should enjoy such self-reliance. Achievements stem from desire and enjoyment even when they are compulsory. When we speak of obligation on the part of children we must refer to an enjoyment of such obligation ...

<sup>1</sup> Translation Jennifer Bruen, Dublin



## II. How we do it

### Winter (WA Vol. 4, pp. 80-93)

#### 2. Example

In the same way that Winter in the village school encourages an in-depth engagement with history so too does this season naturally result in a search for a more integrated and coherent understanding of the forces shaping our planet, i.e. geography. Detailed observations collected and documented during the Summer over the course of many trips, large and small, are now reunited in a larger undertaking. One Winter, we choose flying as the theme [Leitmotif] for our geography classes, its significance clear in the Germany of today. As a project, it promised to yield both broad and in-depth findings. The ground work had been done and needed now merely to be reinterpreted within the parameters of the *Leitmotif* itself. Indeed, the opportunity was there for the taking: It is no longer possible to separate our understanding of our planet from the historical phenomenon of human flight. This phenomenon has contributed to our understanding of the geography of our planet as well as repeatedly to its current geopolitical state. Human history and the geopolitical state of our planet are inseparable from human flight. Prophecies, anecdotes, reports on events and deeds reflect the incredible event that is flying in the most direct and strongest manner possible in our German language. Conquering the third dimension greatly enriches our understanding of the Earth, the forces which shape it and their impact on the human community. Experiencing geography in its broadest sense from the perspective of human flight involves acquiring a geopolitical perspective on both German and human destiny.

We had been collecting and sorting pictures related to flying for quite a while from our collection of newspapers, magazines and calendars, something we do for all of our topics. The different folders were grouped according to topic: history of human flight, gliding, commercial aviation, airships, aerial views, pilot training, aviation associated with war-time etc. We had approximately fifteen folders. The youngest children were already familiar with the popular character *Fritz der Wolkenfahrer* (Fritz the Cloud Driver)<sup>2</sup> from the series of children's books of the same name, the intermediate students knew sayings and anecdotes and had, thanks to their bi-weekly science and history magazine, *Lesebogen*, a complete picture of general developments in the field, while the older group were in possession of a range of facts and details which came up for discussion while collecting the pictures. Our common point of departure concerned how someone in flight viewed our home. Every day multi-engined passenger aircraft flew in reconnaissance over our town. How did our little world appear to them? To help us answer this question we constructed a 2 x 2 meter model of our locality. We had to be able to interpret the ordnance map in order to be

able to construct the model. The horizontal and vertical dimensions had to be in the correct ratio. As we were working with plastic we built in an appropriate degree of elevation. Thus, layer by layer, we painstakingly created a shell of our native landscape shaped by thousands of years of erosion by water, ice and weather. This we covered with a layer of papier maché. Soon it was painted and began to take form. The lakes shone blue between the forests of Icelandic moss, a piece of primeval landscape. Roads were created over dams and railways over bridges. The earth was revived. Using materials gathered in the previous Summer, the different elements came to life. And finally, our town, a man-made addition to the natural world, was added. Colourful, wooden houses lined up along the street. Not even the smallest hut could be omitted. We had experienced in spirit the development of our home from its original state when humans first set foot in it to its current state. We had recreated this process by hand. Even though only the main points are captured here, I hope the degree to which this work stimulated thought, clarification, consideration and insight is nonetheless clear. Our finished product resembled what can be seen from the air, i.e. 'culture in the landscape'. Human fate, yes, our own, was there intertwined with the work of nature and everything else. It was a picture of our home.

Our thoughts focused now on this model and from here, from the creation of our home, they moved out into the wider world. They flew with the birds. On our trip to East Prussia, we had ourselves visited the bird observatory in Rossitten<sup>3</sup>. We had therefore an idea perhaps even an understanding of the science behind the flight of birds. Avian research and gliding co-exist as neighbours on the spit. We paired pictures of gliders and birds in flight, compared them and discovered similarities in their design and movement, and heard of the close relationship that exists between flight in birds and in humans. Humans eavesdropped on flying creatures and attempted to recreate that which they had discovered. Therefore, we put together series of images and recordings ranging from the simplest examples of flight in nature to man's most advanced designs, from the winged dandelion seed to the parachute, from the rotating maple seed to the propeller, from the butterfly to the tailless plane and from the seagull to the *Rhönadler* glider on the *Wasserkuppe* mountain. We pictured the storch's flight from Rossitten to South Africa, studied maps of aircraft flight routes for the purpose of comparison and discovered to our surprise that the major flight paths of European and African airlines were almost the same as those of migratory birds. Our route mappings accumulated, Alpine mountains and seas were identified as obstacles, while straits, islands and coasts were considered attractive to

<sup>2</sup> Compare Commentary 2 (Grammes).

<sup>3</sup> Rossitten was the location of a well-known scientific bird flight observatory and a gliding school. Since in the Treaty of Versailles, the construction of aircraft engine had been banned in Germany and gliding offered an aeronautical alternative.

those hoping for safe passage. Before our eyes flight paths unfolded facilitating Air France's trans-African journeys to the heart of the Dark Continent and those of the storks to Senegal and Niger. How different from the experiences of Wissman, Stanley and Livingstone!<sup>4</sup> Innovations in flight technology changed the nature of the challenges associated with the development of what Europe perceives to be a politically young continent. Colonisation by the English in the East and the French in the West now appear possible as a result of developments in aviation. Our perspectives on items previously viewed from the ground changed once they were viewed from the air. Again, we resorted to our plastic to contextualize such things and again created a three dimensional model, this time of Africa. The different altitudes were in different colours and rivers followed their paths while colourful miniatures of passing flocks of migratory birds and aeroplanes floated above them.

The fragmentation of European air travel and the more straightforward transcontinental approach taken by the North America network provided the basis for comparison. Our home-made model was helpful here too. Like any model, it revealed the natural shape of this continent and the different routes in terms of their proximity to one another. The Rocky Mountain passes, clearly visible on our model, were important land-marks on the major routes from east to west. The division of the major routes according to east-west and north-south created the impression of a system designed to fit a geographical space. It was obvious, particularly when compared with the European route-map derived from national requirements, how the physical relief and political shape of a continent can influence the nature of travel. This observation could easily have been complemented by a similar analysis of roads and railways.

We had collected German ordnance maps of the Rhein-Main region between Taunus and Odenwald, the Black Forest, Lake Constance and the Ore mountains in addition to our own model, which was sadly limited in nature. They were indispensable to us in achieving an accurate picture of the German landscape. As we were consciously taking a bird's-eye view, they now provided us with a wholistic and integrated perspective on the different elements of the landscape and their relationships to one another. The relationship between the location of the cities and the landscape became clear. For example, the locating of industry close to sources of water, something of which we had previously simply had a passive awareness, became obvious from the model as we saw how the small-scale, traditional industries in Wurttemberg and Thuringia were located close to mountain rivers and streams just as the large-scale industrial conurbations in the Rhine-Main region made use of major rivers and waterways. An image of the

entire German economy was revealed to us from the perspective of 'man in flight'.

Yes, when we looked more closely we saw beyond the surface and uncovered the history of Germany layer by layer. The tourist office of an old historical city had sent us an ordnance map designed for tourism purposes. This served as a model for us of how the entire history of a city could be contained in a single image. What had been the heart of the city in the middle-ages was clustered around the river in the form of old, narrow gabled houses arranged along winding streets with the cathedral in the centre. Moving outwards, we found the broad, high buildings of the wealthier renaissance and baroque eras. The influence of the 17<sup>th</sup> century was revealed next in the form of green space around these buildings. And then, clearly, development stalled for a while, the economy became more conservative and the city remained content with what it had achieved until, after more than a hundred years, development began again and the city began to expand into the surrounding countryside. Growth this time was no longer systematic but resembled instead a more haphazard expansion into the surrounding areas. During this period of unrestrained expansion, the city engulfed small towns, endless, wide streets appeared before the ramparts and ditches of the old city as did huge blocks of houses and far-flung residential developments. Numerous railway tracks appeared outside stations as if drawn there by magnets. The unrestrained development of the 19<sup>th</sup> century was captured here in a single image. As fate would have it, we came across a little book containing Hamburg's city plans over the course of a millennium. This contained an ordnance map for each period in the history of the city. These confirmed in more detail what we had already been able to deduce for ourselves. In addition, however, they also contained a wealth of historical insights revealing to us how over a thousand years, the generations had succeeded in creating an international port from water, swamp and forest.

Our maps and models led us directly to our collection of arial photographs. When viewed from above, both large and small-scale human settlement, consistently associated with geographic and historical forces, looked very different. It was only now that we truly comprehended the process of human settlement and as a consequence the forces shaping our history. There was Noerdlingen, for example, content and at peace within its medieval walls and there was Chemnitz, a seething cauldron of industrial activity. Here a lonely windmill or water mill, there a modern milling installation in the middle of a polluted industrial region. And, finally, here our own little village, there tiny farms huddled together in the larger Hessian villages, the typically oval shaped towns in Saxony, isolated courtyards. All of these different types of settlement developed for a reason and one which they shared with us. Then we expanded our

<sup>4</sup> Wissmann, Stanley and Livingstone are famous explorers of the African continent.



horizons. Swiss aviation pioneer, Walter Mittelholzer<sup>5</sup>, provides images of primitive negro settle-ments with indiscriminately thrown together and poorly built huts to be found next to sophisticated and carefully planned villages. Thus, the juxtaposition of random development and meticulous planning was also to be found outside of Germany. And so we repeatedly threw open the window and peered beyond our own borders to discover that forms of organized co-habitation both closer to home and in remote parts of the world were characterized by a hierarchy of different approaches. Thus, whenever an aerial image revealed the 'structure' of human life to us, it was always a symbol of a particular rationale.

We were constantly confronted with the limitations put on air travel by weather and climate conditions when we were following flight paths and viewing reports, both pictorial and factual, of pioneering journeys and those conducted for research purposes. We also discovered how both research institutes and those working on the construction of the aircraft themselves are constantly attempting to overcome such limitations. And again, we were able to draw on our own observations and findings which we had accumulated over the years. Daily recording of temperatures and pressure levels was worth it now not to mention rainfall, cloud cover and fog. We were glad now that in previous years we had graphically recorded these results with great care. Now we just needed to widen our remit somewhat and remind ourselves, in the first instance, of the relationships between temperature, air pressure, and precipitation as well as deducing from our own observations the basic meteorological principles that those flying aircraft must have at their fingertips. And by comparing our own observations, with our town as a point of departure, with German and sometimes English weather maps covering geographical areas reaching far into the Atlantic, we discovered how large-scale weather conditions first experienced by pilots influenced eventually the weather conditions in our town. We also gained an understanding from the study of meteorology of particular concepts which proved indispensable in the construction of our own small gliders related for example to radiation, wind, thermal lift, up-drafts and down-drafts. The simplest elements associated with the construction of a model would not have been possible without this understanding of, for example, load distribution, and the shape of the support deck and the controls. Similarly, without this basic knowledge, the impact of elevator and rudder controls, and torsion not only on gliders but on aircraft generally would have remained incomprehensible as would the core issues at the heart of the construction of passenger and war-planes, i.e. load, elevation and speed. Now, however, such issues greatly enriched our mathematics classes. In order to explore together the different numerical relationships related to flight, every-

one had to be involved in conducting all of the different types of calculations required thus developing and consolidating their mathematical skills and abilities. And so we have come full circle in our considerations: returning to the flight of birds and to the landscape, to the notion of space and its mastery in short to the basic geo-political mission of flying itself. This short description condenses the work of many months. We just wanted to give a flavour of how a significant undertaking, the actual objective and parameters of which were to begin with known only to the teacher in charge, developed from hundreds upon hundreds of different activities which fed into it over many years and how a deeper understanding of the world and its constituent elements was obtained using a *Leitmotif* of human flight. The crystal forms when saturation point is reached.

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<sup>5</sup> Walter Mittelholzer (1894-1937), Swiss aviation pioneer and travel writer. The expression "negro settlements" for African villages corresponds to the use of words at that time.



Heinz Schernikau

## Commentary 1

### The Earth from the Perspective of Birds and Humans in Flight

#### An example of teaching from the Volksschule Tiefensee (1933-1939)

The purpose of the following detailed interpretation of the project report is a “reconstruction of the internal logic” [Rekonstruktion der inneren Logik] (Peter Menck) of Reichwein’s pedagogical approach. It has its roots in Weimar Classicism and the works and educational philosophies of Herder, Goethe and Humboldt.

#### Keywords:

Teaching Geography under National Socialism, wholistic teaching [Gesamtunterricht], Goethe, Herder, Humboldt, Weimar Classicism, Progressive education, Tiefensee, World View [Weltanschauung], Project

In 1933, socialist and progressive educationalist, Adolf Reichwein (1898-1944) was suspended for political reasons from his Professorship in the field of education studies which he had held for more than a decade at the Pedagogical Academy [Pädagogischen Akademie] in Halle. In 1944, he was convicted by the Nazis of membership of the resistance movement and sentenced to death. Beforehand, however, his wish to takeover a small one-class school in Tiefensee near Berlin, was granted. There, he succeeded in setting up an experiment in the school and documenting it in “Creative Teachers” [Schaffendes Schulvolk] which remains relevant to discussions around progressive education today under the heading of “Model School Tiefensee” [Schulmodell Tiefensee].

Hands on, practical learning is of central importance, be it with the objective of creating something useful such as a green-house through collaborative work or in the form of smaller tasks such as the building of a model of the earth’s surface. Activities of this nature are integrated at significant points in the teaching and learning process and such tangible representations of what they are learning serve to motivate the students. The following paragraphs consider this form of practical learning in more detail.

Of the pedagogical approaches reported by the country-school teacher from Tiefensee, the project, *The Earth from the Perspective of Birds and Humans in Flight*, has received most attention in educational research. The project is infused with the character and charisma of a man ahead of his time who undertook an adventurous trip around the world and was an enthusiastic pilot in possession of his own sports plane – the propellor of which still rested against the backwall of a classroom in Tiefensee. Here, however, the focus is on the man as an engaged and creative representative of progressive

education whose global awareness and sense of cosmopolitanism countered the growing nationalism of the Nazi era.

#### Significant elements and ideological drivers for geography teaching under national socialism

A content analysis of educational texts from the period 1925-1944 - essays, books, Nazi teaching plans and guidelines 1937/38 for the *Volksschule*, 1938 for the higher level secondary school (*Höhere Schule*), 1939 for the Middle School (*Mittelschule*), 1942 for the *Hauptschule*, which offered more practical and applied subjects:

##### 1. Study of your native country [Heimatkunde]:

Love of country and of nature – love of the father land – national pride – willingness to sacrifice oneself – hostility towards cities – “blood and soil”, referring to lineage and territory, - ideology

##### 2. Geopolitics and Political Geography:

Overturing the Treaty of Versailles – Germany’s borders under threat and its position in Central Europe – borders, foreign countries and “Germanness” [Deutschtum], Reordering the global geopolitical situation – France, Great Britain, the USA and the Soviet Union as enemies of Germany – Italy and Japan as allies – explaining the way – Territory/Living Space [Lebensraum] – ideology

##### 3. The study of race:

The nordic race as the superior race – racial “purity” [Rassenhygiene] and the inferiority of mixed races – inferior races – the Jews

##### 4. Military Geography and preparation:

Securing the threatened German borders – describing military terrain – willingness to defend [Germany] and to sacrifice oneself – military geography of metropolitan areas.

##### 5. Colonial geography and the colonial mindset:

Demanding the return of the German colonies – Africa as an economic extension of Europe – the Germans as glorious explorers and colonial benefactors – Whites as masters of the natives – misdeeds of other colonial powers – other ideological elements – “Hitler myth” [Hitler als Mythos]

(Heske 1988, 139).

However, as well as being closely connected to the passions of its initiator, the project, *The Earth from the Perspective of Birds and Humans in Flight*, is also closely related to the story of the country school in Tiefensee. It has its roots in a journey with the older students, the “Einklassigen” to East Prussia which resulted in the encounter with the Curonian Spit, a primeval landscape and location for “avian research and gliding”. In addition,



a collection of pictures on the following topics had already been compiled: history of bird flight, gliding, commercial aviation, airships, aerial views and pilot training: "Detailed observations collected and documented during the Summer over the course of many trips, large and small, are now reunited in a larger undertaking. One Winter, we took flying as our *Leitmotif*, its significance clear in the Germany of today. As a project, it promised to yield both broad and in-depth findings" (WA Vol. 4, pp. 80).

In the end, however, the focus was on the topic, *The Earth from the Perspective of Birds and Humans in Flight*, rather than on the broader "Flying and Aviation" and the many and diverse topics referenced in the collection of pictures. In the spirit of the pilot and global traveller that was Reichwein himself, the intention was to subvert or overcome the growing nationalist tendencies as reflected in the geopolitical thinking of the Nazi era (Schernikau 2009, 137) with a broader more cosmopolitan approach.

Reichwein's approach derived from the Classical approaches of Herder, Goethe, Alexander von Humboldt, which were based on universals and mutual comparison (Schernikau 2009, 120, 281).

The tried and tested methodological approach begins with an introduction often in the context of an apparently opportunistic lesson. It leads then to the collection, reviewing and classification of relevant texts and pictures and to further work on the topic in conjunction with thematically relevant tasks. Fundamentally, it involves confronting phenomena similar in appearance and sharing similarities and differences in terms of their structure (Schernikau 2009, 280).

1. The children, whose home was located on an approach path to the Airport in Berlin, started by considering the question: "How does someone in flight view our home? And then it is likely that this question was followed directly by the following: "How do the storks see our town? How did they view our town in the past? Can we also view our town from above in the same way that those flying and the storks do?"

These questions led to the "building of a model of our locality". The children began to create the geographical, cultural and historical development of their town by hand. They created the shell of the landscape shaped by erosion during the ice-age and covered this with papier mache to create the original landscape and chart its gradual development by man. They envisioned for themselves through their plastic reconstruction "the development of their home from its original state".

Thus, layer by layer, we painstakingly created a shell of our native landscape shaped by thousands of years of erosion by water, ice and weather. This we covered with a layer of papier maché. Soon it was painted and began to take form. The lakes shone blue between the forests of Icelandic moss, a piece of primeval landscape. Roads were created over dams and railways over bridges. The earth was revived. Using materials gathered in the

previous Summer, the different elements came to life. And finally, our town, a man-made addition to the natural world, was added. Colourful, wooden houses lined up along the street. Not even the smallest hut could be omitted. We had experienced in spirit the development of our home from its original state when humans first set foot in it to its current state. (WA Vol. 4, pp.81)

In this way, questions concerning the relationship between the natural and the man-made landscape, between earth, climate, transport routes and settlement types became relevant to the children as well as the view of the earth from above. This key function of the introductory phase and the degree of abstraction associated with teaching using maps aligned itself with a particular methodological and content-based form of learning. This form of teaching and learning involved taking a historical and genetic perspective in terms of the active, iconic and symbolic representation of the object under scrutiny.

2. The model served as a starting point and basis for the remainder of this topic. Our thoughts focused now on this model and from here, from the creation of our home, they moved out into the wider world.

Following their trip, the children pictured the storch's flight from Rossitten to Africa. In doing so, they compared the almost identical routes taken by the migratory birds and planes using ordinal maps and a model of Africa that they had built themselves. This basic model clarified key aspects for the children: Miniature models of birds and planes are used to indicate the flight paths of planes and the migratory routes of birds, colourful paper cutouts illustrate the national and colonial history of the continent, colourful animals indicate the location of significant species and in a similar fashion the key regions for the production of the most common crops (palm oil, cocoa and cotton etc.). (WA. vol.4, pp. 54.)

The director of this many faceted teaching and learning process with his extensive experience of the world, added a comparative element in the form of a comparison of the north America transport network with the network in Europe. "The fragmentation of European air travel and the more straightforward transcontinental approach taken by the North America network provided the basis for comparison. Our home-made model was helpful here too. Like any model, it revealed the natural shape of this continent and the different routes in terms of their proximity to one another. The Rocky Mountain passes, clearly visible on our model, were important land-marks on the major routes from east to west. The division of the major routes according to east-west and north-south created the impression of a system designed to fit a geographical space. It was obvious, particularly when compared with the European route-map derived from national requirements, how the physical relief and



political shape of a continent can influence the nature of travel.” (WA, Vol. 4, pp. 82)

4. The following sequence focuses on the use of aerial photographs of German landscapes:

We had collected German ordnance maps of the Rhein-Main region between Taunus and Odenwald, the Black Forest, Lake Constance and the Ore mountains in addition to our own model, which was sadly limited in nature. They were indispensable to us in achieving an accurate picture of the German landscape. As we were consciously taking a bird’s-eye view, they now provided us with a holistic and integrated perspective on the different elements of the landscape and their relationships to one another. The relationship between the location of the cities and the landscape became clear. For example, the locating of industry close to sources of water, something of which we had previously simply had a passive awareness, became obvious from the model as we saw how the small-scale, traditional industries in Wurttemberg and Thuringia were located close to mountain rivers and streams just as the large-scale industrial conurbations in the Rhine-Main region made use of major rivers and waterways. An image of the entire German economy was revealed to us from the perspective of ‘man in flight’. (WA, Vol. 4, pp. 82)

And at another point:

When viewed from above, both large and small-scale human settlement, consistently associated with geographic and historical forces, looked very different. It was only now that we truly comprehended the process of human settlement and as a consequence the forces shaping our history. There was Noerdlingen, for example, content and at peace within its medieval walls and there was Chemnitz, a seething cauldron of industrial activity. Here a lonely windmill or water mill, there a modern milling installation in the middle of a polluted industrial region. And, finally, here our own little village, there tiny farms huddled together in the larger Hessian villages, the typically oval shaped towns in Saxony, isolated courtyards. All of these different types of settlement developed for a reason and one which they shared with us. (WA, Vol. 4, pp. 84).

5. Finally we return to “Expanding our horizons”

“Then we expanded our horizons. Swiss aviation pioneer, Walter Mittelholzer, provides images of primitive negro settlements with indiscriminately thrown together and poorly built huts to be found next to sophisticated and carefully planned villages. Thus, the juxtaposition of random development and meticulous planning was also to be found outside of Germany. And so we repeatedly threw open the window and peered beyond our own borders to discover that forms of organized co-habitation both closer to home and in remote parts of the world were characterized by a hierarchy of different approaches. Thus, whenever an

aerial image revealed the ‘structure’ of human life to us, it was always a symbol of a particular rationale.” (ebd.)

Notable in this comparison of German settlements with African settlements is that Reichwein here moves beyond a geographic perspective in the narrow sense and incorporates a general cultural perspective. Life, its artefacts and its symbols are interpreted by him in accordance with Goethe’s humanist, cosmopolitan understanding of the world with regard to the relationship between form and content. Reichwein, as a humanist, did not see difference in terms of near and far but understood it instead as associated with identity.

Additional, related themes and activities contributed to the holistic experience under Reichwein’s tuition. These included:

- From aircraft in the open-air to the flight instruments
- The reading of specialized texts
- Meteorology on the basis of “personal observation and findings”
- The physics and technology of flying in mathematics.

“The integration of parallel and associated themes does not lead to a blurring of the overall learning experience but results instead in a logically developed and appropriate curricular design. The geographical Leitmotif runs logically through the whole granting it coherence. In the words of its architect: “We just wanted to give a flavour of how a significant undertaking, the actual objective and parameters of which were to begin with known only to the teacher in charge, developed from hundreds upon hundreds of different activities which fed into it over many years and how a deeper understanding of the world and its constituent elements was obtained using a Leitmotif of human flight. The crystal forms when saturation point is reached.” (WA, Vol. 4, pp. 93)

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