WORKING UP OF A TOPOGRAPHIC BASE MAP 1:250,000 / QUARTER INCH MAP OF THE DOMINICAN REPUBLIC AS A BASE OF THE GENERAL GEOLOGICAL MAP OF THE DOM.REP. MAPA BÁSICO 1:250 000 DE REPÚBLICA DOMINICANA CARTE BASIQUE 1:250 000 DE RÉPUBLIQUE DOMINICAINE

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about cartographic working in the Dominican Republic 1987, as part of a german-dominican working group of geological cientists.

Abstract: The description deals into the production of a topographic base map 1:250,000 /quarter inch map in the Dominican Republic by transforming of the General Topographic Map 1:250,000 of the Dominican Republic and its completing with further supplements.
The cartographic work was done by assisting a german-dominican working group of geoscientists and the produced map should be used as the base for all the geological summaries over the dominican country.
All the cartographic and technical jobs to that purpose were carried out in cooperation with the GEOGRAPHIC INSTITUTE (IGU)in Santo Domingo, Dominican Republic.

Résumé: La déscription se déclare la production d'une carte basique 1:250,000 dans la République Dominicaine par transformation de la Carte Génerale Topographique á 1:250 000 de la République Dominicaine et sa complètements par d'autres suppléments.
Le travail cartographique aurait fait pour l'assistance de la groupe du travail allemande-dominicaine des géologues et cette carte basique avait produte á l'usage d'une base pour les recherches géologiques de toute la République Dominicaine.
Des toutes travaux cartographiques et téchniques pour cette éxigence purent fait en coopération avec l'INSTITUTE GÉOGRAPHIQUE (IGU) à Santo Domingo, la capitale de la République Dominicaine.

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1. Situation, Devices of Cartographic Work and the special Circumstances in the tropical Surrounding of the West Indies

In 1987, the author had performed a cartographic work in the Dominican Republic, it's formed by the eastern part of the Hispaniola Island in the West-Indies (see figure 1). There he had assisted a working group of german and dominican geologists in a german-dominican project of technical cooperation, established by the FEDERAL INSTITUTE OF GEOSCIENCES AND RESOURCES/BGR/GERMANY and the MINERIA / Ministry of Research into Mineral Resources of Dominican Republic.
One of the tasks of the working group was the preparation of geological summaries for the whole dominican country into a General Geological Map and the first condition was the creation of this map.
The GEOGRAPHIC INSTITUTE, IGU (Instituto Geografico Universitario, Santo Domingo) presented mainly the place of the cartographic working, in an old manor in the colonial centre of Santo Domingo.

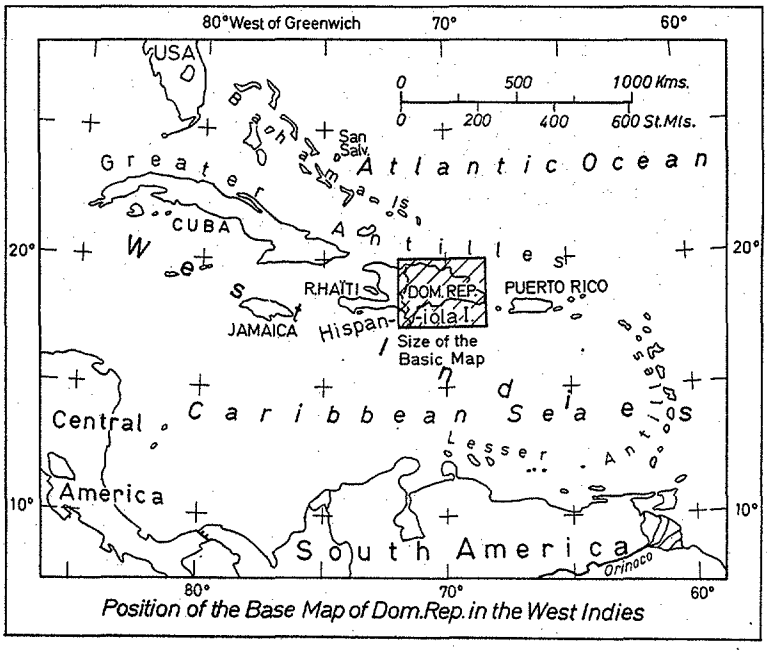


Figure 1: Area of Topographic Base Map in the West Indies

The technical equipment of the IGU had been improved already during the years before 1987, so a new film-reprographic set (by SACK) had been installed and in addition an electric generator (by BOSCH) to bridge common power current brake downs. Other cartographic tools and the materials of the map production, like coated scribing foils, films and chemicals were spent enabling for a continuous cartographic and reprographic working.
The author should be managed by the direction of the members of the working pool and the cartographic work was carried out with the counterparts of the cartographic divisions in the IGU and in the MINERIA. The counterpart-training and -instructing on job in the cartographic techniques was a very important condition for the author. The communication in the office was performed mainly by Spanish (Castellano) and sometimes in English.
The rooms of the cartographic and reprographic working were equipped by air condition and well temperated at 25° C, if there was not a general current brake down in the district, which was a common problem to a continuous working.
In this time we could not use any air-conditioning and were not able to cartographic work with the films.
But with the calm and kindly nature of the counterparts in using improvisations, all difficults could be solved in the best way.

2. Task of technical Means to Assistance and Inquiry into the Purpose of the Topographic Base Map 1:250,000/ Quarter Inch Map of the Dominican Republic

The geological working group needed very urgently a topographic base map of the Dominican Republic, for the presentation of the geological summaries of this country.
The author's instruction was to prepare the decided map of the dominican country on the general scale of 1:250, 000 /quarter inch map.
Already in 1970 the U.S.ARMY TOPOGRAPHIC COMMAND had prepared a General Topographic Map 1:250,000of the Dominican Republic, in cooperation with the IGU. This map and its print films were available in the IGU for further cartographic use. This map comprised five sheets. The geographic grid was constructed by a transverse mercator projection and the framework was completed with UTM-grid in the 19Q-Zone.
Adjusting the overburdened content of the map proved as the main-point and its transformation into a base reciptive for the geological theme. The contents included the picture and colour scale of forest and agriculture, the fully colour chart of altitude and silhouette of mountain design among the isolines about the different print films.

Only three contents - a, b, c, - of this print films were suitable for the construction of a base map.

3. Construction and provisional Fulfilment

The cartographer was able to take this contents of that print films mentioned for construction of a base map:
a) the ground plan of the road network with localities and names of settlements and the geographic grid;
b) the stream-pattern with the boarderline and UTM-grid;
c) the isolines of altitude with high-points.
Meanwhile, there was an clearing up by the working group to change the design of the decided map in the division to four new sheets (parts). So the map should also be usable as a wall map too and to this condition the map should be quartered well- balanced in four equal parts. Thisfore the author had offered some different suggestions to the division of the new map, at last the working group decided in that four new sheets.
The decision had required lot of cartographic and reprographic workings for all cartographers.But after the preparing a layout of the meaned construction and a pattern of the whole cartographic working,we could take the right and economic direction (see figure 2 and table 1).

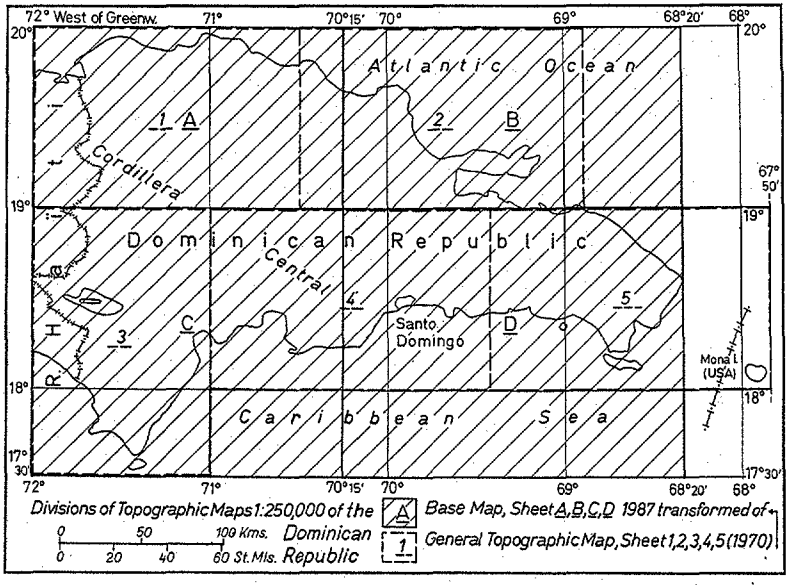


Figure 2: Topographic Maps 1:250,000 Dominican Republic

IGU had let the submitted print films of that addressed General Topographic Map and the duplicating could be carried out by the reprographic installations of the IGU economically by autoreversal-film-contact (negative to negative) and in a further process (work on) by daylight-film (of FUJI incorp.), fitting the films by pass-points and pass-foils.
The film copies were to be shared into the parts of the new division and thise we put together into the four designed sheets. Always this film reproduction could be done exactly by register punch (KODAK-form).
After this start the unnecessary contents we removed, i.e.: this meaned all the signatures and symbols of agriculture, the names and borders of the provinces, the boldface drawed geographic grid and framework.
This retouching and closing of the opened structurelines had taken quite some times.

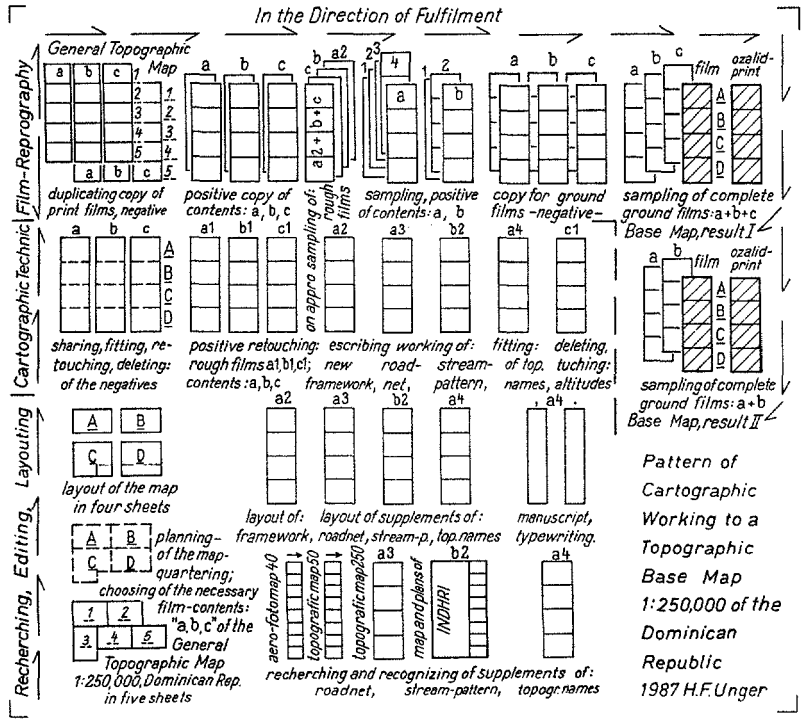


Table 1: Pattern of Cartographic Working to a Topographic Base Map 1:250,000 of the Dominican Republic

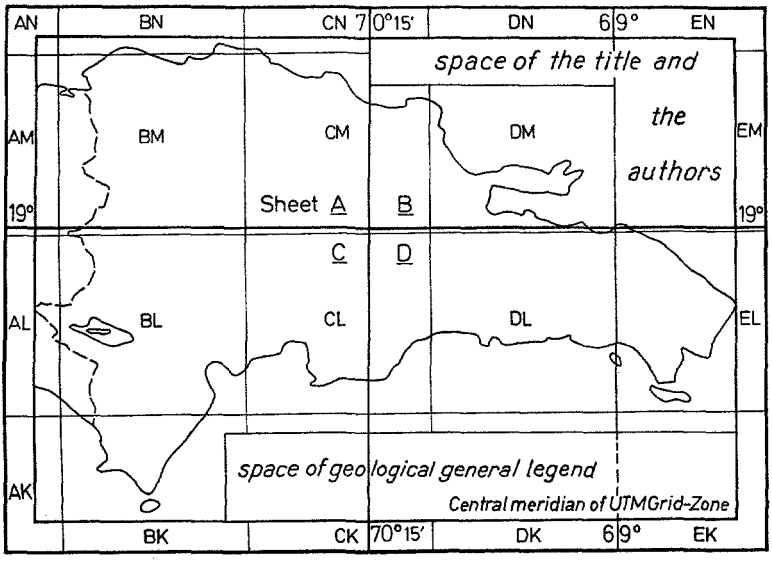
The construction of the new geographic grid and the new framework, which made for a better design, could be taken out by scribing on coated foil (ESCRIBE of KAEUFFEL & ESSER) with the scribing tools (aparates of HAAG&STREIT) So we could made the first structure of the new base map.

For a provisional close we were able to make sampling films (sandwich of the rough films) of the new framework including the film-contents of b.and c., of each of the four sheets, to really get the further working base and for controlling the right idea, such as additing the lay-out, aiming for the new Topographic Base Map and fixing the space for the title and the geological general legend of the later General Geological Map 1:250,000 of the Dominican Republic.

4. Completion by further Supplement

The used General Topographic Map had not gotten of any supplement or improvement in its representation and contents since the last reprints in 1979 and 1987. All along the members of the working group had recognized this and sampled some noticeable change of the road net and other topographic news besides their exploration in the countryside. For more recognition the author took part also in topographic excursions of the IGU in different parts of the Dominican Republic and had gotten new infos on the construction of roads and bridges. All results were kept and completed in comparision by aereal-photo maps 40M and topographic maps 50M, which were obtainable in the IGU too.
The administration of water supply (INDHRI) had published in special maps and plans a lot of plannings and results of the newbuilded dams and water reservoirs and thise results we overtaken in the topographic maps 50M and by reduction in the supplement foils of the map.
By literature and researching in the IGU we compiled more complementaries in designations than of mountain-ridges, valleys, plains and basins of landscapes, which were also needed for naming the geological unit and synopsis , and the water reservoirs as well and layed them down in the layout also with the numerial data of the framework,like the geographic grid, the UTM-grid and the sites of altitude. An office of typewriting in the city delivered the supplements of type-writing and so could carried out the newly edited geographic names with fitting.
All the topographic supplements and correctures were done by scribing on coated foil and fitting on supplement foil. After the conclusion of this editing and the cartographic work, these supplements were inserted in the concerned films by contact copy.

This was the step with completing the ground films of the contents a, b,c in positive and negative copy.
Then sampling films of all the four sheets_A_B_C_D by the ground films in two different results (I., II.) for the base map were made, how it was demanded by the working group.
Firstly a handing out in sandwich-film copy of all three topographic contents (a-b-c) with a screening-copy to the isoline of altitude for making a better difference to the other parts of the map:
RESULT I. Sampled as a Topographic Base Map to the Geological Summaries.
Secondly only the themes with the groundnet names and the stream-pattern (topographic contents a-b):
RESULT II. Sampled as a Topographic Base Map to the very important fossil sites and their declaration.
The author's cartographic work was fullfilled after different OZALID-prints on PE-foil and paper in sepia colour (RENKER-form), and together with this ready films it was the working base for the results of the different geological summaries of the german-dominican working group of geoscientists (see figure 3).



Layout of the Base Map of the Dom.Rep.
Pattern of Framework, UTM Grid – Zone 19Q, Sheet A, B, C, D

Figure3:Topographic Base Map 1:250,000 Dominican Republic

Epilogue

Preparatory work for the General Geological Map 1:250,000 of DOMINICAN REPUBLIC had been an other condition to the author in Santo Domingo. He could prepare a comprehensive general geological legend including the geological standards and sampling the geological summaries in a first drawing, choosing the print colours and the signatures according to the international standards of the geological units to the map. Some years later the General Geological Map 1:250,000 of the Dominican Republic was produced and printed in Germany by the utilisation of the ground films of this Topographic Base Map.