

CARTOGRAPHY IN SOUTH AMERICAN COUNTRIES

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The cartography is essential as a basic material to establish industries. If you have to chose between differents regions and at the first point of view all of them seems to be indicated to the intended purpose, no doubt that is better the region with cartographic material, because in this case you have the structure, the extension and the general conditions of the area which is considerate.

The militaries are in the great part of South America, who carry out the cartography, which is right now old-fashioned.

Nowadays, the cartography has a great practical and economic value in a country, that's why South American countries have obtained cartographic instruments with the purpose of modernizing their national cartography. These instruments are acquired in their majority by the militaries institutions, who are in charge of the cartography in South America. (Figure nº 1).

History shows us that the cartography was military originated and it is still standing in this way thanks to the special care that must have the cartographic maps in order to be used. The existence of revolutionary movements (terrorist groups), force that this important material, were carry out by the militaries to avoid the wrong utilization of the nationals maps.

Figure nº 1

COUNTRY	CARTOGRAPHIC INSTITUTION.
ARGENTINE	Instituto Geográfico Militar.
BOLIVIA	Instituto Geográfico Militar y de Catastro Nacional.
BRAZIL	Comissao de Cartografaffa -Diretoria do Serviço Geografico do Exército.
CHILE	Instituto Geográfico Militar.
COLOMBIA	Instituto Geográfico "Agustin Godazzi".
ECUADOR	Instituto Geográfico Militar.
GUYANA FRANCESA	Institut Geographique National.
GUYANA	Department of Lands Surveys.
PARAGUAY	Dirección del Servicio Geográfico Militar.
PERU	Instituto Geográfico Militar.
SURINAME	Central Bureau Luchtkaartering.
URUGUAY	Servicio Geográfico Militar.
VENEZUELA	Dirección de Cartografaffa Nacional.

At present the cartography in South America has an advanced level, that is due to the developed countries as United States of America, France, Switzerland etc..., who are the cartographics instruments suppliers. Furthermore, South America has the support of others Europeans countries who contribute at the world tecnological developmen.

The cartography in these countries is advanced in a level of 100 %, but regrettably is not brought up to date, the national maps of the eighties are used to make projects about development. These maps are the basis for the projects and it is only brought up to date for a certain area of the project.

THE IMPORTANCE OF THE CARTOGRAPHY IN SOUTH AMERICA.

A whole of countries that have an economic progress, with a lot of problems and charges, the importance of their cartography consists in the production of money, as a result of saving charges through reasonable investigations, it means that a country is able to use much better their riches, the characteristics and general conditions of the surrounded areas it's changed in an essential help towards the technical and economic progress.

If you have to choose between different regions and at the first point of view, all of them are identical to the intended purpose, no doubt, it's better the region who dispose of cartographic material, because it shows the structure, extension, and general conditions of the considered area.

Some investigations made in United States of America, demonstrate that if you have cartographic documents, the planning charges can be reduced in a 70%. The enterprises and the projected works, obtain additional economic, because they have been built by means of a choice of a situation advisable, a better connection with the system of communications and a conditions of work more favourable etc...

Countries who are still in process of development, with economic, social and politics problems, could be able to emerge from their crisis, bring up to date their cartography and save money, thanks to the help of the developed countries.

With the purpose that the economists and specialists were able to produce their projects according with the reality, they must have knowledgments about geographic conditions of their country (terrain, the existing of frozen areas, vegetation, geological structure, etc...), it can be obtained with efficacy using as basis the cartography.

CARTOGRAPHY: HIS BASIC PROBLEM.

The problem is not only the economy, but the representation of the earth, with the gravity concept was discovered that the earth were not spherical, it has a form like an irregular ellipsoid. Furthermore, we have to remember another definition, the word geodesic, who has different definitions, one is the area from a point of the sea middle level, it maintains constantly in a normal way a system of vertical lines from the points of the physical area and the second definition is that the equipotential area is equal to 0 (Figure n°2).

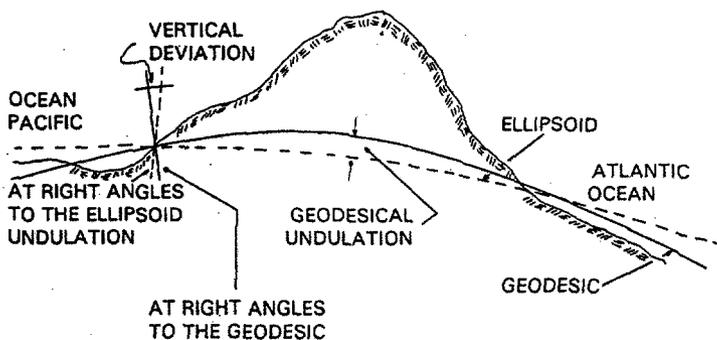


Figure 2.

The ellipsoid has a local character, that's why it could adopt an ellipsoide who translate an area nearest to the earthly surface considered, however considering the advantages to connect geodesic works, it's only one of them adopted. Brazil and Argentine use Gauss-Krüeger conformal projection; international ellipsoid and the others countries Transverse Mercator Projection; Hayford International ellipsoid.

THE CARTOGRAPHIC ADVANCE IN SOUTH AMERICA.

It's due that this graphic expression must reach a satisfactory precision, and nowadays is supported by astronomical desicions, geodesic, mathematiclas solutions, remotes sensories, map making from the air, etc... which will give as a result a certain precision in the obtained results.

The knowledgement about Geography, Geodesic, Meteorology, languages, computers, are a great support to the cartography, who needs to his development directs datum, datum who are obtained from the traditional Geodesic, from the Astronom and the Satelital Geodesic (they use sistems like TRANSIT and CPS), these make the cartographic substructure, in order to obtain the position and the coordinates of the observed points.

South America is cover by points, and their position give as a result the substructure, because they are joined by triangulations lines.

Indirects datum are also used, which serve to elaborate nationals maps, scales, and in this way to obtain a basic Cartography, Figure nº 3 shows the scale of the differents national maps and the year in which were publicated the nationals maps of every country.

FIGURE 3

COUNTRY	SCALE	THE MOST RECENT PUBLISHED EDITION
ARGENTINE	1:500000	1983
BOLIVIA	1:1500000	1980
BRAZIL	1:5000000	1985
CHILE	1:500000	1990
COLOMBIA	1:500000	1979
ECUADOR	1:1000000	1989
FRANCE GUYANA	1:500000	1965
GUYANA	1:500000	1987
PARAGUAY	1:250000	1978
PERU	1:250000	1989
SURINAME	1:50000	1978
URUGUAY	1:1000000	1981
VENEZUELA	1:500000	1979

The technology that have the developed countries give us modern tecnic, computers, automatics sistems, offer us a great help to bring up to date the maps. With the remotes sensories we have images from satellite, Lansat and spot who are satelits that throught the images that they transmit us, we have the employed resolutions with cartographic purposes.

At the basic Cartography the terrain is represented with more details, which allow that the others cartographys can use it. That's why we can say that it will appear irreparable economics damages if an adecuated cartography is not avaiable at the exact moment and with a great amount of urgents projects in South America countries.

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