

# **THE HISTORY OF THE BRAZILIAN CARTOGRAPHY - 500 YEARS OF THE DISCOVERY OF BRAZIL BY THE PORTUGUESE**

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The objective of this work is to presenting a compilation of the entitled author's books the History of the Brazilian Cartography - 500 Years of the Discovery of Brazil by the Portuguese, volumes I and II, starting from the following classic periods of the Brazilian History: Brazil Colony, Brazil Emperor, Brazil Republic, New State, Democratic Interval, New Republic and Democracy, beginning with the Origins of the Cartography so that the Reader can understand in that context felt the beginning of the Brazilian Cartography and concluding with the Cartographic Projects of Next Millennium, where the main perspectives and challenges of the Cartographic Science are described in the future.

The books have the honor of being prefaced for: Lieutenant Colonel Cartographer Engineer, Parachuist and Former-student of the Author at Departement of Cartography at the Military Institute of Engineering- IME, the current Commandant of the 5th Survey Division of the Geographical Directory of the Army José Donizetti Lopes Telles and for the Former Geographer - Teacher of the Author in the Course of Master's Degree in Geography of the Federal University of Rio de Janeiro and Former - Vice Presidente of International Affairs of the Brazilian Society of Cartography Ana Maria Coutinho.

From the instant in that the Man began to move in the food search and protection, it began to trace the first maps in the soil and in the walls of the caves where he inhabited so that if it did not lose. Like this, he had beginning the Cartography. The Map oldest date of 6.000 AC and it was discovered in 1963, in excavations archaeologic, in Çatal Höyük, in Turkey according to information of the Teacher of Geography of the University of Winsconsin - Milwaukee J.B Harley (1991) they dated of the Neolithic Superior. For the Italian Cartographer Danieli Giovanni Papi (1997) specialized in Ancient Cartography for the Polytechnic Institute of Milan, it verified that in reality this painting of found wall, in the Area of Anatólia, dated of 7.000 AC and that other registration fellow creatures were found in Tell Uquair 3.000 AC and in Nippur 1.500 AC.

Feeling a jump in the History is had that in Old Greece, it is had the celebrated Geographer's illustration and Mathematical Cláudio Ptolomeu, that it described the methods of cartographic projection used in Cartography and it elaborated the first world maps of the time, that understood the Area of the Mediterranean Sea East. That whole knowledge disappeared in the Occident until the end of the Medium Age. The First Universal Atlas is of Ptolomeu, containing a world map and 26 detailed maps, where Mediterranean Europe appears in the Conical Projection.

In agreement with Sobhi Abdel Hakim (1991), Egyptian and Teacher of the University of Cairo, where he got to be a Vice-Rector he becomes difficult to evaluate the Arab maps of the Medium Age because the cartographic documents elaborated for: Al-Khwarizmi, Al-Balkhi, Al-Istakhri, Ibn Hawkal, Al-Idrisi and Al-Maqdisi they were lost. The History of the Arab Cartography as well as the one of other societies is strictly linked to the progresses of the Geography and of your multiple disciplines.

Detainers of that inheritance of the Antiquity, the Arabs preserved her and, along the Medium Age, they did not cease of enriching it with your own contributions and with the one of the Indian thought. Among the centuries VII and XII, the pole of the geographical knowledge was constituted by Baghdad, current capital of Iraq; Córdoba, in Spain and Damascus, capital of current Syria. Even without the direct exchange among the Arab and European cartographies, it is known that the resurgence of the Mathematics and of the Astronomy verified in Rome, capital of the Roman Empire, today capital of Italy, Oxford, in England and Paris, capital of France, in the century XIII, was the prolongation of the Arab progresses in the domain of the Cartography.

The Arab travelers objected many ideas of Ptolomeu according to the writings of Al-Battani and of Al-Mas'udi, in the century X. the pilgrimage for your immense territory developed in the Arabs the taste for the Geography, through where they went establishing broken commercial, they wrote your books. Mohamed Ibn Musa Al-Khwarizmi, the largest Arab Geographer, wrote the Kitab surat al-ard - I Liberate of the configuration of the earth, in the century IX, rectifying the studies of Ptolomeu.

The most illustrious Arab Cartographer of the century X (century IV of Hégira) it was Abul Hassan There Al-Mas'udi, of Baghdad, it was in India, Ceilão, sea of China, Ásia Menor, Syria, Palestine, Zanzibar, Madagascar and Oman. Your masterpiece Murudj adhadhab - The prairies of gold are the sum of your experiences. He believed in the esfericidade of the earth. The Arabs were excellent Geographers, because, in your trips they registered everything that you/they observed and they knew how to guide very well in your countless displacements for the Desert of Saara.

In the century XII, is had Al-Idrisi, born in born Ceuta in Ceuta, that after studying in Córdoba, he settled down in Palermo, in Sicily, where the Norman King Roger II, also call Illustrious King of Sicílias, ordered him a gigantic planisfher. This map got lost, but the comments of Al-Idrisi they stay in the Kitab nuzhat al-mustaq fi khtiraq alafaq - Book on pleasant trip for who wants to travel the world or Roger's Book.

This treated of Al-idrisi it was written at that time in that Sicily, belonging island the Italy, busy for the Arabs from 831 to 1072, it reached your prosperity acme with the monarch Roger II, your

domains embraced the South of Italy, including Naples and portions of the North of Africa. Sicily was the point of encounter of the navigators and of the culture of Mediterranean, Bizance and of the Northwest of Europe. Powerful Roger II sent emissaries besides to Escandinávia to compare geographical information contained in that document of Al-Idrisi, that also produced a circular world map in a great silver plate.

A new map type appeared in the centuries XIII and XIV it was the portulano that was drawn in sheep skin. Of use seamanship, was characterized essentially by a system of directions, in other words, for lines that were irradiated of a center in the graphic representation of the wind currents or of the points of the compasses. That net of lines, converging for several roses of the winds, it gave origin there is a group of broken marine that the navigator could follow being guided by the compass and calculating the approximate distances.

According to the Portuguese Historian Jaime Cortesão (1966) the oldest references known regarding the marine letters, portulanos or letters of sailing they date of 1270, 1293 and 1295/1296. In 1270, the sailors genoveses showed a copy S.Luis, King of France, when it undertook the crossing for the Mediterranean Sea. For Cortesão (1953) the old ones Phoenician of the branch of Cananeus that there is about 3.000 AC they were navigators and they should possess knowledge of nautical science.

In 1290 the King D. Dinis of Portugal founded Christ's Order and also the General Study, in Lisbon, one of the first Universities of Europe and that it was transferred for Coimbra, in 1307. To the they open the route of the great marine discoveries, the Portuguese navigators renewed the cartography of your time and they imposed a new geographical vision of the world.

For Alfredo Pinheiro Marques (1991) Teacher of History of the University of Coimbra, along the century XV, preceding the map of the trips of Cristopher Columbus, the Portuguese inaugurated the Era of the Great Transoceanic Navigations, for the systematic recognition of the Western Coast of Africa and of the Islands of Atlantic Ocean, initially they learned with people from Mallorca, the techniques of the nautical cartography.

In 1415 the first foreign conquest, the city of Ceuta, happened for the King of Portugal D. João I. The famous School of Sagres, it was founded by the Infante D. Henrique, in the proximities of São Vicente's Cable, in the promontory of Sagres. It was a wellknown one I center irradiador of knowledge of Astronomy, Cartography, Geography, Mathematics and Navigation that they provided the Portuguese discoveries. There is who says that this School is a legend, it would not really have existed, possibly with the intention of despising the Portuguese marine knowledge.

Under the reign of D. João I, it appeared in Portugal, the astronomical navigation. That new method allowed the navigators to be guided during months in high sea. It was introduced in the portulano map, a meridian that supplied the latitude. That was the great Portuguese contribution to the navigation techniques and of cartography.

About 1420, D.Henrique called Portugal, the Cartographer Jaime of Mallorca, expression of the

Jews from Mallorca. The Infante D. Henrique had organized a type of geographical espionage, that allowed to gather him/her and to order elements of several sources. It is known that D. Pedro, the Infant of the Seven departures, traveled through Europe from 1425 to 1428 and it visited Italian cities, where the contacts with the North of Africa were frequent. He obtained the book of mark Pole that came to do part of the library of D. Henrique. One became pregnant in a secret way, an alternative of penetrating in the African Continent for a new road, Atlantic Costa, once the Christians never there would arrive overland, because, there was the Arab Wall, reinforced by the immensity of the Desert of Saara, this would be the form of reaching África Negra.

In agreement with Teacher Maria Emília Madeira Santos (1988) greata authority in History of the Portuguese Cartography, Director of the Institute of History and Ancient Cartography, subordinate to the Institute of Tropical Scientific Investigation, in Lisbon, Portugal says that at that time in that the Portuguese undertake the exploration of Africa, in the first half of the century XV, the knowledge that Christian Europe possessed concerning that continent was above all indirect. Any attempt of immediate access was dependent of the confrontation among the Arab and Christian civilizations.

The image that Medieval Europe possessed of Africa seated in two groups of information. One of erudite origin, with the Latin and Arab Geography, the Cartografia Maiorquina and Italian, travelers's reports and ambassadors' contacts. Another of popular origin, as merchants' news and pilgrims, traditions, faiths and legends. Vacancies and insinuations always, a lot of confused times. The Islamic World checked the Geography a honor place. For her they were interested travelers, philosophers and astronomers. Of the travelers they stood out Al-Idrisi and Ibn Batuta that crossed the Desert of Saara to Sudão Nigeriano.

Moslem Spain accompanied with interest and it played the transmissora part of the Arab knowledge to the Christian culture. In spite of they have intensified her the commercial changes among Mediterranean Sea two margins, the Arabs defended the monopoly of the relationships jealously with the interior of Africa. Just Jews there obtained access. During the Low Medium Age it bloomed at the Island of Palm of Mallorca and in Catalunha, a School of Jewish Cartographers, that a lot of times worked for Christian Princes. Your maps came to enlarge the known world, just referred until then by having vacated travelers' rumors. However, the Mediterranean cities kept these valuable geographical secrets carefully for the international trade.

The Mallorca Cartography outlined, the North of Africa with an only river: actually Senegal, Nile and Niger just formed a great river with several arms. The Golf of Guinea appears already drawn in some maps and it is referred in Arab travelers' reports that would have obtained news in Sudan through black merchants originating from of southern areas. In a letter maiorquina of 1413 to be observed the itineraries of the caravans that will look for gold in Tombuctu. The roads left of Egypt, of Tunes and of Morocco.

Many of the portulanos maps from Mallorca were drawn in skins of oxen, that were useful for the orientation of the marine crossings in the embarkations. During the Conference EURO CARTO VIII in April of 1990, accomplished under the auspices of International Cartographic Association - ICA/ACI, of Geographical Servicio Del Ejercito of Kingdom of Spain and of Universidad of Islas Baleares, in the Island of Palm of Mallorca an Charts Exhibition of this valuable collection happened. The Author was present to the event where presented work and she made a donation of a Map of Political Brazil of IBGE, that participated in the same exhibition.

The three great instruments of determination of the height of the time of the Discoveries were without any doubt, the nautical quadrant, the nautical astrolabe and the balestilha, that were introduced in the navigation in this order. The oldest reference to a quadrant remounts a century XI. It is Quadrans Vetus, appeared about 1288, in Montpellier, in France, when Astronomer Jacob Tibbon Well Makir, or Profatius Judaeus, of Hebraic origin, wrote the Agreement of the Modern Quadrant. In this work it was presented an ingenious solution that consists of reducing an astrolabe planisférico to a fourth of circle, in him rebutting your four rooms.

He is due to the Portuguese Cartographer Diogo Ribeiro, the first representation of a nautical quadrant, that it was to service of the King of Spain, starting from 1519, where he/she became Royal Cosmographer. Person in charge of maintaining in day the Real Pattern, that was Almicantarado Spanish's General Map, the map it was a typical portulano. In him it registered Magalhães's Strait (in the border between Chile and Argentina), it located America. With that there was a considerable change in the geographical conception of the world falling for earth the geographical system of Ptolomeu.

The Portuguese quadrant made possible the simultaneous observation of the Sun and of the horizon and the reading in an angular scale. This instrument would be later improved, with the rift with lens to perfect the image of the Sun and a device that it measured 1/10 of the angle. This improvement was developed by Pedro Nunes, that called him/it Vernier, and much later it would be improved by Vernier and for this name it became known.

The astrolabe word of Greek origin that wants to say to reach a star, was an old navigation instrument, with a graduate circle, possessing an alidade in the center and adjustable accessory foils on which projections estereográficas of the sky is represented and of the celestial sphere for the local latitudes.

The balestilha was invented in the century XIV by Catalan Hebrew Levi Well Gerson, that substituted the astrolabe as guiding element of the navigation, for the height of the stars. The Portuguese improved these instruments that used in your ships also known by caravels, until the end of the century XVIII. The balestilha preceded to the sextant.

Creators of the astronomical navigation, the Portuguese began in the century XV, the route of the

Great Marine Discoveries, was the first global wave in the Earth. The innovative vision that they brought, was later retaken by other schools of cartography of Europe. Several Portuguese Cartographers worked in the exterior, and in Lisbon there were many spies.

When speaking of the Discoveries of the Iberian people, it fits to weave here some considerations regarding the word discovery in your geographical conception, the famous Portuguese Historian Armando Cortesão (1972) in the work *Discovery and Discoveries*, it informed that the subject is controversial and that the word discovers, it appeared in geographical character, when the infant D. Henrique, made a donation on December 16, 1457, previously the King of Portugal when mentioning the feats of D. Henrique in the years of 1443 and 1446 made use of the expression to know part, when referring to the ships that went to investigate unknown lands. The search for the stranger is something inherent to the man.

*To " discover did not just mean to find by chance. It was, before, result of having calculated effort of search of an earth of whose existence there was previous knowledge, although I wander or erroneous... it is still more than an earth had seen herself, knowing her/it in the accidents of larger interest corográfico was still to discover ".*

J. Franco Machado

Jaime Cortesão, brother of Armando Cortesão, when doing perfected study on the subject in the work the *Pero de Vaz Caminha Letter*, published in Rio de Janeiro in 1943 and in Lisbon in 1967, it established a comparison among the terms: achamento, again to find, to order to look for, to inquire and to know part, and discovery. When commenting J. Courtier's research, the celebrated Stuttering aviator Coutinho he wrote, regarding *Discovery and Achamento* in your work *the náutica of the Discoveries*, edited in Lisbon, in 1952:

*" Formerly the word to discover it meant more to explore that to pré-sight. It is concluded like this of the titles of the Discovery of Guinea, of the Índia, of Sofala, of African Coast, of the Cable, etc. everything lands already known. Of the dictionaries it is also concluded that discovery doesn't exclude the idea of previous search. The subject was studied thoroughly by Dr. Jaime Cortesão in your work Letter of Caminha: and with relationship to the word **achamento**, that there is repeated, he mentions Vasconcelos's teacher's Michaëlis opinion, that considers achamento as action practiced for who before looked for. We can apply like this him/it to the Discovery attributed by some old ones Vespúcio, they can be interpreted as meaning that him not the, but one of the exploiters from Brazil. Although he has been one more reporter that navigator..."*

Cortesão also spoke about the sarcasm driven him and your brother Jaime for the Admiral and Teacher of the university of Harvard, the North American S. E. Morrison said that: *" them the Courtly brothers clamored that the Portuguese were the first ones they be her everywhere of the world "*. Cortesão in many cases that there was was in reality a rediscovery, that some anonymous navigator had undertaken, what doesn't remove when reading this precious work, the shine and the greatness of the Portuguese World that it exists until today consequence of your great navigations, the Portuguese were you of the seas in the centuries XV and XVI. And one of the largest legacies of the Portuguese World is Brazil, where the Portuguese Language is spoken

from North to South to delicious and interesting regional accents.

Being observed the subject of the several discoveries under the social and anthropological point of view the lands was invaded, conquered and spoiled all over the world by the settlers. Brazil for instance, it was populated by Indians, your autochthonous inhabitants.

As this Author's books present several types of cartographic documents, such as, maps and letters, the author considered important for the Reader, the knowledge of the origin and meaning of the term map. The word in Portuguese and Spanish **mapa**, and in Italian **mappa**, in French **mappemonde**, and in English **map** they have for origin the Latin **mappa**, that means handkerchief, napkin, maid in Vulgar Latin as **mappa mundi** to define the representation of the world in a handkerchief. The term map and yours derived they became used in the languages supramencionadas among the centuries XIV and XV. The German language only uses the terms **karte** or **landkarte**.

The Marine Discoveries of the Iberian People - Portuguese and Spaniards were decisive for the renewal of the Geography of Ptolomeu. Starting from 1490, the geography ptolomaica passed a long time without being reedited. In 1498, Bartolomeu Dias bent the Southern Cable of Africa; in 1492 Christopher Columbus he discovered America, in 1498, Vasco of Gama went by current South Africa and India arrived. In April 22 of 1500 Cabral he/she discovered Brazil.

The work of Ptolomeu was only reedited in 1507, with new maps, said " *modern* ", results of the discoveries of the Portuguese and Spanish navigations. The Collection of maps of State department, Palace of Itamaraty, in the river of January, possesses two copies in facsímile of the Letter of America of Ptolomeu 1513, drawn in function of Américo Vespucci's trips or Vespúcio, that it was in Brazil for the first time in 1501.

Spain obtained close to on May 04, 1493 the Papa Alexandre I, Spaniard Rodrigo of Bórgia (1430-1503), the recognition of your pretensions with relationship to the commercial monopoly in the New World, they promised to send missionaries to the lands that discovered to evangelize the autochthonous ones. That cunning excuse convinced the Pope that arbitrated the Line or Meridian of Tordesilhas that it passed to 370 leagues to West of the Islands of Cape Verde.

The Agreement of Tordesilhas signed between Portugal and Spain, on July 07, 1494, it was consequence of Columbus' trip America. The first aspect refers to the meaning of the word discovery and yours derived, in the century XV. The fact that an earth, island or continent, out discovered it didn't mean that of her no longer there was knowledge. The second, it is the political subject of secret in the century XV imposed by the Portuguese rulers, in any activity regarding the discoveries. It is understood a lot albeit neighboring Portugal of powerful Castela had to involve in a possible more secret way, the navigations in Atlantic Ocean and in Costa of Africa.

The negotiations that preceded the signature of the Agreement of Tordesilhas were a duel of diplomatic sagacity and of secret electric outlet of positions so much on the part of Spain as of

Portugal. The Catholic Kings D. Fernando and D. Isabel of Castela of Spain intended the Portuguese not to interfere in Columbus' discoveries and D. João II, it intended the Spaniards not to disturb your plan of India to arrive, through Cable of the Good Hope. Like this, the Iberians maintained a peaceful coexistence

In the Cartographers Engineers perfected understanding, is that history of the determination of the Meridian of Tordesilhas strange, because on that time there still was not, been invented the clock, then as it is that was possible to do the determination of the longitude? How was he determined the Tordesilhas Meridian? It is known that the maps won precision and they were rectified with the Reform of the Cartography happened in France. The nautical instruments of the determination of the height of the Sun, determined the latitude accurately just.

As some historians, the Portuguese Navigator Duarte in 1498, recognized the Brazilian coast, aiming at the preparation of Pedro Álvares Cabral trip. In the National Library of Madrid, Spain, a precious manuscript exists, largely written in Portuguese and in Latin, the book about navigation among 1505 and 1508 of your authorship.

The History of the Brazilian Cartography gets confused with the own History of Brazil, that began with the Portuguese Navigator Pedro Álvares Cabral, that was in 1484, young man nobleman of the house of D. João II, Mister of Belmonte and Alcaide Mor of Azurara, son of Fernão Cabral and of D. Isabel of Gouveia, he had as brother João Fernandes Cabral. Pedro Álvares Gouveia only started to use the last name Cabral after your brother's death, that was firstborn, as it ordered the tradition the time. Cabral was named Captain Mor of the Armada that would leave immediately, for India, in the Royal Letter, written by D. Manuel I, the Lucky, of February 15, 1500.

Of the Fleet of Caravels of Cabral, that commanded the Nau Capitânia, they announced great navigators, such as: Sancho of Tovar, your Immediate one, Bartolomeu Dias, your brother Diogo Dias, the siblings Vasco and Pero of Ataíde, Gaspar Read, Nicolau Coelho and other. This Fleet left of Rio Tejo, in Lisbon, on March 09, 1500. To March 22 the caravels reached the Archipelago of Cape Verde and the following day the embarkation of Vasco of Ataíde disappeared. On April 21, they sighted signs of close earth (sea herbs, called botelho and ass tail). at dusk of the following day, **April 22, 1500, it was sighted a Mount that was called of Pascoal, Brazil it was discovered, also known by Earth of Vera Cruz. Call her Week of Vera Cruz to the period in that Cabral's squad was in Brazil, it was the Week of Easter. He was because, discovered Brazil.**

The History of the Brazilian Cartography and the First Politics Cartographic Portuguese in Brazil began, on April 27, 1500, when Master João Emenelaus, surgeon and physical of Cabral's fleet, in Recife of the Red Crown, Baía Cabrália, in the close coast to Porto Seguro, in the current State of Bahia, accomplished the first latitude observation, with the nautical astrolabe, in agreement with your own report, in letter of May 1 to the King of Portugal, D. Manuel, together with the clerk's Pero Vaz of Bed celebrated letter, the first historical registration of Brazil, that belonged to the collection of the Real Academy of the Guard-navy of Brazil from 1809 to 1821:



"... Mister, yesterday, Monday, April 27 we went down to the earth me and the pilot of the captain mor and the pilot of Sancho of Tovar and we took the height of the sun at noon and we found 56 degrees and the shade was northern; for the that, according to the laws of the astrolabe, we judged to be moved away of the equinocial 17 degrees and consequently, to Have the pole Antarctic 17 height degrees..."

In agreement with the Colonel's Engineer Joaquim Francisco Duarte book - Notes of Astronomy of Field, published in 1955, this letter driven D. Manuel it was discovered " in the File of the Tower of the Tumble, in Lisbon for the eminent Brazilian Historian, Viscount from Porto Seguro, Adolfo Varnhagen, and it is published in the first volume, pages 423 and 424, of your General History of Brazil, the first edition, it was printed in Madrid, in Spain, in 1854, written in Castilian old.

The Gregorian calendar was established in 1582 dC to correct the Juliano Calendar, for the introduction of a necessary value of the duration of the tropical year, 365 days, 05 hours, 48 minutes and 46,0 seconds of the medium solar time. The Gregorian calendar modified Juliano's Calendar requirements, in which every 4 years are added one day, once the secular years, that would only be made where such years root divisíveis for 400.

With relationship to the way of obtaining the value of the decline of the Sun to the half day of April 27, 1500 in Red Crown, there is to do this observation: it invigorated the Juliano Calendar, and the civil delay at that time on the tropical year, that in 1852 when of the Gregorian Reform, it was of ten days, it estimated in nine days in 1500. In consequence, the decline of the Sun to seek should not be the one of April 27, but the one of May 06, 1500, the real date of the beginning of the Cartography in Brazilian soil. The Brazilian Society of Cartography in General Assembly of 1972, face to these valuable data decided to adopt May 06 as the date of celebration of the Cartographer's Day, where SBC always greets and it honors it all the ones that they are devoted to the Cartography in Brazil.

The origin of the name Brazil - the largest South American nation was treated by Moacyr S. Pereira, designation that appeared as Ilha Brasil in the Cartas Portulanas and in cartographic documents as in the Atlas of Médicis 1351, and us of the Four hundred of Andréa Bianco 1436, like Y of Brazil, in the one of Bartolomeu Pareto, like Insulla of Brazil and in the kreschmer Atlas reproduced by Amusing Benicasa 1482, like Isolla of Braçill, to identify islands belonging to Açores. In several cartographic documents it appeared with the following spellings: **Braçill, Prazil, Bersill, Prasill, Brazill, Brassil, the brasil, O'Brazil, Brazylle, Breasail, Brazile, Brazir, Braxil, Braxili, Braxyilli, Buzille and Brisilge.**

Brazil means ember color. The name **Rio d brasil**, appears in said Planisphere as of Cantino, the Italian secret agent, that bribed a Portuguese real cosmógrafo and he/she obtained a map, of 1502, where for the first time he/she appears mapped Costa Brasileira. Others attribute the name the tree wood brasil, source of traffic of the Portuguese of your wood to do dyes in Europe.

The name Earth of Brazil would compete with the name Brasília Sive Terra Papagalli - Brazil or Earth of the Parrots. However the name Brazil ended up surpassing besides to the official name given by D. Manuel I, of Earth of Vera Cruz.

Américo Vespucci (1451-1512) Florentine Navigator was in Brazil in two Portuguese expeditions commanded by Gonçalo Coelho (1501/1502 and 1503/1504). It is said in the history that German Cosmographer Alemão Martin Waldseemüller (1470?-1518) in your Map of America, in honor to Américo Vespucci, on April 25, 1507.

The only copy of the world map of Waldseemüller was found in 1901, in the Castle of Wolfegg, in Württemberg in the Alemanha, consisting of the Exhibition of the World, in the Museu Diocesano of Brixen/Bressanone, in the North Area of the Italy of May 13 to October 31, 2000.

In the Renaissance Cartography besides Pedro Nunes, the maximum exponent of the Portuguese nautical science, born in 1502, and that became Cosmógrafo Real in 1529. The extraordinary work Portugalie Monumenta Cartographica of Courtly Armando is had and of the Commandant Avelino Teixeira Mota of 1960, elaborated at the request of the Portuguese Government to celebrate the 500 Years of the Death of the Infante D. Henrique, gathering all the Portuguese Nautical Charts in the world. Copy of these 6 volumes was presented by President Américo Thomaz, when the General President Emílio Garrastazu Médici, was in May of 1973, in Lisbon.

To celebrate that date through the Brazilian Government, in the Ministry of The International Affairs, it edited in 1960 the Catalog of Old Maps, elaborated by the great Historian and Geographer, Boss of the Service of Documentation of Itamaraty from 1946 to 1988, Dr. Isa Adonias, that produced the magnificent work Map in 1993: Images of the Brazilian Territorial Formation, in Portuguese, Spanish and English.

In the Renaissance that they produced cartographic documents where appears Brazil, they can be mentioned: the Italians Vesconte of Magiolo, Giacomo Gastald and Leonardo of Vinci, the Turco Piri Reis, Cracoviano Jan Stobnicza, the Portugueses Jorge and your son Pedro Reinel, Lopo Homem and your son Diogo Homem João Afonso, Diogo Ribeiro (to service of Spain), the Spaniards Gaspar Viegas, Diego Gutierrez.

Along the time Brazil would have your altered map and the first territorial division of Brazil happened, when D. João III, in 1534, established the Division in 14 Hereditary Captaincies, the first territorial ordination of Brazil, to contain the French smugglers' action, with the introduction of the sugar-cane.

In 1555, the French Admiral Nicolas Durand of Villegagnon, founded in the Bay of Rio de Janeiro, the call France Antartique, that the natives gave the name tupi of Guanabara, maintained until today, for the liquid portion between the Cities of Rio de Janeiro and Niterói. French stayed in Rio de Janeiro for 12 years.

In the year of 1572, the map of Brazil changed, D. Sebastião, King of Portugal, divided Brazil in two General Governments to accelerate the development of the colony, this was the Second territorial division of Brazil. The North Partition had as thurst Salvador and the South Partition, in Rio de Janeiro. In 1578, this division didn't meet the expectations and D. Sebastião reunified Brazil, and the City of Salvador became the Capital of the Colony. This was the third territorial division happened in Brazil.

In 1580, D. Sebastião died in Africa and the King D. Felipe II of Spain, it received the lands of the Portuguese Crown, in heir's quality, appearing the Iberian Union - Portugal/Spainh. In 1621, the King of Spain foreseeing the separation between Portugal and Spain, it created States of the maranhão embracing Pará and Ceará, with capital in São Luís and that later started to call her State of the Grão Pará and of Maranhão, with capital in Belém.

In 1637 Pedro Teixeira, the Conqueror of the Amazonian, it went up Amazonas River, arriving Iquitos. Portugal was freed of Spain in 1642 and as consequence, it enlarged the fight for the ownership and domain of the Amazonian, ignoring the Agreement of Tordesilhas completely.

Among the end of the century XVI and XVIII the family Teixeira of Albernaz, left a valuable inheritance of maps of several parts of the world and planisférios of all the Portuguese Colonies. Pero Fernandes (1602-1666) it was the founder of the cosmografers dynasty, they appeared Sunday, Luís, Pedro of we read that worked for Felipe II. The most fertile was João Teixeira de Albernaz, that made among other Santa Cruz Aque Mapa Província Vulcarmente Chamao Brasil and the Atlas of Brazil.

In 1627 Brazil would be white of the first attack of the Dutchmen, led by admiral Pieter Heyn, that attacked Bahia. In 1630 they disembarked in olinda, in the Beach of yellow wood and they occupied the whole Northeast under the command of Conde Maurício of Nassau-Siegen, this invasion that lasted up to 1654, therefore 27 years, it was all accompanied by cartographers, like Albernaz, Georg Marcgraf and Blaeuw the combats were mapped and they are preserved in the Collection of Maps of Itamaraty.

The Agreement of The Hague signed between Portugal and Holland, in 1661, it brought as main consequences: the increase of the production of sugar, the participation of the Dutchmen in the etnia and the emergence of the nativistic feeling, basic beginning, for the future creation of the Brazilian Army.

The Reform of the Cartography in France, happened starting from the end of the century XV going to the end of the century XVIII. Under the critical spirit of the age of the Reason and for the proportionate pulses for the Academy of Sciences of you give birth, there was great rigidity in the

works, provoking a rectification of the maps, distancing-if the dynasty of Sansons.

Starting from your necessary maps, due to the progress of Geodesy, the French cartographers began to denounce the irregularities in the Portuguese maps with relationship to Brazil, so much it is that before the signature of the Agreement of Madrid in 1750, been celebrated between Brazil and Spain, the Portuguese Crown hired French geographers for us to map Brazil. There was an Agreement previous of Lisbon 1681, between Portugal and Spain, regarding the Colony of Sacramento, located in the south of Brazil.

The first politics cartographic Portuguese was seamanship essentially, the Second politics cartographic Portuguese worried about the mapeamento of the interior of Brazil, the Entrances and Flags were motivated. In that middle time French invaded Brazil (1710-1711), in Rio de Janeiro. The Agreement of Utrecht 1713 between Portugal and France it assured the domain of Brazil for Amapá and it defined the limits with French Guiana. In 1715 it was celebrated between Portugal and Spain new agreement on the Colony of Sacramento, that was returned to Spain.

In 1730 the spring clock, employee in the sea appeared for the determination of the longitudes, what made possible the improvement of the definition of the territorial limits, also known as Quadrant Azimutal of Heights of Langlois - Claude Langlois, that lived in you give birth, with 81 centimeters of ray, that was a fourth of circle of 3 feet, that was used in the expeditions undertaken in Northern Hemisphere and in Equatorial America. It possessed a micrometer with a graduate limbo, where each degree became separated porr an universal régua and a copy exists at the observatory of you give birth. Starting from this date the determination of the longitude became done accurately, making possible the making of necessary maps.

Meanwhile Portugal and Spain manipulated the Meridian of Tordesilhas, that they separated your domains in agreement with your political-economical conveniences. In 1720, l'Isle Guillaume presented dissertation, with results of the observations of the longitudes that the Agreement of Tordesilhas cut Brazil, much more to west, that until then presumed her.

The third Portuguese politics cartographic would legitimate the ownership of the enormous Brazilian territory, to west of the famous meridian of South America. To reinforce this fact they arrived in Brazil, in 1730, the Priests - cartographers Diogo Soares and Domingos Capassi, that created the Observatory in the School of Jesus' Company, in the Hill of the Castle, in Rio de Janeiro.

On January 13, 1750, it was signed the Agreement of Madrid finally between Portugal and Spain and for such it based on the Map of the Boundaries of Brazil with the Lands of the Crown of Spain in Southern America, made under the supervision of the Minister of the Overseas and Plenipotentiary Alexandre of Gusmão.

In the year of 1761, the Agreement was signed of El-Pardo among Portuguese and Spanish, annulling him/it of Madrid. To October 1, 1777, Santo Ildefonso's Agreement was signed with base in the map of authorship of Juan of la Cruz Cano Y Olmedilla (1734-1790), in that Portugal

gave up the Colony of Sacramento and it was with the ownership of the Seven People of the Missions. This is the most precious map of South America of the century XVIII.

The century XVII was marked by intense campaigns of demarcation of the Brazilian borders, many of them under the responsibility of the Colonel Portuguese Engineer Ricardo Franco, as well as for the elaboration of the plans of the following Fortresses of the Bay of Guanabara: Red beach, later satiny, São José of the Island of the Snakes, Pick, Gragoatá, Santa Cruz, Flagstone, Conceição Fortification (headquarters of 5th DL/DSG commanded by the Lieutenant Colonel Engineer José Donizetti Lopes Telles), Tenalha of the Beach of Out and São João.

With the coming of the Portuguese Royal Family to Brazil Colony, escaping from the troops of the French General Napoleão Bonaparte, tends as boss the Príncipe Regente D. João VI, that arrived in Salvador on January 22, 1808 and later in Rio de Janeiro on March 07. On April 07 the Military Central File was created.

In 1820 the technique of construction of the maps and letters acquired new possibilities with the emergence of the litogravura and, later among the years of 1860 and 1870, of the photolitogravure. To September 07, 1822, D. Pedro I, IV of Portugal proclaimed the Independence of Brazil, to Rio Ipiranga's margins, in São Paulo, becoming the First Emperor of Brazil up to 1831. The first organ of cartography of Brazil was the Commission of the Empire of Brazil, 1825.

On October 21, 1838 Emperor D. Pedro II, D. Pedro I son, founded the Historical Institute and Geographico Brasileiro, through the Sociedade Auxiliadora of the National Industry.

It was the Portuguese notable, Second Viscount of Santarém, Manuel Francisco de Barros e Souza de Mesquita de Machado Leitão e Carvalhosa (1791-1856) that for the first time used the word Cartography in written letter, in you give birth, to the Brazilian Historian, Francisco Adolfo Varnhagen, on December 08, 1839, in the which said: *I "invent this word cartographia since ahi has been inventing so much"*, previously the employed term was Cosmography.

Letter remounts to the Greek **khártes**, papyrus leaf or of paper, latin **charta** that overcame litterae in certain Romance areas, in the epistle sense, typical case of the Portuguese and of Spanish.

In honor to this event IV CONGRESSO DE CIENCIAS DE LA TIERRA – 2000, at THE INSTITUTO GEOGRAFICO MILITAR – IGM, SANTIAGO, CHILE, the Author presents a modern definition of Cartography is had produced by the Chilean Cartographer Leiva (1984): *Cartography is a system of information, where has special importance the expression means and the way or given cartographic treatment, in order to represent each wanted " information.*

In the year of 1851 Brazil celebrated your first Agreements of Limits, as Independent nation with Uruguay and with Peru. From 1852 to 1862 the works of Commissions of Fronteira Brasil-Uruguaí were accomplished. 1852 with the Baron of Caçapava have beginning the Era of Geodesy in Brazil

In the period of transition of the Brazil-Colony for the Brazil-Empire the 4 French Missions happened in the Coast of Brazil: First (1819-1832) with the Capitain Albine it Reigns of Roussin, Monday (1831 - 1832) Lieutenant Commander Louis Martius Barral, Third (1842-1845) Lieutenant Commander Tardy of Montravel and Wednesday (1868) Commander Amedée Ernest Barthélemy Mouchez.

M T Vital of Oliveira (1829-1867), commanding the late Paraibano lifted from 1857 to 1859, the coast between River Mossoró's mouth and the estuary of San Francisco River and commanding the Gunboat Ipiranga, it began in 1863 the rising of South Costa of the State of Rio de Janeiro, these were the first risings done by the Navy of Brazil.

The Navy of Brazil accomplished the first cartographic risings in the Amazonian in 1862, with the Peruvian Mixed Commission, with Commander José Costa Azevedo, the Baron of Ladário, producing hydrographic charts of Rio Amazonas River and of your tributaries.

In 1871, the historical Atlas of the War of Paraguay, an Imperial Lithograph, was published where through maps the theaters of operations of this War of Brazil are portrayed with Paraguay (1864-1869).

Seeking the best knowledge of the mineral resources of Brazil, in the year of 1875 the Geological Commission of the empire of Brazil was created, under the Canadian Geologist's leadership Charles Frederik Hartt and in 1886, the Geological and Geographical Commission of São Paulo, founded by Orville Adalbert Derby, Geologist and North American Geographer. This Commission produced in 1925 the Letter of Campinas, in the scale of 1:100.000.

On February 02, 1876, for Ordinance of the Imperial Government the Service of Coastal Risings of the Navy, the first official organ of nautical cartography in Brazil was created, under Commander Antonio's direction Luiz Von Hoonholtz, the Baron of Tefé. The Imperial Ordinance of no. 3.001 of October 09, 1880, regulated Geographer's profession in Brazil.

In 1908, already in the Republican Period, the Partition of the Marine Letter, changed the name for navigation Superintendency, in 1914, it passed for the headquarters of the castle in the Fiscal Island up to 1983. In 1923 he/she started to call her Management of Navigation and in 1946, it was substituted for Directory of Hydrography and Navigation - DHN, that today works in the Tip of the Frame in Niterói, possessing several hydrographics ships as Taurus that had your Display of Armament on April 23, 1959.

The demarcations of borders of Brazil in the South America always had the diplomatic character and they were based on four beginnings: 1st *uti possidetis* - ownership use; 2nd the Brazilian

expansion always awaited with caution the definitive solutions so that your neighbors' revindications at that time hispano-American they reached an agreement on the territories that fit them respectively, of the discovery of the colonial vice-reigns; 3rd Brazil doesn't participate in collective negotiations on objecteded, but he/she treats with a Potency involved in the subject of every time and 4th in the cases of demarcation Brazil he/she prefers to appeal to the arbitration.

The following Agreements were signed: Agreement of Ayacucho, between Brazil and Bolivia, signed in La Paz on March 27, 1867; Agreement of Assumption, between Brazil and Paraguay, in 1872; Agreement of Petrópolis, between Brazil and Bolivia, on November 17, 1903.

Brazil is one of the few countries of the world that possesses a vast juridical apparel to solve litigious international subjects through arbitration. To the the Baron of Rio Branco, larger exponent of the Brazilian diplomacy, to die he left signed thirty treated by arbitration. And they were four the resolved subjects for arbitration: Subjects of the Missions, in 1895, the referee was the President Cleveland of the United States; Subject of Amapá, for Swiss arbitration; Subject of Guiana Inglesa, with decision of the King of Italy, Vittorio Emanuele of July 6, 1904 and the Subject of Colombia, with decision by arbitration of the Rainha Regente of Spain, with the Agreement of Bogota 1907 and protocol of Caracas 1859.

The Agreement between Brazil and Peru is of September 8, 1909, it was like this defined the territorial extension of the largest Country of South America, with about 17 thousand kilometers of terrestrial borders where all the agreements were accompanied of cartographic documents. The frontier studies are under the responsibility of the Brazilian Commissions Demarcadoras of Limits - CBDLs, the First is directed by Cartographer Engineer Dauberson Monteiro da Silva and Second, the boss is the Colonel Engineer Juvenal Engel, that they belong to the Ministry of the International Affairs.

The Geographical Service of the Army was created by the Ordinance no. 415-TO, of May 31, 1890, in the very beginning worked, in the enclosure of the National Observatory, in São Cristóvão, in Rio de Janeiro, in 1920 it was transferred to Conceição's Fortification. The Small chapel of Our Lady of Conceição was erected in 1634 and the Order of the Small hoods was donated in 1669. There in 1702, the Palace of Conceição's Hill appeared, in Conceição's Slope, later Rua Major Daemon no. 81, current headquarters of the 5th Division of Levantamento/DSG.

In 1739 it was lifted up the first plant of the Fortification, in 1765 the building of the Chapel was built. It served as the Disloyal miners's prison in 1791 Em 1791 the year of creation of the Factory of Weapons that worked up to 1831 was. In 1900, to Fortaleza it was transformed in Barracks of the 7th Battalion of Infantry and the Military Geographical Service was progressively organized. In 1923 the Army acquired Conceição's Palace and SGM finished settling in 1928, year in that accomplished the rising of the Palace of Guanabara.

SGM was protagonist of the great innovation in the cartographic methods of production of letters with the coming of the Cartographic Imperial Mission Military Austrian, that it arrived in Rio de Janeiro on October 14, 1920, under the command of the General and Baron Arthur von Hübl and that introduced the employment of the photogrammetry (equal of aerial pictures) in the making of topographical letters.

It has been many the activities of SGM, current Management of the Geographical Service of the Army - DSG (it received this designation on January 31, 1953), on these 110 years spread by the whole Brazil, where they stand out:

- the topographical map of the Municipal district of Rio de Janeiro, Capital of the Republic for the Centennial of the Independence of Brazil (1922), Triangulação of Resende's Area (1932), so that the traditional Military Academy of the Black Needles was installed - AMAN, the survey of the coast of the State of Guanabara (1943), inside of the Plan of Defense it Activates of the City of Rio de Janeiro, in function of the Second War; cadastral mapeamento of the Labor Villa of the National Factory of Motors - FNM (1944); in agreement with the national Department of highways - DNER, accomplished President Costa e Silva Bridge cadastral and topographical survey and that it ties the Cities of Rio de Janeiro and Niterói, on the Bay of Guanabara (1968), Digital Atlas of Brazil (1991).

The great leader of DSG was the General of Division Engineer Cartographer Aristides Barreto, died in 1986. The current director is the wellknown General of Brigade Armindo Carvalho Fernandes. DSG acts throughout Brazil, through the Divisions of Risings: 1st DL/DSG, thurst in Porto Alegre, in Rio Grande do Sul (Cel. Pedro Sanchez); Center of Automated Cartography of the Army, in Brasília-DF (Cel. Antonio Eliseu Sommerlate); 3rd DL/DSG, in Olinda, Pernambuco (Cel. Pires), 4th DL/DSG, in Manaus, Amazonas (Ten Cel Estanislau Sanches) and 5th DL/DSG, in Rio de Janeiro (Ten Cel José D. L. Telles).

The Commission of the General Letter of Brazil was created by the Warning no. 801, of March 27, 1903, being installed in Porto Aegre, in June 28 of the same year.

The Comissão Rondon was the largest Operation of Military Cartographic Engineering, mischievous to effect for 40 years, through the areas Center-west and North of Brazil, directed by Silva Rondon's Marechal Cândido Mariano (1865-1958) denominated Comissão of Linhas Telegraphics Lines of Mato Grosso to Amazonas and Acre, maid in 1907. It was the great protector of the Indians and it was immortalized by your performance with the name of the State of Rondônia, having left countless cartographic documents of your missions in the interiors of Brazil.

On September 7, 1992, to commemorate the Centennial of the Independence of Brazil the Club of Engineering ordered to do in Germany the First Edition of the International Letter of the World to the Millionth - CIM.

The National Council of Geography - CNG, later Foundation Brazilian Institute of Geography and



Statistics - IBGE was created by the Ordinance no. 1527 of March 24, 1937 and for the Ordinance no. 218 it was incorporated to Statistics National Institute. The National Exhibition of Municipal Maps of 1939, inaugurated by Presidente Getúlio Vargas. The First Map of Brazil produced by IBGE, it was in the scale of 1:7.500.000 it was a commemorative edition of Fifth General Recenseamento of Brazil.

The works of Geodésia of IBGE were initiated in Mantena, Minas Gerais, on August 11, 1943. The first base, in Goiânia was thrown in April of 1944 with 10.034,0557 meters, it was measured with thread invar. The Base of Criciúma, Santa Catarina, with 10.145,2136 meters, was the second task of IBGE. The great precursor of Geodésia in IBGE was the Teacher Allyrio Huguency of Mattos. On July 23, 1949, IBGE concluded the initial space of the first Chain of Geodesic Triangulation, in the State of Goiás. The current President of IBGE is Economist Sérgio Besserman Vianna. The Law of no. 960 of December 8, 1949, was the first law to discipline the photogrammetric survey activities in Brazil.

On January 24, 1951, with the creation of the Center of Training of Four-engined planes, being equipped with aircrafts B-17, the Flying Fortresses, that later would come to be modified for the 6th Group of Aviation, on November 20, 1956, and subdivided later in 1st /6º GAV (Esquadrão Carcará) and 2nd GAV, headquartered in the air base of Recife, in Pernambuco used in tasks of mission of Aerial Recognition.

PETROBRÁS was created by President Getúlio Vargas on October 03, 1953. And in I begin him/it of 1960, the first Section of Geodésia of PETROBRÁS was created. The company in the research and exploration of petroleum, developed techniques genuinely national, besides of search in deep waters, as in responsible Campos' Basin for 80% of the oil production in Brazil. The author was visiting the Base of operations of PETROBRÁS in Urucu, in the Amazon Jungle, in 1994.

The Brazilian Society of Cartography was created on October 28, 1958, in São Paulo, considered organ of public usefulness by presidential ordinance, you/he/she foments linked activities to the Cartography in Brazil and in the Exterior, being adopted International Society you/he/she goes Photogrammetry and Remote Sensing - ISPRS, International Cartographic Association - ICA/ACI and Federation International Geometres - FIG. It already accomplished 19 Brazilian Congress of Cartography and it distinguishes Cartographers of Brazil and of the Exterior with the following prizes: Scientific initiation, Ricardo Franco and Order of the Cartographic Merit. The main thirst of SBC is in Av. President Wilson, 210, 7th floor, in the Center of Rio of January. The current President is the Colonel Engineer Camillo José Martins Gomes. The author is member of SBC since 1979 and she belongs the Order of the Cartographic Merit since 1989.

The Geographer and Teacher Ana Maria Coutinho became the first woman chosen Vice-president of International Affairs of SBC (1991/1998), Dra. Ana was the first woman to defend Thesis of

Master's degree in 1972 in ITC, in Enschede, Holland. It was the author's teacher in the Course of Master's degree in Geography of the Federal University of Rio de Janeiro - UFRJ, in 1980.

The Superintendency of Development of the Northeast - SUDENE, was created on December 15, 1959 and the Cartography had beginning, the year of 1960, in the then State of Guanabara, that was transferred for Recife in the end of 1961, in Pernambuco., having produced 630 leaves in the scale of 1:100.000 of the Northeast Area.

On August 3, 1961, President Jânio Quadros, created, in São José dos Campos, in São Paulo, the Group of Organization of the National Commission of Space Activities - GOCNAE, tends the ownership happened in 1962. This Group was the embryo of INPE - National Institute of Space Researches, that develops activities of Remote Sensoriamento in Brazil. To main glory of INPE in this sense was the release in 14 of October of 1999, of CBRES - China Brazil Earth Resources Satellite, with participation of 30% of Brazil and 70% of the Popular Republic of China. The director of INPE since 1989 is Engineer Márcio Nogueira Barbosa.

From 3 to August 22, 1962, that counted besides with the participation of Cartographers of IBGE (Rodolpho Pinto Barbosa, Armando Sócrates Schnoor and Clóvis of Magalhães), that took place in Bonn, in the Federal Republic of Germany, the Technical Conference of the United Nations On the International Chart To the Millionth - CIM.

In 1962 it was signed in the Larger State of the armed forces - EMFA, the Cartographic Agreement Brazil - United States, that give to Brazil, aerial pictures in the scale of 1:60.000 about 50% of the national territory, that created the systematic mapeamento elaborated by DSG and for IBGE.

In 1965 the First Course of Cartographic Engineering was created destined to the Civilians, in the University of the State of Rio de Janeiro - UERJ. Engineer Eliane Alves da Silva, graduated in this Course in the year of 1981.

The Commission of Cartography - COCAR, an organ collegiate, was created by the Ordinance-law no. 243, of February 28, 1967, with the objective of executing the activities inside of a National Cartographic Politics. To COCKADE it created and it developed the Program of Dinamização of the Cartography - PDC. Your Secretary-executives were: Lieutenant Colonel Fernando Rodrigues Carvalho, Admiral Ship Múcio Piragibe Ribeiro of Bakker and Commandant Jacob Ennes Filho. The author was Advisory of Adm. Múcio, in the Office of Rio de Janeiro, that worked at the National Observatory/CNPq.

In the year of 1971 the Course of Cartographic Engineering was created in the Federal University of Paraná - UFPR, in Curitiba. After the graduation of the first groups of Engineers Cartógrafos of UERJ, the profession was regulated by the Council Regional Engineering and Architecture - CREA, according to the Resolution no. 218 of June 29, 1973.

The Directory of the Geographical Service of the Army - DSG was installed in Brasília, on January 22, 1973, after 80 years headquartered in Conceição's Fortification. The patron of DSG is Our

Lady of Aparecida, that is the Patron of the Brazilian Army, been celebrated in national Holiday, to every October 12. DSG has as missions: the Brazilian systematic mapping, topographical surveys for States and municipal districts, technical consultantship to federal organs, rising of areas of military interest, demarcation of indigenous reservations and etc.

In the seventies the Military Government authorized Projeto RADAMBRASIL'S creation, that mapped the whole country with airborne side air looking radar. The Cartographers Engineers Hans von Studnitz (AEROFOTO CRUZEIRO) and Herbert Erwes (WILD) done the terrestrial photogrammetric survey of the São Francisco de Assis Church, in Ouro Preto a Historical City (UNESCO), Minas Gerais and the Cartographers Engineers Camillio Jose Martins Gomes and Luiz Felipe from IME done the same to the Christ Redimer Monument in Rio de Janeiro City.

To January 28, 1978, Brazil arrived Antártida, and in the Hydrographic Day, on September 28, 1984, it produced the Letter of the Bay of the Admiralty - Island of King Jorge, starting from the rising hidrográfico done by the ship Polar Baron of Tefé.

The Ministry of the Aeronautics is recent, it dates of January 20, 1941. Colonel Wilson Ruy Mozzato Krukosky the Father of the Aeronautical Cartography is considered in Brazil, today in the reservation it acts in the Second Brazilian Commission Demarcadora of Limits.

The Minister of the Aeronautics Lieutenant Brigadier of Air Délio Jardim de Mattos, instituted in 1979, the System of Protection to the Flight - SPV, that included the activities of aeronautical cartography. At that time there was an agreement between IBGE and the Ministry of the Aeronautics. The album of the Leaves of the World Aeronautical Chart, was given, in 1979, to Minister Délio, for the Cartographer Engineer of IBGE Joil Rafael Portella.

The Institute of Aeronautical Cartography was created on May 10, 1983, for the Ordinance no. 88.296, of the General President João Figueiredo and ICA already did more than 700 aeronautical letters destined to the civil and military air traffic, used for ends related with flights on the Brazilian air space, on this 17 years of existence. The current director is Lieutenant Colonel Cartographer Engineer Alison Vieira de Vasconcellos, that took the Course of Cartographic Engineering in the Federal University of Pernambuco - UFPE.

To December 19, 1985 the, Calha Norte Project, was created in area of 6.500 kilometers of extension and with 160 kilometers of width, located to the North of Rio Solimões/Amazonas's Gutter and that makes border with the following Amazon countries: Colombia, Venezuela, Guyana, Suriname and French Guiana, tends as one of the special projects the intensification of the campaigns demarcatórias of the borders, for the restoration and adensamento of the bordering geodesic marks.

On May 29, 1986 the National Association of the Aerospace Survey Companies - ANEA, completed the silver jubilee, in other words, 25 years of good services to Brazil.

In April of 1987 the Cartographic Association of the Countries of Portuguese Official Language

was created - ACAPLOP. In the first meeting the following Countries attended: Brazil, Cape Verde, Guinéa-Bissau, Mozambique, Portugal and São Tomé and Príncipe. Angola did not send representative, but correspondence. The first president was Admiral Ship Múcio Piragibe Ribeiro de Bakker from Brazil, the second was Engineer Elvino Dias Duarte from Cadaster and Geographical Institute from Portugal.

In 1990 the Captain Engineer José Donizetti Lopes Telles and the Lieutenant Engineer Tarcísio Salles Rodrigues defended the Project of End of Course in Engineering Military Institute - Control of Quality of Cartographic Documents. These officials were the author's of Geography and Cartographic Legislation.

In 1991, concerned with the lack of mapeamento of the Amazonian, in 30% Engineer Eliane Alves da Silva recommended during the Brazilian Congress of Cartography in the University of São Paulo - USP, the mapping of the area for airborne radar of synthetic opening - SAR, in function of the jungle and of the equatorial climate and of the covering of clouds of great part of the area, is uncorrect the photogrammetric activities as well as the use certain satellites of remote sensing. Your ideas reached the national media and it can present your ideas in Brno, Washington, Vienna, Lisbon and Stockholm.

In 1994 the Engineer Eliane Alves da Silva became the first Cartographer of the feminine sex to do the Course of High Studies of Politics and Strategy of the Superior School of War - ESG, group Monteiro Lobato. In 1985 Monday was the Engineer Eliana Fernandes Lira of DHN, Brazilian Amazonian Group.

All the great Brazilian cities make digital cadastral cartography now. And As the Great Cartographic Projects of the Third Millennium, they can be related: Digital Mapping of DSG and of IBGE; the SIVAM Project - System of Surveillance of the Amazonian, that will map the area with SAR, an accomplishment of the Command of the Aeronautics; the elaboration of Electronic Letters of DHN; Relevantamento of the Brazilian Airports for GPS, under the responsibility of ICA and the continuation of the Program of the Remote Sensing Satellite China Brazil - CBRES on the part of INPE.

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#### Data of the Author

Engineer Eliane Alves da Silva, is natural of the City of Rio de Janeiro, the Wonderful City. She possesses the following courses: Bachelor and Licentiate in Geography for UFRJ (1977/1978), Cartographic Engineer at UERJ (1981), Master in Geographical Sciences for UFRJ (1985), CAEPE for the Superior War College (1994). She studied English in the Institute Brazil/United States and French, in the French Alliance.

She possesses more than 70 works published in Brazil and in the exterior (Austria, Czech Republic, France, Portugal, Spain, Sweden and United States), in events of SBC, ICA/ACI and of ISPRS. She works at IBGE – The Brazilian Institute of Geography and Statistics (Rio de Janeiro) and at UFF – Federal Fluminense University (Niterói).

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- Sergeant **Robson** – 5<sup>a</sup> DL/DSG