

Vitoria, January 21st, 2014.

To: **World Radio Amateur Community and Society in General**

Final Report about radio amateurs actions during strong rains in December, 2014 at Espírito Santo State – Brazil.

Dear Fellow *Hams*,

This report aims to inform the activities developed by radio amateurs in the state of Espírito Santo, Brazil, in aiding communication routing, during the crisis caused by rains and devastating floods in December 2013.

First, we would like to express our esteem and appreciation to radio amateur friends who joined this solidary chain on behalf of those in need. Also our thanks to all staff of The Civil Defense, The Fire Department, The Armed Forces and others involved, as well as the people of Espírito Santo, who were at hand to assist the flooded brothers.

The Civil Defense and The Fire Department of Espírito Santo gave us the support we needed in order for our missions to be successful. Especially with the grant of a room, that served as the Base for our operations, at The Civil Defense, located inside the Fire Department Headquarters in Vitória, the state capital.

What is radio amateur?

Radio amateur is a hobby, and as such, is mostly practiced as a good pastime.

Radio amateur may denote backwardness or activity into disuse, considering the advancement of today's media, because they allow contact around the world with nothing more than a small device. However, this is not our goal. To talk with friends around the corner or across the world, without any interface between us, beyond our radios and our antennas – that is our fascination.

The radio amateur operator is a curious individual, an experimenter and not rarely, an inventor. Some of the media so present in our lives today had their start or development in radio amateur. Such as the telex (radio teletype for us operators, or RTTY), precursor of what later became the fax; and the cellular

phones, that had their birth in radio amateur activities in the United States in the 1950's.

The need for learning, either for the convenience of the user or due to the encouragement of colleagues, or even by the very nature of the activity (which aims technical-operational learning and the development of skills that enables its practitioners to communicate in many different ways in the most unlikely situations) ends in the acquisition of skills that empower users to cope with diverse and adverse situations.

Equipments

The amateur radio equipment nowadays outnumbers any other modality of communication through Hertzian waves. There is no commercial or military station in the world that measure up, in structure, to some of the great radio amateur stations existing across the globe.

The radios we use have the most advanced technologies, which are constantly evolving. These radios allow receptions and transmissions that another equipment using the same frequencies allotted to us, hardly reaches. We are able to talk in the broadest spectrum of radiofrequency in activity in the world, ranging from 1.8 MHz to over 1.2 GHz.

We build antennas, radios, amplifiers, assorted accessories. We have the support of an industry of top-notch communication that accelerates advances in communication, like in the radio amateur activity worldwide.

Perhaps we are not, all rulers of technical knowledge to the point of developing, designing or building equipments. However, even if our knowledge does not reach such stages, one thing is for certain: We know how to work a radio and talk, in a simple and hasty manner, in the most adverse situations possible. This is the reason why we seek knowledge, because we cannot always get access to such equipments in Brazil. These assertions have no connotation of praises to our quest. This is a process that can be put in place anytime, anywhere, and which arouses admiration for its simplicity.

Radio amateur performances in humanitarian aid

The emergency situations that we followed in December 2013 in the state of Espírito Santo is only the tip of the spear of what we have already done in other similar situations, and this now goes back several decades.

We need not get too far back in time. Let us have a close look at the most dramatic moments in the recent history of Mexico, when the great earthquake shook Mexico City in 1985. In a time pre-internet and cell phone all communications failed, and the Mexican Capital nearly succumbed without the providential help, that would only be possible with communication. At that time, it was the Mexicans radio amateurs who rescued the authorities and placed Mexico City in touch with their base as well as rescue teams in the United States and several other locations around the around. They managed to direct all efforts of humanitarian aid to the people in the capital surrounding cities, which were likewise affected. Needs were reported by radio amateurs 24 hours a day, every day of the week, and continued for weeks. This was, for many days, the only form of communication between the center of the crisis and the authorities.

Decades passed and we are faced with one of the greatest natural tragedies in the history of mankind. The 2004 tsunami brought death and destruction to Asia and Africa. This phenomenon of nature did change the way the Government of India once saw radio amateurs. For political reasons, radio amateur activities were not permitted in the archipelago consisting of Andaman and Nicobar Islands, Indian possession in the Bay of Bengal. Except for some more influential group who would scarcely get permission to mount an operation of radio and set sail for the islands. Such was the fate of these islands to be hit by the devastating tsunami exactly when this group of radio amateurs was there on one of their scarce visits. And it was just the amateurs, who were there, who managed to put the archipelago in the air, providing communications between the mainland and the islands, thus aiding the population.

In Brazil there were many times when amateurs provided assistance in the communications of constituted forces to help the people in times of crisis. Santa Catarina in 2008 and 2011, and Rio de Janeiro in 2011 lived through moments of crisis caused by rains. Also in these cases, normal communications such as fixed and mobile telephones, Internet, radio, commercial communication, etc., collapsed, and authorities that rescued victims of these natural disasters recognized that the help of radio amateurs was of fundamental importance.

And finally, December 2013 arrived bringing with it an extreme amount of rain and flooding. This time, unfortunately, we, from Espírito Santo were the ones affected by them. We went through just what our brothers of Santa Catarina and Rio de Janeiro had suffered in previous years. We, local hams feared this situation in Espírito Santo. Not that we doubt our ability or the willingness of our peers to face such situations, but because of the reduced number of active radio amateurs in our state.

Would we be prepared for this situation? Maybe the answer was no. So we thought, because to be prepared for the extensive contingencies we passed, there would be an urgent need for training, planning, volunteer operators, equipments, etc., However, we got to give our contribution. But how?

We focused on some primordial facts:

- The voluntarism of radio amateurs from Espírito Santo;
- The portability of an amateur station;
- The fast and effective actions of the coordinators, the Civil Defense and the radio amateurs, who volunteered for the service first.

We highlighted, among the best features of an amateur, the ability with which he/she sets up a station: Antennas for mobile operation, portable power for his/her equipments from a variety of sources. These characteristics of this skilful agent make the whole process easier and faster.

The vast majority of transceivers (radios) that we use have their own power by 13.8 Volts Direct Current. The actual voltage is 12 Volts Direct Current, which is the same as in the batteries for all passengers' vehicles. Even in the absence of an electric power network, an amateur can, within minutes, put his/her station on the air using a car battery. The amateur can also, in a few minutes, build a homemade antenna with a few meters of wire. And that allows communication with stations in the other side of the world. Installing the antenna amidst the trees, or any supporting protection, he/she has a station ready to reestablish communication.

There is today in Brazil, as well as around the world, networks that are formed by the initiative of amateurs, with local authorities, to develop joint projects aiming to aid in communications in cases of crisis. In Brazil we have the RENER – Rede Nacional de Emergência de Radioamadores; in the State of Rio de Janeiro the ROER – Rede de Operações de Emergência de Radioamadores; in the State of Paraná the REER – Rede Estadual de Emergências de Radioamadores, among others.

Similar networks, present throughout the world recognize in amateurs a reliable source of communication when conventional communications fail.

The crisis of December 2013

As noted above, we believe that the aid that the activity of amateur radio can provide to society is the implicit knowledge in communication as a core activity, portability, voluntarism, speed and dexterity with which they put a station on the air, as well as the equipment available for that purpose.

This happened in aid to communications of the cities of Santa Leopoldina and Itaguaçu with the Civil Defense in Espírito Santo, located in the Fire Department Headquarters, Enseada do Suá - Vitória/ES during the flood crisis in December 2013.

Our fellow amateur, Renan Almeida – Amateur ID PP1AR, who had been the Coordinator for RENER-ES and participated in the State of Rio de Janeiro, as a volunteer for ROER during the crisis of the mountainous region in 2011 was contacted by the State Civil Defense. The need for the intervention of hams, to restore communication and make collection of information from various cities of the state, was evident.

Renan Almeida, with deliberate purpose of organizing and using his own contacts summoned several other radio amateurs so that they could join in the effort to assemble stations in every city affected by the rains, as they were requested by the Civil Defense of ES. Within a few hours a coalition was formed for the help requested. And also for the arrangements of *capixabas* amateur to assemble stations in places where communications were poor or had collapsed. Soon, they installed a Base Station at the headquarters of the Civil Defense of Espírito Santo.

During all of our communications we used, the frequencies of 7,145 MHz and 146.500 MHz. The frequency of 7,145 MHz, by the characteristics of Hertzian waves propagation, is particularly conducive to contacts around the world, from late afternoon and throughout the whole night.

We request all radio amateurs across the globe, through daily bulletins, social networks, the Internet, in short, in many different ways, to leave the frequency of 7,145 MHz free. We had total support from hams worldwide.

Other amateur from outside of ES were also contacted in various ways, including by radio. They were immediately ready to provide necessary assistance, as soon as they knew that local hams were at certain frequencies. The amateurs Kennedy Sandoval – PP1KS and Luiz Paulo – PU1GLP were sent with their equipment to the city of Santa Leopoldina, highly affected by the floods and landslides. A few after their arrival there, a station was set up and communication between that city and the Civil Defense Headquarters in Vitória was reestablished. By the account of the fellow hams, it became clear the shocking extension of the flooded area and the number of people needing food and drinking water.

Amateur Luiz Paulo – PU1GLP, thinking he would not stay in Santa Leopoldina for more than a day, ended up staying for 03 days due to transportation displacement problems. He worked for 72 hours straight and could not even afford a change of clothing. He displayed the ability of a veteran amateur, despite being still young. His selflessness and volunteerism were an example.

A little later we were requested another station in the town of Itaguaçu, where the amateur Andrew – PU1BGT went to. Likewise, he quickly managed to put together a station, even having to walk in waist-deep waters from the helicopter landing site to the mounting location of the just set up station.

Just like Luiz Paulo, beginner amateur André – PU1BGT, also showed competence taking the lead at the Itaguaçu station, where he remained for two consecutive days.

It was more than 05 days of operations at the Base Station at the Headquarters of Civil Defense of Espírito Santo, in Vitória/ES as well as in flood affected towns, with the Civil Defense Advanced stations in the towns of Santa Leopoldina and Itaguaçu. In addition, several other hams around Espírito Santo in their private stations, communicated vital informations to the relief effort for the victims.

The coordinator of our services, Renan Almeida – PP1AR relieved our partner André – PU1BGT at the Itaguacú station, where he also had the intention of staying only 12 hours (this was our plan), and ended up staying for 03 days, also due to transportation issues. It is needless to mention that he was not prepared to do so.

What are the next steps?

We must keep in mind that, although we hope these crisis situations will never happen, they may reoccur.

Therefore, amateurs who participated in the crisis communications services in ES in 2013 have already decided that more preparation is required for similar events. To this end, actions aiming in the formation of a larger number of volunteers will be undertaken. Also the relationship of public agencies and constituted authorities who coordinate times of crisis will be narrowed, so that we can interact and create favorable conditions for this purpose.

We must have an orientation to form a group in which the basic actions are planned:

- Planning and training to meet our goal of providing communications in the event of a breakdown in existing media;

- Provision of technology and equipment that assist us in delivering better services during emergencies that might arise;
- To encourage greater involvement of beginner amateurs in this cause;
- And last but not least (the most difficult action), to provide to each town (municipality) in the State of Espírito Santo, at least one amateur with a station, ready to serve as a base or a bridge to these needs.

Final Considerations

The statements in this document are our impressions and should pass through a sieve as they are considerations of all who participated in the relief effort for flood victims in December 2013. We include here the authorities, especially those involved in helping the State Civil Defense communications with the most affected cities.

It is important to remember the hams that shared the microphone at the Civil Defense of Espírito Santo base and remote stations:

Werther – PU1BRA.

David – PU1DAV.

Paulo Mello – PU1EPM.

Edson - PU1EDS.

Dilmar – PP1DRS.

Geraldo - PU1EBJ.

Kennedy – PP1KS.

Reinaldo – PP1ER.

Henrique – PU1HLB.

André – PU1BGT.

Divino – PU1DAP.

Renan – PP1AR.

Carvalho – PU1AAC.

Léo – PP1CZ.

Dilcinei – PU1ADE.

Luiz Paulo – PU1GLP.

In Brazilian radio amateur we are divided into three Classes: A, B and C. Most of the amateurs who participated in this effort belong to the C Class, which have been penalized by the National Telecommunications Agency – ANATEL. ANATEL is lacking examiners in the state of Espírito Santo, to apply admission exams to Brazilian Radio Amateurs, be it in Classes C or B, or even to be promoted to Classes B and A.

We had at all times, hundreds of amateurs in Brazil that followed our work and volunteered throughout the whole time, bridging our communications or making

themselves available to provide assistance to any service. They were represented, in particular, by fellow Jackson - PY1PDF, William - PY2ING and Alessandro - PU4ISA. We should also highlight the communications equipment section by friends Joedir section - PP1ES, Candeias - PP1JE and José Luiz - PU1AGS.

We cannot forget to mention the support and understanding of our families, because we had to deprive them of our company at a special time of universal reconciliation, when we celebrate Christmas and the New Year with family, to meet with a humanitarian call to our brothers *capixabas*.

We do not have the notion of importance or relevance of the services we provide to the Civil Defense of Espírito Santo, to the forces involved in helping the victims of the disaster that hit us. However, we know for sure that it took the efforts of a group of hams in order for us to provide the communications necessary.

Moreover, we move forward, ready to serve in any way and at any time.

We can say that we learned a lot from this crisis. As citizens, we are grateful for the opportunity to help in some way, the people of Espírito Santo in a tragic time for many, who not only lost their goods and properties, but unfortunately also lost their lives.

Best regards,

Volunteer radio amateurs of the state of Espírito Santo in the floods of December of 2013.

For more information about the events listed above please read the following links:

http://articles.latimes.com/1985-10-12/local/me-14478_1_mexico-city-health-and-welfare-messages-laguna-beach.

http://articles.chicagotribune.com/1989-08-15/features/8901040856_1_ham-radio-radio-amateurs-american-radio-relay-league-the

Translator: Maria Bernadete Morosini

<http://lattes.cnpq.br/4265781410321567>