PRS92 Newsletter

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An officer of BRP Hydrographer Ventura sets up a geodetic GPS receiver at the Tubbataha Reef marine sanctuary in Cagayancillo, Palawan as part of DENR's PRS92 Project.

Workshop on cadastral survey for PRS92 held

by Nicandro P. Parayno
OIC, Aerial and Spatial Surveys Division, MGD-NAMRIA

Stakeholders of the PRS92 Program conducted a national consultative workshop last 03-04 June at the Marco Polo Hotel in Davao City. The workshop was held to discuss the proposed guidelines on the execution of cadastral surveys under PRS92 and to arrive at a uniform costing under the Bill of Quantities as a result of the new guidelines.

Region XI RTD for Lands Felix S. Alicer welcomes the participants. Seated on right is Engineer Gatus.

The participants of the workshop included members of the Geodetic Engineers of the Philippines, key officials and selected technical personnel from the DENR head office, Lands Management Bureau (LMB) and NAMRIA. Various DENR Regional Technical Directors (RTDs) for Lands and Regional Surveys Division (RSD) Chiefs also participated in the said event.

Before the workshop, a small group meeting was held last 19 May at the LMB conference room in Manila. This was attended by LMB Assistant Director Allan V. Barcena with University of the Philippines Professor Epifanio D. Lopez, Engr. Jose P. Gatus, RTDs for Lands from Regions V, X, and XI, and RSD Chiefs from Regions III, IV-A, and NCR. Engineer Gatus is the new consultant of the PRS92 project who will be responsible for the preparation and study of the proposed guidelines. With the approval of the new guidelines, the land sector will have a standardized and a more realistic approach in the conduct of cadastral surveys under PRS92, including the establishment of project controls, political boundary surveys, lot surveys, and the transformation and integration of all old surveys.

The first PRS92 municipal ordinance in Region XI. *Members from the Association of the Barangay Captains (ABC) of Carmen, Davao del Norte intently read the draft on municipal ordinance for PRS92 prepared by the Sangguniang Bayan members. The municipality of Carmen has recently passed the Municipal Ordinance No. 123-s-2009 authored by Councilor Danilo de Ramos which obliges residents to safeguard and maintain all existing 101 geodetic control points within the municipality.(DENR Region XI)*

Marinduque LGU for preservation of Station Balanacan

by Concepcion A. Bringas
MPD, IMD-NAMRIA

The Marinduque *Sangguniang Panlalawigan* and Mogpog *Sangguniang Bayan* jointly issued Resolution No. 630 on 27 May 2009. The resolution aims to request President Gloria Macapagal-Arroyo to issue a presidential proclamation reserving a certain parcel of land of the public domain situated at *barangays* Hinanggayon and Argao, Municipality of Mogpog, province of Marinduque as the site for the Luzon Datum Origin National Landmark, ecotourism, and other purposes.

Marinduque Sangguniang Panlalawigan and Mogpog Sangguniang Bayan joint session which resulted in the issuance of the resolution for the establishment of Luzon Datum Origin National Landmark

The Triangulation Station Balanacan was established by the US Coast and Geodetic Survey in 1906, as part of a nationwide triangulation network and designated as the Origin of Luzon Datum 1911. Up to the 1990s, the Luzon Datum served as the primary reference frame for all survey and mapping activities in the country. PRS92, the present geodetic reference system, is a modified and updated Luzon Datum and still uses the Station Balanacan as datum origin.

The historical significance and importance of the Luzon Datum Origin is recognized in the surveying and mapping community. NAMRIA being the central mapping agency initiated efforts for its preservation. The agency presented the history and the significance of Station Balanacan during the joint session which resulted in the issuance of Resolution No. 630. NAMRIA has also sought the assistance of the National Historical Institute for the declaration of the Station Balanacan as a national landmark.

DENR officials and staff headed by NAMRIA MGD Director Isada (fourth from left) and DENR Region IV-B RTD Lopez (third from left) were welcomed by Mogpog Mayor Senen Livelo, Jr. (fifth from left) through "Paputong," the traditional Marinduque welcome ceremony of prayers for friendship.

NAMRIA Administrator Diony A. Ventura issued Special Order No. 208 creating an inter-agency task group to undertake the technical and complete staff work for the presidential proclamation in consultation with other stakeholders. The task group is chaired by OIC Deputy Administrator Linda SD. Papa with, as vice chairpersons, NAMRIA Mapping and Geodesy Department Director Jose Galo P. Isada and Lydia S. Lopez, Region 4-B Technical Director for Lands.

PRS92 Stories from the Field[1]

Point of Zero Order: The life of surveyors through a different lens

by Xenia R. Andres
Media Production Division, Information Management Department, NAMRIA

I did not think I would come out alive after ten days. Traveling by sea for a long period of time was indeed a once-in-a-lifetime experience filled with a roller coaster of emotions. Through a travel order signed by Administrator Diony A. Ventura, I went up the transport platform BRP HYDROGRAPHER VENTURA with photographer Renato E. Eguia and videographer Joseph C. Estrella. The media production team's mission was to document the Global Positioning System observation surveys for the upgrading of first-order geodetic control points (GCPs) in parts of Palawan. The upgraded GCPs will form the Zero-Order Network of the Philippines that will be tied to the International Terrestrial Reference Frame. The network would be the highest-accuracy reference in the country which may be used in scientific studies and in crustal deformation monitoring.

Emong

The sky was so gloomy when we left Manila for the Subic docks in Olongapo City, Zambales on 05 May 2009. There was the threat of Typhoon Emong over Northern Luzon. Onboard, Executive Officer Ltsg Apolonio Lagonsin welcomed us warmly and brought us to the sick bay, our quarters-*cum*-office for the duration of the mission. Every hour, the weather condition was worsening that we almost could not push through on schedule. Finally at two in the afternoon of 06 May 2009, clearance was given and we were off to Cuyo Island.

During the muster, the roll of the ship's company was called which now included us, the documenting team. Commanding Officer LCdr Ralph A. Justo briefed the body on the objective of the undertaking, gave pointers on some administrative matters, and reminders about the dos and don'ts in the project areas, especially in the Tubbataha National Marine Park. The GPS observation teams were moreover directed to gather coast pilot information. We asked for a few moments with the surveyors to also brief them on our purpose.

I was eager but afraid. I prayed hard that I would not have motion sickness. I felt okay at first and was even able to observe the flurry of activities at the bridge. I began to feel dizzy, however, when we had barely left Subic. *Kuya* J said I will get used to the undulation. Among the three of us, he is the one with experience in sea travel, having been part of the Joint Oceanographic Marine Science Expedition from Philippines to Vietnam aboard BRP HYDROGRAPHER PRESBITERO in 2006. He advised me and *Kuya* Nato to get some fresh air at the upper deck, the same advice that we got from the vessel's crew.

Sad to say, only *Kuya* Nato was able to hold himself. I threw up twice. In our quarters where we each had a bed, I did not know whether I would sit or lie down. *Kuya* J fussed around us, offering hot water or anything that may alleviate our discomfort. Our division's officer-in-charge (OIC), Ms. Nancy M. De Jesus, kept checking on us and told *Kuya* J that we should disembark at the nearest port and get the earliest trip or flight back to Manila. *Kuya* J assured her, however, that I and *Kuya* Nato would soon be okay.

I lost track of the days and the route where we sailed. Sleep was a welcome diversion even if I could not wake up even to eat. But who can have a meal with the undulation? Only crackers from our extra provision could enter my hungry stomach. I was invalid for a day while *Kuya* Nato recovered fast. In my sleep, I could hear them talking to each other and at one point mentioning that we were in the vicinity of Oriental Mindoro. The ship meanwhile avoided the path and wrath of *Emong*. Soon, I could feel from my bed that the waves began to be calm. When I woke up, I could already withstand the undulation.

We arrived in Cuyo Island in the wee hours of the morning of 08 May 2009. At the break of dawn, the GPS observation team for the area was dispatched. We documented the dispatch activities for the team which comprised Ensign Glenn G. Jandayan and Seaman 3rd Class Alvaro A. Caldona Jr. In my conversations with some of the ship's crew at the deck, I learned that what we went through with Emong was just the tip of the iceberg. They asked how I was and assured me that even seasoned seafarers had their bouts of dizziness. They moreover related about the storms that they encountered *kung saan sumasalok ng tubig ang barko, napupuluputan ng lubid ang makina, at kumakapit na sila nang mahigpit sa* railings. They also said it was good that the desalinator worked or else we would not have enough water for consumption.

Cagayancillo

We set off for Cagayancillo after sending off the Cuyo team and arrived in the area after eight hours. We were with the survey team composed of Ensign Maylord M. De Chavez and Seaman 2nd Class Raymundo Barrozo when they were dispatched at around two in the afternoon. The waves were so rough that I thought the skiff that we rode on would overturn. I was holding so tightly that I could almost leave fingernail markings where I was sitting. We had a hard time going to the island. At long last, after expert maneuvering, we set foot on the island and immediately looked for the municipal hall.

We paid a courtesy call to Mayor Joel A. Carceler and informed him about the PRS92 Project and the related activity to be conducted in the municipality. The control point for observation was beyond recovery because of the destruction of the concrete water tank at the Cagayancillo Central School where the GCP was located. The survey team talked with Municipal Planning and Development Coordinator Arnold Buñag regarding the establishment of a new GCP near the municipal

[1] *All those involved in the PRS92 Project are welcome to contribute first-person accounts on their own experiences from performing their respective duties for the project.*

hall. After gathering footages of the island, we left the survey team behind and returned to BRPH VENTURA through the Port of Cagayancillo. At the port, we were welcomed by a group of young people who handed us boiled bananas fit enough for dinner. It was nearly sundown when we advanced to the Tubbataha Reef National Marine Park, a journey that took another eight hours.

Tubbataha

On 09 May 2009, we arrived in Tubbataha early in the morning. We could see the South Islet in full, breathtaking view. Survey team members Ensign Jonato S. Donida and Seaman 2nd Class Redentor S. Gabato led the recovery of the GCP at the ruins of the islet's steel lighthouse. Birds hovered around us as we approached the old lighthouse's hexagonal concrete base where the control point is located. Perhaps they were trying to tell us that the islet is their territory and that we should be careful for their eggs were scattered in the area. The new lighthouse and an abandoned hut were both full of birds. *Kuya* Nato and *Kuya* J almost had their share of bird attack when they were looking for a good spot to take photos and footages of the GPS observation.

Later, we set out to the ranger station to pay a courtesy call to the marine park rangers and brief them about PRS92 activities. Station OIC PO2 Freddie M. Rabiton, PN welcomed us and offered some refreshments while we turned over maps and information materials. Back in our base, we documented activities in the bridge and processing area.

The simultaneous two-day observation of the GPS survey teams commenced on 10 May 2009 after a slight setback from the El Nido team composing Loop 8 of the zero-order network. All systems were ready before seven in the morning and pack-up time was at four in the afternoon. On the first day, we documented the conduct of the GPS observation early in the morning and late in the afternoon. In our quarters, we processed our photos and footages so that we would know what to reshoot in order to have the best shots that we can use in our publications, audio-visual presentations, and other materials for IEC.

We went with the survey team in the islet on the second day. After documenting the setting up of the GPS observation, we took as many photos and footages as we could since the islet can be circled in just a few minutes. We also captured the movements of Ensign Donida and SN2 Gabato when they went to check if the instrument was still functioning. When the tide went up that it touched the base of the old lighthouse, schools of fish swam towards the sea wall where we were staying. They even had a fight over their prey. From afar, sea turtles occasionally bobbed their heads in the surface as if to say hello. We went wherever there was shade because there were only a few trees in the islet.

We were so close to nature that nothing could be heard except the squawks of the birds. If I were an ornithologist, it would have been worthwhile to pass the time identifying each bird species. The dry air which smelt of bird poop made it nearly impossible for us to eat our packed lunch. Later in the afternoon we noticed an egg that was laid near a base of the tripod. We recorded the wrap-up activities before walking on sand and dead corals for nearly two kilometres toward the skiff. We even met a group of divers on the way back to BRPH VENTURA.

Cuyo

On 12 May 2009, we were back in Cuyo Island. The survey team in Cagayancillo was picked up along the way. Ensign Jandayan and SN3 Caldona met us at the Cuyo Port and accompanied us in our courtesy call to Mayor Manuel C. Abrea of the Municipality of Magsaysay. After photographing and gathering video footages of the observation in the Cuyo Airport where the GPS station is located, we went back to the Port of Cuyo.

SN3 Caldona advised us not to board the skiff yet since it was settled precariously on slippery rocks. I was in a hurry to return to BRPH VENTURA because it was already beginning to get dark. Needless to say, I did not heed the advice. Truly, the rocks were so slimy that I lost my footing not just once but twice in the full view of people. First I landed on my buttocks. I slipped again when I tried to stand up but my left foot got sandwiched between the rocks. Thankfully, my ankle was just black-and-blue, not sprained. To hide my embarrassment, I laughingly said to the skiff's crew that I was annoyed I tripped when it was already our last stop. Oh well, it was part and parcel of the experience.

Allen

On 13 May 2009, we were sailing towards Allen in Northern Samar. The first time I set foot on soil on 14 May 2009, I felt I was still swaying with the waves. We were able to document the mooring of the vessel at the Port of Allen for the conduct of hydrographic surveys. Afterwards, we went to Calbayog City in Samar with some of the vessel's crew. It was time for us to go home and I felt sad when we said our goodbyes. The following day, we were in the Cebu Pacific flight to Manila. It took several days for me to regain my sense of balance.

I remember with fondness the courage and reliability of the entire officers and crew of BRPH VENTURA, of how they would patiently bring us to and from our destinations. I also could not help but ponder what my life would be like if I was permanently assigned at the vessel. It would be a great opportunity to contemplate the wonders and vastness of God's creation day and night when all that you see is water everywhere. Perhaps then I would get used to a lot of things: waiting for a signal in my cell phone whenever the ship nears a landform to say hello to my loved ones; taking a bath without holding the railings of the comfort room; eating just the right amount of rice with the viand so as not to get fat; knowing how to maneuver and jump from the skiff expertly; and learning how to swim so that I will enjoy a few dips in the water, which was what most of us did in Tubbataha during our free time.

I was bulky, bruised, and burnt when I returned from the travel. But it was all worth it.

Birds resting at a sand bar in Tubbataha

DENR-ARMM PENROs and CENROs in PRS92 orientation

by Concepcion A. Bringas
MPD, IMD-NAMRIA

NAMRIA conducted an orientation on PRS92 for DENR-ARMM Provincial Environment and Natural Resources Officers (PENROs), Community Environment and Natural Resources Officers (CENROs), and technical staff in Cotabato City on 10 June 2009 and in Zamboanga City on 25 June 2009. The orientation aimed to inform the DENR officials about the PRS92 project which will undertake densification and data integration activities in the region during the year and onwards.

Participants of the orientation on PRS92 for DENR-ARMM held in Grand Astoria Hotel in Zamboanga City

The orientation focused on the rationale for PRS92, component activities, and the opportunities for collaboration with stakeholders to pursue the project objectives. PENROs and CENROs are the DENR representatives at the local government level who coordinate with the stakeholders to generate their support for DENR projects and advocacies.

On behalf of DENR-ARMM Secretary Kabuntalan Emblawa, Assistant Secretary Alindatu K. Pagayao in Cotabato City and Director Brahim Andamen in Zamboanga City respectively thanked NAMRIA Administrator Diony A. Ventura for including their region in the PRS92 implementation. The messages also highlighted the need to conduct the trainings and other advocacy activities to boost their capability building in implementing PRS92.

The concerns raised during the open forum include the resolution of areas with overlapping boundaries between forestlands and A & D; the changes in the technical description of lots after PRS92 transformation; the mode of PRS92 implementation in the region; and the unavailability of land records and other cadastral data of old surveys.

DENR-ARMM Assistant Secretary Pagayao delivers the message of DENR-ARMM Secretary Emblawa during the PR92 orientation program in Cotabato City.

The orientation in Cotabato City which was held in Estosan Hotel was attended by 68 participants from the mainland ARMM provinces, Maguindanao and Lanao del Sur. The activity in Zamboaga City was conducted in Astoria Hotel and attended by 35 participants from the island provinces of Basilan, Sulu, and Tawi-Tawi.

The NAMRIA composite IEC team members were Joselito T. Reasol, Nicandro P. Parayno, Concepcion A. Bringas, Xenia R. Andres, Renato E. Eguia, and Marlon Mariñas.

Updates on Geodetic Network Development

by Carmi D. Laylo
GGD, MGD-NAMRIA

The following are the updates on the Geodetic Network Development component of the PRS92 project. For the Zero-Order Network Observation project, 53 out of the 65 pre-selected First-Order GCPs have been re-observed and upgraded to Zero-Order Accuracy. The most recent locations which have been observed were Basco, Batanes; Currimao, Ilocos Norte; and Sta. Ana, Cagayan.

For the Re-leveling of Mega Manila activity, 91 kilometers of existing benchmarks have been re-leveled and established on new routes to update the Metro Manila vertical control network. This is also geared towards determining ground subsidence in the area and establishing the vertical datum of the country.

For the Inter-Island Benchmark Connection, four out of the nine clusters have been surveyed. Recently, benchmarks in Basco, Batanes; Currimao, Ilocos Norte; and Sta. Ana, Cagayan were observed. They form part of the project's Cluster Four.

A total of 22 stations were established for the Establishment of First-Order Gravity Stations undetaking, which aims to establish 80 first-order gravity stations nationwide. The established gravity stations are located in Manila, in Quezon City, and in the provinces of Bulacan, Cavite, Rizal, Pampanga, Tarlac, Laguna, Batangas, Quezon, Nueva Ecija, Nueva Vizcaya, Isabela, Cagayan, Zambales, Pangasinan, Benguet, La Union, Ilocos Sur, and Bataan.

Gravity observation at the Subic-Clark-Tarlac Expressway

Zero-order network observation in Basco, Batanes

'Mojon' establishment in Region III. *Geodetic engineers from the DENR Central Luzon office are putting up 'mojons' in Bataan, using a Total Station. Over 300 'mojons' have been put up in the provinces of Zambales and Bataan since the PRS92 program started in 2007 in a bid to bring the government's surveying and mapping activities on a par with global standards.*

IEC Task Group conducts more trainings

by Aubrey George T. Corpuz
MPD, IMD-NAMRIA

The IEC Task Group conducted more trainings on GPS Data Processing and Evaluation to five regions: Region IV-A (13-17 April in Roxas Boulevard, Manila), Region I (20-24 April in San Fernando City, La Union), Region IV-B (11-15 May in Marinduque), Region III (08-11 June in San Fernando City, Pampanga), and Region V (15-19 June in Legazpi City, Albay). Part of the Task Group's Continuing Regional Technical Education program, the main objectives of the trainings are: (1) to equip the regional PRS92 technical staff with sufficient knowledge and expertise on the use of the newly-acquired GPS equipment, and in processing of data through the use of the Trimble Geomatics Office software; and (2) to give them ample knowledge on how to evaluate, manage, and manipulate their respective data and how to design the network before the implementation of densification activities of the region. A total of 64 participants from the five regions were trained.

Meanwhile, a regional cluster training on Local Area Networking and Troubleshooting was held in Baguio City on 11-15 May 2009. A total of 19 participants from the Cordillera Administrative Region and Regions I, II, and III attended the event.

GPS training in Legazpi City, Albay

NAMRIA IEC on PRS92 reaches Batanes

by Xenia R. Andres
Media Production Division (MPD), Information Management Department (IMD), NAMRIA

Radio guesting at the DWBT Radyo ng Bayan Batanes

The NAMRIA Team headed by LCdr. Gatchalian (second from right) paid a courtesy call to Sabtang Mayor Babalo (third from left).

Information, education, and communication (IEC) campaigns to generate awareness on and stakeholder support to the Philippine Reference System of 1992 (PRS92) project were held in Basco and Sabtang in Batanes on 08 and 09 June 2009, respectively. Vice Governor William A. Agsunod, Basco Mayor Demetrius Paul C. Narag, and Sabtang Mayor Maxilindo Emilio A. Babalo expressed support to the project and endorsed the *Adopt-a-Mojon* program. The IEC team was composed of LCdr. Ronaldo C. Gatchalian, Officer-in-Charge (OIC) of the Geodesy and Geophysics Division (GGD), Mapping and Geodesy Department [MGD]-NAMRIA and from IMD, Mr. Renato E. Eguia and this writer. The IEC team appeared as guests in the radio program of DENR field information officer Mr. Nestor Reyes entitled *DENR sa Himpapawid*. The program was aired over DWBT *Radyo ng Bayan* Batanes.