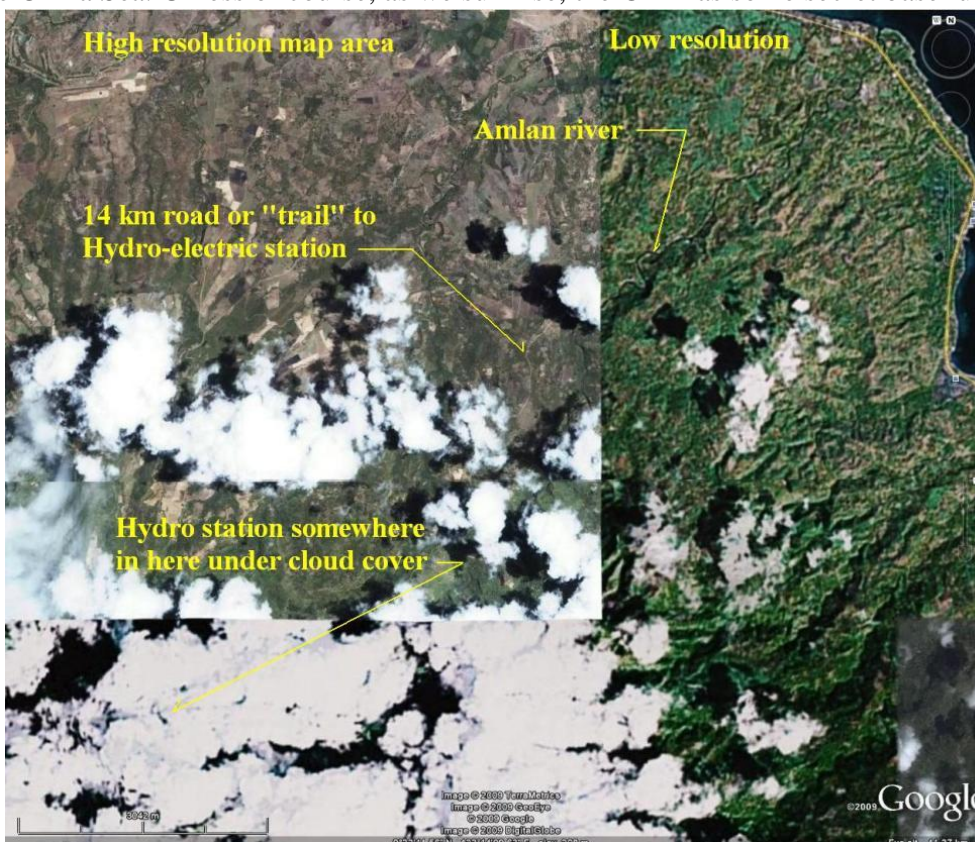


RAMBLINGS – MINI POWER 101- AMLAN HYDRO STATION

My friend Wolfgang is always on the go. He knows almost everybody who is anybody on the local scene. A few days ago, he invited me to go visit the Hydro-electric power station in the hinterlands of Amlan town, south of Tanjay. The local Napocor (Nat'l Power Corp) chief Eng'r Yap had said something to him about some silting problem in the dam, and this was therefore an excellent opportunity to rough it up in a "picnic" up there. Wolfgang originally had a British golfing friend as another passenger in his rugged 4-wheel drive vehicle, but the guy couldn't make it, so we got a young fellow who referred to both of us Tito, or uncle. Jay was an OFW on furlough from Saudi, and turned out to already be on my massive genealogical database of major Tanjay families. Completing the entourage was the Napocor crew in another SUV, headed by "George", the right hand man of Eng'r Yap, and a few others. This "others" were originally described to us as "bodyguards" since this was reputedly NPA country. As a matter of fact, I believe Wolfgang had text'd the ex-Governor/now-Congressman George Arnaiz to inquire about any army activity, and the reply was that it all was quiescent. I do receive copies of all of this texting and initially got confused by the two Georges; I thought that no less than the Congressman was joining us. After all, three weeks earlier, we had visited his farm about 40 km inland, and witnessed what I like to call the "golden stool" operation, but that's another story. A week later, Wolfgang had joined Tanjay Mayor Teves and the Congressman on a medical mission to barrio Pal-iw, a valley area on the north-west end of Tanjay. The closest I had gotten to that area was 3 years ago as a passenger on a "habal-habal" (mountain bike) to view the Bais/Tanjay plains from a high vantage point, as a challenge which I took up from one of the guys.

Going to the hydro plant turned out to be just as much as a challenge. The road, if it can be called such, started out as concrete, then asphalt, then dirt and compacted gravel, often interspersed with twin strips of concrete in critical areas of steep slope and/or wash-out-prone gullies. See three pictures on the right side below. It was 14 km by the odometer and took an hour 15 minutes, a slow crawl. About two km inland, we came to the barrio of Silab, but after that, there was no other vehicle or motorcycle we met on the way. When I later recounted to Lisa and the maids about passing this barrio, they all chimed that this place was reputed to have lots of "abals" or aswangs!

The Google map below shows the general layout. We started off at the upper right hand corner. Understandably with Google, most areas are in low resolution, with just a few swaths in high resolution. However, those high resolution areas often have no reason to be such, like in certain coastal areas in Palawan, or the Spratley islets in the China Sea. Unless of course, as we surmise, the CIA has some secret base lurking there.



We met up with George in their white SUV near the main road, and we were surprised by the number of people jammed in the vehicle. A pretty young girl emerged and as George requested, joined us in our van. “Jasmine” turned out to be also a Napocor employee, in charge of the computer operations, hails from another small barrio of Amlan with the melodious name of Tambohangin, where she had been the local beauty queen. But she must have been also brainy because she is a graduate programmer and created the Amlan web site. As we followed the other vehicle over the rough terrain, we noted it stopped 2 or 3 times to disgorge a passenger. Good PR for George, Wolfgang muttered. For unlike the other side roads I’ve been to, this route didn’t seem to have any means of public transportation (meaning primarily, habal-habals), and the area was very sparsely populated.



Finally, we got to the hydro station. On higher ground was a fenced compound with a few old structures, then downward for another kilometer was the power house at the riverhead. The 3 photos above show the power house, one of the two turbine-generators inside, and the group pose. The hydro plant was old and small: installed in the early 50’s with two 460 kw machines. So that’s a generating capacity short of one megawatt or 1,000 kilowatts. As a comparison, an electric flat iron draws one kilowatt. That capacity nowadays would barely fulfill the requirements of a typical town. Indeed, Lisa remembers how regular electricity came to Tanjay in the mid 50’s when the Amlan hydro station started up, electrifying Amlan, Tanjay and Bais. Previously, Tanjay had a diesel generator near the town plaza, whose noise wafted to the neighborhood, and as one of our close Tanjay friends in LA remarked “I got so used to it, that when it shut down, I couldn’t sleep because of the silence”. But as late as the early 60’s, many small towns only had electricity at night when the local rice mill hitched their diesel engine from the rice husker to the generator. Such was the case in a small town called Dupax in Nieva Vizcaya, where I visited with a Cebuano friend whose forebears came from there. I remember more vividly about the brawl we got into with some locals at the town dance.

But in all fairness, the Amlan station is now connected to the Visayas grid. It may be a small cog, but with bigger renewable power sources such as Kanlaon’s and Palimpinon’s much bigger hydro and geothermal generating stations, they make the province a net exporter of power to Cebu and Iloilo via submarine cables.

Anyway, the group pose above shows the unshirted George, Jasmine, Wolfgang and Jay on the extreme right. I didn’t quite get the names of the two others, but they helped guide us going upriver.

The “picnic basket” was a cool box of beer, soft drinks, sandwiches, siopao, a pot full of adobo, rice in a pot and also as “puso” or individual rice cusps cooked in a leaf enclosure. On occasions like this, we take turns with Wolfgang supplying the food, and paying for gas. It was my turn for the food, but just the same, he also brought sardines, crackers and chips. But before all this food was to be consumed, it was time for the hike up to the lake: past the first water fall, then further to an even higher waterfall, then somehow clamoring further up to the lake. But not all cared to go. Wolfgang had been there 4 years before. And Jasmine had no intention.

I myself, was not that prepared, with only leather sandals as footwear. I thought we would ride up to the lakeshore in the SUV, and came prepared with swimming gear. But apparently, there was no other way.

I then recalled that as a good roller skater, I always fancied myself as sure-footed as a mountain goat, with a fine sense of balance. I flash backed to early events of nimbly jumping from stone to stone across river beds, though I perished the thought about how once in the early 60's at a college excursion to Montalban dam, I was doing the same thing but slid on some slippery stone moss and kerplunked into the water.

But today, I took it up as a personal challenge, albeit more carefully. Even though burdened further by my camera, I managed to scamper up boulders, fallen tree trunks, going further upriver while keeping my feet dry, with a minimum of hand grasping of vines or boulders for balance. But I didn't make it to lake shore, or even to the second water fall. After about 45 minutes at a wide glen in front of a cave (see third photo), I was tired and called it quits, and told the rest to push ahead. Then Jay, the young guy, said he'd also just hang around. So George and the other two guides went further on. Later, I found that Jay had given them his camera to shoot pictures of what we were missing, which was the higher water fall, among others. Obviously, they didn't clamor further up to the lake. But it must have been SOP for them because they often go up there to shovel away accumulated silt near the intake pipe. After half an hour, we all headed back, and this time, I felt my age. I even had to sit on my butt to slide down some boulders; also got my sandals wet. But I didn't slip or fall. Jay did and damaged his camera. Photos below show our progress along the river. That yours truly at the waterfall.



There are 6 full time personnel taking turns manning the plant 24 hours. The senior mechanic-operator was quite loquacious and told about their concerns of the pending buyout by the Aboitiz Group of this facility. The GMA administration is privatizing much of Napocor's generation plants through an agency with a catchy acronym of PSALM. He said he'd first have to retire from Napocor, after 35 years, then re-apply to the new owners. Hopefully, they should get a generous package, after all, one of the earlier scandals of Napocor was the outrageous retirement packages of their executives. I asked some technical questions, and he lit up and explained even more: the most critical time is when there is a sudden loss of electrical load such as when the station get disconnected from the electrical grid, as in a circuit breaker trip, or a wide area blackout. The generator and turbine spins faster, and if not slowed down, may spin out of control and self-destruct. That's because the safety devices are not anymore working. Normally, the speed governor should close down on the water gate valve to limit the water entering the turbine. Therefore, they have to manually close the main water valve (the spoked wheel in the turbine photo) when such outages occur, and do it pronto.

On really large generating stations which use boilers to produce steam to spin the turbine-generators, when a sudden outage occurs, the safety controls keep the turbines from over speeding by modulating down on the steam valve, but the steam pressure keeps building up in the boiler. So the steam is vented to the atmosphere in a ear-piercing racket known as a blow-down. For years, when we lived in Makati beside the Rockwell plant, this was a common baneful occurrence. In addition, of course, to the soot and sulfur from the smoke-stacks. It's a good thing that nowadays, Rockwell is a posh business and residential center.

Starting up the Amlan generator and synchronizing it to the grid is even more interesting. For starters, it is all done manually. As a background, think of the electrical grid as a pulsating piping network with hundreds of pumps beating in unison (not unlike the blood system). Now, here you have your pump also pulsating, and you want to connect it to the system but you can only connect ("throw the switch") when the pulsations are



exactly synchronized. You therefore start up the turbine-generator by opening the water valve, then gradually increase the water flow so the turbine and generator start speeding up to approach the electrical grid's frequency of 60 cycles per second. (I recall all these now from our Power Plant engineering class in the 60's where we took turns trying to synch the laboratory's diesel generator to the Meralco grid). This has to do now with sine waves and a synchroscope, and when it's all aligned, throw the switch, and voila you've synched up. As you increase the water flow some more, the turbine won't speed up anymore as it is locked in synch with the grid, but then, it would be pumping electrical power into the mains. Bottom photo on previous page shows the head honcho beside the synchroscope (dial in center of photo) and switch right below it.



Photo on left is the view from the power house, showing the head waters of the Amlan river, really a puny river. In contrast, the Ambuklao dam (on the "mighty Agno" river) with 75 megawatts from 8 turbines was the biggest in Asia in the 50's. It is 91,000 times bigger in capacity than Amlan. I remember our college field trip to the underground turbine house. The approach was a spiral tunnel that was continuously raining water from seepage above. The present champ is China's Three Gorges dam on the Yangtze river which will eventually have 32 generators totaling 22,500 megawatts.

Later, I turned to George and asked about more local and mundane things: was there really an NPA problem here? I used the local term "wal-hon" which means left-handed. Not at all, he replied, we know most of them, and keep them happy by giving them P20 a month for each of us who work here. Wow, that's some protection money – equivalent to two dollars a month for the entire dam's personnel. If only our politicians were that minimalist, we'd be in much better shape. I then asked whether these people are really ideologues and not mere bandits like many of the Moro troublemakers in Mindanao, and he said they indeed are ideologues who look up to a guy in Holland (obviously Joma Sison). His reply to Wolfgang's query was even more surprising: they are not disgruntled locals but are young firebrands from Cebu and Bohol. To me, something didn't click right here, but anyway, live and let live. Who knows, maybe those who were given a ride earlier were one of them.



After the picnic meal, which we shared with everybody including the guards and other personnel, we had time to relax. I would have wanted to don my trunks and take a dip at the river, but that was a km below. See both photos on left.

In the mean time, George took leave for a while do his other duties: check up on the seedlings in the surrounding areas. I was surprised and asked if they as Napocor employees also were part of the gov't forestry reforestation program, and he said they have some similar operation. That was gratifying. Yeah, let George do it.



Then it was time to head home. On the way back, we passed barrio Silab again, and it was teeming with people; cockpit time! Lots of motorcycles, but no broomsticks.

And Wolfgang's extensive connections paid off again as we dropped for coffee at another of his friends,



a retired Dutch ship captain with wide business interests, married to a local. He was out but let his house help get us in. His posh house held a commanding view, better than a crow's nest.