

I recently started researching info about the Loran Stations built in Vietnam and Thailand in 1966. I was one of the ET's that built the Sattahip, Thailand station that summer. A third slave was built 1969 in Vietnam at Tan My.

I was astonished to find a lack of info regarding this effort called Operation Tight Reign. There is a bit of info available from the C123 crew that did the early aviation surveys flights and deliveries and a write up about the Con Son Island Station. Lacking is any detail about the effort at the Brooklyn Yard to put together the plan and equipment, which I have referred to as the largest Heath Kit ever built.

No where have I read about how the monitor originally planned to Da Nang, Vietnam ended up at Udron AFB in Thailand or the store we heard about Navy Seabee's that loss their lives building the pads at failed Da Nang site! Recently I made contact with RM1 Rod Christian who says that he was slated for the Da Nang monitor when the incident occur and his orders were changed to the Section office in Bangkok.

The USCG crews, mostly ET's in the beginning worked extremely long hours for the first 6 weeks to assemble the equipment. This was one of the first installations that did not include factory reps on site. At Sattahip we were bunked that the Air Force base 5 or 10 miles away and we left at 6 in the morning and not returning until around midnight. I was one of the four that drove the trucks. Lots of muddy roads and the old 2.5T International stake bed truck had a hard time in the mud.

The chain was up in 6 weeks and being test for two weeks and at the 8 week point we started logging up hours. We had very few security issues at the Sattahip location other than a set of equipment manuals that went missing and stolen pieces of equipment from construction crates and the warehouse with the spare transmitter system. A young female Laos national construction office worker was the prime suspect regarding the manuals and was let go. She ended up working at the NCO club at the Air Force base and we advised the Air Force to watch her. Our security at the time for a small group of Thai National Guard types.

At Lampang, the locals were digging up the number 6 cooper ground plane wires and recycling it. They were ahead of their time on recycling!!! That caused us to have to go check for continuity of our ground plane wires. I found the first wire at its end, and put long leads on a VOM. I would take nine giant steps and dig a hole at the next wire end, checking continuity between the two. Fill the first hole and pace off again. Wires were at 3 degree's, so 120 holes and week or so later we still had our ground plane in tack.

We had the most secure Teletype in the world when we piloted the first Teletype across the Loran transmission signals that fall. It was very leaning edge equipment and a factory rep came on site to install it. I remember telling the rep that the engineer that designed it should be shot. He said, why do you want to shoot ME! My reply was that we would have a hard time fixing it if it broke. It had small logic components in cans slightly larger than a transistor with 10 or so legs solder onto the circuit cards. This was a pilot for other uses of data transmissions across Loran signals. Again Rod Chistian confirm my thoughts on repairing this system. The one in Bangkok went down during his time there and they had to fly someone in from state side to repair it. Most likely the same person that engineered and installed it in the first place.

What was and still seems to be missing are details about how the Loran chains signals we used. I see reference to B52 using it and other standard navigation references, however I have been told that B52's were early D models and did not have or need it. Only very late in the war do I find any reference of a few B52 that were upgraded with Loran C installed. I was told some 20 years later that the military put a receiver in a reconnaissance plane with photo equipment attached to a WWII bombsight optic and used the repeatability of Loran to repeat photo's over time to watch enemy troop movements and construction of roads etc. And that was one of the primary uses of the system. See the attachments below to read more on the use of Loran in Vietnam.

We found our selves in another unplanned role when someone in Vietnam spread the word that we had atomic clocks and accurate GMT. The Military phone link start ringing each morning around 5AM for time checks. In reality we listen to WWV or WWVH on a receiver and had a wall clock that was always very close to actuate. We probably timed more attacks in Vietnam than most!

There are many untold stories that should be documented before we are all gone!

Here is a picture of a F-4D, six pictures down the page.

http://www.secretvietnamwar.com/frame/f_war.htmThe F-4D at the top of the picture, FA 788, is LORAN equipped (the towel rack on the backbone) and FG 815 is equipped with the laser designator called "ZOTZ." The scope assy was mounted on the left canopy. The pilot would make the aiming limits on his canopy with a grease pencil as called out by the WSO. LORAN was the long range alternative to Combat Skyspot which relied upon short range ground stations in Laos. These photos are from about '71-'73.

AN/ARN-92 LORAN-D equipment was fitted to Pave Phantom F-4Ds. A rather prominent "towel-rail" antenna on the upper rear fuselage behind the rear cockpit could easily identify these models. A total of 72 aircraft from blocks 32 and 33 were so equipped. In Vietnam, the primary mission of these Pave Phantom F-4Ds was the seeding of the Ho Chi Minh trail with sensors, which required the precise nighttime navigational capability provided by LORAN. The primary operators of the "towel-rail" F-4Ds were the 25th and 497th TFS of the 8th TFW and the 555th TFS of the 432nd TFW. Subsequently, these planes were passed along to the 457th TFS of the 301st TFW, the 23rd TFS of the 52nd TFW, and the 704th TFS of the 924th TFG. I contacted the OV-10/FAC Museum and received this reply. "Add RF-4 to the list.

Light Gap program used SR-71 guided photography with a diamond stylus to mark the desired point on the photo. When dropped it provided a small hole. A calibrated light was placed under the photo and when it was centered on the hole, computer calibrated the coordinates. There were three types of map coordinates in play in SEA. Map, corrected map coordinates, and true coordinates. Loran and Sky Spot (SAC RBS) used true. Light Gap used true and thus could be put directly into the AN/ARN-92. When we figured this out we used Light Gap for a multitude of operations. For Bat 21 we had a computer generated lists of targets that we could use especially when weather affected our operation. One of the great things about Light Gap was it could be used by any aircraft that had a AN/ARN-92. Several times we had formations of aircraft being led by an AN/ARN-92 equipped aircraft. One of the largest of this type of drop was lead by a RF-4 departing from the DaNang TACAN. The person who knew the most about how to use Light Gap was then Lt. Donna Mooney.

Another way we used Loran was to find a target using the Pave Nail system, put the laser on it and "integrate", which would give you the loran coordinates of the target. A loran equipped F-4 at 15M with a laser guided bomb would come in on the attack heading you would provide and release the bomb 3.5 miles short of the target. At bomb release you would start an arc around the target and laser designate the target. Bomb fall time was about 37 seconds. If the loran equipped F-4 had dumb bombs we worked out a method with the 490th where they would drop triple 500 pounders and use "release advance" which put the center bomb directly on the target with the other two bracketing it to take out any spacing error. The advantage of using these types of deliveries was there was no location error between the two aircraft. The loran chain had a tendency to drift the further you got away from the stations (you used a master station and two slave stations). But since you were taking a reading and using it within minutes there was no target location error. You could also use the loran to fly a prescribed glide path to a point on the ground. This was used at least once to bring helicopters thru the weather during rescue operations. This also proved invaluable during search and rescue. Once you located the survivor you could put the laser on them and get a good coordinate. Then you could put a safety circle around the survivor(s) and begin delivering ordinance if needed. Several times we had to make loran deliveries of area denial munitions and riot agent using loran. This location capability really cut down the time needed to get the Sandys and Jollies over the survivors. After SEA I went to Eglin and participated in several programs testing a ground laser system, which also used loran for target location and designation. That was a scary concept because the bomb came from behind and passed over you on its way to the target. Eglin terrain was very flat and you had to make sure the grass was short so that your laser beam did not illuminate the area directly in front of you – very spectacular. There was also a loran-guided bomb that was being developed but that was stopped when the war ended.

The loran folks formed a group known, I think, as the Wild Goose Society. They showed me some of their members accomplishments in the 80's. One that really stood out was the use a system very similar to loran D for navigating large ships in San Francisco Harbor. Chris, I hope some of this "brain dump" helps.

VR Rick Atchison”This article has references to the use of Loran C.

<http://www.vhpa.org/stories/AAblack.pdf>

Another Loran C equip’d plane.

<http://vietnam.warbirdsresourcegroup.org/ov10bronco-operation.html>

Here is a bit of history!

<http://www.vietnam.ttu.edu/star/images/213/2131005001.pdf>

Page 40 starts Loran Reconnaissance write up.

<http://www.vietnam.ttu.edu/star/images/039/0390214001.pdf>

This one is very interesting!

<https://www1.nga.mil/Newsroom/Pathfinder/0604/Pages/HoChiMinhTrail.aspx>

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