

Pony Express

Pony Express was the code name for a DOD program to collect information on Soviet missile tests. There were several components to the program. Two large tracking ships, the USNS Arnold and the USNS Hoyt Vandenberg used sophisticated telemetry antennas and radars to track the missiles and collect telemetry in the mid-course and reentry phases. Land-based radars in the Aleutian Islands also tracked the missiles in the mid-course phase. Aircraft from Japan and Hawaii would also attempt to collect telemetry signals. One or two specially-configured Destroyer Escorts (DEs) from a group of four stationed at Pearl Harbor would attempt to collect re-entry telemetry and retrieve any floating debris in the target area. I was assigned as one of the NSG division officers for these DEs from 1971 to 1974. The DE portion of the Pony Express operations was also called POINTED FOX, as noted in one of my fitness reports. We never used that name, but referred to all the operations as PONY EXPRESS.

The collection of data from Soviet missile testing had a very high priority in the early 1970's. The Soviet Union was making rapid improvements in its ballistic missile arsenal. During this era the US launched its first geosynchronous-orbit telemetry intercept satellites. The Navy converted four Claud Jones class DEs to collect telemetry in the mid-Pacific impact zone. A particular concern for the Navy was the improved capability of the Soviet Submarine Launched Ballistic Missiles (SLBMs). In the early 1970s Soviet SSBNs carried the SSN-6 missile which had a maximum range of about 1300 miles. This meant that the SSBN had to sail quite far from its base to be within range of targets in the continental United States. The US Navy had become quite adept at tracking these submarines through HFDF and other means. In 1970 and 1971 the Soviets started testing the SSN-8 missile, which had a range of 4200 miles. This was a tremendous shock to the US Naval establishment. The longer range of the SSN-8 meant that the Soviet SLBMs could strike the United States from "bastions" of Soviet-controlled waters near their Murmansk or Petropavlovsk bases. Furthermore, in 1973 and 1974, the Soviets began to test the SSN-18 missile which had multiple warheads.

The Claud Jones class DEs, were built in the late 1950s. The ships were round-bottomed, diesel powered, about 300 feet long, and mounted two 3” guns. During 1969 and 1970 the ships had received a major upgrade which included the addition of a special electronics compartment and several million dollars’ worth of telemetry intercept equipment. The telemetry intercept compartment was just aft of the ship’s radio room and connected to that room with a door having an electronic lock. Only a few of the ships company, among them the captain and executive officer, could enter the telemetry room during operations.

The four 1033-class DEs were:

- USS Claud Jones (DE 1033)
- USS John R. Perry (DE 1034)
- USS Charles Berry (DE 1035)
- USS McMorris (DE 1036)

I sailed on the Claud Jones and McMorris for Pony Express missions. Two of the DEs were generally in port at Pearl Harbor and on call for Pony Express operations. The other two might be on Western Pacific deployments or other cruises. The ships would rotate through the Pony Express operations so that each ship would have sea time for other activities necessary to keep the crews ready for service in general naval operations. Pony Express operations were broken down into several phases which are described in the following paragraphs.

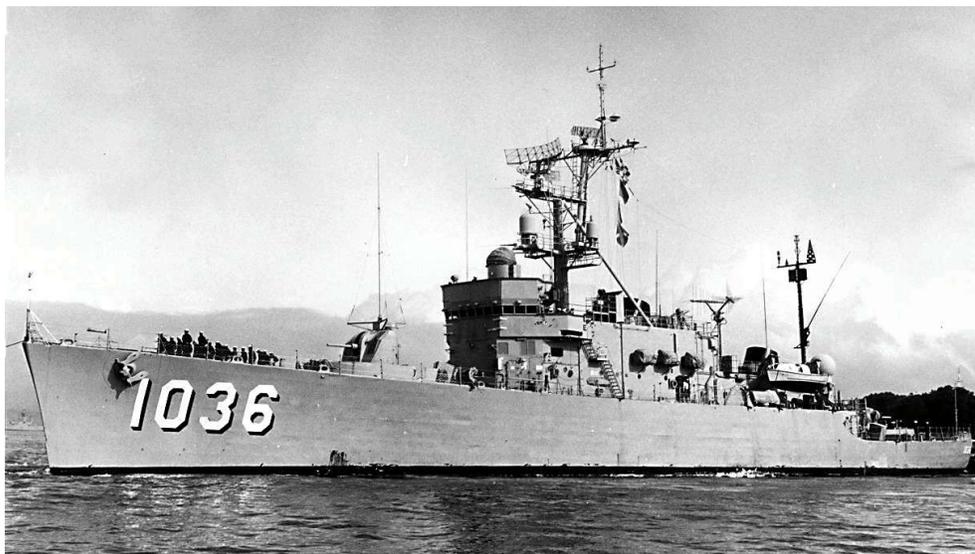


Figure 1 The USS McMorris in 1972

The telemetry room is under the after mast which has telemetry intercept antennas. The rectangular box under the antennas contains preamplifiers. (US Navy Photo)

In-Port Time

While the DEs were tied up at Pearl Harbor the ships' crews performed normal maintenance and training. Groups of CTs from TGU would board the ship during the day to train on and maintain the telemetry intercept equipment. The telemetry room was laid out like as shown in the figure at the end of this chapter.

The telemetry intercept positions were arrayed along one side of the compartment. A comfortable chair was bolted to the deck in front of each position. The chairs had to be bolted down because the ship would roll as much as 30 degrees in heavy seas.

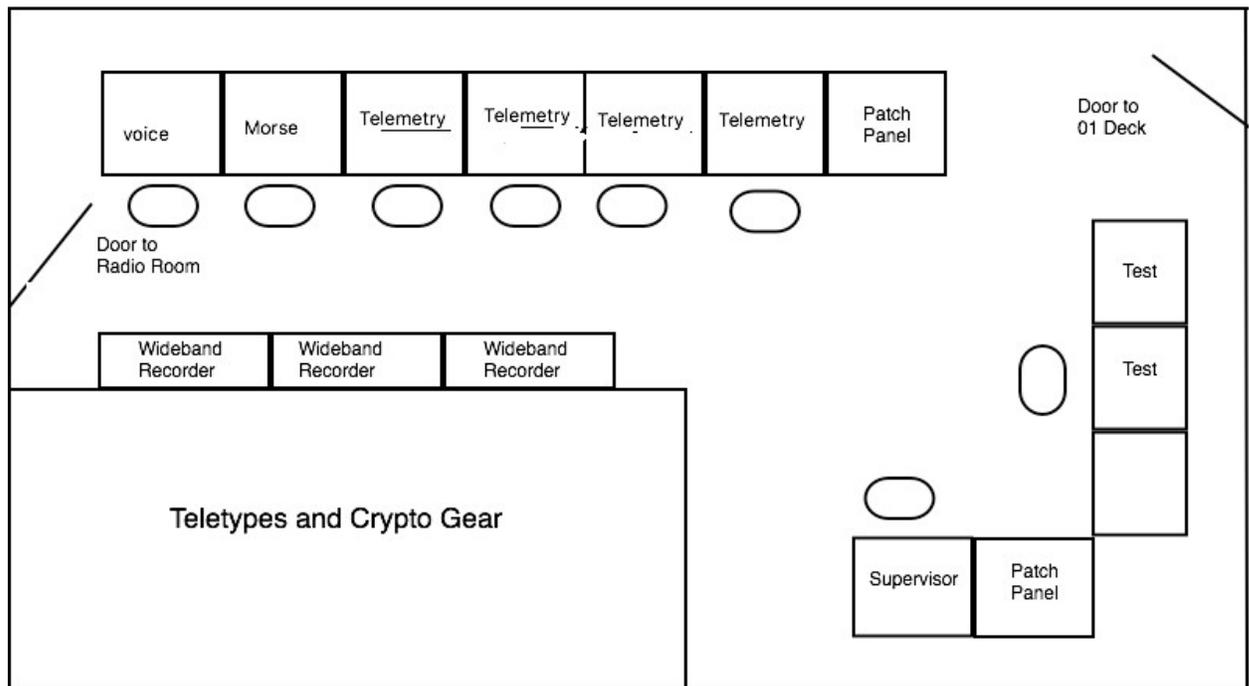


Figure 2 Layout of the Telemetry room. Drawn from memory by author.

Each telemetry position looked much like the example in the NSA Cryptologic Museum exhibit on Telemetry Intercept. The primary radio receivers are at the bottom of the position. The oscilloscopes above the receivers were used to display the signal characteristics. The operator could also recognize various type of telemetry signals by the sound made when the signals were routed from the receiver through an AM or FM detector and played through headphones.

One test given to new operators was to set up the position to intercept and display a standard TV signal. This could be done because the Tektronix oscilloscopes at the position

were very versatile instruments. You could set up the vertical scan to match the 60Hz TV vertical sweep. You could then set the horizontal sweep to match the horizontal scan rate of the TV signal. An FM detector in the position was used to generate a signal proportional to the TV luminance signal. That signal was fed into the Z-axis or brightness input of the oscilloscope. When everything was set up properly, you got an intelligible TV picture in shades of CRT green.

It took me several hours of practice before I could pass this test. The most difficult part was the setting of the sweep triggers to achieve a stable picture without rolling or tearing. I was very proud of passing this test—and some of the CTs were very surprised. I was the first junior officer to pass the test. After I passed the test and showed some general competence with other pieces of equipment, the Chief presented me with my very own tweaker. (A tweaker is a small screwdriver used to adjust some of the maintenance settings of the equipment). This was a rare honor. A common question at the time was “What is the most destructive thing on any warship?” The answer was “an ensign with a screwdriver.”

Alert Phase

The alert phase usually started when I walked into the TGU office and someone would announce “The SMRIS are out”. This meant that the Soviet Missile Range Instrumentation Ships had left their home port and were headed to an impact area for a missile test. The notification might come from one or more sources:

- a surveillance aircraft flying from the Aleutian Islands, Korea, or Japan
- SIGINT intercepts or HFDF tracking from US Navy sources
- SIGINT from US Air Force Security Service stations or detachments on tracking ships
- Satellite communications intercepts of increased radio traffic in the launch area

Once the alert was formalized with orders from the Commander, Naval Security Group Pacific, we would start loading our gear aboard the designated DEs. I would try to call someone in the theater group and my girlfriend to let them know I would be out of town for a week or two. I would then return to my apartment and pack my duffle bag and leave a note and a rent check for my landlord. These short-notice deployments were the main reason I kept no house plants and never considered getting a cat or dog.

While I was getting ready to ship out, the ship's crew would be busy loading last-minute supplies and preparing for sea. CTs with families ashore would be packing and saying their goodbyes. Those without families were doing the same things I did— notifying friends and postponing leisure-time activities.

One unusual aspect of the last-minute supply runs was that the officers aboard the ship were not fed from the general mess supplies, but from supplies purchased with funds from the officers' Basic Allowance for Quarters (BAQ). The stewards working in the wardroom would purchase supplies with these funds and were responsible for the storage and cooking of the provisions. A complicating factor was that many of the ship's officers lived ashore, in family housing or the BOQ, when the ship was in port. While in port, their food allowance went to the BOQ mess or to feed their families. As a result, only a minimum amount of non-perishable foods was kept aboard for the wardroom. As soon as we got mission orders, the ship's supply officer would hit up each of the officers for a contribution to the wardroom mess. Most officers, particularly the married officers, were not inclined to make more than the minimum required contribution, so the initial stores purchased for the wardroom were not generally as plentiful or varied as the provisions in the crew mess. If the mission extended more than a few weeks, wardroom supplies could get a bit short and the stewards would have to purchase emergency rations from the ship's supplies. The ship's supply officer heard complaints about this, both from the captain and from the chief mess cook. A draw like this generated a lot of extra paperwork for the cooks, stewards, and supply officer. If the ship happened to pull into Midway Island for refueling, the chief steward would request an emergency cash draw and head to the Navy Exchange for supplies. However, this could be frustrating, as the supply situation at Midway could be almost as bad as that aboard the ship.

The CTs would bring aboard several footlockers with classified materials: key cards for the crypto gear, TECHINS, magnetic tapes, spare parts and consumable supplies such as teletype paper. Storage space in the telemetry room was limited, and a lot of the gear was stowed behind the equipment racks.

As soon as I came aboard, I would report to the captain to make sure we had both received the same orders. After that, I dropped my duffle bag in an unoccupied bunk in the JO Jungle—a berthing space with four bunks, some lockers, a desk, and a head. I would unpack later—when I was sure that we weren't going to be recalled after a day or two. I would then

head up to the Telemetry room to make sure that communications were up and running and there were no last-minute issues to resolve.

While I was reporting in and getting organized, the detachment Chief Petty Officer would supervise the assignment of the CTs to berthing areas and emergency stations. The latter part was simple: in any sort of emergency, the CTs would report to the Telemetry room. The goal, from the viewpoint of the ship's crew was to get the riders out of the way so that they could handle the problem without tripping over bewildered CTs. The chief would also make sure that CTs were assigned to cleaning duties in the berthing area. We would usually ask if the radio room adjoining the telemetry room needed any help getting ready for deployment. If they were in a crunch, they might get a CTO to help set up circuits and crypto gear. The Pony Express missions often required more communications circuits and crypto gear than normal operations, so CINCPACFLT might assign a few extra radiomen to assist the ship's company. Working the communications required a Crypto security clearance, so they couldn't assign random extra personnel from the ship's company.

Transit to Operations Area

Once the ships left Pearl Harbor, the SECGRU division CTs unpacked their gear in their assigned berthing areas and reported to the telemetry room for a general mission briefing. We next unpacked our chests of TEXTA, TECHINS and crypto keycards. The O-Branchers worked with the ship's radiomen to get our secure communication up and running. We also unpacked our boxes of snacks and stowed sodas in the overhead air conditioning ducts. The sodas had to be well secured to keep them from rolling around and possibly disappearing into the ductwork. When that was finished we started practice and training sessions for the telemetry operators while the Morse and voice intercept operators manned their positions. Training now had an extra degree of realism as the CTs had to cope with the ship's motion, noise and vibration.

One of the most difficult parts of the training for the CTs was learning to rapidly acquire, recognize, and properly tune the telemetry signals. Speed was of the essence, since final portion of the missile trajectory lasted only a few minutes. There was also an interruption in the telemetry signals during reentry when ionized plasma formed around the warhead and

blocked the radio signals for a minute or two. Reacquiring the signals after this blackout was critical as some of the most interesting telemetry was at the end of the trajectory.

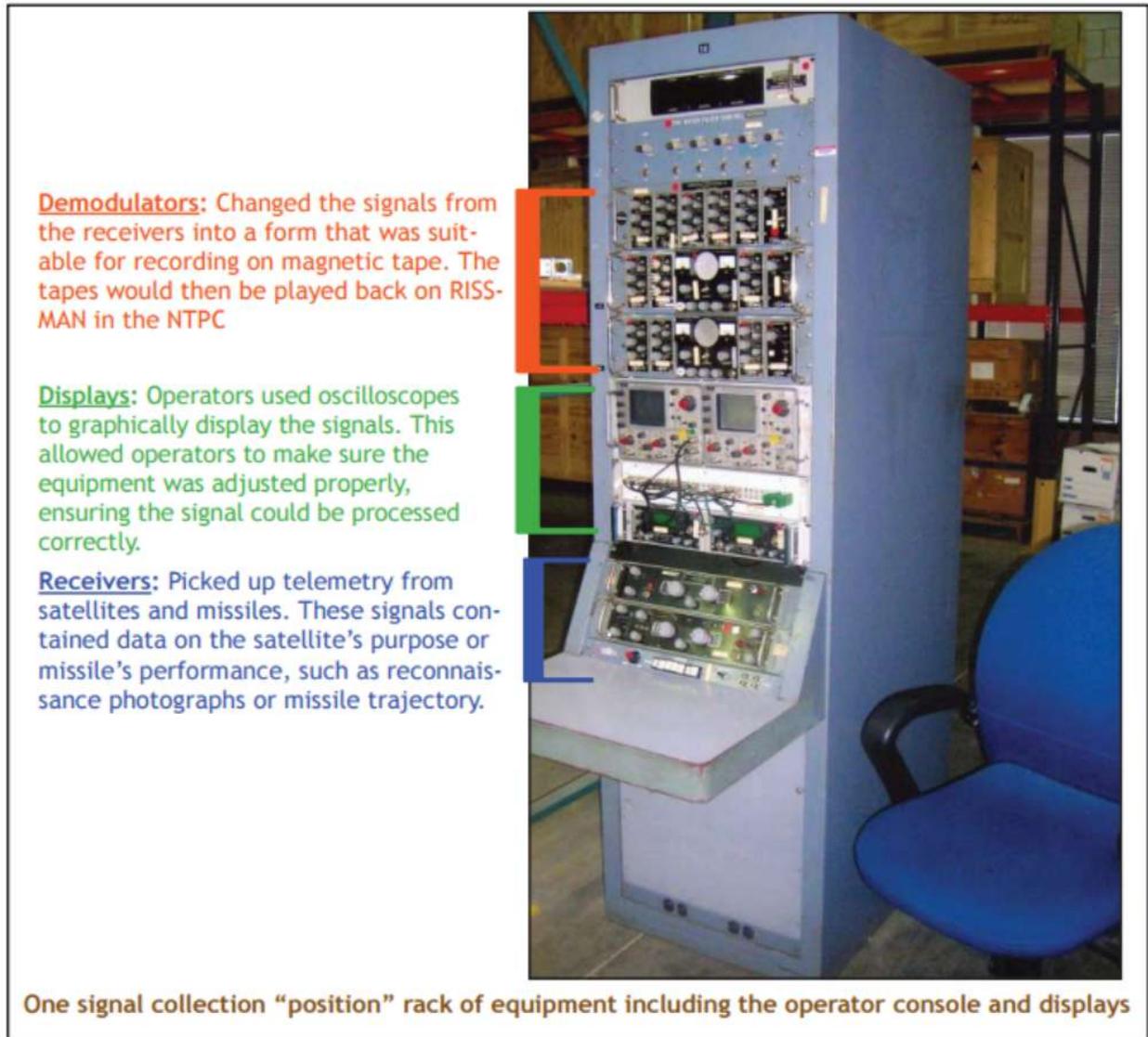


Figure 3 Telemetry intercept position from the 1970s

This exhibit in the National Cryptology Museum is nearly identical to those on the Pony

We had some training tapes we could play back on the high-speed recorders to familiarize the operators with the telemetry signal sounds and their appearance on the oscilloscopes. However, that didn't help the operator with the critical step of finding and properly tuning the radio receivers. With the help of my CTTC, I came up with a workaround that helped the operators get the full telemetry intercept experience. The test position at the end of the room had an amazing array of signal generators, mixers and amplifiers. We set up one signal

generator to mimic several of the Soviet PWM (Pulse Width Modulation) and PPM (Pulse Position Modulation) telemetry signals. When the Chief agreed that they sounded about right through the headphones, we fed the signals into the modulation input of a VHF signal generator. We could patch this signal into the RF inputs of the telemetry intercept positions with varying RF frequencies so that the operator would have to find and properly tune the signal. The problem with this method is that the telemetry signals were strong and clear and the only signals that showed up on the receiver.

I took this method one step further and suggested that we broadcast our simulated telemetry signal through a spare antenna at very low power. We weren't really set up to broadcast signals, but even with antenna mismatches and a very low power RF signal, I thought there would be enough signal for a test. We didn't want to test this in port, as even low-power signals on known Soviet frequencies might draw some attention from other ships. We certainly didn't want to try it when close to Soviet tracking ships during an operation as it would reveal too much about our knowledge of their operating frequencies and telemetry modes. We finally tested this training method while at sea in transit to a collection operation.

The simulated signal training worked surprisingly well. The operators got to work through several reentry scenarios in an hour. They had to use their receivers with their usual antennas. The chief and I could vary the signal strength and frequency and could even simulate the plasma blackout by shutting down the signal for a minute. I don't know whether the CTs on the other DEs adopted this method—we only perfected it on my last operation in February of 1974.

One consequence of this testing of the full signal-acquisition chain was that we found that we had a bad preamplifier in the junction box just below the omnidirectional antennas at the top of our intercept mast. We had a spare preamplifier, but the weather was bad, and our maintenance tech was not only seasick, but had a fear of heights. On the theory that I shouldn't ask anyone to do what I wouldn't do myself, I volunteered to climb the mast and replace the preamp. I reminded the chief that I had earned my tweaker and spent a lot of my teenage years building tree forts sixty feet up in in second-growth redwood trees. I had also recently taken a basic rock climbing course while on leave in Yosemite, so I knew how to

harness myself and tie off below the preamp box. The maintenance tech had spent three months with me on the Wheeling the previous summer and was confident that I could accomplish the repair. (The Wheeling had minimal roll, the weather was good, and our antennas were only about 10 feet above the deck.)

I briefed the CO and asked for a course that would minimize the ship's roll. Once we steadied on that course, I climbed the mast, tied off to allow me to use both hands, and started the repair. The repair consisted of opening the preamp box, disconnecting and removing the bad preamp and installing the replacement, then closing the box. I think it took me about 30 minutes. Soon after I tied off, I found that the course with minimum roll was directly into the wind and I was getting a strong dose of diesel fumes from the after stack. I yelled down about the fumes and asked for a minor course change. That reduced the fumes but increased the roll.

As soon as I mentioned the fumes, all the onlookers moved upwind in case I puked. That didn't happen, but dropped tools or parts were still a hazard. When the repair was complete, I asked the CTs to verify that the antenna and preamp were working properly. That took about five minutes, during which time I hung on and enjoyed the view.

When I got back to the deck, I was a bit unsteady on my feet and had the jitters from the adrenaline rush. We all retreated to the telemetry room and I had a celebratory Pepsi which had been cooling in the AC ductwork. The sugar and caffeine didn't cure the jitters and I think I was babbling a bit.

It turned out that the omnidirectional antenna and repaired preamp were responsible for a lot of our success in recording missile telemetry later in the mission.

Surveillance

Once we arrived in the operational area, defined as somewhere within sight of the SMRIS, we would cruise slowly around the SMRIS while the bridge crew plotted the position of the Soviet ships. We knew from previous tests that when a launch was imminent, the SMRIS would position themselves in an elongated cross with the long axis along the flight path of the missile. When that happened, we would position our ship in the center of the cross so that we would have the best chance of collecting warhead debris.

While we were watching the SMRIS, they were watching us. They had the advantage that some of them had onboard helicopters. The ones we saw were the KH-47 with two counter-rotating rotors. The helicopter would fly around us while both sides took photographs. They would generally stay a few hundred yards from us and not make provocative moves. Unlike other barely-armed surveillance ships such as the USS Liberty and USS Pueblo, we had two 3" dual purpose guns with anti-aircraft capability. There were times when the helicopter would close to about fifty yards upwind, then "bounce" down to about 30 feet in altitude. When they did this, the rotor wash would kick up a lot of spray which would wash over the ship. When this happened, the bridge crew would retreat inside and close the hatches. Luckless sailors and CTs on deck would turn their backs and hide their cameras under their jackets.



Figure 4 Soviet KH-47 helicopter near the USS Claud Jones Photo by Author.

We had a few white-knuckle incidents during the surveillance phase of Pony Express missions. The scariest incident occurred on the Claud Jones when the insulation around one of the freshwater evaporators caught fire. These evaporators were low-pressure distillation equipment that used waste heat from the diesel main engine exhaust to produce fresh water for the crew. The insulation started smoldering and the smoke was detected by the engine room crew. They called in a fire alert and the bridge hit the emergency alarm followed by the announcement “Fire in the engine room. This is not a drill!” The crew went to fire emergency stations and the CTs mustered in the telemetry room. With our separate AC system, we never smelled smoke, but it could be smelled throughout ship. The fire never grew to a dangerous blaze, but ALL fires on a ship are taken seriously. This one was identified and controlled in about 20 minutes.

Another incident occurred on the McMorris while we were on station. There was a failure in the hydraulic steering gear during a turn. As a result, the ship could only continue that turn until the steering gear was repaired. As a result, the ship sailed around in a circle for about two hours while repairs were under way. Since the ship could not maneuver, it had to hoist a day signal indicating that it was not under control. (The mnemonic we learned at OCS was “Red over Red, the captain is dead”. No captain likes to hoist that signal! Another downside to the situation was that it occurred near lunch time and we could not take a course to minimize rolling during the meal. During that lunch and other meals in rough conditions, the officers got very good at eating with one hand while holding our plates in place with the other. The crew in the enlisted mess actually had it easier. Their food was served on standard metal tray with four areas with raised edges that minimized sloshing. The crew mess was also a deck lower where there was less ship’s motion to move the food around. It was almost funny watching the officers handle the soup course: one hand tilting the bowl to keep the soup in place while the other maneuvered the soup spoon.

The 1033-class DEs rolled a lot. They were round-bottomed ships which had been given a lot of new topside weight in the telemetry room and antennas. It was not uncommon to have 30-degree rolls in the large swells of the North Pacific. Seasickness was a common problem—particularly among the CTs who didn’t spend that much time at sea and were in a closed compartment well above the roll axis of the ship. Sleeping in heavy weather was difficult. I would often sleep against the bulkhead behind the mattress in my bunk with the

mattress wedged against the bunk rail to keep me in place. It was not uncommon to find a few CTs strapped into the bolted-down chairs in telemetry room with their heads on their crossed arms trying to get an hour of precious sleep.

I was seasick to the point of nausea only once on my Pony Express missions. That occurred on a morning where the stewards served very sweet and greasy French toast accompanied by guava nectar. I was braced in a chair in the telemetry room just after breakfast when I realized that breakfast and I were going to part ways. I barely made it out the back door to the deck before losing breakfast. After about five minutes of coughing and spitting, I felt much better. French toast and guava nectar have joined with 95% ethanol and cranberry juice on my Do Not Consume list.

Resupply

There were some missions which extended beyond the fuel and provision limits for the DEs. When this was predicted, a second DE would arrive on station and the first would head for Midway for fuel and provisions. It would take a day or two to get to Midway and we would generally be at the pier there for only about half a day. The stop would give the sailors and CTs a chance to get ashore, visit the Navy Exchange and perhaps a bar at the EM or Officer's club. One of our favorite pastimes was to walk out to the golf course and watch the Laysan Albatrosses (or gooney birds) come in for a landing. While these birds were experts at soaring over the waves, they weren't very good at landing and taking off on land. Midway is a nesting area for these birds and we were supposed to keep our distance from nests and birds on land. It was amusing to watch the birds landing—many would tumble head-over-heels on landing. Unfortunately, a small percentage would tumble hard enough to break their necks and there were often a few dead birds on the grass.

During one approach to the pier at Midway, the captain allowed one of the ship's junior officers to handle the ship. While the crew and CTs watched on deck, he made a nice approach, but didn't slow down in time. We dinged one of the offshore dolphins (groups of pilings about 10 yards from the pier) pretty hard. The dolphin barely survived, and the McMorris got a good dent and needed some repainting of the hull. As a visitor, I stayed quiet in the wardroom that night, but the other officers were not gentle with the junior officer of the deck.

On one mission starting in early 1974, our detachment was aboard the USS Claud Jones at the time Navy-wide advancement examinations were scheduled. We had left Pearl Harbor several weeks before and had not anticipated being at sea so long. We did not have either the exams or the study materials the CTs needed to prepare for the test. CincPacFlt had a procedure to cover this, as it was a common occurrence for the CTs deployed on submarines: a special exam would be administered after the CTs returned to Pearl Harbor.



Figure 5 USS McMORRIS During High-Line transfer to the Claud Jones
Photo by author.

After we had been on station for about two weeks, another of the DEs, the Charles Berry arrived on station and delivered some critical supplies. I also received a message that the NSG officer on the Berry would be delivering our CT exams to be administered in about two days. This caused great consternation amongst the CTs. They had been tired and seasick for two weeks and had no access to books and manuals needed to prepare for the exam. Remember that this was before the era of internet downloads—the required manuals would

fill a footlocker and the manuals were classified and required special handling. We normally didn't take these manuals with us as we had limited storage space and no study area other than our telemetry intercept room. There wasn't desk space to spread out manuals and it was often noisy due to the teletypes in the communications area.

After consulting with my Chief, I sent a message back to headquarters requesting delayed exams and explaining why the exams would be unfair to the CTs. Some lieutenant commander on the staff decided that we didn't rate the same consideration as the CTs on submarines and we were ordered to proceed with the exams. I again consulted with the Chief, asking if there was anything else to be done. He said that if we were ashore we'd be screwed—but we were on a ship. The captain of a ship has nearly absolute control of administrative matters aboard his vessel. I went up to the bridge and pled my case to the commanding officer, Lieutenant Commander Hogan. LCDR Hogan sent a message to the NAVSECGRUDET CincPacFlt staff stating that, since there was a procedure in place for giving alternate exams and there was no secure area aboard the ships suitable for administering the exams, they would be postponed until the ship returned to Pearl Harbor. I'm sure there was some grumbling and cursing amongst the NAVSECGRUDET staff at this countermanding of their order. However, overruling a ship's commanding officer would require taking the issue outside NSG channels and it was unlikely that CincPacFlt would side with the NSG rather than their own commanding officer. The envelope with the exams remained sealed and the CTs breathed a sigh of relief.

LCDR Hogan's stock with the CTs rose to new heights. We had all thought him a good captain. Now we knew he would stand up to staff pressure in the interests of the embarked CTs. I have long felt that he was one of the best leaders under whom I served. After that incident, I was less impressed with the leadership of the NAVSECGRUDET staff. Along with the CTs, I felt that they didn't understand the difficulties of our mission on the DEs, and that they gave unfair consideration to the CTs aboard submarines. We knew that working conditions on the subs were difficult and living and working quarters were cramped. However, the subs didn't roll 30 degrees each way on station!

My own standing with the NAVSECGRUDET staff dropped significantly after this incident. Since I had already received orders to be released from active duty, this was not a major concern to me. I felt a lot more loyalty to the CTs with whom I served than I did to the staff weenies who complicated our lives. My fitness report from the Claud Jones was very good. The report from the NAVSECGRUDET staff—OK, but not as good. In the end, it counted for little as the mission reports from the USNS Wheeling, McMorris and Claud Jones were all very good. At that time, the best fitness reports in the Navy would probably not have been sufficient to change the decision to release me from active duty.

While we were on station with the SMRIS, we struggled to keep our high-frequency radio communications circuits open. We were often in what the communicators called “the Black Hole of Midway”. HF radio signals bounce off the ionosphere, allowing them to have hundreds to thousands of miles of range. However, there are areas along the signal path called “skip zones” where communications are unreliable. The locations of the skip zone are dependent on the frequency and time of day. The communicators could usually get circuits to work most of the time, but even small dropouts would cause the crypto gear to lose synchronization. Resynchronizing the crypto gear required using a new key card and following a procedure that took up to 10 minutes. One of the critical supplies delivered to the McMorris was several packages of crypto key cards.

Launch and Telemetry Intercept

When a Soviet launch was imminent, keeping communications in sync was critical. Unless one of the large US missile tracking ships was in the area, our only way to get warning of the launch was via HF communications. If the Vandenberg or Arnold was close by, they might be able to get the launch warning via either satellite communications or their own HF links and forward it to us via VHF radio.

We had a high-gain steerable antenna in the “golf ball” housing over the Telemetry room, but it was seldom operational. The antenna was supposed to give us satellite communications capability. The rolling motion of the DEs resulted in too much wear and tear on the aiming system servo motors and they usually failed before we arrived on station. Even if they were working, the servos couldn't move the antenna fast enough or far enough to compensate for

the ship's motion in anything other than the calmest of seas. Since we had no satellite communications capability, we had to rely on HF radio for warning signals.

The launch warning came from other national surveillance assets: ships or tracking stations near the Aleutian Islands, or satellites. In 1970 and 1973 the US launched its first geostationary SIGINT satellites, Rhyolite 1 and Rhyolite 2. These satellites were designed to collect telemetry from launches at the main Soviet launch facility at Tyuratam. The satellites were able to collect telemetry for the launch and intermediate phases of the missile tests, but they could not get good results for the re-entry phase of tests which impacted in the North Pacific near 180E. My own suspicion is that the modification of the Claud Jones class DEs was prompted by the lack of telemetry intercept satellite coverage in the mid-Pacific impact area.

HF Launch warning messages went out to the ships in the impact area at FLASH priority. By the time the message arrived aboard the McMorris, we would have about 15 to 20 minutes for the CO to position the ship and for the CTs to be ready to intercept the telemetry. If there was only one DE on station, the CO would generally put the ship right in the middle of the predicted impact area as determined from the positions of the SMRIS. That would give us the best chance to collect warhead debris and the exact position made no difference to the omnidirectional telemetry intercept antennas.



Figure 6 SMRIS Chazma

This is one of the Soviet missile range instrumentation ships. Photo by author.

When we estimated that the missile was about 10 minutes away we would start our high-speed tape recorders and begin searching for the telemetry signals. We had to be wary of starting the recorders too early as a tape only lasted about 15 minutes. We could not risk starting too early and having to change tapes in the middle of a reentry. We had two recorders, but we always wanted to keep one as a backup in case of an equipment failure. We would generally collect telemetry in two phases separated by a blackout interval. The blackout occurred as the warhead re-entered the atmosphere. The very high speed of the reentry vehicle would heat the air around it to become a superheated plasma that blocked outgoing telemetry signals. When the blackout occurred, the Chief would announce “Blackout” and note the time on the audio log channel. The CTs with valid telemetry signals would move their hands away from the receivers lest they jar a knob and shift their receiver frequency.

After a minute or two, one or more of the CTs would announce “Reacquisition” and the Chief would note that on the log and everyone would breathe a sigh of relief. We would continue to collect terminal phase telemetry for several more minutes until the warhead hit the ocean. There would sometimes be an announcement from the bridge of a visible impact. Some warheads also had a sounding and destruction charge that exploded on impact. This charge allowed the SMRIS to pinpoint the impact area with sonar gear. It also destroyed most of the warhead electronics.

After the impact the DE would head to the impact area to search for debris. After the CT’s had shut down the recorders and logged the frequencies and telemetry types, they were free to go on deck to observe the debris retrieval. The ship’s crew had long-handled dip nets to fish out any debris that they could find. All I ever saw recovered were some charred chunks of Styrofoam. Perhaps the size and curvature of the foam told CIA and Air Force analysts something about the warhead—to those of us aboard the ship it was rather anticlimactic. I think the CO and crew did find it interesting to match wits with the helicopter from the SMRIS to see who could get the most Styrofoam!

Return

The end of a Pony Express mission generally came when the SMRIS headed back to port. The DEs would then head back to Pearl Harbor. On the way back, we would prepare summaries of our collection, make backups of the tapes and clean up the telemetry room. Once the chores were done, the CTs and I would catch up on sleep to the degree allowed by the ship's motion and the need to maintain a communications watch.

On the return trip in November of 1973, we discovered that we were missing a used key card from one of our KW38 crypto units. These key cards were carefully inventoried, and loss of a key card was considered a major security breach. With the capture of the USS Pueblo in 1968, the Soviets gained access to US KW38 crypto machines and could potentially decode any intercepted comms for which they could obtain the key card.

We practically disassembled the telemetry room looking for that key card. The search was to no avail and we returned to Pearl Harbor without the card. We finally decided that the key card must have been inadvertently included with classified teletype printouts which had been dumped overboard. A long Pony Express mission would consume dozens of rolls of teletype paper. When ashore, the burn bags would go to an incinerator. At sea on the USNS Wheeling, we shredded the paper and kept it in bags in a large unused compartment. The DEs had neither a shredder or a secure storage area, so the classified printouts were stuffed into weighted bags and dumped overboard in deep water out of sight of the SMRIS.

On the way back to Pearl Harbor I wrote a report detailing the loss and search for the card. The NSG staff must have been convinced that there was no potential compromise, as no disciplinary actions were forthcoming. I later found out that the Walker spy ring (a searchable term) had been copying Navy key data and turning it over to the Soviets for almost 18 years.

One of the most satisfying moments of my naval career occurred after we returned from a Pony Express mission on the Claud Jones in February of 1974. We had collected almost five minutes of good telemetry signals. The Vandenberg was also in the area, but had some trouble acquiring the warhead with its high-gain antennas in the rough seas. As a result, our data was the best collected for that mission, and we generously sent a copy of our tape to the Vandenberg by small boat. They had specialists in telemetry analysis who could do a quick-

look analysis of the data. The Claud Jones then headed back to Pearl Harbor with our original tape.

A day or so after we returned, I got a call requesting my presence at NAVSECGRUDET headquarters for a post-mission briefing. This had never happened before. I checked with Chief and he said that such meetings usually happened when something had gone wrong. Congratulations usually arrived in the form of a Bravo Zulu message. Dissatisfaction was expressed in person.

I showed up at headquarters and was shown to the desk of a staff lieutenant commander. He asked, "How do you explain your team's performance on the last mission?"

I replied, "Well, I think we did the best we could with our omnidirectional antennas."

"So, you couldn't collect any data because your high-gain antenna wasn't working?"

I think he was confusing our SatCom dish with the large telemetry antennas on the Vandenberg, but we did have a steerable VHF antenna---which was seldom used .

"Well we might have gotten more with better antennas" I said.

By now the LCDR was in full snit mode. "The only telemetry I've seen from this mission is this tape from the Vandenberg. I don't like getting my data from the Air Force!" He then waved a large routing envelope containing a magnetic tape. It was the same envelope in which we'd transferred our tape to the Vandenberg, which had just arrived in Pearl Harbor. The technicians on the Vandenberg had made a copy of the tape and returned ours in the same envelope---just blacking out our To and From blocks and adding their own.

I politely said "Sir, if you look closely, you'll see that the tape you're holding originated on the Claud Jones. We sent a copy to the Vandenberg for analysis. The routing message in the envelope should make that clear."

After a few seconds, during which the LCDR had nothing to say, I said, "Is that all sir?" I departed quietly

TGU CincPacFlt and the Claud Jones later received congratulatory messages from CINCPAC and the NSA for our significant contribution to the Pony Express operation. NSG also got a thank-you note from the Air Force for allowing them early access to the telemetry data from the Claud Jones. I would love to have been looking over the LCDR's shoulder when he read those messages.

About a week later the Chief told me I should steer clear of headquarters for a while. The CPO network reported that a certain LCDR had been forced to eat crow over his premature criticism of the Claud Jones detachment. It's never good to put a superior officer in an embarrassing position. I was just weeks from my release from active duty at that point. I spent most of that time working the CTs at TGU to document the training simulations we had developed.