

1033-Class Destroyer Escorts and Pony Express

The Forgotten Platform



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Motivation, Declassification and Action

- Motivation: I wanted to record this part of my life for my family and for the families of the men with whom I served on the DEs.
- Action: I started collecting declassified documents and filing FOIA requests in 2015
- Declassification: The NSA report on telemetry intercept during the cold war led me to believe much of the subject matter was no longer sensitive.

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Between 2015 and 2018, I wrote a memoir of my 5 years in the Naval Security Group.

This presentation covers my experiences with PONY EXPRESS;

Although I have had no access to classified information since 1974, I felt obligated to comply with the secrecy agreement and submit my manuscript for pre-publication review. The manuscript was returned with some redactions and cleared for public release about one year ago.

The pre-publication review process leaves a lot to be desired--particularly for persons like myself who are 45 years out from their own cryptologic history.

Background

- The SALT-I treaty, signed in 1972, limited the number of ICBMs and SLBMs each party could deploy and strictly limited ABM systems.
- SALT-II negotiations started in 1972 and limited the number and type of strategic warheads.
- Collection of telemetry from opposition missile tests allowed the US and Soviet Union to verify compliance with the SALT treaties

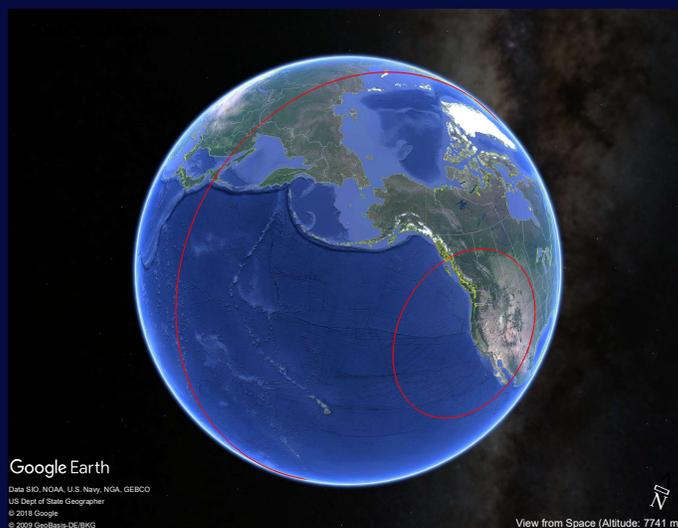
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SALT specified that telemetry was to remain unencrypted.
There was no requirement to specify the format and sensors.

SALT did not limit missile range

- This became a major problem for the US Navy



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In 1973, the Soviet Union started testing the SSN-8, which had a 4700NM range. This was about three times the range of its predecessor, the SSN-6. This slide shows the enormously greater area from which Soviet submarines could launch SLBMs targeted on San Francisco.

The problem was just as bad on the east coast of the US. Soviet submarines would no longer have to transit the GI-UK gap.

Determining the accuracy, payload weight and reliability of these new missiles was a very high priority.

Telemetry Collection Assets

- Anders: Shemya Island
- StoneHouse: Ethiopia
- Transportable Systems
- EA-3B Aircraft
- USNS H.H. Arnold TAGM-9
- USNS Hoyt Vandenberg TAGM-10



From NSA CCH Publication: Telemetry Intelligence (TELINT) During the Cold War

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These are the platforms covered in the NSA publication.

Stonehouse was discussed by several speakers in session 2C yesterday.

The Vandenberg and Arnold were converted cargo ships originally built near the end of WWII. The tracking radars and a high-gain telemetry dish made these ships ideal for telemetry intercept.

Their maximum speed of about 16 knots meant that they might need early warning to arrive in the BOA

The Hidden Assets:

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



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Missing from the NSA publication are the four destroyer escorts listed here. Two of the four were generally in port at PH ready for short-notice PE Ops. This photo of the McMorris shows her approaching the Claud Jones in moderate seas in the BOANW of Midway Atoll.

Claud Jones Class Destroyer Escorts

Specifications

Displacement:

1,314 long tons (1,335 t) standard

1,970 long tons (2,000 t) full load

Length: 312 ft 0 in (95.1 m) oa

Beam: 38 ft 0 in (11.6 m)

Draft: 12 ft 1 in (3.7 m)

Propulsion:

4 × Fairbanks-Morse 38ND8 diesel engines

9,200 shp (6,860 kW)

Single shaft

Speed: 22 knots (41 km/h)

Range: 7,000 nm (13,000 km) at 12 kn (22 km/h)

Complement: 175 (including CTs??)

Armament:

2 × single 3"/50 caliber guns (Aft guns removed on Berry and Perry)

2 × triple 12.75 in (324 mm) Mk.32 torpedo tubes

2 × Hedgehog anti-submarine mortars

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This slide shows the specifications for the 1033-class DEs.

The ships were built and launched in 1958 and 1959.

At the time I was aboard them, they were just 12 years old. This made them fairly new for naval ships which often have service lifetimes of 30 to 40 years.

The class design was soon determined to be unsuited for escort duty:

- * Too slow to keep up with carrier battle groups
- * New generation subs had submerged speeds faster than the DEs.

Telemetry Intercept Suite

- Before Modification:

No SUPRAD compartment

No intercept antennas

After deck gun



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The DEs were modified for telemetry intercept in late 1969 and 1970.
This photo shows the Berry before modification.
SUPRAD is short for Supplementary Radio—The NSG working area.

Telemetry Intercept Suite

- After Modification

SUPRAD compartment in front of aft stack

Telemetry intercept antennas

SHF SATCOMM dish

Aft deck gun removed (Perry shown)



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The omnidirectional antennas above the preamplifier box were used for telemetry intercept.

The rotatable log-periodic VHF antenna in front of the after stack was also used for telemetry intercept. It also did a good job bringing in TV signals when operating near Oahu. The dish antenna inside the dome aft of the after mast was used for SHF satellite communications. It was generally not very useful as the aiming servos could not compensate for 20 to 30-degree rolls.

The SATCOMM antenna generally failed in a few days if seas were anything but dead calm seas.

Telemetry Intercept Suite

- SUPRAD Layout

- Telemetry intercept positions

- Supervisor position

- 14-track high-speed recorders

- Test equipment

- Chairs bolted to deck

- HF intercept position (not visible)

- NSG Secure comms (not visible)



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The photo shows the interior of the SUPRAD looking aft from the door to the radio room. The teletypes and crypto gear for SECGRU communications were just to the right of the camera.

An HF intercept position was just to the left of the camera.

On the left are telemetry intercept positions and the two high-speed, 14-channel tape recorders

There was about a 15" space behind the equipment racks that provided maintenance access. That area was also used to for storage space for teletype paper, manuals, snacks and sodas.

Sodas were often placed in the overhead AC ducts for chilling.

At the far end are signal generators and test equipment.

To the right is another telemetry intercept position generally occupied by the supervisor (usually a CPO).

In the right corner you can see the display of a very precise digital time base display

Telemetry Intercept Suite

- Telemetry Intercept Position

Demodulators

Oscilloscopes for signal display

Patch Panel

VHF and UHF receivers

Bolted-down operator chair (not visible)



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This was my first encounter with radio receivers that had digital frequency displays. I had hundreds of hours experience as a CTI with R390A HF receivers that were mechanically tuned.

These TM receivers were electronically tuned using YIG filters (resonating crystals whose resonant frequency could be changed with an applied magnetic field.)

This equipment was near the State of the art electronics in 1970.

I was interested in electronics and I was like a kid in a candy store

(You can replicate most of the capabilities today, with better data recording, using a good laptop, software, and a \$150 USB SDR module)

Pros and Cons of using the DEs

- Pros
 - Four ships increased availability while allowing lower-priority tasks
 - Faster transit to BOA (22Kts vs 12-15 for Vandenberg)
 - Self Protection (remember the Liberty and Pueblo)
 - Ships capable of underway replenishment
- Cons
 - Poor seakeeping qualities hard on equipment and personnel
 - Limited SUPRAD and berthing space restricted NSG detachment size
 - Required more frequent resupply than larger vessels
 - Less capable telemetry intercept suite (particularly antennas)
 - No capability for onboard telemetry analysis

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The seakeeping limitations had a significant effect on the NSG complement. Rolls of +/- 30 degrees were common in rough seas (and it seemed the seas were always rough!)

The addition of the SUPRAD and antennas made the DEs roll even more.

The lack of the after 3" guns on the Berry and Perry may have improved their seakeeping.

Mission Profile

- Administration and Training

CTTs, CTOs, CTMs assigned to Technical Guidance Unit, Pearl Harbor, a division of Naval Security Group Detachment, CINCPACFLT

Division officers assigned to either NSG Detachment or NSG Division, NAVCOMMSTA Honolulu (then TAD to CINCPACFLT as required)

Training facilities and administration at TGU building 395, Pearl Harbor Naval shipyard

Specialized training aboard one or two DEs pier-side at Pearl Harbor

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Administrative control of the PE program shifted from NCS Hono to CINCPACFLT in about 1972. I was assigned TDY to the TGU at PH at that time.

CTs and officers were assigned other duties when PONY EXPRESS was between missions:

- * I served as a DIRSUP division officer on another program.
- * As a division officer for a SPINTCOMM relay station,
- * As an RPIO issuing officer (for a thankfully brief period)
- * As an assistant division officer at NAVCOMMSTA Hono.

The TGU building was the admin center and training building for the PE riders and sub riders deployed from PH.

There were separate training facilities for the two groups

Due to differences compartmented access and equipment.

There wasn't much crossover between the groups as the missions and equipment were very different.

Rec activities often pitted the surface pukers vs the bubbleheads.

While I was technically cleared for almost all programs, I only worked on PE and surface DIRSUP.

Junior Officers at TGU had to be cleared for compartmented programs as they served as JOOWs at COMNAVSECGRUPAC.

Mission Profile

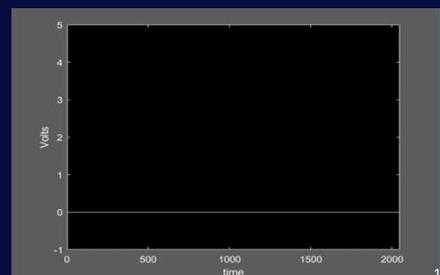
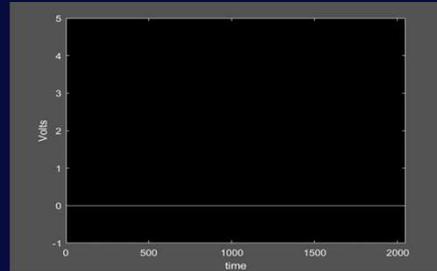
- Shipboard training

Basic equipment operation

Signal generators through patch panels

Training tapes of actual telemetry

Could not simulate actual intercept environment:
too many signals, no ship's motion



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One basic operator proficiency test was to tune and display a TV signal on the oscilloscope. This required use of receiver, demodulators and oscilloscope.

When I was able to complete this exercise, I was awarded an honorary Tweaker (small tuning screwdriver)

I was told it was quite an honor—as the most dangerous thing on any warship was an ensign with a screwdriver

Operators learned to identify different types of telemetry signals

Tests with signal generators and tapes weren't a good test of actual operating ability

No noise, known frequencies, strong signals

We developed a system that used multiple signal generators to simulate telemetry, which was then broadcast at low levels through a spare antenna.

It didn't work well in port: too many strong local signals and we didn't want to use Soviet frequencies when we could be heard.

Mission Profile

- Alert Phase

Commences with warning from DEFSMAC giving 24 to 48-hour notice of impending deployment

Teams selected and TAD orders issued for assignment to one of the DEs

CTs and division officer prepare for deployment for two to four weeks

Ships take on supplies and CTs and division officer move aboard ship

Typical PE Team

1 Division Officer
1 CTT CPO

6 CTT Telemetry collection operators
2 CTO Communications operators
3 CTR Collection specialists
2 CTM Maintenance technicians

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The typical alert started when I walked into TGU and someone announced “the SMRIS are out”

This meant that the Soviet tracking ships had left port in Petropavlovsk
Warning came from various reconnaissance assets through DEFSMAC.

Teams Assigned:

The CTs generally came from TGU, but if an RT operator was assigned, he often came from another unit.

PE Riders usually had about 48 hours notice of an operation.

Most ship’s officers lived ashore in family housing or BOQ requiring hasty arrangements for deployment.

Officer food supplies were paid for by the officers, purchased and prepared by the ship’s stewards

Mission Profile

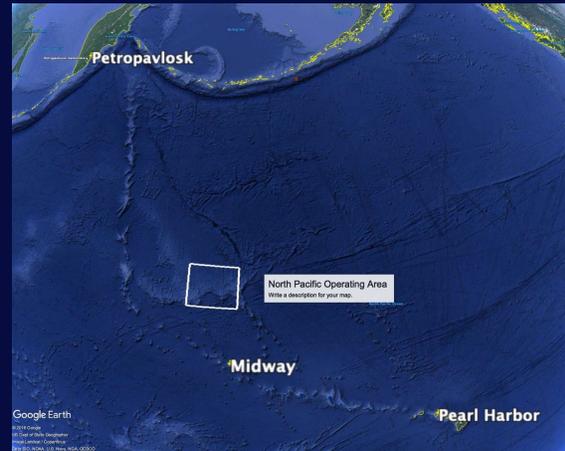
- Transit to Operations Area

DE departs Pearl Harbor and heads toward Midway Island

CTs and division officer settle in to shipboard life

Setup and testing of SUPRAD equipment

Establish and maintain NAVSECGRU communications channels



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The North Pacific BOA is about halfway between the SMRIS home port of Petropavlovsk and Pearl Harbor.

It could take a few days to a week to get your sea legs---some people never did.

I was seldom seasick to the point of nausea, but I often felt tired

We all accumulated bruises from collisions with bulkheads and equipment.

Mission Profile

- On-Station Surveillance

Locate and observe Soviet Missile Range Instrumentation Ships

Maintain Secure Communications for launch alert

Resupply as required



The SMRIS Chazma had a KH-47 helicopter that it used to check out the DEs and to retrieve warhead debris.

The SMRIS rolled a lot less than we did.

After a week or two at sea, we often received resupply from another DE that had left Pearl after us.

The most critical items were mail and key cards for the crypto gear.

(We left with minimal keying material and limited classified publications---memories of the Pueblo)

The DEs were sometimes refueled at sea, but most often made alternating runs to Midway for fuel and food.

On station between launches, the CTMs and CTRs often helped out with comms watches.

Maintaining HF comms in the BOA was often difficult:

We referred to the BOA as the Black Hole of Midway— HF radio signals often disappeared

Mission Profile

- Launch and Telemetry Intercept
 - Early Collection
 - Blackout
 - Terminal Collection
 - Impact and Warhead Destruction
- Debris Collection
 - Primary debris was Styrofoam chunks

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DE was often positioned near the center of the assumed impact area as defined by the positions of the SMRIS.

Telemetry collection opportunity lasted just a few minutes with a brief blackout as ionized gases generated by re entry heat blocked radio signals
Warhead destruction charge destroyed electronics and gave sound signal to precisely locate the impact

Most frequent recovery was Styrofoam pieces—whose shape might indicate warhead size and contents.

KH47 helos also recovered debris.

Mission Profile

- End of Mission
 - Mission ended when SMRIS left impact area or the DE was replaced by another ship
 - Occasionally, copies of data were transferred to Vandenberg or Arnold
- DEs Returned to Pearl Harbor
 - Sometimes a refueling stop at Midway was necessary
- CTs cleaned SUPRAD and slept a lot

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The Vandenberg and Arnold had analysis facilities and personnel. Sometimes the DEs got better telemetry in the impact phase due to closer proximity and omnidirectional antennas.

My Last PE Deployment

- 1974 was a year which saw CLAUD JONES perform several missions which resulted in considerable time at sea. On 31 December 1973, CLAUD JONES received orders to proceed to the Midway Islands for Pony Express Operations involving surveillance of Soviet Units in the Broad Ocean Area. Within 24 hours of receipt of these orders the ship was enroute Midway and plans to participate in Project Teal Gull in Mid-January were modified.
- CLAUD JONES remained at sea for 71 consecutive days despite adverse weather and limited support making use of underway replenishments with the USS PIEDMONT (AD17), USS KIWISHI (AO-146) and USS SACRAMENTO (AOE-1), plus two brief refueling stops in Midway. The efforts of CLAUD JONES contributed significantly in making this Pony Express Operation a most successful operation. In addition, Project Teal Gull was modified and conducted while on station, further demonstrating the versatility of CLAUD JONES.
- I was released from active duty in March of 1974

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The first two paragraphs are from the 1974 command history of the Claud Jones. They were originally classified Secret. I received them via FOIA request. Claud Jones was also at sea for about the last three weeks of December 1973 (which are part of the 71 consecutive days of sea time).

TGU and the ship probably knew about the orders a day before they were issued.

Berry and Perry were gone by then. Only the Claud Jones and McMorris remained. This is probably the reason for the very long deployment.

MUC Award

- All 4 DEs (and several other units) received the Meritorious Unit Commendation for IVY GREEN operations in 1970
- In a declassified 1973 CINCPAC command history IVY GREEN was described as follows:

“IVY GREEN operations were supplementary collection operations against foreign missile and space activities. Soviet tests monitored by the United States were conducted periodically during 1970 both in the mid-Pacific broad ocean area and in the Kamchatka Peninsula area.
...”

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On 5 August CINCPACFLT informed CINCPAC that one of the destroyers observing a test series had reported impacts at ranges of 3,500 yards east and 2,000 yards down range from him.

During IVY GREEN operations off Kamchatka, the ships were warned to take only the minimum amount of classified material necessary for the mission. The loss of the Pueblo was still fresh in the minds of the NSG.

The End Service for the DEs

- Claud Jones DE-1033 Sold to Indonesia December 1974
- John R Perry DE-1034 Sold to Indonesia February 1973
- Charles Berry DE-1035 Sold to Indonesia January 1974
- McMorris DE-1036 Sold to Indonesia December 1974

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Claud Jones and McMorris on PE ops from December 1973 to February 1974 and later in 1974 (after my time)

All the ships had WESTPAC deployments in 1970s.

The ships all received MUC awards for IVY Green Operations in 1970.

The DEs continued in service in Indonesia for about another 30 years.

Closing Theme for Telemetry Collection

And all this science I don't understand
It's just my job five days a week
A rocket man, a rocket man
And I think it's gonna be a long long time
'Till touch down brings me round again to find
I'm not the man they think I am at home
Oh no no no I'm a rocket man



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I had one former Pony Express rider comment as follows after I sent him a copy of my memoir :

“ I'm grateful to you for doing the book - I've wanted to tell my wife, kids and grandkids what I did, but had the classified sword of Damocles hanging over my head so all they knew was "Daddy went to sea and will be back".”

He wasn't quite the man they thought he was at home!
(First run 8/5/2019 34 minutes)