# Recollections of the Late Rear Admiral Peter Cullins

Peter K. Cullins was born in Annapolis, Maryland on 19 November 1928, the son of Captain Thomas Oliver Cullins (then a LT and USNA `21graduate and Helen Adelaide (Hopkins) Cullins. He grew up in Palos Verdes, California when his father served in cruisers and battleships homeported in Long Beach. He moved with his family to Oahu, Territory of Hawaii, and attended Punahou school until the Japanese attack on Pearl Harbor on December 7, 1941 during which his father's battleship' *USS OKLAHOMA* was sunk while his father was ashore. The family (including sister Patricia) was evacuated on Easter Day, 1941, to Annapolis, where he attended Annapolis High School for two years. When his father went back to sea, he attended Valley Forge Military Academy in Wayne, Pennsylvania and graduated in 1946. When his father's Navy assignment took the family to Houston, Texas, Cullins attended the University of Houston. He passed the Presidential examination for the Naval Academy, where he graduated with the Class of 1951.

Ensign Cullins' initial sea duty was in *USS ROGERS* (DDR 876) as the Electronic Material Officer, Assistant Communication Officer, and Registered Publications Custodian. He joined the ship in the Western Pacific where it was a unit of Task Force 77 during the Korean War. Returning to San Diego, California in December 1951 he attended the Anti-Submarine Warfare School and returned to *ROGERS* as the ASW Officer. During a shipyard overhaul of *ROGERS* in Mare lsland Naval Shipyard in May 1952, Ensign Cullins was badly injured in a head-on accident with a drunk driver and spent five months in the Oak Knoll Naval Hospital in Oakland, California. He was then ordered to the Combat Information Center School in Glenview, Illinois with promotion to Lieutenant (Junior Grade) on 1 January 1953.

Returning to sea duty in March 1953, LTJG Cullins reported to *USS CARPENTER* (DDE 825) as CIC Officer. The ship deployed to Korea for eight months, mostly with TF 77, until 19 December 1953. On 2 April 1954, he married Valaree Margaret Jacobson, the daughter of Commodore Jacob Harry Jacobson USNA '18 at Pearl Harbor. With Cullins now serving as the Operations Officer, *CARPENTER* deployed again to the Western Pacific for seven months from August through February 1955.

From *CARPENTER*, LTJG Cullins was ordered to the first Guided Missile Officers Course at the Convair Terrier missile factory in Pomona, California. It was here that he began to gain a detailed knowledge of guided missile technology that would play an important role in his future assignments. After the two-month course, he was ordered to the pre-commissioning detail of the first guided missile cruiser *USS BOSTON* (CAG 1) at the New York Shipbuilding Corporation in Camden, New Jersey, as the Sixth Division Officer in the Weapons Department. After commissioning at the Philadelphia, Pennsylvania Naval Shipyard on 1 November 1955,

*Boston* shifted to new homeport, Norfork, Virginia. Most of the next year was involved with Refresher Training at Guantanamo Bay, at-sea VIP visits, and the operational evaluation of the Terrier Missile. Cullins was promoted to Lieutenant on l February 1956 and became the CIC Officer.

*BOSTON* deployed to the Sixth fleet in the Mediterranean from November through March of 1957, ushering in a new era in naval warfare during which Cullins, using his understanding of guided missile technology, authored a Sixth Fleet Air Defense Guide. Prior to LT Cullins' detachment for shore duty in November 1957, BOSTON participated in a midshipman cruise to Chile, several major fleet exercises and a two-month NATO exercise in the Norwegian Sea.

Continuing to advance a growing subspecialty, LT Cullins' shore duty from November 1957 to November 1959 was as the developer and instructor for the Senior Officers' Guided Missiles and Fleet Air Defense Course at the Fleet Air Defense Training Center in San Diego. He was then ordered to the Naval Electronics Laboratory in San Diego, to attend the Navy's first course in Basic Operational Computer Programming, along with three other officers bound for the first four ships that would be equipped with the Naval Tactical Data System (NTDS). After one year of training, Cullins. was ordered to *USS ORISKANY* (CVA 34 ), one of the two CVAs to get the NTDS installed initially. He was there from January until June 1961, being promoted to Lieutenant Commander on 1 April. His next assignment was to the pre-commissioning detail of the first nuclear carrier, *USS ENTERPRISE* (CVN 65), at the Newport News Shipbuilding and Drydock Company in Hampton Roads, Virginia, as the Assistant CIC Officer and NTDS Officer. *ENTERPRISE* was the first ship to go to sea with the NTDS and the advanced technology fixed array radars.

*ENTERPRISE* was commissioned on 1 November 1961 and went to RefTra in Guantanamo, after requisite at-sea visits by VIPs who wished to observe this new, unique ship in operation. She deployed to the Med in July 1962 until October arrival back in Norfolk, whereupon a week later she was deployed off Cuba for 49 days during the Cuban Missile Crisis. She deployed again to the Med in February 1963 and LCDR Cullins was detached in May to report to the Naval War College in Newport, Rhode Island for the nine-month course. After the NWC, where LCDR Cullins obtained a master’s degree in intemationa1 affairs, in June 1964 he was ordered to report for duty as the Executive Officer in *USS LUCE* (DLG 7) homeported in Mayport, Florida. As part of predeployment workup, *LUCE* went to Guantanamo for RefTra, that was interrupted by the ship’s emergency insertion of Marines in the Dominican Republic during a revolutionary uprising. *LUCE* deployed to the Med in May 1965 and LCDR Cullins was detached in August to proceed to Newport News Shipbuilding to become the Operations Officer of the first nuclear cruiser *USS LONG BEACH* (CGN 9), which by now also had the NTDS and

the Fixed Array Radars installed. Upon reporting LCDR Cullins was spot promoted to Commander pending official promotion to CDR. on 1 March 1966.

*LONG BEACH* shifted homeports to her namesake of Long Beach, California, and after completing RefTra, deployed to the Tonkin Gulf during the Vietnam War from 9 November until return to home port in June 1967. During this deployment, CDR Cullins was instrumental in initiating the use of NTDS in fleet air defense and the operational employment of the Talos Missile while *LONG BEACH* was on station in the Positive Identification and Radar Advisory Zone (PIRAZ). He was then ordered to the Office of the Chief of Naval Operations (OPNAV) at the Pentagon as the Head Joint and Allied Tactical Data Systems Branch in the Surface Warfare Directorate where he was intensely involved in the further development of NTDS and SAM missile application in the fleet. After two years in OPNAV, he received orders as Commanding Officer of *USS WADDELL* (DDG 24), homeported in Yokosuka, Japan. After fourteen months in WestPac, mostly on the 'gun line' off the coast of South Vietnam, *WADDELL* returned to her new homeport of San Diego, having won a second straight Battle *E*. In July 1971, CDR Cullins received orders back to OPNAV as Head Surface Combatant Ship Branch of the Ship Acquisition and Improvement Division, during which time he was promoted to Captain on 1 July 1972. During this tour, he was principally engaged in trying to improve the effectiveness of the Fleet Modernization Program (FMP).

Captain Cullins' next assignment was as Commanding Officer of *USS LITTLE ROCK* (CLG 4) in Newport, Rhode Island where he reported in June 1973 shortly before she deployed for Gaeta, Italy as the flagship for Commander Sixth Fleet. During his two-year tour, his overseas-homeported ship was involved in numerous NATO and national naval exercises and made several dozen important political-military port visits as the fleet commander's flagship. In June 1975, Captain: Cullins was ordered back to OPNAV as Head Surface Warfare Plans and Programs Branch. This tour was interrupted by selection to Rear Admiral in January 1976, followed by frocking and orders as Director Information Systems in OPNAV (OP 91) where, based on his strong automation background, he was directed to form a business computer command in the Washington Navy Yard. OP 91 was dissolved and RADM Cullins was double-hatted as Commander Naval Data Automation Command and Director Command and Control Information Systems Division OP 942 (for six months until a new OP 942 RADM relieved him). He was intensely engaged for three years in forming NAVDAC and had the privilege of forging a close working relationship with the legendary Grace Hopper. From this duty, RADM Cullins was ordered to Puerto Rico to relieve as Commander South Atlantic Force. In this capacity, in 1980 and 1981, he planned exercises with South American and West African forces and led a force of ships on cruises to each of these continents, conducting bilateral exercises with various countries that included an important diplomatic mission in dealing with their military and political leaders. On 1 August 1981, Admiral Cullins retired from active naval service.

Rear Admiral Cullins has received two awards of the Legion of Merit, the Bronze Star, Meritorious Service Medal, Navy Commendation Medal, Korean Presidential Unit Citation, Republic of Vietnam Honor Medal, RVN Distinguished Service Order Second Class, and nineteen other various area, service and campaign ribbons.

Following retirement, Admiral Cullins and his wife Valaree took up residence in Camp Springs, Maryland. From 1985 until 1996 he worked for The Retired Officers Association as their information technology department head. He then retired again, on 1 April 1996, to pursue his life of gardening, travels to the Caribbean with his wife, racquetball, scuba diving, reading, writing, and stamp-collecting. Valaree, his wife of 54 years, died in December 2008. Together they enjoyed many years of happiness, raising two children, three grandchildren, and four great grandchildren. Admiral Cullins continues to reside at his home in Camp Springs.

# Subjects Covered

B-52 and Iron Bombs

Air Force versus Navy in the Tonkin Gulf

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Fun and Games on the Gun Line

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# B-52s and Iron Bombs

**From "Coloring the News" - McGowan – 2001**

"The spectacle of B-52s, the quintessential strategic bomber of yore, being called in to provide direct air support against enemy troop positions is striking testimony to the change in thinking and organization that has taken place".

This reminds me of an incident at the Naval War College in either the fall of 1963 or the spring of 1964. I was a student sitting in the large auditorium with all of the War College students as part of the usual series of lectures by senior military or civilian officials. The speaker of the day was a USAF Lt Gen, a bomber general with, I believe, the name Blanchard. He was talking about the Strategic Air Command.

At one point he galvanized the usually sleepy students with a statement that SAC was going to look into the possibility of dropping iron bombs from B-52s. There was instant derisive laughter from most of the students (of course the majority of the NWC students were USN). First off, I was upset that the students were not showing much respect to a very senior officer, and secondly that we were there at the NWC to theoretically stretch our uni-service thinking.
One would say that the general was prescient. Half a decade later, B-52 strikes around KheSan probably caused the NVN army to decide they couldn't produce another Dien Bien Phu and thus withdraw. And three decades later, B-52s certainly helped "prepare the battlefield" in Desert Storm. And there isn't much doubt that the Taliban and al Queda know the B-52s. Every time I see the "ArcLight"-type strikes on TV I think of the [mostly] naval officers and their derisive laughter about the ridiculousness of a high-flying strategic bomber having any effect on a battlefield

# Air Force versus Navy in the Tonkin Gulf

In October 1966, after *USS LONG BEACH* (CGN 9) arrived in the Tonkin Gulf, it was soon apparent that we could track all aircraft over North Vietnam by radar whereas other platforms in the Gulf could only track US aircraft by Identification Friend or Foe (IFF), since land clutter interfered with the radar picture. Other ships were either too far away from the "packages" or did not have good Moving Target Indicator (MTI). For example, the Air Force "BIG EYE", a C121 that frequently hung around the Northern Gulf, didn't have a good radar picture. The E2B aircraft obviously could track our carrier strike aircraft to the targets, but as many of these aircraft were in the habit of turning off their IFF equipment when over land (the myth was that they could be tracked by the NVN, which didn't wash as the NVN command and control network knew where their aircraft were, thus any other aircraft they tracked had to be US), they couldn't be tracked and the E2B aircraft couldn't handle the land clutter.

As to tracking NVN aircraft, no one except CGN 9 had radars capable of tracking them. (CGN 9 had the first phased -array frequency- shifted SPS 32/33 radars, in effect the forerunner of the Aegis radars.) "Spook" units in Danang and in BIG EYE could issue "Mig Warnings" over the UHF Guard circuit monitored by all US aircraft, (if they didn't turn the volume down due to circuit clutter), but these code word warnings were from decoding of the NVN tracking network and were so "time late" that they frequently gave a false picture of where the Migs really were or in what direction they were heading.

We had a pretty good handle on where the US aircraft were in the USN “Package 6B” area of northern Vietnam. (“We” because I was Operations Officer of CGN 9 during our 66-67 deployment). In the western Package 6A, we could track lots of US aircraft but didn’t know who they were, since this was generally the USAF area of operations. In addition, all sorts of strange aircraft would enter the PIRAZ (Positive Identification and Radar Advisory Zone) that we couldn’t identify, and some would fly over NVN and return to the Gulf (sometimes scaring us badly, if we lost track of them due to low altitude over land).

It took frustrating months for us to sort this out. We finally, through the efforts of CTF 77, started to get Air Force “frags”, the daily schedule of AF flights against package targets. It took while to get the 7th AF people to tailor the frags for our use, with IFF codes, because their tailoring of IFF codes to strike packages could in effect give you the voice call of the flight based upon their observed IFF code. This really paid off in 1967, (and I think helped keep the frags coming daily), when we observed a MIG 21 heading west right toward some AF blips which were heading toward their assigned targets. We decoded the USAF IFF and I got on UHF Guard calling out “Dodge 21 (as I remember, many AF strike calls were named after cars), this is Red Crown (the Piraz voice call) on Guard - Bandit 030 relative to you 40 miles closing ... Dodge 21, Bandit now 030 relative 30 miles closing” ... etc. The contacts merged on the radar, and we were of course frustrated as the Mig 21 headed back to the vicinity of Hanoi. Imagine our excitement several days later as we received a message to “Navy Red Crown” from an AF Captain stating that he had been Dodge 21, had heard our strident Mig call, had decided to break his F-105 flight sharply to the right, and observed two air-to-air Atoll missiles pass directly in front of the path on which they had been heading before they broke right. This encouraged us to continue with this whenever we could identify the US target that the Migs were heading toward. (Easier with the AF - their aircraft usually kept their IFF on when over NVN, as compared to the Navy).
Our complaints to CTF 77 about the “strangers” in our area paid off when we all discovered that the omnipotent Strategic Air Command (SAC) was flying drones into our area, with the launch and recovery aircraft down to the southwest, and the reconnaissance drones heading north into our area and then inland for 20 - 30 minutes then exiting to the southwest back to the recovery area. When SAC figured out that we alone could sometimes track these drones, and they were losing some over land, we started to get regular notification of these flights so as to help keep track of them.

Apparently, the word about Red Crown didn’t get around to all AF flights. One day we tracked a friendly headed out of Package 6B toward us that couldn’t be identified by us, and got a call on the emergency guard circuit from an AF F4 - one of these “Any station this net” types of calls. We answered as “Navy Red Crown”. Turns out he was low on fuel and looking for a tanker over the Gulf. We were in agony because we knew he wasn’t configured to drink from Navy tankers (I forget the details, but with “probes and drogues” differences, some aircraft could drink from some tankers but not from others - a big incompatibility among the services)., but we tried to locate the AF tanker that hung around the Gulf, usually unknown to us. Couldn’t do it, so we told him that we had him located to a “T” as he bailed out. The North Search and Rescue (SAR)

station DLG picked him up immediately and returned him to *LONG BEACH*, where he said he had taken out his pistol as the DLG approached because he hadn't known any US ships were in the Gulf that close to land!

A potentially disastrous situation existed one day towards the end of our deployment when a giant blip was detected some 250 miles to the north, coming out of China, heading towards us at a speed of over 1000 mph. We'd never seen anything that big or fast and immediately reported it while going to General Quarters. All of TF 77 also went to GQ. We sent our BARCAP (Barrier Combat Air Patrol) to investigate, and attempted to lock on the target with our Missile Fire Control System (MFCS). The CAP couldn't get up as high as the contact, which we calculated at 90K altitude. We eventually locked on with our MFCS, but by that time the CAP reported that they could see the contact above them and that the contact had a bizarre shape and was black. The whole thing was so strange and fast moving that we didn't attempt any attack, nor did CTF 77 direct us to do anything, and the contact passed overhead of TF 77 and headed south. We soon learned that good old SAC had struck again - the contact was code-named "Giant Scale" and turned out to be a reconnaissance mission by the SR 71 Blackbird, which none of us had ever heard of before. Had we shot it down with Talos, which perhaps would have required a faster reaction than we were capable of due to all of the puzzlement and uncertainty, it certainly would have been a major drama.

The point of all of the above is that it was obvious that the Navy and Air Force were not very closely linked in a joint effort to make the best use of each service's unique capabilities or equipment's, and that the "green door" mentality of "sensitive" missions or unique capabilities hampered each service's ability to get the most out their assigned operations.
As luck would have it, I was ordered to the Tactical Command and Control Systems Branch in the Office of the CNO, and was the Tactical Command and Control Joint Interface Officer, among other things. I worked some Vietnam command and control papers for the OPNAV office responsible for joint matters, did a lot of briefing on Piraz, worked on building up equipment suits for Piraz-bound ships, but perhaps my principal job was as the Navy's Executive Agent for the Southeast Asia Interface of the joint service's tactical data systems in the theater. This had been directed by Secretary MacNamara and was to interface the Navy's Naval Tactical Data System (NTDS/ATDS), the Marine Tactical Data System (MTDS) and the Air Force Seek Dawn, which was a system located at Udorn, Thailand plus an NSA system called Ironhorse in Danang. My responsibility as Executive Agent was to get the individual service points of contact together to agree on procedural details - in particular the technical message standards which had to be exactly the same to allow the individual systems to exchange data. All the systems were in place (the MTDS in Danang) but the AF had to build a "buffer" system to communicate with the NTDS and MTDS, and all had various differences which had to be ironed out and then tested before "the switch could be thrown" in Vietnam.

An interesting sidelight to this is when a Dr. Cannon, who was the Chief Scientist for the CSAF, came to see me in my Pentagon office. He had heard that I was the Piraz "wizard", and wanted to know if I could come out to Andrews AFB on a Saturday and brief some AF generals on Piraz

capabilities. I said sure, and this junior Navy CDR went out to Andrews and found about a dozen generals waiting. This was a time when the Migs were bouncing a lot of US aircraft and the odds were turning in the NVN's favor in air-to-air combat. I gave my Piraz briefing and answered lots of questions. My bottom line was that the Piraz ships had lots of capabilities and information which could be useful to the AF effort over NVN. Most of this was new to the generals present. I don't know whether the word came down, but AF cooperation from the Seek Dawn contractor and the AF Southeast Interface reps was quite good after that.

The interface testing started and was proceeding well when I got a call from the officer whom I had assisted on USN input to the Joint Staff command and control papers. He showed me a back-channel message from the CTF 77 at the time, stating that he was not in favor of the Southeast Asia Interface being deployed as it would eventually lead to the Air Force gaining control of all air-tasking in the area - that the Air Force would "take over" command and control.
The Southeast Asia Interface proceeded anyway and was implemented successfully in late 1968 or early 1969. Perhaps CTF 77 was prescient, but for the wrong reasons. A subset of this is that my last few months in OPNAV were spent putting together the next generation interface, as the JCS Executive Agent for the integration of the NTDS/ATDS, MTDS, the Army's TSQ 73 and the AF TSQ 91. An interesting sidelight is that an AF group showed up to brief us with their slides showing that their next generation airborne system, called 407L, was pictured as a big circle in the middle, with everybody else's system feeding into 407L, with nothing flowing out. (407L eventually became AWACS.) In any case, well after I was gone the successful test of TACS/ TADS (Tactical Air Control Systems/Tactical Air Defense Systems) was completed in 1977. This was presumably the forerunner of today's supposed integration of all Command, Control, Communications and Intelligence systems intended for joint operations. But, as witness the Air Force dominance of the foregoing in the Gulf War, according to reports, perhaps that long- ago CTF 77 was prescient. Or was it just service parochialism and fighting the concept of joint operations

# NTDS - Success Has A Thousand Fathers

**10 Feb 2003**

Over the years, reading various articles in various publications about the engineering success in producing the Naval Tactical Data System, and the resources devoted to shore production of NTDS programs for the Fleet, I am struck by the total absence of anything about the 'operators' - those who took the system to sea. Thus, this monograph, in order to give the reader a flavor of the operator's viewpoint.

On 20 April 1959, I was at the Fleet Air Defense Training Center (FADTC) on Point Loma, in San Diego, instructing in the Senior Officer's Guided Missile and Fleet Air Defense Course. I wrote the Bureau of Naval Personnel (BuPers) asking that I be ordered, upon completion of my shore duty at FADTC, to "...a course of instruction in Operational Computer Programming and then be assigned to the commissioning detail of either the USS King (DLG10) or USS Mahan

(DLG11) as prospective Operations Officer." I was aware that the Naval Electronics Laboratory (NEL) across the street was in the process of developing the NTDS. I knew that the two DLGs and CV *ORISKANY* were going to test the NTDS, and that CVN *ENTERPRISE* and CGN *LONG BEACH* would get the 4th and 5th suits.

BuPers replied on 9 June that I had been "...selected for assignment to the NTDS training course that will convene in early January 1960 at NEL, San Diego, California. The course of instruction is expected to last approximately one year." "You will be considered with other qualified officers for assignment at the time the DLG's are nearing completion."

Realizing that I was going to become a 'programmer' I volunteered for a study being done by the Naval Personnel Research Field Activity, essentially to determine how to select computer programmers. I took the test, consisting of five parts:

*Logical Analysis Device
*Advanced Technicians Test
*IBM Selection Test
*Problem Solving Attitude Test
*Civil Service Commission Test
*Distribution Test

I aced the ATT and scored above the median on all the others, but not significantly so. I had gotten pretty friendly with the Director of the Selection Research Division, and when I later asked what his opinion was of the highest scorers, he replied, "Musicians or people with a significant musical background." Interesting, but I can see why, since musicians have an almost mystical feel for the totality of a project while working on parts of it.

So, I was detached, walked across the street to NEL, and reported in on 7 January. Found out that I was the first officer, of the ones destined to go to sea, to report in. All the other officers at NEL who were involved with NTDS were on shore duty and involved in testing. I was in Code 1700, under a Cdr Frank Quinn (although it seems to me somehow that he didn't report until later). Code 1700 was to set up 'NTDS Training', but there was at yet nothing to train on/with. So, I was pretty well left on my own until the Basic Operational Computer Training Course (BOPC) started in late January. A couple of weeks later I met the second fleet-bound officer, LT Sam Pearlman, when he reported in, with, "Now let me tell you all about this here NTDS!". The third officer to report in was Lt Curt McDowell, and the fourth and final was LT Tom Colligan (who I think reported in quite a bit later).

Pearlman and I, and I believe McDowell, started the BOPC course that Cdr Bob Sink of NEL had set up, in the first part of February. I believe this was the first official training course, as the instructors had just been trained themselves, mostly by Univac people.
The course was 8 weeks, lasted until 31 Mar 1960, and included:

*Number Systems and Conversions (Base 8, 10 etc).
*Boolean Algebra.
*Logical and Alpha-numeric Composition of Computer Programs.

*Basic Programming of the NTDS on the Remington-Rand UNIVAC M-460.

The really interesting thing, about the last segment, was how primitive it was compared to today - or even a few years later. Our graduation programs were flow-charted, then written by hand, in machine code, punched into paper tape by hand, to be read into the computer, and the results of the program had to be deciphered by reading what the registers (the rows of lights) said, after either a successful run or the dreaded 'Four Stop', which meant a program error - usually in coding. Let me explain, for those who can't believe how primitive it was in the early days:

*The machine had 30 bits in a 'word', and had space for 32000 words. Actually, as I remember, the real 'word' (usable instructions) was 30 bits, but since two bits were needed for error correction and detection, the 'true' word was 32 bits. Each bit of course was a 'magnetic core memory' ('donuts') that could represent a 1 or a 0 in binary code. The wired-in machine code in the computer had 62 instructions, as I remember. For example, the base 7 number (no 8's or 9's, remember?) for 'Add' might be 74. For 'Store' it might be 63. So a 30 bit word would start off with the basic instruction, taking up 6 bits, and the next three were for modifiers, register identifications etc, and the last five were for memory address. So a program might be written as 7403015006, meaning 'Add' something that 030 told you where to get it to something that 030 told you where to find it, and put the result into memory location 15006. A number went into three binary bits, as follows:

[0][0][0] was 0
[0][0][1] was 1
[0][1][0] was 2
[0][1][1] was 3
[1][0][0] was 4
[1][0][1] was 5
[1][1][0] was 6
[1][1][1] was 7

So the above 7403015006 on the computer registers (lights) would look like:
111100000011000001101000000110.

Fortunately, typing the 30 bit ten number base seven 'word' into the paper tape reader, to be read into the computer, was converted by the computer into the binary bits above, which would give the computer instructions as to what to do.

Putting the program together (and the graduation program was an air intercept program) was a matter of flow-charting the entire program logically. A flow chart realizes that the world is divided into yes/no decisions (binary) and what mathematical operation to do as a result of those decisions. Every problem can eventually be reduced into these logical decisions. So, after you were relatively satisfied with your flow chart, you would apply the numerical 'words' to the flow chart to finish the program prior to putting it into the paper tape reader (which meant typing it into the reader).

Later, of course, came Assembly Coding, which as I remember was 'mono-coding', in that we could use English, like "add" instead of "74" and the computer would produce 74 etc. Later came, I think, CS1 which was a compiler which would produce a number of instructions from an English phrase. (Might have been CS2).

Enough of the horror of remembering those times. But it is important to know what the developers had to go through to put the NTDS into one or two computers with only 32000 words, with a , I believe, 4 microsecond access time. As archaic as it was, one can see why a lot of machine coding had to be done to reduce to a minimum the code necessary to do the job. The early computer (eventually to be succeeded by later generation vertically oriented USQ-17, USQ-20, CP642A/B general purpose stored-program computers.) still could do about 50 -60000 instructions per second (642s were about twice as fast).

After we completed BOPC, since Colligan and McDowell were aviators, of course Pearlman and I divvied up the DLGs between us - me for Mahan and Pearlman for King - because no one at NEL, or from what we could see, BuPers or the PCOs of the ships, knew what was going on (or was telling us) other than that NEL was to test the in-house NTDS equipments (in a location known as ASDEC), and NEL officers would be monitoring both the Univac programmers who were the initial programmers of the Service Test software. and the eventually monitoring the training of the equipment technicians who would be reporting in. (Operator training would come much later, starting, I think, in early 1961, because the people to set up the course had not yet reported in to NEL).

After the BOPC training, in April the three of us plus a USMC Cpt programmer I've forgotten the name of, went to learn NELIAC, a NEL developed compiler, and then spent several months working with NEL's Bob McManus on the NTDS data link testing from another shore site besides the Rexberg, an NEL research ship which just had had the data link (Link 11) installed. We were deep into the error detection and correction business, in order to examine data transmission errors, using NELIAC. There were error correction and detection bits built into the SSQ-29 Link 11 modem and the series of tests were designed to see how much data was lost in transmission. I don't believe I saw any other naval officers or Univac types on these tests, at least in our testing area.

About this time Pearlman and I started dabbling in the aspects of manning, allowance, and training, at least for the Service Test DLGs Mahan and King, because there seemed to be a thundering silence on these matters from BuPers. We were sort of left alone on this and no one was apparently keeping the prospective CO's informed as to what was going on.

From letters I sent to Cdr Bill Busik, prospective CO of Mahan, (Pearlman and I had sort of 'picked' what ships we'd go to, and contacted the prospective CO's. Pearlman communicated with Cdr Mel Bustard, PCO of King), written in Feb and Mar '60, besides recommending myself, I recommended a Lt Lautermilch as the best of the NTDS Maintenance Officers I had seen. I also suggested that Lautermilch go on the 'Grand Tour' to Remington Rand (computer) (Apr-Jul '60), Collins Radio (communications) (Aug-Dec '60) and Hughes (displays) (Jan-Apr '61). Also that Pearlman and I had fought successfully those who had wanted to put Lautermilch on board after the NTDS installation was complete.

We also told ‘our’ CO’s that we had gone through all the available records and interviewed the men, determined their likes and dislikes, and arbitrarily, (and tentatively), split them, just so that, in Mahan’s case, Lt Lautermilch could work with them and get to know them. Ten were at NEL, and we each picked five. All were PO2 or above (ETs and FTs). Advanced training plans (which we had nothing to do with) were:

5 System techs to RemRand, Apr-Jul ‘60
5 Computer techs to RemRand, Oct’60 to Mar ‘61
3 Data Transmission techs to Collins, Apr-Aug ‘61
5 Data Display techs to Hughes, Mar-Jul ‘61

They would then show up on the ships about late Aug or early Sept ‘61.The presumed ‘allowance’ for DLGs would be:

3 System Techs
5 Computer Techs
5 Display Techs
3 Data Techs

Also, according to Cdr Trawick of BuPers (the NTDS-manning contact in BuPers), there would be an additional 18 or so ETs for each DLG.

I really pushed for pressure to get ‘our’ NTDS Maintenance Officers on board before the equipment installation. The BuShips EDO’s seemed to want them out of the way while their man on-site, a Lt Buckingham (a very cooperative guy), plus the BuShips engineers, did the entire installation and equipment checkout.

We had talked at great length with Cdr Trawick, Cdr Butcher and Cdr Foote (all of whom had a ‘hand’ in manning the ships), along with my putative boss, Cdr Frank Quinn - the #2 man in NEL Code 1700, and the man in charge of training the people for the NTDS ships. Butcher and Trawick felt that all of us NTDS types should remain in training at NEL until Sept ‘61 and then be superimposed on the existing ship’s structure. In other words, a ‘straight-stick’ group would take the ship through shakedown training and then a separate OPS, CICO etc, NTDS-trained group, would be thrown in, either as a separate organization, or to replace the original bunch, or to be the supervisors/superiors of the shakedown crew. We shuddered at this madness, but kept quiet. The next day, CDR Quinn, primed by us, gave a telling speech that the NTDS ‘crew’ could make a far greater contribution by being on board from the ‘word go’. I mentioned to Cdr Busik that, having commissioned the first guided missile ship, USS Boston (CAG1), after attending the first guided missile school, that “people thought that we couldn’t maintain missiles with our own people, couldn’t shoot the missiles, needed double talent, and that we had to have special rules for this and that, different tactics, and what-have-you. When I left the Boston, the missiles were the status of nothing more important than a highly efficient AA battery. I believe that the same parallel will be true in NTDS eventually. A special superimposition is not needed.”

I also emphasized that the Operations or NTDS Officer didn’t need 18 months of training. “The current Service Test Programming group of NEL’s Capt O’Toole, is organized on a basis which will continue for several years. Essentially it consists of 100 civilian programmers to program for several years. The naval officers [the so-called ‘Fabulous Forty’] over there are strictly advisors, to assist in the flow-charting of the operational aspects of the problems. Captain O’Toole, backed by Cdr Foote, states that all debugging will be accomplished ashore, that there can be no time

once [Mahan] goes to sea." As such the 'operational programmers' would have to crank in changes when directed by the shore people, and be able to identify problems as they occurred, either with the computers or the program, by intimately knowing the flow-charting and the system capabilities. No actual programming would be done on board. The purpose of the Fleet Computer Programming Center (where the civilian programmers and the 'Fabulous Forty' would go - I believe about the summer of '61 when FCPCPAC was established) would be to provide the debugged programs for the Fleet. Thus, I didn't think 18 months of 'training' was required. By the end of '60, we would be thoroughly familiar with programming, and all the flow-charting, and the programming method used by the Code 1800 people, and the existing Service Test programs, since the Code 1700 people had left us completely on our own in our self-training (since there were no 'courses' as yet set up). Our 'self-training' consisted of sort of wandering around to learn on our own, practically entirely from the Univac or CSC programmers. Mostly we looked over program flow charts, which was the way we 'learned' about the service test programs (for some reason we were seldom 'allowed' in the ASDEC to play with the system), and advised the incoming NTDS Training Group on matters. No one paid much attention to what we did or where we did it.

Much went on after this, particularly at the Washington level, which I'm not privy to, and my documentation is poor on the last half of '60. Much of what we did for the DLG manning and training sequencing/assignment plus when to report worked out, but to Pearlman and Cullins, the shock came when BuPers decided that we two senior LT's were too senior to go to the DLGs, so a LT Gardner, from the computer programming training group, plus a LT from Code 1700, would go to the DLGs. I would go to the commissioning of *ENTERPRISE* as ACICO/NTDS Officer and Pearlman would go to *LONG BEACH* as CICO. (Little did I know I would eventually go on to be Ops Officer of *LONG BEACH* 5 years later). McDowell would go to *ORISKANY*, as well as Colligan, when it entered the shipyard at Hunter's Point in San Francisco (although I don't remember them there before I left *ORISKANY*). As I remember, Pearlman went to *LONG BEACH* a little later than I went to *ENTERPRISE*, since *LONG BEACH* would be in the shipyard until early 1962. I would also go to *ORISKANY* in Jan '61, through the initial installation of NTDS in *ORISKANY*, and then go to *ENTERPRISE* at Newport News in time for the beginning of NTDS installation in her. Colligan and McDowell would stay in *ORISKANY* through Service Test, which was supposed to start in the Fall of '61 and finish in the Spring of '62. (Actually, I seem to remember that Service Test didn't complete until mid 1962.)

So, I reoriented to learning *ORISKANY* programs, which were the same as would be installed in *ENTERPRISE*. In late '60, I met *ENTERPRISE* PCO Capt Vince DePoix and PXO Cdr Max Harnish and commenced the same dialogue/planning that I had attempted to do with Mahan. For example, re my collecting personnel data, among other correspondences Max Harnish wrote me, "We are in the process of writing a letter for a new personnel allowance and any information we can obtain on officer and enlisted personnel required to man our CIC and associated equipment would be helpful."

Having been transferred from LT detailer, Cdr Landis, to LCdr detailer, Cdr Pridinhoff, he informed me that I'd leave NEL in January 1961, and go to *ORISKANY* until *ENTERPRISE* needed me. I was detached on 31 Jan and reported to *ORISKANY* on 17 February, and had a month of so of operating until late March when *ORISKANY* entered the shipyard.

The shipyard time is foggy for me. I know that BuShips LCdr Al Bettis was around a lot during the equipment installation and technical checkout, and I was mostly an observer to keep the CO, Capt Ace Barton, informed as to how things were going. I was recalled to the FAAWTC (the new name for FADTC) for 10 days TAD to assist in "Establishing a curriculum for a shipboard Course of Instruction in NTDS." On 23 June 1961 I left for *ENTERPRISE*.

14 July I reported to "The Big 'E'", where the equipment I believe was already being installed. I don't remember any resident BuShips types in evidence for the installation effort, although from time to time we got BuShips Cdr Erick Swenson and others blowing through. Checkout went fairly smoothly, probably due to the lessons learned in the installation in *ORISKANY*. Our radarman allowance was sent to NEL and got trained, as I remember, on the ASDEC equipment, before coming to us. We had the 'billboard' radars, the 2D SPS 32, the radically new, non-rotating, phased-array frequency-shifting radar installed, and its 3D SPS 33 counterpart. I'm sure we had three CP 642 computers, but for some reason I remember four. You'd think I would know, but serving later in *LONG BEACH* where we had operational programs and the SPS 33 clouds my memory. (The 'Billboard Story' is worth telling at a later date, since I'm the only officer to have served in the Operations Department in both ships).

We of course did a lot of on-board training, radar testing with test aircraft, and lots of demos before going to sea, and I got somewhat tied up in 'blackshoe' duties as I was virtually the only qualified OOD-Underway officer on board, other than the 'nukes'. (As a matter of fact, I was the sea detail OOD during builders and acceptance trials and port and starboard OOD for those six days. Also part of 'shakedown' before the Captain qualified a few others from the Weapons Department.)

We commissioned 25 November 1961, and departed for Gitmo for shakedown from 12 Jan-15 April 1962. Since there were no other NTDS-equipped ships to communicate with, we were very independent, thus spent all of our time using the CIC in the classic carrier way, plus the invariable demos and tours for VIPs. (Sen Humphrey in February). Back to Norfolk, where we operated in and out for air group and CarQual training, and of course a 14 April '62 at-sea extravaganza for President Kennedy.

We deployed for the Med in July and returned in October. Exhausting for me - we had some of the 'crowned heads' of Europe, most of the senior military (our own and NATO), of course mainly because we were the first nuclear carrier, but they all wanted an NTDS demo as well, since OpNav/BuShips were most interested in equipping NATO navies with the NTDS, so that we could 'talk' during operations. Of course, in port, other officers departed the ship for tours and fun, but we in CIC seemed to have a heavy schedule of NTDS demos.

I don't remember much communication from BuShips or FCPCPAC, and we were completely in the dark about what was happening in Service Test. Nor do I remember any 'bug' fixes being sent our way. We did have some '4 Stops', and reported them, but LT Jack Pennock, my NTDS programmer, and I could design a fix to keep us running. We did do some original thinking and sent letters back, mostly to FCPCPAC. Some I remember: the need to be able to draw lines, in order to be able to outline coastal geography on our displays; not needing the extensive air-intercept profiles which used up so much computer space and needed very accurate manual tracking of targets (and the advent of good air-intercept radars in the aircraft meant that you basically only had to point your aircraft at the target, feed him the range, and he'd figure out his intercept profile); and a few others. Our accompanying ships wanted our tracking information, so Jack Pennock himself took on the job of programming an ability to send our NTDS track data over a teletype link to accompanying ships so that they could manually plot our tracks. We sent our program back to the FCPCPAC people, and were amused when it ultimately (I'm sure with a few refinements), got sent to other NTDS ships as a BuShips/FCPC-generated improvement. This became Link 14, in NTDS jargon, and ultimately NATO B-Link.

After returning home in October, and with only 6 days in Norfolk, on 19 October we sailed for Cuba re the Cuba Crisis and didn't return until December. (49 days off Cuba after the U2 was shot down). (But that's another story). When we did get back we couldn't get ashore for two days because of weather, so had to be heloed off for two hours at home. What with the *ENTERPRISE* policy of standing port and starboard watches in port, most of us in the crew had 12 nights at home in 1962. During our Cuba time there was also a standing joke that "We had had a pretty good deployment - 8 days in Cannes, 8 days in Naples and 6 days in Norfolk."

By this time, Service Test had completed on the West Coast, and 'production' programs were starting to come to the Fleet, and to the new NTDS installations, so this story of the "early days of NTDS" is finished. My Service Test counterparts did all of the real work, during the extensive testing, while we in *ENTERPRISE* were operating a lot, with no other NTDS ship to link with. So, they are the real heroes, in my judgement - they did all the real work. And Erick Swenson should be considered the real father of NTDS, out of the hundreds of engineers and programmers and supervising officers who contributed.

A postscript about what hardly anyone knows. What people do know is that when the Washington 'thinkers' realized that spread-out formations because of the threat of nuclear weapons and the advent of surface to air missiles meant that close ringing of carriers was no longer needed, and that forces over a 100-mile area would have to rapidly communicate, the NTDS concept was born. What people don't know is this:

*After three WestPac tours with the tight, classic Formation 40/91 'ring' of the early 50's, in my first deployment after commissioning of CAG1 Boston, how to use the missile capability in formations was a significant topic of conversation between us and the Sixth Fleet staff. The resultant "Haystack" formation, which the Sixth Fleet experimented with during the entire 5-6 months we were there, was the first extended formation any of us had

ever seen (particularly me as the CICO). And the originator/'father' of the Haystack extended formation was LT Jerry Denton of the Sixth Fleet staff. (I used to tease him that his POW/ Senator fame was subsumed, at least in my mind, by him being the father of modern-day fleet formations.)

# Fun and Games on the Gun Line

**10 October 2003**

All was not 18-hour days or 36 hours straight on gunfire missions, or every 3rd day rearming or every 6th day for refueling on a 30-day tour on the Gunline during the Vietnam conflict. We knew, in *WADDELL* (DDG 24), since we were homeported for three years in Yokosuka, Japan and spent practically all of our time on the Gunline. (As a matter of fact, since DDGs, with their two 5"/54 guns, got most of the Gunline time compared to DLGs or 5"38 DDs and since the 'straight-stick' 3 mount DD 931 class ships were not often deployed, *WADDELL* was probably "Top Gun" during the Vietnam conflict because she had two deployments prior to the Yoko homeporting, and one more after the homeporting).

To take off some of the stress and pressure of the 30-day exhausting deployments, we tried to maximize the opportunities for 'fun'.

*We had a beer party ashore, in a secluded cove south of Qui Nhon. Sent a boat ashore twice with about 60 sailors and 30 cases of beer. Put two machine gunners on the cliff overlooking the cove for safety purposes. Those of us left aboard amused ourselves at the shore antics via telescopes. Got them back aboard via cargo net, and made sure they didn't stand any watches for 12 hours. Were amazed that no beer found its way back aboard.

*From an occasional detachment from the DMZ area to return to Danang, we used to stop by the hospital ships *REPOSE* and *SANCTUARY* and signal them that we had a concert to give them. We'd snug up to a couple of hundred feet and have our famous rock band "The Waddell Revival" play for them for an hour or so. It was always gratifying to see lots of patients being brought topside to hear the music. Since they got used to us, we decided to invite some nurses aboard for dinner. To our surprise, they jumped at it, and we sent the gig over to bring back 8 young cuties and one LCDR 'dragon' supervisor to ensure the nurses' virtue. Of course, after dinner when my JO's offered to show the nurses 'the ship", guess who had to babysit the 'dragon' in the wardroom with 'sea stories' during the lengthy 'tours'. A good time was had by all, but the second time we offered, the reply was that "the nurses were too busy".

*We were fairly sure that AOs and AEs were pretty bored with basically 24-hour rearming and refueling ships, so we tried to liven things up by always having our rock band play when alongside. On a couple of occasions we added to the mix with our famous Vietnamese

puppy mascot “Charlie One”. He always liked to be in the Captain’s wing chair when going alongside so one time when we had a newly-deployed AO, when we were signaled to come alongside from the waiting station, we put Charlie One in the wing chair, and the rest of us cleared the bridge and hid in the pilot house - of course peeping up from time to time to make sure our approach was safe. We watched the bored AO OOD glance in our direction and wave us to come alongside, then do a visible double-take as he in effect sighted nothing but a barking dog ‘conning’ the destroyer alongside, then hurried into the AO pilot house and returned with his CO, who broke out laughing. When we were hooked up, the AO CO said that our approach was the best he had seen, and could he borrow Charlie One. Our luck didn’t last though, the second CO we tried this on chewed on me for being a safety menace, so I decided to safeguard my career and kept Charlie One from ‘conning’ the ship in the future.

We were sent to chase the Russian ‘Okean’ operations in the Philippine Sea, twice. The Russian ships were quite skittish about letting us come close and shied away frequently, until we started to use the rock band and Charlie One. The Russian flagship let us come alongside at refueling distance, fascinated by our band and mascot. Of course we were snapping pictures, and they were too. I sent a visual to the Russian CO asking “How do you like our band”? He replied, “Pretty good, but do they know ‘Katushka’”? I asked the band - they said no, but they could play “Back in the USSR”. They did - and from the blank looks on the Russian faces, they’d never heard of the famous Beatles song. The word must have gotten around, because we didn’t have as much trouble closing up to the other some-40 Russian ships after our flagship performance.

Our band did make many shore visits to play, up the Cua Viet river, by the DMZ, for an entertainment-starved outpost. Danang, Nha Trang and Qui Nhon EM clubs. CPO and EM clubs in Okinawa, Subic and Sasebo, and countless private ‘clubs’ in Hong Kong for which they got paid. (Turned out the ‘Waddell Revival’ was so famous that when we returned to San Diego the band was asked to be the second band at the annual CRUDESPAC formal ball. It was interesting that the CCDP band had only a few couples on the floor when they played- when our band came on there was a roar and the dance floor got crowded, even with CCDP ‘Himself’. (Times were obviously changing, as this was late 1970!).

Gun Line tours were exhausting, particularly for the Gunners Mates trying to keep the brittle 5”54s up, and the entire crew for the inevitable rearmings. ‘Kookyness’ probably would have been frowned on by the ‘old guard’ (had they known about it), but the ‘fun and game’ outlets were important to keep the lid on for the every-other-month gun line tours.

# Tea Party in the Tonkin Gulf

In October 1966, *LONG BEACH* (CGN 9) arrived in the Tonkin Gulf, having achieved a successful Talos surface-to-air missile (Sam) kill at 130 miles against a BQM jet drone on the West Coast, and having had Hughes engineers for the SPS 32 MTI (Moving Target Indicator) on board all across the Pacific. They were to provide a fix so that land clutter would not obscure target "pips" on this first-of-a-kind, phased-array (fixed "slabs" vice rotating) radar, which was the most powerful in the world, its capabilities for long-range high-altitude detection having been the main reason for *ENTERPRISE* (CVN 65) remaining on station for several weeks longer during the Cuban crisis, so that the daily U2 flights over Cuba could be tracked. (Remember that prior to this the Cubans had shot down one of the U2s). (I was the ACICO/NTDSO of *ENTERPRISE* from 1961-1963 as well as the 1965-1967 Ops Officer of *LONG BEACH*).

We sailed into the Gulf with great trepidation, not knowing whether the MTI would work. Much to our delight we saw a completely black screen except for, clearly detailed, a couple of Migs over Hanoi. (More later on how we knew they were Migs). Together with our 3D fixed array SPS 33, which could automatically track dozens of targets in a flat calm and a clear day, but could not do it during most normal days at sea, (but could provide extremely accurate altitude), we knew we had the Tonkin Gulf air picture whipped, which no other platform in the Gulf could do, for one reason or another.

We were to be the Piraz ship. (Piraz meaning Positive Identification and Radar Advisory Zone). The concept had been started by the ship we relieved, the non-NTDS cruiser CHICAGO, and was the establishment of a more or less fixed station in the northern part of the Gulf in order to monitor the inflow of aircraft returning to their carriers after strikes in North Vietnam (NVN).

*LONG BEACH* had the tools to dramatically expand the original Piraz concept. The powerful SPS 32. A good ECM suit, with a home-grown capability to "snatch" NVN shore search radar pictures. An ability to track Migs by their IFF (Identification Friend or Foe) alone, which assisted in identification of the radar contacts we could see over NVN. The first SATNAV system in the Gulf, allowing us to stay close to the assigned Piraz station (we also moored a buoy at the station for use by us and particularly those later Piraz ships who had no SATNAV). Accurate positioning was important, since strike aircraft were usually too far away from carrier TACANs to get their range and bearing, so they would use the Piraz (hereafter called Red Crown, which was the Piraz ship voice call) Tacan for readings to help them get home. A good IFF suit. A "spook" unit on board, to do mysterious things behind the "green door" to assist us in identifying Migs. And finally, a Naval Tactical Data System (NTDS), allowing us to accurately track and display contacts, designate them to the Talos fire control system, and, perhaps more importantly, having the ability to "draw" the entire Gulf of Tonkin and NVN airspace (with Sam sites, airfields etc) onto our displays, in effect giving us a geographical indication of everything that was going on.

Since we could track everything that moved, we started pushing for Rules of Engagement (ROE) that would permit us to use Talos against these targets. We soon put up enough communications with strikes and their strike coordinator E2Cs, SARs, CAPs, refueling aircraft, USAF Tonkin Gulf aircraft, (altogether about 16 UHF frequency equipments, all of which were either manned or actively monitored), that we truly felt we had the big picture, and knew where and when the Migs were active. (A side issue was that to man CIC without putting our radarmen on port and starboard, we had to use, and train, some 40 or so non-radarmen in order to have the 40 men on each watch needed to run our CIC, in a very stressful and busy environment). I remember sleeping behind the vertical plot every night for the first 30 days on line, never seeing the light of day.

So began the agonizing process of getting higher-ups to make use of our capabilities. Tea Party (Tea for Talos) was the code name for the back-channel messages and situation reports we were sending concerning what our capabilities were and how we knew exactly where everybody was, US or NVN. Our aviator Yankee Team Commanders didn't want a whole lot to do with us - we controlled BARCAP (the combat air patrol over the Gulf for purely defensive purposes), but were denied permission to take them over land to engage the Migs. (Too worried about the SAMs and apparently not sure we could tell friendly from foe). And of course we tracked Migs all the time, after designating them from the NTDS to the powerful Talos fire control radars SPG 49. It was intensely frustrating to track Migs from takeoff around Hanoi airfields, (where we couldn't attack), headed down south to attack our strike aircraft attacking the southern "packages", calling out Mig alerts on the UHF guard channel, and not be able to take them on with the CAP under our control or with the Talos missile.

We were pushing the concept of offensive use of Talos. Why could we not shoot at the Migs when they were southbound towards our aircraft and were not yet anywhere near the US aircraft? TF 77 had a defensive mindset as far as surface ship control of aircraft for anything except

defensive purposes or use of long-range missiles for anything except self- defense. (Self-defense defined as someone about to attack you rather than enroute to attack someone else).

After months of messages to no avail, the emphasis was shifted to requesting broad guidelines, the least restrictive the better, for defensive use of Talos. The word finally came from Washington that if the CPA (Closest Point of Approach) of an identified hostile was (as I remember) about 30 degrees off Red Crown, we could request permission to take it under fire. The euphoria in *LONG BEACH* was short lived when on three separate occasions when a Mig met these criteria (granted we calculated the "sufficient CPA" whenever a Mig well clear of friendlies turned in our direction in the process of heading back home), the Yankee Team Commander wouldn't give us permission to fire.

Finally, toward the end of our tour in the summer of 1967, when a Mig met the "criteria" and the Yankee Team Commander (the carrier admirals rotated through the Gulf, and the command - you'd probably get a different one each month), again said "Weapons Tight" (meaning do not fire), I realized that the present Yankee Team Commander was my old CO in *ENTERPRISE*, RADM Vince Depoix, and his Chief of Staff was CAPT Hal Lang, my OPS Officer in *ENTERPRISE*. I picked up the voice net and told the duty ops officer on the flagship (who had negated our request to fire) that I wanted to talk to the Chief of Staff. Getting him, I explained hurriedly who I was, that we had a good picture and had satisfied the ROE. Less than 30 seconds later came "Weapons Free". Much excitement in *LONG BEACH*, as you can imagine. With the wasted time, the Mig had now turned outside the "CPA" track and was headed home - with an increasing range. We fired anyway, only to find that of the two arms of the aft Talos launcher, the one that was used for the launch had a malfunction, and the bird that was fired was a dead bird - thus was destructed once we found it wouldn't ever get into tracking mode once we illuminated the target. Anyway, it was the first SAM fired in anger by the USN.

I left *LONG BEACH* for Washington after the last line period, to rejoin her when she returned to CONUS, so that I could pack out the family for the drive east. Once back in Washington, I was madder than hell about Tea Party, so in my new position in OPNAV's command and control directorate as the "resident wizard" on Tonkin Gulf command and control, I snooped around the Joint Staff and found to my horror that the Joint Staff officer responsible for briefing the JCS on our request for offensive use of Talos had not been cleared for back channel messages and had no real idea of all of the details of our technical capability. And that the CNO at the time (an aviator) had been the one who put the kibosh on the whole use-of-Talos effort, for fear that we might endanger the International Control Commission aircraft that flew from Thailand to Hanoi once a week. My God, the ICC aircraft was a large commercial jet, squawking IFF, painting largely on the radar, on the exact same track, on the exact same day! And the CNO had never been briefed on our capabilities.

So, even more upset, I joined *LONG BEACH* when she returned and briefed the XO CDR Jim Watkins (later ADM) and CO CAPT Ken Wallace (later RADM) about the turn of events. CAPT Wallace said he'd get to the bottom of it when he went east.

He must have, because a postscript to this whole Tea Party drill came in May 1968. Coincidentally, I was in the Gulf on a trip from OPNAV on command and control matters, at the Monkey Mountain Command Center in Danang, listening to the TF 77 combat information net, when I heard all of the familiar code words concerning a request to shoot at a Mig, from Red Crown, which was *LONG BEACH* again. Weapons Free, Missile Away, Splash one Bandit, and cheering in the background as the Splash report went out. The next day, I heloed up *to LONG BEACH* and relived with my ex-shipmates the first shootdown of a Mig by a Sam. Apparently the downed Mig's wingman had fled back to Hanoi babbling about "a giant thunderbolt had come down on them from above". (One of the Talos charms - it cruised at 80,000 feet and then came down on targets from above). I know *LONG BEACH* got several more before their tour ended - I don't know how many. Talos Tea Party had finally come to fruition after almost two years of trying.

ADM Jim Watkins and RADM Ken Wallace (now retired in Merritt Island, FL) can amplify much of the above, since they were there for all of the shoots that I have described.