

What's Wrong with Tonkin Gulf Incident "History"

by Jim Treanor

Prevailing historical and public opinion holds that the reported night attack in the Tonkin Gulf by North Vietnamese PT boats on the American destroyers *USS Maddox* (DD-731) and *USS Turner Joy* (DD-951) on August 4, 1964 never occurred and that the resulting Tonkin Gulf Resolution which authorized the escalation of U.S. participation in the Vietnam war was based on a false premise. This view is based largely on two works considered to be the standard references on the events of that night: Edwin E. Moise's *Tonkin Gulf and the Escalation of the Vietnam War*¹ and National Security Agency historian Robert J. Hanyok's 2001 *Cryptologic Quarterly* article, "Skunks, Bogies, Silent Hounds, and the Flying Fish: The Tonkin Gulf Mystery, 2-4 August 1964."²

Moise's book is at first blush impressive in terms of its scope and the exhaustive detail it musters to make its case that weather conditions in the Tonkin Gulf, reflections off ocean waves, schools of fish near the surface, or the flight of seagulls misled *USS Turner Joy's* radarmen into interpreting "phantom" radar images as genuine contacts. But the work is a victim of questionable assumptions and selective methodology which render its account incomplete and its resulting analysis flawed. Hanyok's article relies on U.S. intercepts of North Vietnamese radio communications traffic and radar emissions (collectively known as "SIGINT") as its primary sources to assert that the reported attack did not occur and that the handling of the intercepted messages was improperly manipulated to support the report of an attack when NSA presented its findings to the Lyndon Johnson White House. But Hanyok's account is flawed in its assumption that the intercepted traffic "proves" that no attack occurred on August 4th.

What follows is a critical analysis of the Moise and Hanyok accounts. My comments reflect in part my perspective as *USS Turner Joy's* Electronics Materiel Officer at the time of the incident. My General Quarters assignment that night was as Radar Control Officer in the destroyer's Combat Information Center (CIC), tasked with evaluating the "friendly" or "bogey" status of contacts acquired by our SPS-29 air search radar. In performing that assignment I was seated at a radar repeater near both the Dead Reckoning Tracer (DRT) on which the movement of the ship and all surface contacts (including *USS Maddox*) was being plotted and the Radarman Chief responsible for providing shipboard air control to supporting aircraft.

Background

Tasked with gathering electronic intelligence in an operation designated the DESOTO Patrol, *USS Maddox* commenced steaming off the coast of the Democratic Republic of Vietnam on July 31, 1964 with special intercept equipment and technicians aboard. The patrol was under the tactical command of Captain John J. Herrick, USN, Commander of Destroyer Division 192. On the afternoon of 2 August *Maddox* was attacked in the Tonkin Gulf by a squadron of North Vietnamese patrol torpedo boats. Supported by aircraft from the carrier *USS Ticonderoga*, *Maddox* repelled the attack without sustaining casualties and suffered only inconsequential material damage. The three attacking PT boats were seriously damaged and several of their crew were either killed or wounded in the action.

The *Forrest Sherman*-class destroyer *USS Turner Joy*, then on radar picket duty at the northern

end of the South China Sea, was ordered to join up with *Maddox*, and the two ships rendezvoused on the evening of 2 August. The DESOTO Patrol resumed the next morning near the North Vietnamese coast with *Maddox* about 1000 to 2000 yards ahead of *Turner Joy*. The August 3rd patrol was relatively uneventful, although a heavy concentration of fishing and cargo junks in the path of the destroyers required careful maneuvering and prompted concern by *Turner Joy*'s General Quarters officer of the deck, Lieutenant Jerry Palmer, that one or more junks could get close enough to plant Claymore mines or other explosive devices on the destroyer's hull.³ That evening, the destroyers proceeded out into the gulf for night steaming.

The destroyers followed the same routine on 4 August, patrolling near the North Vietnamese coast during daylight. The weather had worsened, and junk traffic had slackened considerably. At around sunset, the destroyers secured from General Quarters and headed east to their night steaming area near the center of the gulf. Following receipt of a message warning of possible hostile action the crews of *Maddox* and *Turner Joy* returned to General Quarters. Radar contacts were detected northeast of the ships' position. Shortly thereafter, the contacts were taken under fire for two hours in action reported as an attack by North Vietnamese torpedo boats against the destroyers. Supplementing the radar contacts were visual sightings by *Turner Joy* crew members that included sightings of PT boats by four personnel.⁴

The Moise Book

Historian Moise's no-attack scenario rests in part on the oft-cited theory of atmospheric-, wave-reflection-, or seabird-caused radar "phantoms," a phenomenon known as the "Tonkin ghost," triggering the reporting by *USS Turner Joy*'s radarmen of contacts approaching *Maddox* and *Turner Joy* at high speed that night.⁵ What Moise and others who propound that theory have failed to do, however, is to distinguish between the operating characteristics (such as frequency, pulse width, and pulse repetition rate) of *Turner Joy*'s SPS-10 surface search radar and those of the Mark 35 fire control radar employed in the ship's aft fire control system (Director 52) to acquire and lock on to targets. The surface search radar *might* be "spooked" by atmospheric as well as by the heavy seas and related artifacts which existed that night in the gulf. That was less likely with the fire control radar. There is even less probability that, given the differences in their operating characteristics, both radars would have acquired and held spurious targets simultaneously for any appreciable length of time.⁶

When, shortly after the incident, I asked Director 52 officer LTJG Wayne Whitmore whether he and his fire control technician might have acquired sea return, whales, bubbles, the ship's wake, or other phenomena that could have created false "contacts" on the Mark 35 radar he was emphatic that everything locked onto and fired on was a solid contact. Curiously, while historian Moise devoted substantial space to an analysis of the ballistics, warhead fuzing, and trajectories involved in firing *Turner Joy*'s 5-inch/54's at targets that were picked up astern or near astern of the destroyer, he did not cite what the Director 52 crew saw that night—except for the visual sighting by one member of that crew, Seaman Roger N. Bergland, of a torpedo wake.⁷



One of the spurious-contact theories that Moise has advanced is that what *Turner Joy* reported as high-speed radar contacts were actually low-flying U.S. carrier aircraft sent out to support it and *Maddox* once a radio message had been transmitted that warned of an imminent surface attack on the destroyers. That explanation, however, encounters an immediate and insuperable problem. The slowest supporting aircraft that night was the propeller-driven Douglas A-1 Skyraider, nicknamed "Spad," and its stall speed of 68 to 70 knots is considerably higher than the 45-to-50-knot speeds attributed to the Soviet-designed P-4 PT's and *Swatow*-class gunboats of the North Vietnamese navy that were reported to have attacked *Maddox* and *Turner Joy*. An A-1 traveling at low altitude even just above stall speed (an unlikely scenario under moonless- and overcast-night combat conditions at sea where safety considerations warrant a higher speed) would track across a surface-search radar display at a much faster rate than any Soviet-designed PT of that era and would not be mistaken for a surface vessel by an experienced radar operator.

Moise cites post-Incident instances of carrier-escorting destroyers in the Gulf reporting air contacts as surface contacts as possible evidence that *Maddox* and *Turner Joy* made the same mistake on 4 August, but the distance-over-time tracks of the surface radar contacts and the report of one of the A-1 pilots at the scene that night that the aircraft were flying at 150 knots do not bear that possibility out.⁸ It should also be noted as an indication that *Turner Joy's* radarmen were not easily spooked that an early apparent surface radar contact, designated "Skunk Sierra", was quickly determined to be weather and scrubbed as a possible threat.

Similarly, Moise missed the boat on another key issue, namely whether or not any torpedoes were actually fired at either of the US destroyers that night. Moise did report what the *Turner Joy's* forward director (Director 51) officer and his fire control technician described as a high-

speed torpedo wake some distance from the destroyer's port side after the two men received a warning of a possible torpedo and left the director to try to get a visual sighting. (They could do so because they were "out of a job" with an inoperative forward 5-inch/54 gun mount and a forward twin 3-inch/50 mount that was silenced by the commanding officer because it was creating too much vibration just forward of the bridge.) He also reported that the torpedo wake was seen by the port side lookout and, as indicated earlier, Seaman Bergland, whose position in Director 52 gave him, as Moise acknowledges, "a good view aft and to the sides" of the destroyer. But Moise downplayed those visual sightings, citing the inability of the ship's AN/SQS-23 sonar to detect a torpedo at the time both men reported seeing the wake. He did indicate that the ship's sonar had failed during an exercise to detect a torpedo as well, but he failed to mention the after-action evaluation by a U.S. Seventh Fleet officer, Commander Andy Kerr, an experienced submarine officer familiar with torpedo characteristics, who interviewed the forward director crew for details. When the interviews were concluded, Kerr stated that there was no doubt in his mind that what the director officer, LTJG John Barry, saw was a torpedo wake.⁹

In this context it's appropriate to quote an excerpt from the official action report, dated 24 August 1964, of *Maddox's* 2 August daylight engagement with North Vietnamese P4 PT's:

The torpedoes fired by the DRV P-4 boats were easily avoided since they were launched at about 27000 yards, from a relative bearing 150, and *they were set shallow enough so the wakes could be seen*. One was running on the surface but it was not porpoising. Their wakes permitted the conn to judge the time to turn and course to change to in order to evade. *Sonar did not hear the torpedoes even though they passed close aboard (100-200 yards) to starboard*. The *Maddox* was at 27 knots throughout the action.¹⁰ [Emphasis mine.]

Note that in this instance more than one torpedo was launched, that *Maddox* personnel could see their wakes, and that *none* of them was heard by *Maddox's* sonar despite their proximity to the destroyer even at the point of closest approach. What we have here is not a case of "one was heard, but the others weren't," a condition where one might argue that a "fluke" obscured the sonar detection of some but not all of the torpedoes launched. The failure to hear any is likely attributable to the fact that *Maddox* was steaming at 27 knots and creating enough interference with her wake to mask sonar acquisition of the torpedoes. During the reported action on the night of 4 August, *Turner Joy* was steaming at 30 knots. It is surprising that Moise did not take *Maddox's* 2 August experience explicitly into account in his discussion of the inability of *Turner Joy's* sonar to detect the torpedo whose wake was reported by that destroyer's personnel two nights later. That may be because, in a passage questioning an assertion made in *Maddox's* 4 August action report, he terms *Turner Joy's* sonar "substantially *superior*" [emphasis his] to that of *Maddox* and is reluctant to accept the real-world possibility that *Turner Joy's* maneuvering astern of *Maddox* at 30 knots to evade the reported torpedo would have created sufficient disturbance in the water to mask torpedo detection.¹¹

The reliance of Moise and other historians on the memoir of then-Commander James Stockdale¹² is similarly problematic. Commander Stockdale had flown against the North Vietnamese vessels engaged with *USS Maddox* on 2 August and--as he stated in his memoir--knew how to "hose" PT boats. Stockdale reported that when he flew to the scene of the reported action on the night of 4 August he saw no evidence—under a moonless overcast and in heavy seas--of any vessels other than the two U.S. destroyers. But it wasn't certain that he could even see *USS Turner Joy*, in part

because--and he bragged in his memoir about his "hosing" ability as the reason--he refused to accept shipboard radar control to vector him to any target the destroyer's radar had acquired, much to the chagrin of Radarman Chief Robert Johnson, who during GQ was the ship's air support controller. Chief Johnson's chagrin was warranted. Stockdale asked *Turner Joy* to turn on its truck lights so he could see it--thereby illuminating a hostile PT boat's potential target. And his ability to "see" *Turner Joy* was further in question when he nearly launched what he says in his memoir was a Sidewinder missile at the destroyer.¹³

How much could the pilots on the scene actually have expected to see in the Tonkin Gulf on August 4th? James A. Barber, a retired Navy captain with nearly 30 years' service as a surface warfare officer, provides a reality-based perspective seemingly ignored by Moise and other historians who put great weight in Stockdale's account. While Barber sees no reason to question the assertion that aviators on the scene that night "did not see any torpedo boats," he offers a compelling example of the difficulty they would have had in spotting PT's—compelling in part because the event he recounts occurred in Vietnamese waters:

What is worth examination is the assertion "*they were certain that they would have seen them had they been there.*" [Emphasis Barber's.] My own experience leads me to doubt this certainty. When we ran night exercises with the Nasty boats [Norwegian-designed PTF's used by the Navy in Vietnam] from Da Nang, we had much difficulty talking our assigned Combat Air Patrol...onto the targets, *despite positive knowledge of the identification and location of the boats.* The pilots were unable to locate the targets in the dark a high percentage of the time *even when vectored directly on top.*¹⁴ [Emphasis mine]

Turning to the command level, Moise's and others' accounts do not include a satisfactory exploration of the curiously inconsistent, if not contradictory, behavior of the task group commander and Officer in Tactical Command, Captain John J. Herrick, who was aboard USS Maddox that night. Herrick is reported to have expressed doubts almost immediately following (and then again long after) the apparent engagement was over that an attack had occurred. Yet:

(1) he submitted an official statement dated 7 August 1964 detailing an engagement with enemy combatants on the night of 4 August;¹⁵

(2) he recommended *Turner Joy's* commanding officer, Commander Robert C. Barnhart, Jr., for a Silver Star (Barnhart was awarded the Bronze Star); and

(3) during the first post-Tonkin Gulf Incident underway replenishment of *Turner Joy* by the aircraft carrier *USS Ticonderoga* on which Herrick was aboard and linked via ship-to-ship communication with Barnhart, Herrick was heard by a Personnelman First Class monitoring their conversation on *Turner Joy's* bridge to say, "Thanks, Bob, you saved my ass out there!"--hardly the reaction expected from someone who doubted that combat had taken place.¹⁶

One further piece of Moise's "evidence"--at least as he has construed it--that an attack did not occur is in fact a breathtaking leap of speculation. The historian's contention is that although the reported 4 August 1964 engagement lasted some two hours, the torpedo payload aboard the number of P4 PT boats reported as attackers should have been expended in 20 minutes. That scenario might apply in ideal conditions such as those presented in primitive video games where the target is always visible, moving on a predictable course at a constant speed, and not firing on the attacker, forcing the latter to adjust course, speed, and tactics to avoid being hit. The 4 August engagement was a night action with the PTs' targets maneuvering evasively at 30 knots

and, in *Turner Joy's* case, taking the attackers under fire with two five-inch guns, each of which could unleash upwards of 40 rounds per minute, and at one point rolling shallow-set depth charges to keep the attackers at bay. The attack problem the PT commanders were confronted with was considerably more complex and fluid than a game of Pong.

The Hanyok Article

Robert J. Hanyok's 55-page *Cryptologic Quarterly* article, "Skunks, Bogies, Silent Hounds, and the Flying Fish: The Tonkin Gulf Mystery, 2-4 August 1964," on the relationship between SIGINT (signals intelligence) and the reported second attack in the Tonkin Gulf is viewed generally as the door slammer on the question of whether what the officers and crew of *Turner Joy* saw, heard, experienced, and reported that night actually occurred, an exclamation point to historian Edwin Moise's thesis that the destroyer's crew members engaged in a trigger-happy atmospherics-induced hallucination. Hanyok's core position can be summed up as follows:

- ⑩ Content and analysis of communications intercepts by U.S. monitoring stations aboard *Maddox* and in South Vietnam and the Philippines demonstrated that the Democratic Republic of Vietnam (hereinafter DRV) Navy exercised tight command and control prior to, during, and following its attack operations against *Maddox* on 2 August via HF Morse and tactical VHF voice communications;
- ⑩ ELINT (electronic intelligence or intercepts) of DRV coastal radar emissions and those of vessel-borne Skin Head radars indicated close surveillance of U.S. Destroyer movements on 2 and 3 August;
- ⑩ DRV radar surveillance slackened to "sporadic" during the day on 4 August;
- ⑩ No conclusive communications intercept evidence exists of DRV intentions to attack *Maddox* and *Turner Joy* on the night of 4 August or of the positioning of vessels to conduct an attack;
- ⑩ No intercept evidence indicates that the DRV navy had up-to-date information on the location of the destroyers after they steamed eastward away from the coast once the Officer in Tactical Command of the destroyer task group, Captain John J. Herrick, received a message warning of a possible attack;
- ⑩ DRV P-4 PT's and *Swatow*-class patrol boats would have had to have sped from their North Vietnamese bases at either Port Wallut or Quang Khe at 70 knots (i.e., well above their top speeds) to reach the position where radar contacts were detected east of *Maddox* and *Turner Joy* at the time they were first detected that night;
- ⑩ No SIGINT or ELINT evidence exists that the alleged attackers coordinated, controlled, or executed attacks using either manual Morse communications or Skin Head radars (although Hanyok acknowledges that the intercept by the DSU communications hut aboard *Maddox* of VHF voice communications would have been masked by the activation of that destroyer's fire control radar).

On the face of it, Hanyok has presented an open and shut case. Well, not quite. Admiral Lloyd Vasey's August 2010 *Naval Institute Proceedings* article on the Tonkin Gulf Incident rightly criticizes Hanyok's facile dismissiveness of radar and visual eyewitness reports supporting the contention that an attack occurred.¹⁷ But Hanyok's no-attack conclusion is also subject to challenge based on assumptions he makes using SIGINT as essentially a sole-source determinant of what could or couldn't have taken place on the night of August 4th and on a glaring internal inconsistency which appears to be related to that methodology.

To begin with, he posits the correlation of SIGINT and ELINT intercepts received prior to, during, and following the 2 August attack on *Maddox* with what actually occurred as establishing a profile of DRV command, control, communications, and intelligence (C3I) that would be followed in the succeeding days as the destroyer patrol plied the Tonkin Gulf. Included in the intelligence component is the DRV's apparent reliance on active radar surveillance, by either coastal radar sites or Skin Head-equipped *Swatows*, to track the U.S. destroyers.

The intelligence component of such a tight command-and-control C3I profile must of necessity include comprehensive surveillance of any potential enemy. On both 2 and 3 August that profile was maintained, with ELINT intercepts indicating constant radar tracking (on 3 August largely by patrol-boat Skin Head radar shadowing) of *Maddox's* and *Turner Joy's* movements. But Hanyok states that DRV radar surveillance became “sporadic” on 4 August.

Had the DRV suddenly become less interested in the two destroyers?

Hardly. To begin with, Hanyok's assertion that DRV radar surveillance on that date was “sporadic” is at substantial variance with what is reported in Edwin Moise's book on the incident. So is the conclusion contained in a 3 September 1964 NSA report that “The evidence is still inconclusive [about the extent of DRV radar surveillance on 4 August] in light of the virtual absence of trackings on 3-4 August before the second attack.” Moise, based on an interview conducted with *Turner Joy* radarman Chad James, reports that James “recalls that shore radar locked onto the *Turner Joy* often during this period” (i.e., on 4 August). This is a recollection that corresponds to my own of hearing numerous “hump freq” callouts—verbal alerts by the radarman manning the passive ECM receiver in *Turner Joy's* CIC of RF emission intercepts—throughout that day. In addition, Moise notes, *Maddox* and *Turner Joy* were shadowed by a Skin Head-equipped vessel (probably a *Swatow*-class patrol boat) for at least four hours, beginning at somewhere between 0900 and 0930 local time. Finally, Hanyok's own account of events during the daylight hours of 4 August indicates a number of instances of “shadows” being detected throughout the day. Their purpose, as suggested by their reported positions and movements? The logical conclusion is to provide information that enabled the tracking of the movements of the DESOTO patrol destroyers.

In light of this information, why would NSA characterize DRV surveillance activity on 4 August as “the virtual absence of trackings?” And why would Hanyok follow that same line of reasoning despite the countervailing evidence in his own account of indications of substantial tracking activity on that date?

One possibility—a strong one, in my view—is that both the NSA report and Hanyok's self-contradictory assertion define “tracking” in an extremely narrow sense, namely one confined to DRV radar acquisition of the destroyers that was reported via communications intercepted by the U.S. SIGINT teams in South Vietnam and the Philippines. In other words, if the SIGINT teams didn't intercept messages reporting what was being picked up on DRV radar, the DRV wasn't “tracking” the destroyers.

In view of the tight command, control, communications, and intelligence profile posited in light of the actions of the DRV navy prior to, during, and following the 2 August attack on *Maddox*, the non-tracking scenario constitutes an extraordinary deviation from previously-observed DRV operational behavior, especially given the presence in near-territorial waters of hostile forces in

the form of two U.S. destroyers, one of which the DRV had already engaged in combat just two days before. Moreover, the position taken by both the NSA report and Hanyok's account leads one to wonder if there was a “hole” in U.S. SIGINT capability in 1964, perhaps specifically within Southeast Asia or Vietnam itself.¹⁸ Even more pertinent to a discussion of the events of 4 August 1964, were there DRV military/naval communications that were not intercepted or could not, for whatever reason, be processed, decrypted, translated—or made public?¹⁹

Absent the ability to access DRV records, if such exist, of all of its naval message transmissions during that period, no conclusive answer to that question can be given. Hanyok reports that on 4 August there was one message communicating to DRV units a several-hours-old position report of *Maddox* and *Turner Joy* late in the day, citing this as an indication that the DRV—contrary to the tight C3I profile observed earlier—did not have a good handle on where the destroyers were. What is not clear from his account, however, is whether this was a retransmission of an earlier, more timely location message not intercepted by U.S. SIGINT when originally sent—or whether it was a “dummy” message the DRV command might expect to be intercepted.

Hanyok reports that no messages were intercepted on 4 August ordering DRV naval commands or units to change their communications frequencies. This buttresses his (and much of the historian community's) argument that the reported 4 August attack never occurred, since no DRV message traffic indicating attack unit dispatch, deployment, approach, execution, or after-action analysis was ever intercepted—on, of course, the frequencies already being monitored by U.S. SIGINT.

But if he and the contemporaneous NSA report postulate “sporadic” tracking by the DRV on that day based, as it appears, primarily on the interception of transmissions on those frequencies when there was demonstrable evidence from other sources of essentially continuous tracking, there are a couple of problems. For one, tracking information is useless if something isn't done with it, and the relaying of timely contact tracking to field commands and units is an essential component of the tight command, control, communication, and intelligence profile attributed to the DRV navy. Not to have communicated that tracking information in a timely manner to pertinent units simply does not seem plausible, especially in the post-2 August environment. Hanyok's suggestion that the DRV naval command had “lost control” of the situation must be measured against the continued presence on 4 August of shadowing *Swatows*. The second problem, already alluded to, is the disconnect between the unreliability of the “sporadic” assessment and the assumption that U.S. SIGINT had intercepted all pertinent DRV communications transmitted on 4 August.

That assumption lies at the core of two related issues key to the 4 August controversy, namely: (1) the absence of intercepted orders that would have precipitated the movement of DRV P-4 PT's (and possibly *Swatows*) from their ports in time to reach their reported attack positions well out into the Tonkin Gulf at speeds they could actually achieve; and (2) the absence of message intercepts that would have communicated to the attacking force the positions and tracks of *Maddox* and *Turner Joy* after the destroyers had moved eastward away from the North Vietnamese coast and well out into the gulf following the receipt of a message alerting them to a possible attack.

Could the U.S. SIGINT effort have failed by missing or misconstruing a message that ordered a change in DRV operational messaging frequency? Or was it possible that DRV command had communicated frequency change or operational orders either on a frequency not monitored by

the U.S. intercept teams or by other means not as easily susceptible to detection?

What Hanyok does not mention is that on the same day that DRV tracking of *Maddox* and *Turner Joy* became, in his words, “sporadic,” daylight junk traffic along the DESOTO patrol track reduced to a trickle compared to the heavy junk concentration encountered by the destroyers the day before. Somewhat worsening weather may have accounted for some of the reduction, but for whatever reason the dropoff was dramatic enough to be noticed by *Turner Joy* bridge personnel. Notably, this traffic was extremely heavy on the day following the 2 August attack on *Maddox*. Apparently that engagement had not deterred junk masters from taking to the sea off North Vietnam the day after it occurred. Yet on 4 August, most of the junks had virtually melted away. What—or who—had scared them off? And how?

Implicit in Hanyok's characterization of DRV tracking of the DESOTO patrol destroyers on 4 August as “sporadic” is skepticism that the North Vietnamese knew the destroyers' location once they concluded that day's patrol by heading east and ultimately into darkness. But it wouldn't be difficult to determine where the U.S. ships were if the North Vietnamese employed passive ECM (electronic countermeasures) to track the destroyers. Hanyok's only mention of that possibility occurs in the context—a strictly tactical one--of refuting any suggestion that attacking PT's could have used passive ECM to determine a potential target's location, since all the PT commander would have to work with would be a bearing, with no indication of range.

That proposition is true as far as it goes, but it does not rule out the possibility that the DRV could have used land-based passive ECM--a technology not susceptible to SIGINT detection, certainly not in 1964--as an operational (as opposed to tactical) tracking tool.

Consider that both U.S. destroyers possessed surface search and air search radars which, out of operational necessity, were “on” the entire time the ships were in the Tonkin Gulf. The AN/SPS-29 air search radar aboard *Turner Joy* was capable of detecting air targets well beyond 200 miles away—typically beyond 250 and on a “good” day (i.e., one with the most favorable atmospheric conditions) beyond 275. In order to do so, it had to emit a tremendous amount of RF (radio frequency) energy—enough so that when, during an in-port test of its antenna's rotational movement, the radar itself was inadvertently switched on, it wiped out reception of TV channel 11 in and around Long Beach, California for nearly an hour. Clearly, given its RF emission range, the SPS-29 was susceptible to detection by virtually any passive ECM installation in or around the Tonkin Gulf (including mainland China's Hainan Island across the gulf from North Vietnam).

While Hanyok is correct that detection by a single passive ECM installation will provide only a bearing, detection by two or more installations will provide a fix, the precision of which is determined by the simultaneity of the intercepts, the distance separating the intercepting stations (the wider the separation the better), and the number of stations (the more the better). It's reasonable to assume that, given the length of North Vietnam's coastline, and buttressed by the U.S. ELINT (including DRV emissions intercepted by *Turner Joy*'s passive ECM) indicating a multiplicity of active DRV radar tracking stations and the likely existence of passive ECM intercept stations as well to enable analysis and source identification of the signals being emitted in their direction, the DRV could determine at least the general location and track of the DESOTO patrol even far out into the gulf. (As indicated earlier, Hanyok cites an intercepted late-in-the-day DRV message specifying the patrol's location as of a couple hours' earlier than the message's time stamp, suggesting to him that the North Vietnamese were not aware of the

destroyers' current location. Whether that's plausible given all the RF energy being radiated by *Maddox* and *Turner Joy* that night is another matter.)²⁰

So whatever the validity of the assertion of “sporadic” tracking, the North Vietnamese had the capability to locate and track the two destroyers even when they were well out into the gulf following their daylight coastline patrols. That is a reality that received at least tacit acknowledgment by whoever was privy to SIGINT intercepts on 7 August 1964, two days after the U.S. conducted carrier- and land-based air strikes on North Vietnam in response to reports of the 4 August night attack on *Maddox* and *Turner Joy*. At 1409 local time on 7 August, the destroyers patrolling in the Tonkin Gulf received warning of a probable air attack on them that night.

The warning appears to have resulted from a SIGINT intercept indicating that the Chinese were delivering MiG jet fighters to the DRV. That in fact was the case, though it was later established that, in the wake of the 5 August U.S. air strikes, the MiGs were intended for DRV air defense, not offensive operations. What is significant about the alert which prompted the destroyers' return to General Quarters is that the warning presupposed the ability of the DRV to locate and track the destroyers sufficiently to direct MiGs to the ships when they were well out into the gulf—and at night.

Much has been made of the alleged inability of either SIGINT stations or the destroyers themselves to detect either communications or radar emissions from the presumably attacking PT boats during the reported engagement. But, as already noted, Hanyok himself acknowledges that the activation of *Maddox's* fire control radar would have masked the interception of VHF voice communications—the type of communication one would expect between cooperating tactical units in a fluid, fast-moving combat scenario, especially at night—by the SIGINT communications hut installed on that destroyer.

With respect to communications intercepts (COMINT), it's appropriate at this point to mention a 5 December 2005 analysis (approved for release by NSA on 3 January 2006) of Hanyok's article by Louis F. Giles, NSA's Director of Policy and Records. While not disputing Hanyok's conclusion that the reported 4 August attack did not occur, Giles comments:

Nevertheless, while Mr. Hanyok's analysis of the available COMINT evidence is convincing on its own, *the COMINT does not prove that an attack did or did not occur*. Unlike the 2 August COMINT where an actual attack message was intercepted, *circumstantial evidence and the absence of a 4 August COMINT attack message cannot conclusively prove there was not an attack*. [Emphasis mine.]²¹

In discussing Hanyok's concern over the "unexplained disappearance" of the original decrypted text of a translation of a pertinent intercepted message from NSA's archives, Giles indicates that many original translations of messages from the Tonkin Gulf Incident period are missing. He explains that under the provisions of NSA records disposition schedules which existed at the time (and continue to this day) raw COMINT material was allowed to be destroyed once a final report on its contents was issued. The practical consequence of this, of course, is that the raw primary source material on which the NSA's contemporary assessments were based (and on which in turn subsequent historians' conclusions have been rooted) is not available for examination or evaluation.

The failure to detect Skin Head radar emissions during the reported approach and attacks by the PT's is also not as conclusive as appears at first blush. Quoting Hanyok's own account of the 2 August engagement between DRV P-4's and *Maddox*: "There is no SIGINT evidence that their Skin Head radars were active, *though the Vietnamese claimed their boats used it*. Pictures from the action *appear to show the radar masts upright and not lowered in a combat position.*"²² [Emphasis mine.]

"Combat position" refers to a design feature of the P-4's radar-mounting mast which allowed it to be lowered or "folded out of the way." In that lowered position the craft's Skin Head radar's search and navigation functions were effectively disabled. While that may suggest an operational liability, the feature was actually practical for a couple of reasons. During a high-speed torpedo run in the open sea, the shallow-draft P-4 could be expected to bounce and vibrate significantly, posing the risk that components of the Skin Head radar would malfunction or fail. In that eventuality, the radar would be useless, anyway. Shutting down the radar would also eliminate the possibility that electronic emissions from the craft would give away its bearing to an enemy listening for such signals on passive ECM equipment.

It's true that the 2 August action was a daylight affair offering good to excellent target visibility without the use of radar, while the reported 4 August engagement occurred at night, which would seem to place a premium on the use of radar to acquire a target and launch an attack. But if SIGINT did not detect Skin Head emissions on 2 August when the Vietnamese said they used it—and their radar masts were upright--what happens to the no-attack argument based on the inability of SIGINT or either of the two destroyers to detect Skin Head emissions on the 4th?

So the case put forth by the Hanyok article is not as cut-and-dried as it might seem at first glance. It is surprising that it has not been subjected to more thorough scrutiny by the historical community. As a final observation on the Hanyok article, I would refer to a 2 August 1964 DRV naval command message attempting to abort the attack on *Maddox*, a message that the Hanyok article indicates was transmitted but either ignored, missed, or interpreted as superseded by the subordinate units receiving it. It succinctly summarizes the DRV naval command's assessment of the existing tactical situation. Whether it also reflects an intention in light of subsequent events is something I leave to the reader. Note that "135" designates a specific DRV squadron of three P-4 PT boats (the squadron mauled in the 2 August battle). The message reads:

Order 135 not to make war by day.²³

The Methodological Problem

There is a common thread which unites the methodology and thrust of the Moise and Hanyok accounts. Both authors dismiss, discount, disregard, downplay, or ignore the evidence presented by on-scene participants aboard *USS Turner Joy* supporting the report of an attack on 4 August. What neither historian acknowledges is that in every instance where an example of the "Tonkin ghost" or similar apparition, whether from 1944 or 1964, has been cited to cast doubt on the validity of the radar contacts acquired by *Turner Joy* that night, there was no visual sighting to confirm the actual existence of the contact. That is not the case here. There were eyewitnesses on the maneuvering bridge, on the deck alongside Director 51, in Director 52, and on the signal bridge who saw everything from post-target-explosion smoke to a searchlight to a torpedo wake to a PT silhouette.

Had there been only one eyewitness who saw only one possible tangible indication of an attack beyond what appeared on radar, it might be possible to dismiss that reported sighting as “evidence.” But a multiplicity of eyewitnesses at different locations aboard *Turner Joy* who saw a variety of indicators that are logical artifacts of a night combat experience at sea renders dismissal or disregard of their testimony as, at minimum, an unreasonable skewing of the historical account of the 4 August 1964 incident in the Tonkin Gulf.

Endnotes:

¹ Edwin E. Moise, *Tonkin Gulf and the Escalation of the Vietnam War*, University of North Carolina Press, 1996. For a more cavalier expression of the no-attack position, see Richard Reitano, “LBJ Goes to War,” *OAH Magazine of History*, 18 No. 5 (October 2004), 27, where the author states: “It is now clear that there was no attack on August 4, and the attack, involving a single bullet hole of ‘damage’, on the Maddox on August 2 was exaggerated by the U.S.”

² Robert J. Hanyok, “Skunks, Bogies, Silent Hounds, and the Flying Fish: The Tonkin Gulf Mystery, 2-4 August 1964”, *Cryptologic Quarterly*, 2001 (declassified in 2005). Hereinafter referred to as Hanyok, “Skunks.”

³ A concern expressed by Palmer to this writer as we steamed astern of *Maddox* during daylight on 3 August 1964.

⁴ Memorandum, Commanding Officer, USS *Turner Joy* (DD-951) to CTF 77, “Statements, Chronology of action and summary DRT,” 7 August 1964, includes brief statements by crew members of some of the sightings. Moise, 169-70.

⁵ Moise, 107-109. One problem with the seabird theory—and this appears to be a problem no one who supports the theory has addressed—is that it is highly questionable that seabirds would have remained in the vicinity of the ships or continued to fly on a course toward *Turner Joy* once the destroyer opened up with sustained fire from two of its 5”/54 guns. Nonetheless, Moise considers the seabird hypothesis “especially good”, citing an example from 1944 off Okinawa where a submarine’s radar tracked clearly-defined radar blips moving at a speed of 24 knots, which his source characterizes as “too close for a plane, too fast for anything but a PT boat—or a hostile seagull.” The problem here is that 24 knots is roughly half the speed at which *Turner Joy* at times tracked the radar contacts which approached it on the night of 4 August 1964.

⁶ James A. Barber, Jr., “Tonkin Gulf: Comments,” in William B. Cogar, ed., *New Interpretations in Naval History: Selected Papers from the Eighth Naval History Symposium*, Naval Institute Press, 1989, 324.

⁷ Moise, 169-170.

⁸ This writer was one of USS *Turner Joy*’s two qualified antisubmarine air controllers tasked with radar monitoring and direction of fixed-wing and rotary-wing aircraft during underway training exercises and actual operations involving the detection and tracking of submarines. I used the AN/SPS-10 surface search radar for this air control function, since Magnetic Anomaly Detection-equipped aircraft (typically the Lockheed P2V Neptune) and sonar-dipping helicopters flew at low-enough altitudes during these operations to be seen on the surface-search display. A

helicopter hovering during a sonar-dipping evolution or moving between dipping points could be mistaken for a surface contact if a radar operator were not aware of its presence or function or had not been tracking it as such. But the tracked-by-surface-search-radar movement, and consequent relative speed, of an airplane not being stalled out over the water would clearly distinguish it on a radar screen from a valid surface contact. No helicopters flew in support of the DESOTO Patrol destroyers on the night of 4 August 1964.

⁹ Kerr, who had in 1947 experienced the “Tonkin ghost” as temperature inversions that rendered the gulf “a weird place, with frequent radar and visual anomalies,” was at first skeptical upon hearing the initial report of an attack on 4 August. He concluded otherwise following his interviews of *Turner Joy* crew and review of pertinent tracks and other records of the action. Andy Kerr, *A Journey Amongst the Good and the Great*, Naval Institute Press, 1987, 177-178. See also Barber, 325-326.

¹⁰ USS Maddox "Report of Action, Gulf of Tonkin, 2 August 1964" dated 24 Aug. The entire report can be viewed at <http://www.history.navy.mil/docs/vietnam/tonkin-2.htm#maddox002> . Compare Moise's certainty that “there is 'no way' the [*Turner Joy*'s] sonar could have failed to pick it [the torpedo whose wake was reported by the Director 51 crew] up.” Moise, 173.

¹¹ Moise, 174.

¹² James Stockdale, *In Love and War*, Harper and Row, 1984, revised edition issued in 1990 by the U.S. Naval Institute. Like Moise, NSA historian Robert J. Hanyok and George Washington University National Security Archive Fellow John Prados also place great weight on Stockdale's account. Hanyok, “Skunks,” 1. John Prados, “Essay: 40th Anniversary of the Gulf of Tonkin Incident”, August 4, 2004, George Washington University National Security Archive, viewable at <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB132/essay.htm>.

¹³ An apparent discrepancy. What I heard the Radarman Chief responsible for shipboard air control report to the CIC Evaluator (*Turner Joy*'s Executive Officer, Robert Hoffman) was that F-8 pilot Stockdale announced that he was commencing a *Zuni* (rather than Sidewinder) firing run--an attack aborted when the RDC waved Stockdale off with a frantic "No, no, airplane, you're making your run on us!"

¹⁴ Barber, 324. Moise could not have been unaware of Barber's comments, made nine years before the publication of Moise's book. They were originally delivered at a 1987 U.S. Naval Institute-sponsored symposium at which Moise and Navy historian Edward Marolda presented papers on the Tonkin Gulf Incident. Barber, who was then the Institute's Executive Director and Publisher, offered his remarks, including the account of the night exercise with *Nasty* PTF's, in response to those papers. What is curious is that Moise's book did not reference that particular example, but did cite (on page 157) an observation Barber made about surface-search and fire control radars in those same remarks.

¹⁵ Memorandum, CTG 72.1 to CTF 77, “Personal Statements of 4 August Action,” 7 August 1964, viewable at <http://www.history.navy.mil/docs/vietnam/tonkin-1.htm#personalstate>. Note in particular the references to the sound of "torpedo noises" picked up by the sonar stack and the emphatic "However, it is my opinion that certainly a PT boat action did take place." Hanyok and Prados likewise ignore this official statement and instead follow Moise in emphasizing Herrick's

“doubts.” Hanyok, “Skunks”, 1. Prados, “Essay”.

¹⁶ Related to me by PN1 Carrell on the day following the underway refueling with *USS Ticonderoga*. Confirmed to me by Barnhart on 23 September 2010.

¹⁷ RADM Lloyd “Joe” Vasey, USN (ret), “Tonkin: Setting The Record Straight,” *Naval Institute Proceedings*, August 2010, 66-71. As chief of staff to the Commander Seventh Fleet in August 1964, Vasey was tasked by his superior to lead an independent investigation to determine what actually happened in the Tonkin Gulf on the night of 4 August. The investigation, which included access to all of the destroyers' eyewitnesses, tracks, logs, and other pertinent documents, concluded that PT's attacked *Maddox* and *Turner Joy*. Curiously, in his online bibliography of published material on the Tonkin Gulf Incident, Edwin Moise characterizes Vasey's presentation of the evidence in the article as “very selective, and overly dependent on unreliable secondary sources”—a charge to which Moise himself is not immune.

¹⁸ One earlier such hole, a gaping one, became glaringly evident in April 1962. As recounted in the Hanyok-authored NSA history of U.S. SIGINT operations in Indochina from 1945 to 1975, “the roof fell in on Allied SIGINT operations in South Vietnam when the Viet Cong executed a major, nearly total communications and cryptographic change on their military and political-military networks.” This change reflected “the culmination of a two-year upgrade to communist communications, COMSEC [communications security] procedures, and, more importantly, its codes, ciphers, and associated materials such as authenticators,” a technical and procedural response indicating Hanoi's recognition of “the threat posed by the high level of American cryptanalysis and the sophistication of its 'technical intelligence collection.’” Robert J. Hanyok, *Spartans in Darkness: American SIGINT and the Indochina War, 1945-1975*, National Security Agency Center for Cryptologic History, 2002, 146-147. This is a heavily-redacted history, but even in its pruned-for-public-consumption state it makes clear that Hanoi was both aware of U.S. SIGINT capabilities and able on occasion to counter them.

¹⁹ Given the imperatives governing the release of information on intelligence sourcing and methods, that last-posed question is one that perhaps cannot be answered even now. Interestingly, Hanyok's article, sprung from its Top Secret cocoon nearly 41 years after the events it recounts and analyzes, contains a number of redacted-out sections screened from public view—presumably for national security reasons that authorities deem still vital.

²⁰ A failing part caused *Turner Joy's* AN/SPS-29 air search radar to operate intermittently and then lose power before being repaired and brought back online late on the night of 4 August. This would not have affected the ability to use the radar's emissions to initially locate the DESOTO patrol's bearing, since the first symptom of an SPS-29 malfunction occurred at 2215 hours local time, a little over an hour after acquisition of the first positive surface-search radar contact evaluated as a vessel on a course to intercept *Maddox* and *Turner Joy*. *Turner Joy* CIC Watch Supervisor's Log 4 Aug 64.

²¹ Louis Giles, “The Gulf of Tonkin Mystery: The SIGINT Hounds Were Howling,” 5 December 2005. While supporting Hanyok's analysis of the 4 August Tonkin Gulf Incident, Giles disputes Hanyok's “assertion that SIGINT was mishandled, deliberately skewed or not provided to the Johnson administration.”

²² Hanyok, “Skunks,” 16. See also *USS Maddox "Report of Action, Gulf of Tonkin, 2 August*

1964" dated 24 Aug

²³ Hanyok, "Skunks," 15.

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