Lessons Not Learned: Cruise Missile Attacks on USS STARK (FFG-31) and INS HANIT (FFL-503)

by
Robert H. Stoner, GMCM (SW) (Ret)

Introduction: ***The era of the anti-ship cruise missile began when the Israeli destroyer INS EILAT (K40) (an ex-British World War 2 warship) was sunk 14.5 miles off Port Said, Egypt. EILAT's executioner was the Soviet SS-N-2 "Styx" anti-ship missile. The launch platform was the Soviet-supplied, Egyptian-manned Komar missile boat. After receiving multiple hits on 21 October 1967, EILAT sank with the loss of 47 killed, 91 wounded of 199-man crew. The conventional weapons suite aboard EILAT was not able to effectively defend against these ship killers.***

Since the sinking of EILAT, the world's navies have invested billions of dollars into weapons systems designed to counter the threat posed by these relatively cheap, yet highly effective missiles. These missiles can be fired from aircraft; fired from surface ships, submarines, and small craft; or fired from mobile launchers ashore. The small size of the missile, its speed, its powerful warhead (for its size), and its ability to fly close to the water hamper detection or defense. The unmanned anti-ship missile is equivalent to the threat posed to warships by the manned Japanese kamikazes during the later stages of the World War 2 Pacific War.

Defending against the anti-ship missile usually takes several forms: (1) advanced or "stealth" engineering technology to deny the missile's targeting system a good target lock-on; (2) active countermeasures and decoys to deceive the missile's targeting system; (3) highly automated combat systems that employ

rapid-fire guns and/or missiles designed to shoot down inbound threats.

Defense against anti-ship missiles started as an extension of the standard manned aircraft air defense problem. At this time (1960s to 1980s) ship designs provided many good returns for a missile's targeting system. Ships gave off massive amounts of radiated heat energy that attracted infrared seekers; ships had numerous reflectors that gave radar seekers excellent target locks; ship size provided large areas for optical seekers to target. Beginning in the late 1980s and early 1990s, naval architects began incorporating stealthy design features into newly constructed ships.

There wasn't a lot of design improvement that could be done to a warship built when there were no anti-ship missile threats to defend against. Stealthy design features are essentially passive in nature and they are part of the ship's overall structure. Therefore, anti-ship missile defense concentrated on active countermeasures: (1) decoys, (2) automated fire control systems for guns or missiles, and (3) automated gun and missile point defense systems.

Decoys were typically: (1) chaff – an airborne cloud of radar reflective material designed to decoy a radar seeker away from the actual ship by providing a better radar return; (2) flares – magnesium flares whose temperature attracted heat seeker warheads; (3) smoke to confuse E/O targeting and imaging infrared guidance systems; and (4) active electronic jamming to deceive or jam the infrared or television seeker. Examples of decoys are the RBOC (Rapid Bloom Off-board Chaff) mortars Mk 33 and Mk 34 or the SRBOC (Super RBOC) mortar Mk 36. These mortars launch either multiple rocket assisted chaff (radar decoy) clouds or magnesium flares or smoke. Television guidance is rarely used by anti-ship missiles. The video link can be easily jammed or the seeker blinded by smoke. The most common missile guidance systems employ radar or infrared seekers. Decoy systems have concentrated on the automation and improvement of the flares, smoke, and chaff launched.

Automated combat systems, such as the Navy Tactical Data System (NTDS), were developed to solve the anti-air warfare problem for shipboard missile defenses (and shorter-range guns). The NTDS New Threat Upgrade modified the existing AAW system to include the anti-ship missile threat. Even so, responses to anti-ship threats required even more automation and consolidation. The Aegis Combat System was developed as an integrated whole to defend against airborne, surface, and submerged threats by integrating all shipboard defenses into a multi-layered gauntlet of missiles, guns, and torpedoes.

When I was an instructor at the U.S. Naval Gunnery School at Great Lakes, Illinois, in the late 1970s and 1980s, the instructor staff had a saying about the lifespan of a missile cruiser (DLG/CG) in an all-out war:

"Question: What's the life expectancy of a DLG/CG in modern combat?"

"Answer: Ninety seconds. If it takes three minutes to respond to the threat, you'll be dead for a minute and a half."

This illustrates the seriousness of the problem and why automated systems are essential to survival in a war at sea.

The first anti-ship missile system deployed by the U.S. Navy was the Basic Point Defense Missile System (BPDMS). As initially fielded aboard USS BRADLEY (FF-1041) in 1967, BPDMS used a manned Mk 115 director and a Mk 25 launcher containing eight RIM-7E Sea Sparrow missiles. BPDMS evolved into the automated Mk 19 Fire Control System with AN/SPS-65 radars and Mk 29 NATO Sea Sparrow launcher. The latest version is the Evolved Sea Sparrow (ESS) missile system that has a four-round module of RIM-162 ESS missiles loaded into a cell of the Mk 41 Vertical Launch System. Foreign allies of the U.S. Navy have adopted the bolt-on Mk 48 ESS VLS missile system.

The first Sea Sparrow systems were quite limited in their abilities to engage anti-ship missiles, and so a stand alone, automatic, rapid-fire gun system based on the Army's combat-

proven M163 Vulcan Air Defense System (VADS) was modified for naval use. The product of that modification was the Mk 15 Mod 0 Phalanx Close-In Weapon System (CIWS). CIWS is a fully automated, 20mm high-rate rotary cannon (Gatling gun) that uses a fully integrated search and tracking, closed-loop, fire control system. CIWS is the ship's last chance before the anti-ship missile hits. Prototype CIWS was tested aboard USS KING (DLG-10/DDG-41) in 1973.

For the period of the 1970s and into the 1980s, the U.S. Navy and other world navies fielded numerous gun and missile point defense systems with increased automation and lethality – but not necessarily reliability.

The Falklands war between the UK and Argentina in 1982 highlighted deficiencies in both air defense and anti-missile defense within the Royal Navy. The Type 42 guided missile destroyer, HMS SHEFFIELD (D-80), was hit by an Argentine AM39 anti-ship missile on 4 May 1982. Twenty sailors were killed and 21 wounded.

SHEFFIELD was steaming as part of a radar picket group with two other destroyers, HMS YARMOUTH (F-101) and HMS GLASGOW (D-88). GLASGOW was the lead ship of the group and detected the targeting radars of two inbound Argentine Super Étendards for their Exocet missiles on its electronic warning support measures (ESM). GLASGOW flashed the word to the rest of the ships. HMS INVICIBLE (R-05), the flagship, discounted GLASGOW's warnings as false. GLASGOW attempted to engage the Argentine aircraft with its Sea Dart missiles unsuccessfully and two AM39 missiles were launched. HMS YARMOUTH deployed chaff and one of the missiles was decoyed away and missed. YARMOUTH was unable to deploy its Sea Cat point defense missile system against the other missile. INVINCIBLE continued to insist this was a false alarm. Due to the use of its SatCom (satellite communications) anntena that blanked out SHEFFIELD's ESM equipment, the ship did not detect the inbound AM39 Exocet. The inbound missile was detected visually just before impact. SHEFFIELD was struck amidships by the missile that fractured the ship's fire mains,

knocked out its generators, and started uncontrollable fires. After four hours, SHEFFIELD was abandoned. The hulk of SHEFFIELD burned for several days. HMS YARMOUTH took SHEFFIELD's remains under tow. SHEFFIELD foundered and sank on 10 May 1982 while towed by YARMOUTH.

On 12 June 1982, HMS GLAMORGAN (D-19) was steaming 18 miles offshore at 20 knots supporting Royal Marine operations against Two Sisters Ridge near Port Stanley. At 0637, Argentine troops fired an AM38 Exocet from an improvised shore-based launcher at GLAMORGAN. GLAMORGAN's outdated radar could not detect the inbound missile, but the Officer of the Watch visually sighted the Excoet. The watch officer immediately ordered a turn away from the missile. The Exocet hit the side of the ship aft on an angle, did not penetrate but ricocheted into the hangar, exploded the Wessex helicopter there and started a fire in the hangar and galley below. The Exocet warhead did not detonate, but the burning rocket propellant and helicopter fuel fed a large fire that was not contained until 1000 hours. Thirteen crewmen were killed and others wounded.

The immediate result of the Falklands War was adoption of the American Mk 15 Mod 0 Phalanx CIWS for Royal Navy ships. The Royal Navy also purchased the Hollandse Signaal-Apparaaten (now Nederland Thales) Goalkeeper CIWS that uses the larger GAU-8/A 30mm rotary cannon of the American Air Force's A-10 tank buster.

On the other side of the world, Iran and Iraq were embroiled in a full-scale war in the oil-rich Persian Gulf. This war lasted from 22 September 1980 until 20 August 1988. Both sides posed threats to the oil life lines of America and Western Europe and so allied navies were sent to protect Persian Gulf tankers.

The Reagan administration commenced Operation EARNEST WILL on 24 July 1987 to protect tankers entering and exiting Kuwait from Iranian attacks in the Gulf. USS STARK (FFG-31) was an Oliver Hazard Perry-class guided missile frigate that was one of the escorts for the re-flagged Kuwait tankers.

The Attack on USS STARK, 17 May 1987.

Above: USS STARK (FFG-31) as she was before the 17 May 1987 attack by the Iraqi F.1. (Photo: U.S. Navy)

At 2000 on 17 May 1987, a French-made Dassault Mirage F.1EQ fighter-bomber took off from Iraq's Shaibah military airport and headed south into the Persian Gulf. An Air Force E-3A Sentry Airborne Warning and Control System (AWACS) plane, in the air over Saudi Arabia and manned by a joint American-Saudi crew, detected the aircraft. Word was passed to USS STARK, a Perry-class frigate on duty in the Gulf. The AWACS crew misidentified the Mirage as a "friendly." Radar operators picked up the Mirage when it was some 200 miles away, flying at 5,000 feet and moving at 550 mph.

Captain Glenn Brindel, 43, STARK's commanding officer, was not alarmed. He had seen both Iraqi and Iranian warplanes fly over the Gulf. Earlier in the day, Iraqi jets had fired missiles into a Cypriot tanker. The vessel was disabled, but no American vessel had been attacked.

Following standard operating procedures, Captain Brindel had a radio message flashed at 2009: "Unknown aircraft, this is a U.S. Navy warship . . . Request you identify yourself." The request was

repeated. No reply was received from either challenge. Brindel saw that the Iraqi pilot had not locked-up his targeting radar on STARK. He expected the Mirage to steer away.

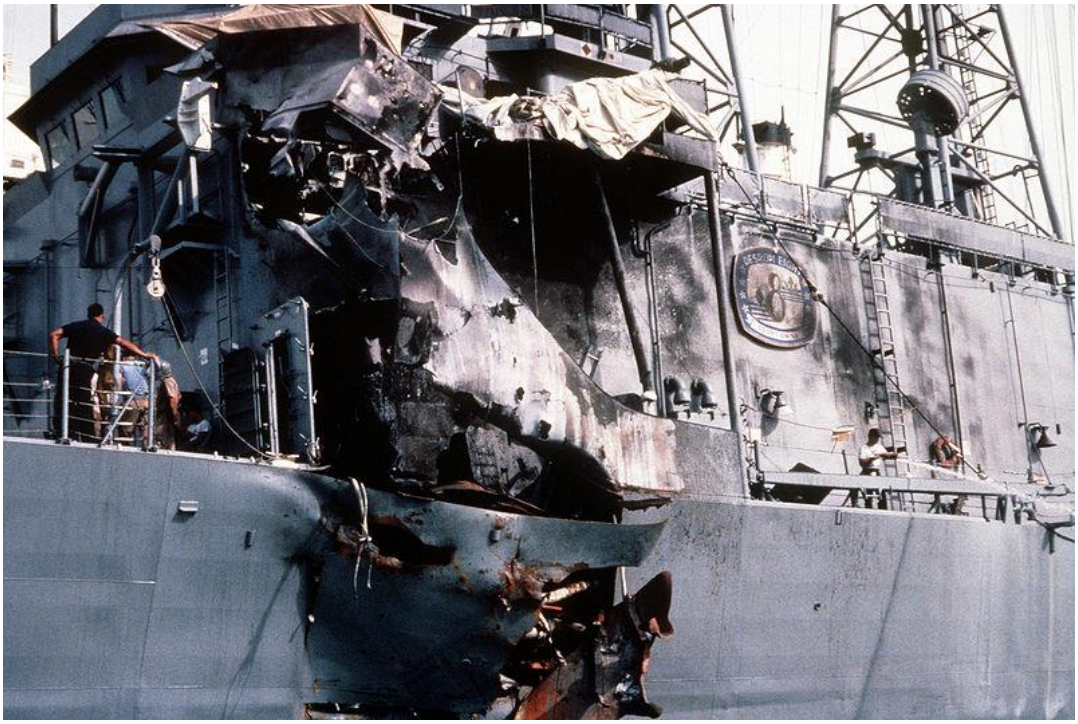
Above: An Iraqi Dassault F.1EQ-6 configured for maritime strike with the MBDA AM39 Exocet air-launched anti-ship missile. (Art: ACIG.com)

Below: The MBDA AM39 Exocet missile in close-up. (Photo: David Monniaux)

At 2010, the AWACS crew noticed that the Mirage had banked suddenly and then turned northward, as though heading for home. They did not detect the launch of two Exocet AM39 anti-ship missiles

by the Iraqi F.1EQ The Iraqi F.1 fired his first AM39 missile at STARK from a range of 22.5 miles. The second AM39 was fired at 15.5 miles. Each of the Exocets had a range of 40 miles and carried a 352-pound high explosive-fragmentation warhead. Neither inbound Exocet was detected by STARK's radars or threat warning systems.

A lookout spotted the first Exocet just seconds before the missile struck, tearing a ten by fifteen-foot hole in the warship's hull on the portside before ripping through the crew's quarters. A fire rushed upward into the vessel's Combat Information Center (CIC), disabling electrical systems. The second missile hit the frigate's superstructure.



Above: USS STARK at Bahrain showing the affects of the two missile hits. The first hit was in the hull; the second was in the superstructure almost directly above the first. (Photo: Navsource.com)

A STARK crewman sent a distress signal with a handheld radio that was picked up by USS WADDELL (DDG-24) patrolling nearby. Meanwhile, the AWACS crew requested that two airborne Saudi F-15s pursue the Iraqi Mirage. Ground controllers at Dhahran airbase said they lacked the authority to authorize such a mission, and the

Mirage was safely back in Iraqi airspace before approval could be obtained.

Above: USS STARK on the morning of 18 May 1987 shortly before the fires were contained and put out. Note the heavy list to port and the dense smoke from the fires. The ship's fire parties fought the fires all night long. (Photo: Navsource.org)

Fires raged aboard STARK. Captain Brindel ordered the starboard side compartments flooded to keep the gaping hole on the portside above the waterline. Throughout the night the fate of the stricken frigate was in doubt. By the next day, STARK's fires were under control, and the frigate limped back to port in Bahrain for emergency repairs by the tender USS ARCADIA (AD-42). After repairs, STARK sailed back to her homeport of Mayport, FL. Repairs at Pascagoula, MS eventually cost $142 million.

Above: STARK, with an ocean-going tug alongside for assistance. The fires just about extinguished and dewatering of flooded spaces is underway. (Photo: Navysite.de)

Below:, A tug provides assistance to STARK at Bahrain. This photo was taken from the USS COONTZ (DDG-40). (Photo: Edward Cleary via Navsorce.org)

Above: Looking down to the main deck from the port bridge wing (01 level). Note that the explosion has completely blown the steel deck away. (Photo: Navsource.org)

The Navy launched an investigation into the attack that killed 37 sailors and wounded 21 others.

What kinds of weapons were available to defend STARK from the Iraqi Exocets? USS STARK (FFG-31) was well armed to defend herself:

- The Mk 13 Mod 4 Guided Missile Launching System (GMLS) with a magazine of 40 Standard SM-1 missiles.
- The Phalanx Mk 15 Mod 0 Close-In Weapons System (CIWS).
- The Mk 75 Mod 0 OTO Melara rapid-fire 76mm dual-purpose (anti-air and anti-surface) gun.
- The Mk 36 SRBOC decoy system.
- The SLQ-32 (V) 2 electronic warfare.
- The AN/SPS-49 (V) 4 air search radar.
- The Mk 92 Mod 2 Fire Control System, STIR (SPG-60) gun, missile fire control radar.

Above: USS STARK (FFG-31) with the various anti-ship missile defense systems identified. (Photo: U.S. Navy, notations Bob Stoner)

Yet, STARK did not get off a shot in her own defense. Why? Captain Brindel insisted his ship's combat systems were operational. The Navy's Board of Inquiry did not agree.

Official records insist that the attack was "accidental." That assertion does not hold water.

Findings of fact

Fact: The U.S. Navy after-action report from June 1987, says the SPS-49 radar was switched on only six minutes prior to the attack and did not establish a continuous, real-time track of the launching aircraft until the first missile actually struck the ship. The report also found that the ship's Mk 92 fire control STIR radar was fully functional, but in STANDBY mode. STIR was not used to track either the Mirage F.1 fighter or the Exocet missiles.

Fact: USS STARK was stalked by the Iraqi Mirage F.1EQ. The pilot followed a course that would take advantage of blind spots in coverage of the ship's weapons and targeting systems. Although Iraq

never admitted to intentionally targeting STARK, the Iraqi pilot was not punished and continued to serve. Official U.S. reports described the attack as “accidental” and that the “pilot was executed.”

Fact: The MK 92 FCS integrates target detection with multi-channel anti-air and anti-surface missile and gun systems control, engaging up to four targets simultaneously. The MK 92 track-while-scan radar employs the Combined Antenna System (CAS), which houses both search antenna and tracker antenna inside a single egg-shaped radome. A separate STIR (Separate Tracking Illumination System) has a larger antenna to provide for longer ranges than covered by the CAS. The STARK’s Tactical Action Officer *did not turn the ship so as to unmask the inbound Mirage to the STIR*. The Iraqi pilot would have gotten the shock of his life if his threat warning indicator had been lit-up by the STIR’s SPG-60 lock-on. Weapons lock-on might have aborted the attack before missile launch and it certainly would have jolted the Iraqi pilot into reality that he was closing on a warship.

Fact: Failure to turn the ship to engage meant that *the two Exocet missiles came in on the blind spots (or “cutouts”) for the CIWS and SM-1 Standard missiles*. The TAO should be fully aware of his weapon system’s blind spots and what he can cover and not cover. *If the inbound missiles are hiding in your ship’s blind spots, you are going to get hit.* It did not help that the AWACS had complicated matters by assigning a “friendly” to the Iraqi F.1.

Fact: During the actual attack phase, Captain Brindel was not in CIC, but in the head. The Phalanx operator was also taking a head call!

Fact: At the Board of Inquiry, Captain Brindel refused to accept responsibility for his actions at the time of the attack and chose to place the responsibility on subordinates.

Fact: There were heroic efforts at damage control by the STARK’s crew under the most adverse circumstances. Fires were raging within 20 feet of the forward SM-1 missile magazine. Twenty percent of the crew had been killed or wounded. Lack of fire main water pressure, loss of internal and external communications, and the loss of one-third of the repair lockers were problems met and overcome. Counter flooding to bring the ship back on an even keel almost sank

the ship as all hands tried to save it. Fortunately, the STARK's sailors prevailed against all odds and saved their ship.

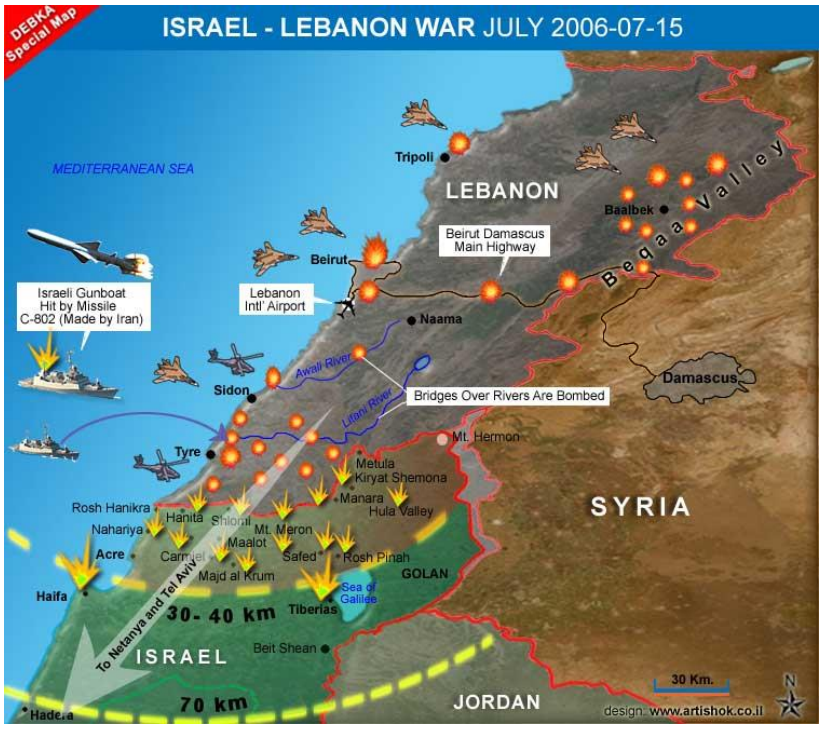
Fact: No weapons were fired to protect the ship at the time of the attack. The Phalanx CIWS remained in STANDBY mode (effectively out-of-action). The Mk 36 SRBOC decoys were not armed and ready for use. The attacking Iraqi Mirage F.1 and its Exocet missiles were in blind spots for both CIWS and STIR that prevented use of the ship's SM-1 missile system. No evasive maneuvers were performed before first missile impact.

Fact: The Navy Board of Inquiry cited lapses in both training requirements and lax procedures aboard STARK. Captain Brindel was relieved of command and recommended for court martial along with his TAO, Lieutenant Basil E. Moncrief. Admiral Frank B. Kelso II, C-in-C U.S. Atlantic Fleet, downgraded the recommendations to non-judicial punishment and letters of reprimand. Both Brindel and Moncrief opted for retirement. Executive Officer, Lieutenant Commander Raymond Gajan, Jr. was relieved for cause and received a letter of admonishment.

The Attack on INS HANIT, 14 July 2006.

Below: The Sa'ar V is an indigenous Israeli design considered to be on the cutting edge by naval architects. During the early 1990s, Israel took delivery of three Sa'ar V corvettes: INS EILAT (FFL-501), INS LAHAV (FFL-502), and INS HANIT (FFL-503). Of these, HANIT was the last delivered in August of 1995. Litton-Ingalls Shipbuilding (now Northrop-Grumman Ship Systems) built all three corvettes for Israel in Pascagoula, Mississippi. The cost was $260 million for each one. (Art: Northrop-Grumman Ship Systems)

With war raging against Iranian backed Hezbollah fighters in south Lebanon (12 July to 14 August 2006), the Israeli corvette INS HANIT (FFL-503) was patrolling in Lebanese waters about 8 to 10 nautical miles off the coast of Beirut. HANIT was acting as part of a blockade to prevent outside aid from reaching Hezbollah ports in southern Lebanon.



Above: The Israeli-Lebanon War summary map of 15 July 2006. The missile attack on INS HANIT is noted on the left side. (Art: DebkaFile.com)

Shortly after the crew had sat down for the evening meal, on or about 2045 the ship was struck by one of two anti-ship missiles fired from the shoreline. The explosion, estimated at 30 kilograms (66 pounds), was aft and caused the ship to lose steering and go dead in the water. A fire resulting from the explosion broke out on the after helicopter deck and threatened to ignite aviation fuel stored below.

Another Israeli ship provided assistance to tow HANIT out of danger until propulsion could be restored. The second missile missed HANIT, hit and sank a Cambodian-flagged commercial vessel. No casualties were reported aboard the Cambodian-flagged ship. Other ships in the vicinity rescued survivors. Four Israeli sailors were killed aboard HANIT.

Damage control parties got the fires extinguished and propulsion and steering restored. The damaged ship then steamed to the Israeli naval base of Ashdod, Israel, for repairs. HANIT arrived on 16 July 2006.

Above and below: Photo of INS HANIT at anchor after the attack and before return to Ashdod for repairs. These photos were published on the Internet within several days of the attack. Over three years later, very few photos of the battle damage are

available. Those that are available are cropped for security reasons. (Photos: DebkaFile.com, captions Bob Stoner)

Above: HANIT alongside the pier at the Israeli Ashdod Naval Base. Fire and blast damage is apparent to the helicopter hangar and starboard side hatch. (Photo: Israeli Navy)

Below: The after helo deck damage. From the pictures, it appears the missile hit the starboard side on an angle and parts of the airframe exited the top of the helo deck to port. The fact that the HANIT did not sink and only took 10 days to repair gives credence to a hit by the smaller C-701 missile and not the larger C-802 missile. (Photo: Israeli Navy).

A 17 July 2006 press release by the Israeli Defense Force said that two kinds of missiles were used as part of a "high/low" attack on HANIT. The first missile was an Iranian copy of the Chinese C-802 anti-ship missile known by its NATO name of CSS-N-8 "Saccade"; Iranians call their production version the "Noor." The second missile was an Iranian copy of the Chinese C-701 anti-ship missile called "Kosar" or "Kowsor". Both missiles are launched from modified transport trucks.

Above: The Iranian-built version of the Chinese C-802 anti-ship missile is called the "Noor", shown here on a trailer for a military parade. (Photo: ACIG via IRIB)

Below: The Iranian-built version of the Chinese C-701 anti-ship missile is called the "Kosar" or "Kowsor", shown here at a weapons display. (Photo: AboveTopSecret.com)

According to IDF sources, the attack was conducted by Chinese C-802 and C-701 cruise missiles or Iranian copies. Apparently, two missiles were launched toward the INS HANIT. Israeli intelligence believes a third missile exploded at launch. The attack was a coordinated, simultaneous "high/low" attack - the first "high" missile [C-802] passed over the Israeli ship. Missing the target, it continued flying, hitting and sinking the civilian merchant ship cruising 30 nm from the shore. The second missile followed a sea-skimming flight profile hitting the Israeli vessel at the stern, killing four sailors and setting the flight deck on fire and crippling the propulsion systems inside the hull.

The simultaneous "high/low" attack was to assure maximum chance of success. The Israelis believe the missiles used targeting data from Lebanese coastal radars so the launch sites could maintain low electro-magnetic signatures throughout the initial attack phase.

The first missile was "bait" to deploy shipboard defensive systems against it. With focus diverted to the obvious threat, the second sea-skimming missile would close-in unnoticed. Supporting evidence shows the first missile locked-on the merchant ship 30 nm away, because it was the next visible target in its flightpath. The second

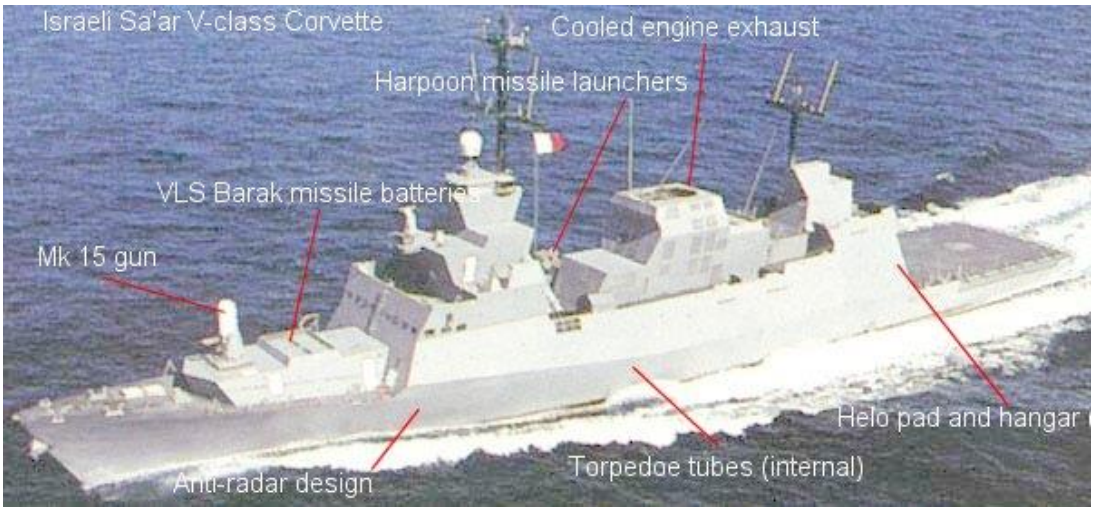
missile could have been guided by radar or, more probably, electro-optically. The E/O method requires the launch of two types of missiles, a C-802 for the “high” profile and a C-701 for the “low” profile.

The Chinese C-802, called “Saccade” by NATO and “Noor” by Iran, uses a rocket booster for launch, and a turbojet cruise engine, giving it a range of up to 70 nm. The warhead uses about 396 pounds of shaped charge explosives. This heavy warhead makes it a capable threat to major warships including U.S. aircraft carriers.

The C-701, (known as “Kosar” or “Kowsor” by Iran) is as a truck mounted coastal defense missile. It is much smaller than the C-802. The C-701 weighs about 220 pounds, has a range of 9-10 nm, and a 63-pound high explosive warhead with a delayed-action fuze to maximize internal damage after hull penetration. The C-701 uses an Infrared/TV seeker or an active millimeter radar seeker.

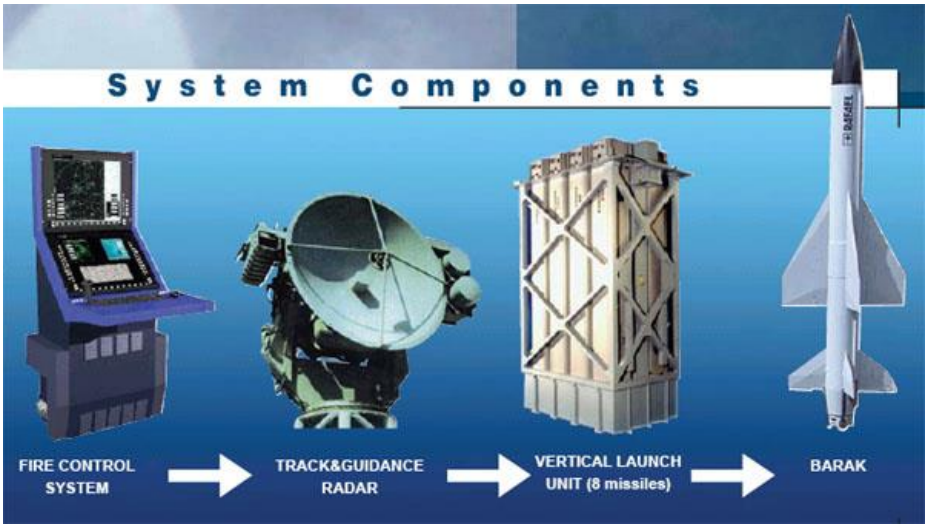
What kinds of weapons were available to defend HANIT from the Hezbollah missiles? INS HANIT (FFL-503) was well armed to defend herself:

- Eight 8-round cells of Barak vertical launch SAM (anti-aircraft, anti-ship missile), a total of 64 rounds.
- The Phalanx Mk 15 Mod 0 Close-In Weapons System.
- Rafael RAN-1010 electronic countermeasures jammers.
- Elbit DESEAVER decoy system (chaff, smoke, and flares).
- Elta 3-D air search; fire control.
- El-Op multisensor stabilized weapon directors.
- Elisra intercept, Tadiran COMINT and direction finder electronic warfare suite.



Above: Location of the various systems on the INS HANIT (FFL-503). (Art: Northrop-Grumman Ship Systems, captions Bob Stoner)

Below: The Barak vertical launch SAM system is a joint project of Israeli Aerospace Industries and RAFAEL Advanced Defense Systems. The total system is summarized in the following artwork. (Art: IAI/RAFAEL)



Findings of Fact

Fact: A glitch in the Elta Pulse Doppler surveillance system affected only detection range, not accuracy. Because the INS HANIT was less than 10 miles from the Lebanese shore, the range-degraded

radar would have detected the incoming threat *had it been operated correctly before the attack*.

Fact: The Israeli-made Barak ship defense system was in optimum condition to track, identify and intercept the Chinese-origin or Iranian-copy missiles, *had it not been deactivated prior to the attack*.

Fact: Other ship defenses, such as the U.S.-built Phalanx and the Elbit DESEAVER decoy control and launching system, *were fully functional but in STANDBY mode on the night of the attack*.

Fact: Investigators confirmed that locally produced electro-optical surveillance sensors, communications and combat management systems were in good condition and fully operational, *but the integrated electronic warfare gear designed to track incoming missiles was in STANDBY mode*.

”Even after the attack, and all the damage sustained to the ship, all systems operated. We found no need to replace technology or order corrective fixes.” said Rear Adm. Omri Dagul, head of the Israel Navy’s Materiel Command. Navy officials said the service operated at readiness rates of more than 90 percent, despite the 8,000 hours of continuous maritime operations in Lebanese waters.

Fact: According to the after-action account, Iranian-assisted Hizbollah fighters launched three Iranian versions of the Chinese/Iranian anti-ship missiles. One hit HANIT, another overshot its target and sunk a merchant ship some 30 nm away, and another apparently exploded upon launch.

Operational Deficiencies

A postwar probe revealed deficiencies in the way the Navy assessed, understood, and responded to the operations in a war environment after Hizbollah’s 12 July 2006 raid that triggered the war.

From the Navy’s failure to anticipate the Hizbollah missile threat to improper deployment of the premier warship so perilously close to the Lebanese shore, investigators found that service leaders *did not appreciate the fact that the nation was at war*.

At the time of the attack, most of the ship's 80-plus crew were in the mess room enjoying a Sabbath-eve dinner. In this case, complacency ended up saving lives.

The report faulted the service's nonchalant disregard of warnings issued by IDF military intelligence that Iranian anti-ship missiles could have found their way into Hizbollah's arsenal.

The report faulted Navy commanders for not elevating alert levels and operational profiles from routine patrol mode to high-alert combat readiness mode.

For HANIT specific shortcomings, investigators faulted the actions of the electronic warfare systems officer, *who switched active defensive systems into STANDBY mode without informing the ship's commander*.

According to Navy sources, the young officer *incorrectly assessed the significance of a malfunctioning electronic warfare detector, and kept the passive defense system on STANDBY when it technically was capable of operating in high-alert mode.*

Investigators reported that the ship's integrated radar did not detect the incoming missile, but Navy officials insist this was due to human error. Either the operator didn't see the target or he didn't understand what he was seeing. There was no malfunction that could have prevented detection of the threat.

Based on the findings of the postwar probe, on 1 January 2007, Israel's top military officer censured the head of naval intelligence, the commander of the Navy's missile-boat flotilla, the corvette's captain. HANIT's engineering officer, and HANIT's electronic warfare systems officer.

LESSONS NOT LEARNED

1. Failure to use on-board systems correctly was common to both the STARK and HANIT incidents.

2. In both HANIT's and STARK's cases, the Phalanx CIWS was in STANDBY mode during the entire attack. Both Captains shared a fundamental misunderstanding of CWIS' purpose and how it reacts to threats.

   Note to Captains: If your CIWS is in STANDBY mode (that is, OFF), *any inbound anti-ship missile will get through*. The lamest excuse I heard offered by the Israeli Captain was: he thought that CIWS would engage friendly IAF aircraft attacking Hezbollah targets ashore. This potential problem is easily solved: Contact the IAF folks, through the Navy chain of command, and tell them to make sure their aircraft come no closer than 5 miles of any Israeli warships. Otherwise, CIWS may shoot them down. Military pilots are rightfully afraid of R2D2's anger and will give warships a wide berth.

3. No orders were issued to assign weapons or to engage the missiles fired at either ship. Similarly, the ship's detection radar was operated improperly and ineffectively.

4. In both events, a series of human errors trumped technical readiness. Such failings are absolutely inexcusable in wartime.

5. Operational complacency and lack of readiness resulted in the loss of life,

6. Both ships were operating in a shooting war and yet their Captains carried on as if they were at peace. General Quarters was not called away. Neither ship was ready for war. Yet, both ships were in the middle of shooting wars.

The moral of these sad stories is that complacency in war kills. How bad the human screw-up is (plus luck or the lack of it) determines the number of killed and wounded.

Regrettably, complacency is in-grained by peacetime ways of doing things. Humans have a very difficult time in breaking out of the old and familiar peacetime habits and mentally shifting gears into a war mentality.

As strange as it sounds, even with shooting and bombing going on around both Captains and their crews, all of the participants continued to act like spectators in these wars. The results were as predictable as they were tragic.

Author's Note: The opinions and conclusions of Lessons Not Learned are the author's only. I do not presume to speak for the U.S. Department of Defense, the U.S. Navy, the Israeli Ministry of Defense, or the Israeli Navy. However, as George Santayana said: "Those who cannot learn from history are doomed to repeat it."

R1