The Suez Canal: Strategic & Operational Security Realities- Past, Present, & Future

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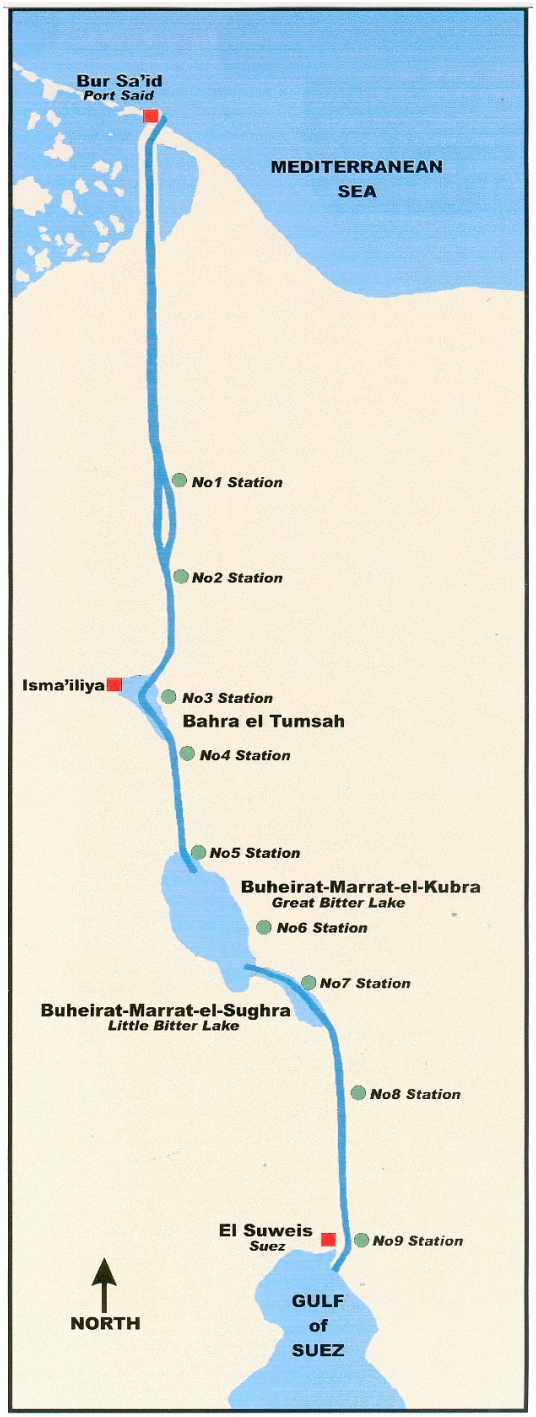
Overview

The Suez Canal, which became operational in November 1869, is one of the world's most vital maritime trading conduits and one of its most prominent geopolitical features. Since its inception, major powers have coveted (and achieved) controlling influence over it, and the canal has been at the centre of several conflicts. Currently, aside from its importance as a vital source of revenue for Egypt (in the fiscal year 2008, the canal generated $5,381.8 billion in transit dues), over 7.5% of the entire world's maritime trade passes through the Suez Canal. In 2008, 21,415 ships passed through the Canal Zone in both directions, amounting to an aggregate 722,984,000 tons of cargo. Notwithstanding the impact of the global economic downturn on the reduction in cargo transported via the canal, a series of recent events both in and around the canal space suggest that the current security of the canal and that of transiting vessels needs to be re-examined and communicated.

Physical & Geographical Parameters:

Because of its physical characteristics and geographical location, the Suez Canal is a feature of considerable strategic importance; it is thus clearly vulnerable in time of war, as history shows, and potentially a prized target for terrorist strikes. By extension, vessels transiting the canal are potentially similarly vulnerable. Different parts of the canal present different practical security challenges and vulnerabilities.



Suez Entrance ***(US Navy)***

Map of the Suez Canal **(Shipwrecks.com)**

In general terms, given that the canal's course runs through a single sovereign state, and is not immediately proximate to contested borders or territory, means that its integrity from an inter-state perspective is secure. However, the Suez Canal is located within a geopolitically turbulent and fragile region, most significantly it is just south of the Levant and as such has been a central feature of previous Arab-Israeli conflicts (see historical section). Given that the canal is clearly a maritime trading route, it is also accessible to vessels from anywhere in the world. Indeed, arguably, the most logical way to execute an asymmetric attack against the canal would be to use a merchant vessel.

The Suez Canal extends for a total length of 101 nautical miles (162 km) from Port Said on Egypt's Mediterranean coast southwards to Port Tewfik on the Gulf of Sea (Red Sea). The canal's widest point is the Great Bitter Lake (although in practical terms only the eastern side of the lake is used by transiting and anchored vessels); however, the canal is only 133 metres wide at its current nominal maximum depth of 22.5 metres. There are no restrictions on the length of vessel that can transit the canal as the radius of the curves in the canal at Ras El Ish, El Ballah, Ismailia, El Kabrit, Geneffe and Port Tewfik, enable sufficient manoeuvring for even the largest ships. Due to the configuration of the canal's dredged cross-section, the maximum width of vessels is 70.1 metres and the maximum draft permitted is 17.68 metres.

Infrastructure and crossings:

- The Suez Canal Bridge, also called the Egyptian-Japanese Friendship Bridge, is a high-level road bridge at El Qantara, and has a 70-metre (230 ft) clearance over the canal.
- El Ferdan Railway Bridge, which is 20 km north of Ismailia, with a span of 340 m (1100 ft), is the longest swing span bridge in the world. The previous bridge was destroyed in 1967 during the Arab-Israeli conflict.
- There are three pipelines taking fresh water under the canal to the Sinai region, which are located some about 57 km (35 mi) north of Suez.
- The Ahmed Hamdi Tunnel south of the Great Bitter Lake.
- The Suez Canal overhead line power-line.
- A railway on the west bank runs parallel to the canal for its entire length.

Physical Security Vulnerabilities of Canal and Transiting Vessels:

The canal is vulnerable to obstruction at many points along its courses, specifically at:

- Canal section between Ras El Ish and El Ballah
- Canal section between El Firdan and Ismailia
- Canal section between Tusun and Deversoir
- Canal section between Geneffe and Port Tewfik

The entrances to the canal at Port Said and the Suez Canal Container Terminal (SCCT) and at Port Tewfik (however, obstructing vessels could be cleared more quickly from these locations).

The canal could also be obstructed with the destruction of The Suez Canal Bridge or the El Ferdan Railway Bridge (if it was swung into place over the canal's span).

Vessels are more vulnerable to any potential vessel-born implemented explosive devices (VBIEDs) at the anchorages off Port Said and the Suez Roads and the waiting anchorages at Lake Timsah and the Great Bitter Lake.

Additional traffic along the canal **(Monsters & Critics)**

Security Monitoring of the Canal Use & Area Surveillance:

The overall security of the Suez Canal, which is ensured by in a compound sense by the means listed below, is of a high order. Aside from the fixed technical and organic surveillance means, the canal is flanked by a considerable range of

Egyptian military units and equipment, which are there in part to ensure its security. Furthermore, background information concerning those vessels using the canal is comprehensive and continuously updated.

The Various Means of Securing the Canal Are:

Vessel data
The Suez Canal Authority (SCA) begins its passive security monitoring of the canal and of those vessels that use it by requiring a full declaration of the approaching vessel's particulars. At least five days prior to the intended transit, the SCA requires: a cargo manifest (including declarations of dangerous cargoes), container forms for vessels carrying containers, a crew list with listed nationalities, owners name, date of the last transit through the Suez canal (and the name of the vessel at that time), a declaration of contents of ship's double bottom and other tanks, an engine room plan, a general arrangement plan, information on any modifications since the last passage through the canal, previous name(s), registry and vessel type.

Radar
Radar monitoring along the canal is endemic and sustained for obvious vessel traffic management reasons (VTMS). As the central feature of the VTMS, the system comprises of 6 radars:

- 3 x 100 KW sets located in Port Fuad, Port Tewfik and in the Great Bitter Lakes area.
- A further 3 radars, each of 50 KW output power, are located at Kantara, Ismailia and Geneifa.
- The integrated system gives full coverage all along the Canal and out to 40 km from the harbours and roads at Port Said and Suez.
- Each of the radars has main and standby power sources, and is equipped with a remote control via a microwave link and fibre optic cable to convey command and status signals and alarms between the remote sites and the operations centre.

Visual
Vessel traffic and the immediate area on both banks of the canal are also monitored visually from 13 signal stations located on the west bank of the canal, which are approximately 11 km apart. These stations are used to monitor vessel traffic and facilitate pilotage operations.

Canal Pilots
All transiting vessels must embark a pilot, which are changed at several points. This essentially enables the canal authority to have positive navigational control of each vessel. However, crucially from a security perspective, it also enables the SCA to organically monitor all bridge operations for the duration of the transit.

Egyptian Military exercises by the canal **(webshots.com)**

CCTV
There is CCTV coverage of a good deal of the Canal Zone, with cameras located at the signal stations along the canal. This system is intended to complement the VTMS; however, the recent enhancement of this system giving greater area coverage has also greatly improved surveillance of the along canal and at the approaches at Port Said and the Suez Canal Container Port and at Port Tewfik. Clearly, the additional CCTV coverage has also enabled a more thorough and almost continuous visual surveillance of all transiting convoys, which assists in both the security of the vessels and the canal itself.

Automatic Identification System (AIS) monitoring
In conjunction with high-definition radar surveillance of the canal, the signal station monitoring system, controlled by the Ismailia Centre, also gathers AIS signals from transiting vessels, which adds to the comprehensiveness of the VTMS and ensures safe navigation. Clearly, the gathering of these signals also greatly enhances the maritime domain awareness (MDA) of the canal zone by virtue of the added dynamic telemetry and identification data that AIS provides for each vessel.

Military
The Suez Canal has long been one of the most militarised areas in the world. This reality is a

clear reflection not only of the wars fought in and around the canal zone [the 1956 Suez Crisis, the 1967 Six-Day War, and the 1973 Arab-Israeli War (Yom Kippur War)], but also serves as clear evidence of the enormous geo-strategic significance of the canal, not only for Egypt but also for the entire trading world.

Currently, there are multiple units from the Egyptian armed forces in the Canal Zone responsible for its security and that of transiting ships. Observers estimate that five Egyptian divisions are in camps west of the Suez Canal. The Second Army is reported as responsible for the area from the Mediterranean Sea (Port Said) to a point just south of Ismailia (30°36'N 32°15'E). The Third Army is reported as responsible from Ismailia on Lake Timsah southwards to the Red Sea. Thus as part of these formations, there are armoured and mounted infantry units based in and around the canal zone that can react to security situations and also serve as a vital deterrent.

In addition to responsibility for the protection of 2,000 kilometres of coastline on the Mediterranean and Red seas, the Egyptian navy is also responsible for the maritime security and defence of the approaches to the Suez Canal, and provides support for army operations in the Canal Zone. There are main bases at Port Said and Port Tawfiq (Bur Tawfiq) near Suez, and at Al Ghardaqah and Bur Safajah on the Red Sea, all of which have armed patrol craft ready for deployment. Patrol craft routinely patrol along the entire length of the canal in lake areas.

All along the canal there are also military observation posts at regular intervals, which mount foot and vehicle patrols on both banks of the canal.

Security at the Suez Canal Container Terminal (SCCT)

The SCCT is declared as in full compliance with all necessary features of the International Ship and Port Facility Security Code, and has an approved PFSP. The SCCT consults and works closely with the Port Said Port Authority, Suez Canal Authority, Free Zone Authority, Customs and local law enforcement agencies to ensure that the security of the terminal also extends to the proximate canal waterways and the approaches to the northern end of the canal.

Access to the terminal is fully controlled, including positive identification of all employees, subcontractors, visitors, vendors and government employees. Access to, and within, the terminal is physically controlled, and the berths, TEU fields and the perimeter areas are monitored using comprehensive CCTV and floodlighting.

US Navy in Transit (US Navy)

Suez Canal Container Terminal (Panoramio)

Current Threat and Security Risk Picture:
As of the second quarter 2009, the overall security risk to the Canal Zone and transiting vessels is deemed as *moderate*. Nevertheless, the incidents

Recent Security Incidents:

Date	Incident
Apr-09	On 15 April 2009, Egyptian authorities announced they had penetrated a Hezbollah cell operating inside Egypt for the purposes of carrying out surveillance and preparations for future terrorist strikes inside Egypt. Hezbollah's leader, Hassan Nasrallah, subsequ[illegible] and another 24 still at large in the Sinai were involved in any f[illegible] However, Hezbollah did concede that one suspect, Sami Sh[illegible] equipment and arms into Gaza along with 10 other operatives fr[illegible] Egyptian officials reported that Hezbollah had told the men to the Egypt-Gaza border and monitor tourist sites in the Sinai. Sig[illegible] alleged that operators were also ordered to monitor transiting sh[illegible] Canal for the purposes of planning an attack. It must be stres[illegible] suggest that these operatives had the intention and/or means transiting vessels.
Mar-08	Security forces and canal authority install new CCTV surve[illegible] already in-place at key locations along the canal following a sh[illegible] *PATRIOT*.
Mar-08	A U.S. Navy security team onboard the *M/V GLOBAL PATRIO*[illegible] charter to the US Military Sealift Command (MSC), opened fire on a small boat that failed to respond to warnings to stay clear. One man was killed and two others injured. The GLOBAL PATRIOT, which was reportedly transporting military equipment from the Persian Gulf, was approached by several trading boats as it prepared to enter the Suez Canal from the anchorages off Suez after dark. The boats were hailed and warned by a native Arabic speaker using a loudhailer. Though the other boats withdrew, one small boat continued to approach the ship and received two sets of warning shots some 20-30 metres in front of its bow. The small trading boat was typical of the numerous craft that routinely sell goods to crews of transiting ships. They are common at the waiting anchorages at both entrances to the canal and in the Great Bitter Lake. Reports indicate that despite verbal warnings not to approach and the firing of warning shots and flare, the boat continued to approach and was thus deemed hostile by the armed security team. It later became clear that the security team felt that the approaching craft could be a hostile VBIED given its refusal to heed warnings to halt its approach to the M/V GLOBAL PATRIOT and turn away.
Aug-06	Security forces increased security measures along the length of the canal in preparation for the passage of warships heading to Lebanon from the Red Sea. All except officially authorised personnel were prevented from entering or working inside the 14 monitoring stations along the canal except for those with special permission. Additional security checks were also carried out for all administrative personnel, particularly those dealing directly with the control of transiting ships, such as pilots. The majority of the warships that transited the canal were U.S. warships that had been re-deployed from the Persian Gulf to increase presence in the eastern Mediterranean as international forces deployed to Lebanon.
Feb-06	Accidental blockage of canal by The 93,000 ton *M/V OKAL KING DOR.* The vessel, which was travelling north during a minor sandstorm and gusting winds, became jammed crosswise in the narrow strait about 10 kilometres south of Ismailiya. This accidental blockage effectively cut off the Red Sea from all southbound canal traffic, including several warships scheduled to be routed to the Arabian Sea, Persian Gulf and Indian Ocean from the Mediterranean Sea. Though this was not a security incident, it clearly highlights the vulnerability of the canal to blockages.
Dec-05	Egyptian security forces along the canal went on high alert following intelligence warnings of possible al-Qaeda attacks on transiting ships. Unconfirmed reports suggested al Qaeda could have established an operations cell in the central Sinai mountain redoubt of Jebel Hillal following the terrorist attacks by Wahhabist-inspired Bedouin militants in Sharm el Sheik on 23 July 2005.
Oct-00	As a precaution, US warships temporarily avoid the canal zone and conducting transits following the VBIED attack on the USS COLE in Aden
Jan-91	Egyptian naval and security forces sweep canal entrances at Port Said and Port Tawfiq for sea mines following warnings that the canal could be a target for Iraqi missiles and asymmetric attacks using sea mines

listed in the table above, coupled with a range of undefined threats to the Canal Zone in the medium term warrant that vessel crews transiting the canal are cognisant of the potential dangers and remain vigilant throughout the full duration of the transit to potential security concerns, particularly approaching small unidentified craft.

- Notwithstanding the acknowledged inconclusiveness of the incident involving alleged Hezbollah operatives and affiliated personnel in April of this year, the incident is a healthy reminder that any terrorist group with sustained or periodic strategic-level (regional) offensive objectives, such as Hezbollah and al Qaeda, will consider the Suez Canal a potentially desirable target (particularly given its continuous use by Western allied warships heading for the Arabian Sea and the Persian Gulf).

  As highlighted earlier in this report, the canal itself is vulnerable to blockage either via the deliberate foundering of a transiting vessel, mining of the approaches and entrances to the canal at Port Said and the SCCT or at Port Tawfiq, or via the destruction (felling) of one of the canal's very conspicuous overhead crossings.

  Vessels themselves are vulnerable to attack by VBIEDs at the waiting anchorages off Adabiya and the Port Said Roads, and in the convoy waiting area in the Great Bitter Lake. It must be stressed that whilst this means of attack has shown to be highly effective against anchored or very slow moving vessels (including warships), there is currently no elevated identified threat to vessels in these areas at this time by this means.

  Bridge watch-keepers, duty officers and detailed lookouts should be mindful of approaching small craft in the above areas, and give unambiguous warnings if the approach by trading dhows etc. is not desired. However, as shown in the incident involving the M/V *GLOBAL PATRIOT,* overreaction by those vessels with armed teams onboard can and does have disastrous consequences.

- There has been some recent, unsubstantiated postulating that Iran has initiated a project during the last several years to develop a presence in the Canal Zone, through the acquisition of proximate real estate in order the monitor the canal and transiting vessels. During the very brittle relations between Iran and the US during the Bush administration, it was suggested that Iran (with possible assistance from Hezbollah) was engaged in this project in order to create a long-range ability to interrupt the U.S. logistic chain supply the Persian Gulf in the event of hostility between the two countries. As mentioned above, there is no evidence for this; however, the allegation once again highlights the clear value of the canal as a geopolitical feature and as a potential strategic-level target in time of conflict.

Small vessels in the canal are common but seldom dangerous (Worldpress)

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