

the Arab Israeli Wars

WHAT POLITICAL AND MILITARY APPROACHES WERE EMPLOYED BY THE ARABS DURING THE PERIOD 1968 TO 1973 TO COUNTER THE EFFECTS OF ISRAELI AIR SUPERIORITY?

by Wing Commander John Rigby RAF

SA-2 GUIDELINE long range, high altitude SAM

Until 1970 anti-aircraft systems such as these were operated in discrete pockets unlike the later Soviet directed fully integrated air-defence network



Fig 1. Israeli Gains in Six Day War

**Egyptian MiG 21s
destroyed on the
ground at the
Abu Sueir
Air Base on the
morning of
5 June 1967**

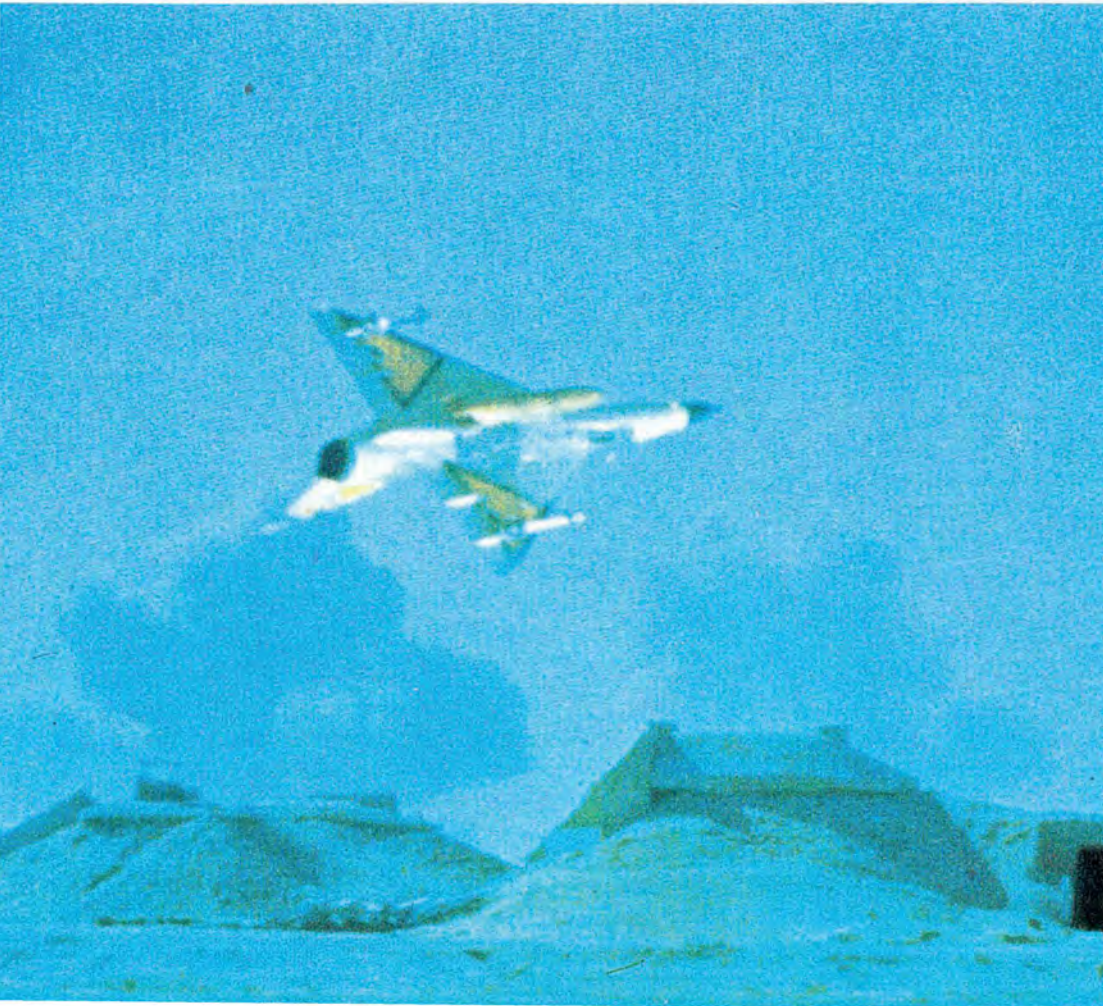


On 5 June 1967, at the start of the Six Day War, the Israeli Air Force (IAF) launched a pre-emptive strike against the air forces of its Arab neighbours. The Egyptian, Syrian and Jordanian air forces were all but destroyed on the ground, by a pre-emptive, offensive counter-air strike. As a result and from the outset of the War, Israel achieved air supremacy. The freedom of action which resulted, enabled the ensuing air-land campaign to conquer Jerusalem and Arab land in the Golan, the West Bank and Sinai, see Figure 1.

When a cease-fire was brokered 6 days later, the Arab armed forces had been decisively beaten and humiliated in battle, and the Palestinian Nation further dispossessed. Diplomatic moves, led by the UN and specified in UN Security Council Resolution 242, pressed for Israel's withdrawal "from territories occupied in the recent conflict", but required the Arabs to recognise the state of Israel. This recognition was unacceptable to Arab public opinion, which agitated for direct and early action against Israel. Between 1967 and 1973, Egypt led the Arab world in its search for a strategy which would force Israel to return the gains of 1967, whilst restoring the lost pride of the Arab Nation. Whilst diplomacy kept the Arabs' plight in the international eye, it failed to achieve any substantive results; consequently, Egypt resorted to military means: first through the desultory engagements which followed 1967 and culminated in the 1969-70 War of Attrition, and finally through the October 1973 Yom Kippur War.

SEARCH FOR A STRATEGY

After its success in 1967, Israel was no longer able to capitalise on its reputation as the underdog and was more controlled by its mentor (the US), particularly during the prevailing spirit of détente. Since it lacked the means to launch an offensive, Egypt aimed to capitalise on Israel's loss of freedom of action and draw it into attritional warfare, hoping that the cost of attrition would force Israel to make concessions. The length of an attritional conflict would not only harm Israel's economy (since the majority of Israel's forces were reservists), but would also prevent Israel from conducting warfare in its standard, high-intensity, manoeuvrist manner. In an attempt to offset the considerable American support for Israel, the Arabs lobbied the USSR to increase its support for their cause. As a by-product of the Russian presence in Egypt, Israeli targeting would be restrained by the need to avoid Russian installations and the precipitation of a super-power crisis. In pursuit of its attritional strategy, Egypt carried out commando and artillery raids against the Israeli Bar Lev fortifications, being constructed in Sinai. Israel's response included a series of air-raids against



Although the performance of Egyptian Surface to Air Missiles improved they were unable to counteract Israeli air superiority

Israeli Nesher inverts during an attack on an Arab missile site. The Nesher was a modified Mirage 5J. Some hundred were deployed by the Israelis in the early 1970s

Egyptian air bases, missile complexes and installations. As the War of Attrition progressed, the IAF continued to demonstrate its dominance, conducting raids deep into Egyptian air-space with virtual immunity. Although the performance of Egyptian Surface to Air Missiles (SAMs) improved as new systems, such as the SA-3, were deployed towards the end of the war, they were unable to counteract Israeli air superiority. Indeed, the air threat to the new Russian systems was so great that Moscow deployed Mig-21 squadrons to Egypt, to defend its assets and Egyptian air-space. The cease-fire of August 1970 brought about the de-facto end of the War of Attrition. As an isolated strategy it had failed to harm Israel militarily or win any concessions. Israel continued to dominate in the air, even when politically constrained.

When Sadat assumed the Presidency after the War of Attrition, Egyptian morale was at its nadir, largely caused by Israel's apparent invulnerability. He recognised that to "shock" Israel to the bargaining table (and persuade the super-power to address the festering problems of the Middle East), he had to go on the offensive. However, the Arabs were faced with a dilemma: how were they to conduct a land attack in the face of Israel's overwhelming air superiority and the deadly combination of Israeli armour and close air support, which this air superiority enabled? The western aircraft supplied to Israel were superior to the Soviet equivalents supplied to Egypt and Syria, particularly in terms of avionics. The IAF's air and ground-crews were highly trained and drawn from the cream of the advanced, highly-technical Israeli society. Furthermore, Russia was far from committed in its support for the Arabs. They had a low opinion of the Arabs' military abilities and doubted the value of supplying equipment to them. They also feared being drawn into a conflict with the US as a result of Arab action. Therefore, they were deliberately selective in the offensive equipment which they supplied and were not prepared to supply the Arabs with new ground attack aircraft which, given the general inferiority of Arab aircrew, would only have partially redressed this imbalance.

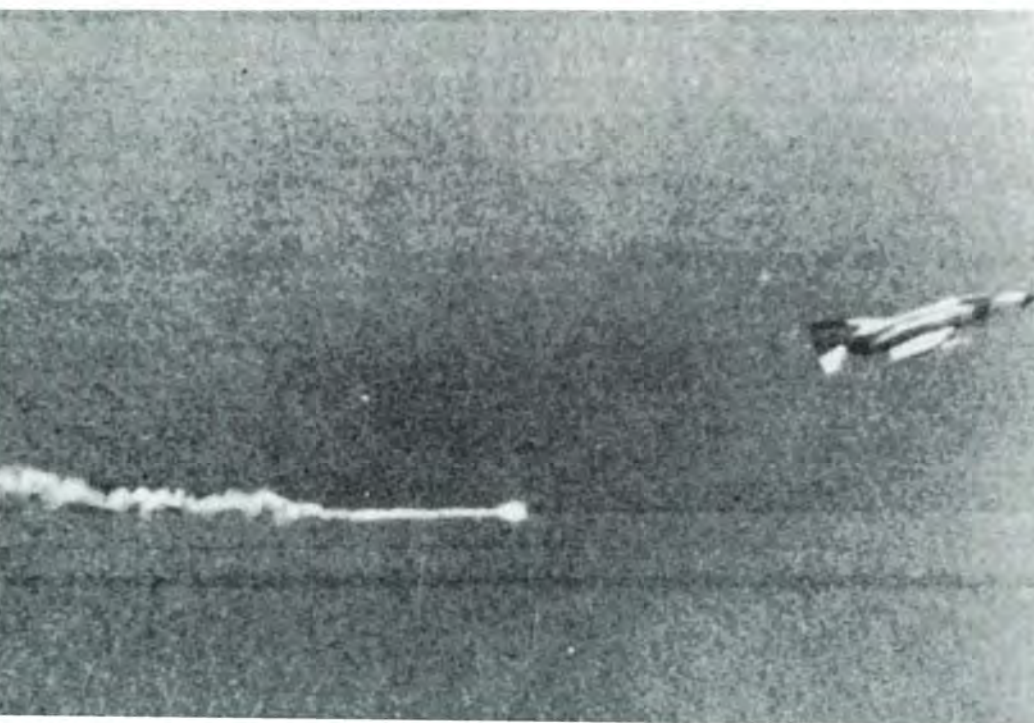
Clearly, the Arabs were unable to regain their lost territory through available military means. Political moves and the War of Attrition had kept the issue alive, but had not sufficiently harmed Israel to result in the return of any territory. Therefore, a new military strategy was developed which sought to neutralise Israeli air superiority over the immediate battlefield; principally using the advanced technology of ground-based air defences. The Arab armies would advance under cover of this screen, stopping and holding ground whilst still protected by it. Aircraft were relegated to a secondary role and would ideally only operate when protected by supporting, ground-based air-defences. A repetition of the wholesale destruction of Arab aircraft on the ground would be avoided, through a multitude of survive to operate initiatives. In an attempt to overwhelm Israel, Sadat formed a coalition of Arab states (principally Syria and Egypt, but including Jordan, Iraq and Libya) which would mount simultaneous attacks in the Sinai and the Golan. These measures would be coupled with surprise, deception and shock action throughout all elements of the Arab campaign. It was intended that this combined action would undermine the cornerstones of Israeli effectiveness - air superiority and land-air co-operation - and turn Israel's reliance on this tactic into a severe disadvantage. The Arabs could then advance into the Occupied Territories, before consolidating their position - still protected by their AAA and SAM defences. Sadat was aware that his reliance on predominantly fixed air defences would limit the capacity of his Army to advance beyond its protection and would prevent him from retaking all his lost territory. Therefore, the aim of this military action was again essentially political and was principally directed at damaging Israel, to the extent that it was forced to become engaged in political dialogue.

INTEGRATED AIR DEFENCE SYSTEMS

Until 1970, Arab ground-based air-defences had been based upon Anti-Aircraft Artillery (AAA) and the high-level, SA-2 Surface to Air Missile (SAM). These assets were not co-ordinated and operated in discrete packets. Consequently, the IAF was able to evade the AAA and SAMs. In contrast, Soviet doctrine was based on a layered and integrated air defence network, consisting of complementary AAA, SAMs, radars and command and control centres. The Soviets supplied advice and equipment, which enabled the Arabs to implement this doctrine. From 1970 onwards the Soviet Union committed over 15,000 personnel to the reconstruction of Egypt's ground-based

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air defences alone. The engagement zones of all systems were re-designed to overlap, providing mutual protection and a multitude of threats from low to high level. Thus army units would be protected at low level by organic radar guided AAA (the ZSU 23/4) and man-portable SAMs (the SA-7), whilst radar-guided SAMs (SA-2,3 and 6) would dominate the air-space from low to high level. The SAMs delivered were either new systems or upgraded variants of the systems which the US had faced in Vietnam and the Israelis had encountered in 1967, and possessed greater range and superior capabilities. Largely thanks to Russian training, in 1973 the Arabs had a far greater appreciation of the role of electronic warfare in SAM engagements. Consequently, at the beginning of the 1973 War, and despite considerable investment in intelligence and support from the US, Israel lacked the tactics and counter-measures to defeat the new Arab air defences.



A second from destruction. Heat-seeking missile about to impact Israeli F-4 Phantom

The Egyptians first used their combined AAA and SAM systems as an integrated, offensive weapon during Battle of the Missile "Box", which took place towards the end of the War of Attrition. In June 1970 Arab SAMs were redeployed from the 100 mile length of the Suez Canal, to a concentrated "Box" 20 miles deep and 45 miles long in central and southern Egypt. The combination of SA-2, SA-3 and ZSU 23/4 operating in mutual support, was immediately effective and, prior to the cease-fire in August 1970, the Israelis lost a number of aircraft to the Egyptian AAA and SAMs. This concept of aggressive SAM deployment was further developed by the Russians and Egyptians; and from 1972 onwards, a highly capable missile Belt was created along the Suez Canal. Ultimately, the Belt's engagement zone projected some 40 miles into Sinai. Syria also acquired Soviet systems and constructed an air defence screen projecting over the Golan. Although it lacked the full complement of early warning radars as supplied to Egypt, the Syrian system was also highly capable. Consequently, in a period of 3 years, the Syrians and Egyptians (greatly assisted by the Soviet Union) had constructed air defences which projected over the forthcoming battlefields of the Golan and Sinai and could neutralise the IAF's local air superiority.

**Egyptian SA-2
battery with
central FAN SONG
radar**

From 1972 onwards, a highly capable missile belt was created on the Suez Canal... the Belt's engagement zone projected some 40 miles into the Sinai



AIR OPERATIONS

Whilst the Arabs' plans placed considerable emphasis on ground-based air defence, they still maintained an important role for aircraft and they improved aircrew training. It was intended that defensive aircraft would engage those Israeli aircraft which broke through the SAM barrier. Ground attack aircraft would transit through the SAM Belt and attack Israeli bases and troops. However, the Arabs were at a severe disadvantage. The destruction of five Soviet piloted Mig21s in 1970, for the loss of no Israeli aircraft, illustrates just how inferior the Arab aircraft were. Egypt and Syria hoped to offset this imbalance, using SCUD and FROG surface to surface missiles to attack Israel; whilst also dispelling the myth of Israeli invulnerability.

PRESERVATION

The Egyptians made particular effort to preserve their air force on the ground. After 1967, they began a rapid construction programme to provide hardened aircraft hangars, facilities and protected fuel installations. Roads and airfield taxi-ways were modified, to enable them to be used as auxiliary landing strips. Airfield damage repair battalions were formed. Where possible, new facilities were built alongside or within geographical features, which would inhibit Israeli attack runs. The scope, scale and rapidity of this transformation was only achieved by drawing on Egypt's massive manpower resources. All arms of the Egyptian and Syrian military constructed and prepared dummy targets, including SAM sites, tanks and bridges. A more professional approach was taken to camouflage, particularly by air defence forces. In the War of Attrition, Israel had been able to pinpoint and destroy hardened SAM sites relatively easily. Whilst hardened sites were maintained, alternative sites were prepared and occupied in rotation. "Drive through" sites were prepared for the transportable SA-6 and the mobile ZSU 23/4. Strict radar emission control was practised and command and control data was routed over land-line wherever possible, to hinder Israeli signals intelligence collectors. By 1973, the Syrian and Egyptian armed forces and their equipment presented a far more difficult target to the IAF.

THE ACHIEVEMENT OF SURPRISE

Israel's seemingly easy victory in 1967 created an arrogant belief in its own superiority and resulted in Israel's open disdain for the quality and courage of Arab forces. The Israelis assessed that Egypt could not strike back before 1975, the earliest they could hope to acquire and learn to operate modern ground attack aircraft. The Arabs did nothing to disabuse the Israelis of their preconceptions and conducted an active misinformation campaign, directed at playing down their own capabilities and undermining Israeli preparedness. At the strategic level, Sadat brokered an effective alliance amongst the Arabs, and formulated the plan to launch the attack on a Jewish religious holiday (Yom Kippur) and to attack on two fronts. This strategy stretched Israel's scant resources and increased the level of surprise. At the tactical level, the Arabs also showed great restraint. When Israeli aircraft launched an attack on Syria on 13 September 1973, just days before the War, the Syrians engaged the IAF in air to air combat and not with SAMs; hiding the deadly effectiveness of their new SA-6 systems.

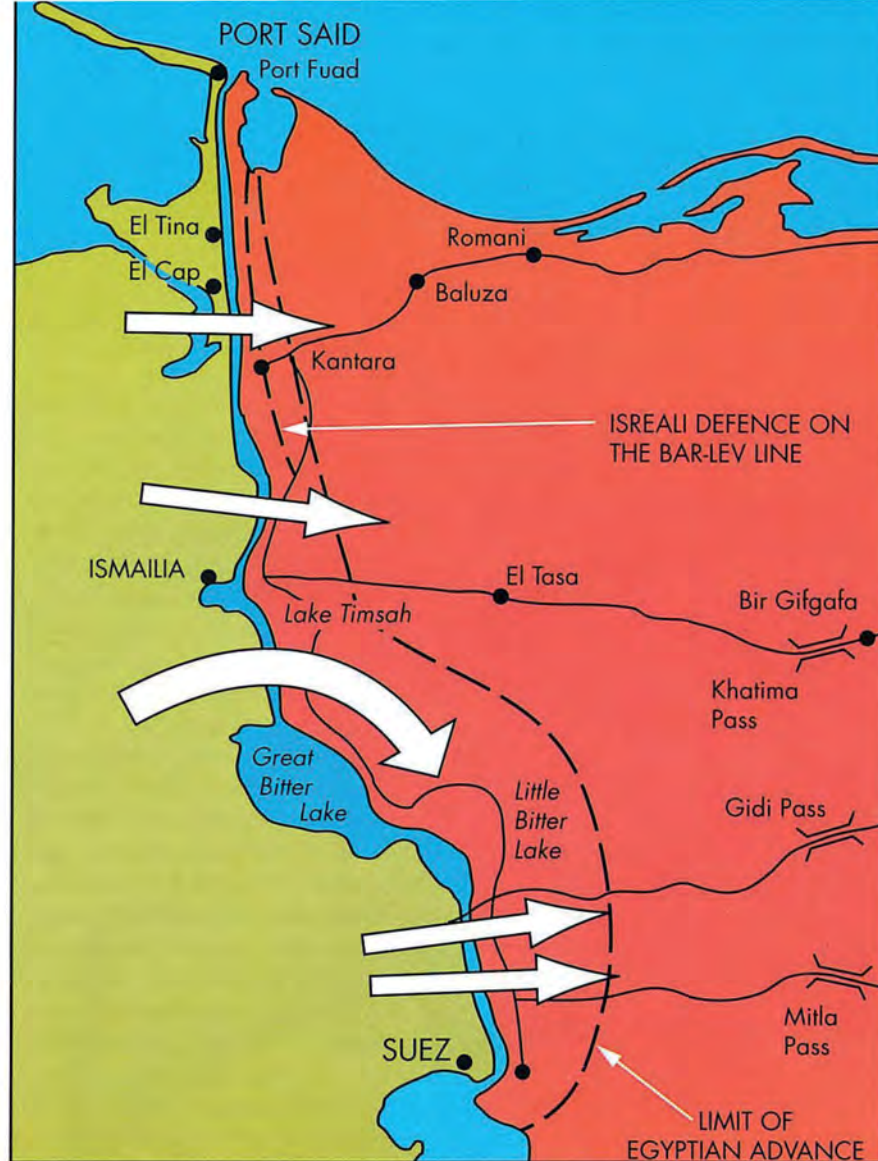


Fig 2. Extent of Egyptian Advances - Yom Kippur War

PERFORMANCE IN BATTLE

When Egypt and Syria launched their combined assault on 6 October 73, Israel was caught unawares and significant advances were made, see Figure 2. The initial success of the Arab air defences not only had a major psychological effect, but also a material effect on Israel's use of air power. The vulnerability of Israel's reliance on air power to support and cover its armour was exposed, severely undermining its effectiveness. Initially, high (and potentially unsustainable) attrition levels forced the IAF to withdraw beyond the range of the Egyptian SAM belt and to be more constrained in operations over the Golan. Arab air forces did conduct surprise attacks against Israeli airfields, particularly in Sinai, on the first day of the war. Raids against Israel continued throughout the war, but were largely ineffective as a result of inferior aircraft, and inadequate targeting. The Arabs were unable to influence the air battle beyond their SAM screens and suffered severe losses from Israeli aircraft and SAMs. Although they did divert the IAF from other tasks. The use of Frog and Scud missiles was equally unsuccessful, proving to be inaccurate and no substitute for effective air interdiction. This inability to conduct effective, offensive counter-air and interdiction

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missions against Israel squandered the shock effect and success of the initial assault, and provided the IAF with safe-havens in which to recuperate and reorganise.

After the surprise of the initial Arab assault and the effectiveness of its air defences, Israel regained its balance and (bolstered by the significant US re-supply efforts) began to strike back at the Arabs, interdicting against airfield and strategic targets. Despite considerable Israeli effort, the Arabs' survive to operate measures were effective and, unlike 1967, the Syrian and Egyptian air forces remained in being after the war. The IAF began to make inroads on the Arab SAM defences, made possible by a combination of: a near exhaustion of SAMs; effective Israeli surface and air attack; modified electronic warfare equipment and raw courage. Ultimately, the Syrian defences failed through attrition and exhaustion, whilst a combined land-air assault breached and rendered ineffective the Sinai SAM Belt. The Arab air forces were no match for the IAF and were both unable to provide cover for their SAM defences and to prevent Israel from inexorably regaining air superiority and returning to manoeuvrist warfare. IAF attrition levels dropped and became sustainable, as Arab losses grew. Once the initial Syrian attack had been repulsed, the Israeli advance began to threaten Damascus. In response, Egypt abandoned its original plan and advanced beyond the protection of its largely static SAM screen. Although organic AAA and SAMs and some SA-6 batteries were deployed into the Sinai, they were unable to cover the Egyptian advance properly. No longer protected by their anti-aircraft screen, the Egyptians rapidly fell prey to Israel's superior air and ground forces. Israel crossed the Suez Canal and threatened the Egyptian Army with annihilation, an outcome which was

only avoided when the two sides (under considerable super-power pressure) agreed to a cease-fire, which finally came into force and held on 24 October 1973.

In the aftermath of the Six Day War, Egypt and her allies not only lost vast tracts of territory, but also their pride. In the absence of diplomatic progress they attempted to energise the political process through military action, initially in a pure contest of attrition (1967-70) and then in all-out warfare (1973). In 1973, they attempted to use the superior technology of Soviet AAA and SAMs to offset Israel's clear qualitative advantage in the air. Coupled with other measures (such as surprise, deception and protection of forces), the Arabs' ground-based air defences denied Israel the freedom of the air over the Arab armies and enabled their initial success. Ultimately, AAA and SAM systems were unable to protect the Arab ground forces and the Arabs were defeated on the battlefield, largely through their very reliance on ground-based air defences. However, although the Arabs' method was military, it is against their political aims that the success of their campaign, and air strategy, should ultimately be judged. As a result of their initial success, they had dispelled much of the dishonour of their 1967 defeat. Furthermore, they had shown to the world and Israel itself, that Israel could not have both territory and peace. Today that peace has yet to be fully achieved. However, it can be argued that the very existence of the Middle East Peace Process is partially attributable to the political success of the Yom Kippur War and the initial success of the Egyptian and Syrian SAM and AAA defences.

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