

THE SYRIAN AND EGYPTIAN CAMPAIGNS

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The October war, although it came as a surprise to the world, was inevitable as a result of failures to solve the Arab-Israeli conflict by peaceful means. The occupation by Israel of Arab territories after the June 1967 war had not brought about the political concessions from the Arab side that Israel desired. Rather than enter direct negotiations at a time when Israel was expressing expansionist territorial demands, the Arab countries attempted to secure an Israeli withdrawal by various military initiatives (the War of Attrition, 1969-1970) and diplomatic means. The latter centred on attempts to persuade the international community, and in particular the United States, to enforce the full implementation of Security Council Resolution 242 upon Israel. But neither the Arab attempts, nor the means of pressure that were intended to support them — repeated threats of a war that might embroil the great powers, or cutbacks of Arab oil—were taken seriously enough. On the contrary, during this period the United States claimed to be unable to exert pressure on Israel, while supplying it at the same time with large numbers of advanced and sophisticated weapons, such as Phantom fighter-bombers, “smart” bombs, self-propelled artillery, electronic counter-measure (ECM) equipment and tanks. With the Israelis apparently determined to transform military occupation into a permanent status quo, the only alternative left to the Arabs was to initiate a war—which proved far more successful than had been anticipated.

MILITARY DEVELOPMENTS SINCE 1967

The Egyptian and Syrian armed forces had emerged from the 1967 war utterly defeated. More than 80 per cent of their equipment was either captured or destroyed. Thousands of soldiers were killed, wounded or

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taken prisoner, and thousands of survivors deserted the army. Morale was extremely low, and it looked as if decades would be required for the Arab powers to rebuild their forces, and to regain their self-confidence. But recovery proved to be much quicker than anticipated. Immediately after the cease-fire, the Soviet Union began resupplying the Egyptians and Syrians with weapons to compensate their losses in the war. Soviet advisers arrived in Cairo and Damascus to supervise the retraining and reorganization of the Arab armed forces. Egyptian armoured divisions carried out regular simulated canal crossings, and the helicopter-borne capability was boosted. In Syria, tough training took place and repeated manoeuvres were staged, in which armoured units, artillery, mechanized infantry, heliborne troops and the air force all attacked a target, usually a hill or several hills, in perfect coordination. The effort exerted by the Arabs and the Soviets was enormous, and some of the results were to be seen in the increased difficulties faced by Israel in the War of Attrition.

Problems did, however, arise over Arab armament. One common Arab complaint during this period was to the effect that the Russians were only supplying the Arabs with "defensive" weaponry, while the Americans equipped Israel with "offensive" weapons. In one sense this is an oversimplification. It is accepted by military experts that almost all weapons have defensive and offensive capabilities according to the role for which their user intends them (as indeed the October war showed). A dug-in tank is a defensive weapon, but the same tank becomes an offensive weapon when it charges towards enemy positions. A guided surface-to-air missile is a defensive weapon if used to protect the air space of a country, but it is an offensive weapon if it is used to give air defence protection for a ground attack.

What the Egyptians might have claimed with justification was that the Soviet fighters they were receiving had very short range compared to the main fighters the Israelis possessed. The combat radius of a Mig-21 fighter at low altitude is a mere 100-150 kilometres, less than one third of the combat radius of Israel's Mirage fighters at the same operational altitude. This hindered Egyptian strategists from developing plans envisaging prolonged dogfights between Arab and Israeli pilots.

This deficiency in air power was partly due to Soviet reluctance to supply their most advanced fighters to Egypt, but it also reflected very considerably the kind of Soviet strategy which Soviet weapons are constructed to fit. The Mig-21, for example, was designed as a point-defence interceptor, to intercept NATO bombers that had managed to infiltrate the East European multilayer air defence system and reach major cities or industrial areas. Thus the Mig-21 was designed to be very light, with minimum range, but good manoeuvrability, and any other mission was thought to be secondary.

The Sukhoi Su-7, another key airplane, was designed as a close support fighter-bomber, to operate in the battlefield area, under the command of land forces. Thus the Su-7 has excellent manoeuvring and rough field capabilities, but a short range and low ordnance carrying capability. Russian artillery, moreover, is towed, because Soviet military theorists do not believe in the need for highly mobile self-propelled artillery. The Russian "steam roller" strategy, which consists of advancing slowly but surely with huge forces along a wide front, allows time both for building makeshift air bases, and for advancing the towed artillery to forward positions. Even tank guns are not required to have pinpoint accuracy, since their quantity is the main factor.

On the other hand, European and American strategy, as reflected in Israeli military planning and equipment, relies upon deep penetration, accurate fire, and high mobility; artillery has to be self-propelled to be able to accompany advancing forces. In general, in the air, Western strategy accepts using specialized aircraft for different missions, but the requirements of intervention in different parts of the world have encouraged the development of long-range multi-mission aircraft. The Phantom and Mirage fighters, for instance, which were designed as interceptors, also possess excellent ground attack capabilities.

Although the Russians have their own long-range Yak-28 bombers, Su-11 long-range interceptors and Mig-23 multi-mission fighters, rather than supply these they instead tried in the Egyptian case to improve the capabilities of the Mig-21, without being able to extend its range. The Soviets also supplied Egypt and Syria with only limited numbers of the powerful T-62 tanks, while the main Arab armour still consisted of the older T-54 and T-55 tanks, and the obsolete T-34, all of whose firepower was inferior to Israeli tanks equipped with the British-designed 105mm gun.

As a consequence of differences over the supply of weapons, Egyptian-Soviet relations deteriorated, in spite of the friendship pact signed by the parties in 1971. The result was the expulsion of most of the Russian experts from Egypt in July 1972, a move which led Israel and the West to believe that the Egyptians were no longer capable of attacking Israel, or even of deterring an Israeli attack. While the other major Arab confrontation state, Syria, remained on good terms with the Soviets, rumours persisted to the effect that the Syrians refused to sign a friendship pact with the Soviets. A third state involved in the October war, Iraq, did sign a friendship pact with the Soviet Union, and was receiving Russian equipment, but had to concentrate on her own problems with Iran and the Kurds. All Iraqi forces sent to Jordan in 1967 had been withdrawn in late 1970.

In 1969 and after, the US supplied Jordan with large quantities of arms, including M60 tanks. The Jordanian army was built to be an excellent,

but relatively small fighting force, with a very small air force and minimal air defence capability which rendered it incapable of challenging Israel. From the nature of this rearmament, it was clear that Jordan was less worried about an Israeli invasion than a joint Palestinian-Syrian invasion from the north.

The Israelis, on the other hand, had lost only a small proportion of their arms in the 1967 war, but since they were faced with the French embargo on selling arms to the countries directly involved in the war, they had to find new sources for arms and ways to overcome a shortage in spare parts and ammunition for the French-made weapons, mainly jet fighters and artillery.

The US became the main supplier of arms to Israel (while the Israeli military industry contributed greatly to the manufacture of spare parts and ammunition). Even more than the tremendous quantity of US supplies, what was important was their quality. The Phantom jet fighter, for example, can carry up to eight air-to-air missiles for its interception role, while the Mirage carried only one. The increase in quality now made it impossible to measure the strength of the Israeli armed forces in merely quantitative terms as is sometimes done by Western military analysts.

Developments were meanwhile taking place in the military outlook of both sides. Great progress occurred in the Arab case, primarily as regards defensive preparation against further Israeli attacks, which was the main concern of the Arabs after the 1967 war. Although the latter period of the October war showed this Arab military outlook still to be characterized by an excessively defensive attitude, the careful emphasis on defence training did yield dividends in terms of self-assurance that any new Israeli offensive would entail an unacceptable price for Israel, and in giving the Arab armies a strong fall-back position should any future Arab offensive fail.

Display of the Arab armed forces purely for public consumption was dramatically reduced. Increased efforts were made to mobilize Arabs under Israeli occupation and to obtain political, military and social information about Israel. Studies of Israeli military thinking enabled Arab commanders to anticipate Israeli moves.

While the Arab armies were retraining and re-equipping themselves, the Israeli military outlook failed to transcend the performance of the Arabs and Israelis in the 1967 war. A feeling of complacency came to pervade the Israeli army. The Arabs were believed incapable or unwilling to initiate all-out war. The fact that Israel was not expecting a large scale confrontation with the Arabs in the near future was demonstrated by reorganizations within the army itself. In late 1972, when Lt.-General Haim Bar-Lev was replaced as Chief of Staff by Lt.-General David Elazar, the latter began to retire high-ranking officers, and replace them with officers from the younger,

unknown, and unpolitically involved category. By autumn 1973 Elazar and his deputy Israel Tal were the only Israeli generals of the 1967 war still in active service. Elazar also reduced the compulsory service period, and relieved people above 50 from civil defence duties.

The Israeli intelligence services concerned themselves increasingly with the threat of the Palestinians and the surveillance of the Palestinian resistance's capabilities, plans, leaders and relations with other revolutionary movements in the world. Especially after Munich the Israeli intelligence services concerned themselves with counter-Palestinian warfare and were active in clandestine activities in Europe at the same time as they were misreading Egyptian and Syrian war preparations. The Palestinians thus seem to have played an important, if indirect, part in distracting Israeli attention from military developments in the Arab countries.

Another illustration of complacency and arrogance in the Israeli outlook was the showy display of military might between 1967 and 1973. While psychological warfare over the Israeli Arabic-language radio station attempted to induce a feeling of impotence, and belief in Israeli superiority, among the Arabs, exhibitionistic military displays and parades tried to drive the point home even further. One instance of the kind of publicity given to the Israeli army occurred in September 1972, when it attacked the central sector of the Lebanese front, with at least one armoured brigade, and under an air cover of an average of 25 fighters over the battlefield at all times against an opposing Lebanese force of merely 400 soldiers and one armoured company. Great publicity was made of the inevitable outcome of this unevenly matched battle, portrayed as a singular example of Israeli war heroism. Paradoxically, Israeli military behaviour after the 1967 war seems to have borrowed certain characteristics from the empty displays of the Arab military before 1967.

Yet the Israeli performance cannot be blamed on complacency alone. There were clearly more fundamental defects in the strategy and efficiency of the army itself. In particular, great faith was placed — in spite of Israel's previously offensive military practice — in defensive lines and fortified positions along the Suez Canal and the Syrian front.

The basic Israeli war plan on both fronts was as follows:

1. Frontal defence lines would stop the advancing forces with the support of the air force, until reserves had been called up, forces mobilized, and the full punch of the Israeli army was available to repel the invasion.

2. If the frontal defences were unable to hold out, the standing army would slow down the invasion, again with the help of the air force, until the Israeli armed forces were fully mobilized.

3. Once mobilization was complete, invading forces were to be destroyed, and all lost positions regained.

4. Arab forces would then be pursued into Arab territory and totally destroyed. The Israelis would not be satisfied only with defending the cease-fire lines, but demanded the complete destruction of the military capabilities of the attacker.

The Bar-Lev line, a system of fortresses along the Canal, some two kilometres in depth, illustrates Israeli strategy. The line was constructed in such a way that each fortress consisted of several bunkers interconnected by underground corridors with a roof able to withstand direct artillery fire. The complement of each fortress was more than 50 soldiers, armed with anti-tank weapons, mortars, tanks and heavy machine guns. These fortresses were not supposed to support each other, but were distributed so that the distances separating each could be covered by patrols which in turn were protected from direct Egyptian fire by a sand wall whose height ranged from ten to twenty yards, built by the Israelis after the War of Attrition.

Directly behind the Bar-Lev line, the Israelis stationed a number of tank units that were supposed to move rapidly to support any fortress under attack. Further behind the tank units were self-propelled artillery units, whose task was to destroy Egyptian forces as they crossed the canal. Remote controlled napalm taps along the canal were reportedly intended to literally burn up the first waves of the Egyptian crossing forces. But the main Israeli defence in Sinai was in the form of three or more armoured brigades, stationed behind the three famous passes of Sinai (Mitla, Giddi, and Khatmia). These armoured units were supposed to constitute the punch that would finally destroy the Egyptian forces attempting to cross.

The Syrians and Egyptians meanwhile drew up their own plans for a coordinated attack. Egypt's plan was to cross the Suez Canal, liberate the eastern bank, control a 20 kilometre-wide strip in Sinai, defend it, and wait for a cease-fire. The main objective of the war plan was political—to break the deadlock that prevented the implementation of Security Council Resolution 242. Secondary objectives were the reopening of the Suez Canal, and the destruction of the Sinai oil fields in order to deprive Israel of their exploitation.

The Egyptian plan was conceived in such a way as to keep the main body of the Egyptian forces under the protection of their air defence system. The air force was to be retained as a reserve to support ground forces, and to engage Israeli planes whenever the surface to-air missiles (SAMs) were unable to protect the skies.

The Syrian plan, meanwhile, was to liberate the Golan Heights (or, at least, a major part of it) and continue fighting until a de facto cease-fire pre-

veiled, probably without commitment to a "peaceful settlement." However, the plan was flexible, and included plans for withdrawal to initial positions in the case of a strong Israeli counter-offensive, whereupon the Syrians would engage in a long war of attrition. The Syrian air strategy was similar to that of Egypt, with greater dependence on the ground-to-air defence system, due to the smaller size of the Syrian air force.

THE WAR

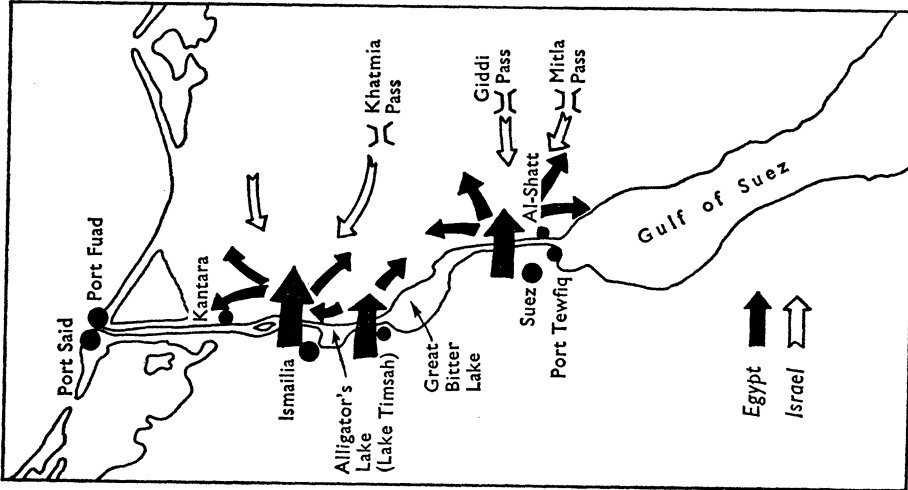
Early in October 1973, American and Israeli intelligence reported heavy Syrian and Egyptian concentrations along the cease-fire lines. Consultations between the US and Israel suggested little possibility of war, the Israelis interpreting the Arab moves as manœuvres. However, on October 4, the Israeli command suspended army leaves, and called up some reserves. On October 5, further reserves were called up, and on the morning of Yom Kippur, the Israelis became convinced that an Arab attack was imminent. Israeli radio, which was supposed to be closed on that day, broadcast coded messages calling up all reserves. At about 10 a.m. the Israeli cabinet held an emergency meeting to discuss the situation.

Fighting began at 2 p.m., the first news being a Syrian announcement of a large scale Israeli attack. Egypt simultaneously announced that the Israelis had raided certain positions along the Gulf of Suez, and that some Israeli forces had crossed the Canal to the west bank. Later in the day, Yigal Allon, Israel's Deputy Prime Minister, swore "on his honour, in front of the whole world, that Israel did not fire the first shot."

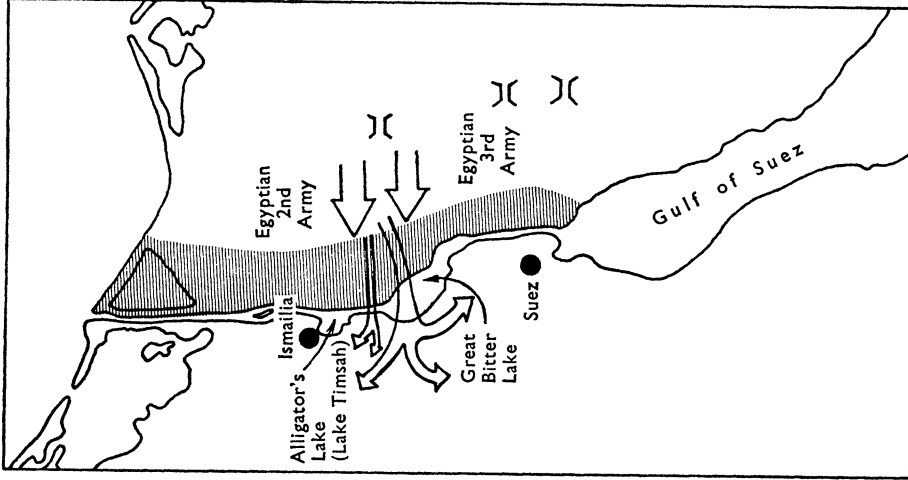
War on the Egyptian Front

At about 2 p.m. on October 6, the Egyptians attacked Israeli positions and air bases in Sinai with their air force, bombarded the enemy positions across the Canal with artillery fire from 2000 guns and landed some heliborne units in different places in the Sinai desert. The Israeli pipes that were to convey the napalm to the surface of the Canal had been blocked up by Egyptian commandos the previous night, and proved useless. Once the artillery barrage was in full momentum, waves of Egyptian commandos crossed the Canal in rubber boats, climbed the defences with ladders and surprised and destroyed key Israeli forward positions. Later, infantry forces crossed the Canal in amphibious armoured personnel carriers and cleaned up a major part of the Bar-Lev line by normal assault, using flame-throwers to destroy the complex underground positions. Meanwhile, engineer units were building bridges for armour to cross, having speedily created gaps for this in the Israeli sand fortifications through the use of high-pressure water-throwers which

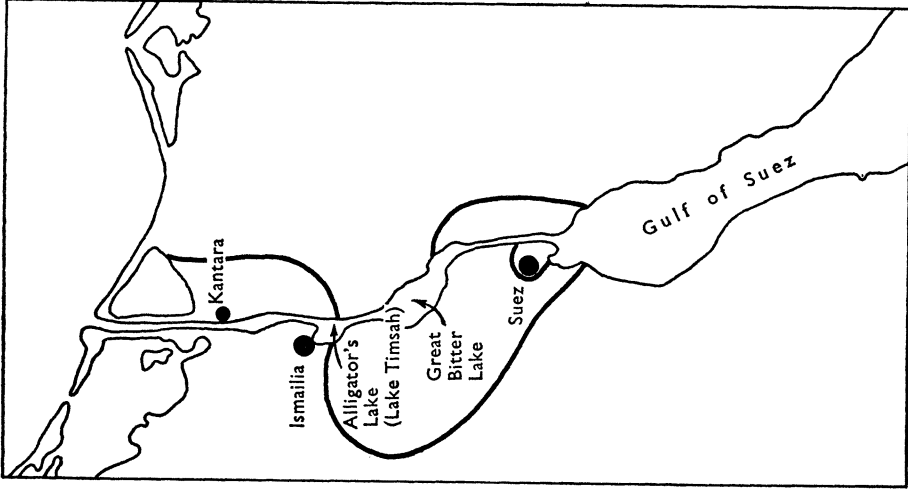
MAP 1: THE EGYPTIAN FRONT



1. Initial Egyptian Attack.

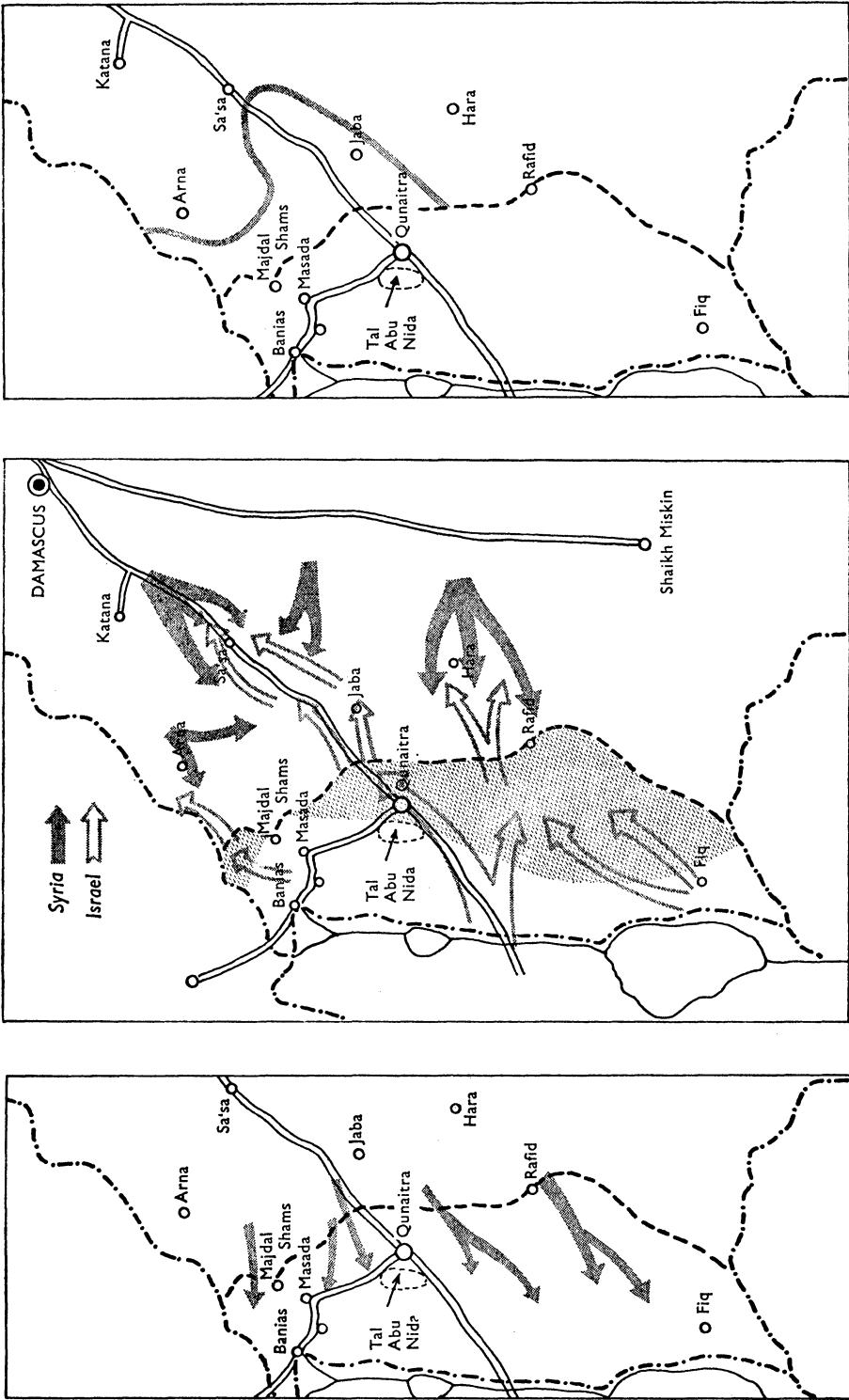


2. Israeli Crossing of the Canal.



3. Final Cease-Fire Lines.

MAP 2: THE SYRIAN FRONT



1. Initial Syrian Offensive.

2. Israeli Counter-Attacks and Syrian Response.

3. Final Cease-Fire Lines.

eroded the sand far more quickly than explosives could have done. Floating bridges, with many easily replaced parts, were built to be quickly repaired if damaged by the Israeli air force.

The Israeli tank units that were supposed to protect the Bar-Lev line attempted a counter-attack, but were destroyed or repulsed by Egyptian anti-tank fire from positions on the west bank built high so as to command key areas on the east bank and by Egyptian infantrymen. A second counter-attack also failed. Egypt, whose forces had fought with great skill and courage, claimed to have destroyed or captured 92 Israeli tanks on this first day—20 more than the Israelis admitted losing in Sinai during the whole Six Day War—although Israel denied any substantial losses.

From the early morning of October 7, the Israeli air force tried to destroy the Egyptian forces in Sinai. Land counter-offensives were frequent, but futile and by the end of the day, Egypt announced that her forces were mopping up Israeli resistance pockets. Haim Herzog, Israel's radio military commentator, meanwhile claimed that the Israeli air force had destroyed the ten Egyptian bridges on the canal, and that the Egyptian army in Sinai was trapped.

On the evening of October 8, General David Elazar claimed in a press conference that "many hundreds" of Egyptian tanks were destroyed, and that the Egyptian army in Sinai was completely trapped. Elazar added that Israel would "break and completely destroy all the attacking forces," and claimed that the three Egyptian bridgeheads on the east bank of the Suez Canal were surrounded. Some Israeli officers even claimed that the Sinai battle might last only 24 more hours.¹ But within an hour of Elazar's press conference, Egypt announced that her forces had liberated Kantara, the second most important city in Sinai, and the following day saw the destruction of the Israeli 190th armoured brigade and the capture of its commander, Colonel Assaf Yagouri, by Egyptian infantrymen, armed with anti-tank rocket launchers and guided missiles. In the following five days of the war, the Egyptians were able to strengthen their positions along a 15-20 kilometre-wide strip in Sinai, and to hold off Israeli counter-attacks.

War on the Syrian Front

The Syrians began the war with a heavy artillery bombardment against the Israeli positions in the Golan Heights, and by landing heliborne troops accompanied by units from the Palestine Liberation Army on Mount Hermon. The heliborne troops occupied the enemy positions on the mountain in less than half an hour. Syrian armoured and ground forces advanced into

¹ The *Guardian* (Manchester), October 9, 1973.

the Golan and engaged the formidable frontal Israeli defences, seizing them all except for the Tal abu Nida hill where the Syrians were reported to have lost about 200 tanks. The Tal abu Nida fort is a complex underground position, with guns that move on rails to firing ports, and then roll back if the fort comes under heavy fire. Syrian heliborne troops, however, managed to neutralize some sections of the fort.

The Syrian advance in the Golan was slow, although the initial Israeli counter-attacks were repelled. By the third day of the war, the Syrians might have claimed the liberation of three-quarters of the occupied Golan, and their forces were in some places less than five kilometres from the pre-1967 borders.

In the evening of October 8, General Elazar claimed in his press conference that the Israelis had been successful in containing the Syrian attack, which had penetrated "very deep" into the Golan, and (prematurely) that the Syrian forces had been pushed back to "a few hundred metres" from the 1967 war cease-fire lines. Israeli military sources also claimed that about 600 Syrian tanks out of 1200 committed to the battle were destroyed.

It became clear that the Israelis were concentrating their efforts against the Syrians, while delaying their counter-offensive against the Egyptians. This strategy was based on the reasoning that if the Syrians could regain all the Golan, it would be almost impossible for the Israelis to climb the Heights again, as they had done in 1967, and the Israeli settlements in Upper Galilee would again come under direct Syrian artillery fire.

By the time the Israeli counter-offensive started on the fourth day of the war, the Israeli air force was busy attacking the advancing Syrian ground forces, and targets deep inside Syria, including SAM sites, air bases, and civilian targets related to the country's economic infrastructure—an oil refinery, factories and other economic facilities. The Israeli jets met an unexpected resistance from the Syrian air defence system, and many were shot down. The Israelis were thus restricted from exploiting the full advantages of their vaunted air superiority over the Arab air forces.

The Syrians had no effective means of striking deep into Israel, so they had used Soviet-made unguided Frog-7 missiles in an attempt to strike the Ramat David air base. When some of the missiles missed their target, and hit nearby residential settlements, the Israelis retaliated by raiding residential districts in Damascus and more than a hundred civilians were killed or wounded. Further Israeli raids hit hospitals.

The strong Israeli counter-offensive forced the Syrians to retreat to their defensive positions between the 1967 cease-fire lines and Damascus and to try to engage the Israelis in a long war of attrition. In the Syrian northern sector, though, the line failed to hold and the Israelis were able to penetrate into Syrian territory and advance along the road to Damascus.

There are several unconfirmed and contradictory accounts of what caused the collapse in the northern sector of the Syrian front. According to one account a Syrian colonel, commanding a brigade, attempted in the first stages of the war to advance much more rapidly than other Syrian units, to the extent that he was almost cut off from the main body of the army. When the Israeli counter-offensive started, the brigade was compelled to withdraw in haste after the loss of most of its tanks, thus creating confusion in the Syrian lines, and enabling the Israelis to advance. Other accounts claimed that the commanding colonel panicked when the Israelis attacked, and ordered a disorganized withdrawal without the consent of the Syrian high command.

The Israeli advance towards Damascus was met with strong resistance from the Syrian army, backed by the Iraqis, who committed most of their army and air force to the battle. In the air, the Israelis continued their attacks: the Syrian air defences were softened, but were still able to shoot down several Israeli jets.

By October 11, the Israelis had penetrated deep inside Syria, occupying and advancing beyond the small village of Sa'sa. Damascus was within the range of long-range Israeli artillery and Moshe Dayan, the Israeli Minister of Defence, announced that the Syrian army had been broken. But the Israelis in fact failed to accomplish this and advance towards Damascus, as a result of the highly sophisticated Syrian fortified defences that extend from the 1967 lines to the capital. When Syrian units were under strong pressure, they simply evacuated one position to occupy one slightly to the rear, and continued fighting.

On October 12, the Syrians and Iraqis counter-attacked, and drove the Israelis about six kilometres to the south of Sa'sa. Thenceforth, the fighting on the Syrian front became a pure war of attrition, where a balance prevailed between the Israeli offensive capability and the Syrian defence capacity. But the Syrians were hoping that if the fighting continued on both the Egyptian and Syrian fronts, they would be able with Iraqi help to mount a new offensive, after eroding the strength of the Israeli forces.

Over a week later, on October 22, the Israelis recaptured Mount Hermon, and occupied new positions that were previously in Syrian hands. The fighting on the Syrian front continued until October 24, when a cease-fire came into effect.

The Egyptian Front : The Second and Third Weeks

On October 14, the ninth day of the war, Egyptian forces, in what appears to have been a move to decrease the enemy pressure on the Syrian front, moved forward towards the Mitla and Giddi passes, but were repulsed by the Israelis during a very fierce and closely fought battle. Thenceforth,

it appears that the Egyptians were satisfied with what they had achieved and took a defensive attitude.

The Israelis took the initiative that was thereby offered them and concentrated day and night attacks against the Egyptians in the central sector, managing to assemble superior firepower through concentrating their forces against important individual Egyptian positions, and to destroy many Egyptian tanks. The Egyptians, in an effort to replace losses in the central sector, repeatedly brought armoured reinforcements from the west bank of the Canal, thereby weakening their available resources on that side.

The Israelis Cross the Canal

On the night of October 15-16, several Soviet-made Israeli tanks and armoured carriers, captured from the Egyptians in 1967 and painted in Egyptian colours, advanced innocently through the sand dunes that separated the Second and Third Egyptian armies. They arrived at the Bitter Lakes at a point where the lake was about 10 kilometres wide. In the early morning the Israeli force crossed the lake to the west bank, split into small units, dispersed, and began to destroy SAM sites and artillery positions. On the evening of October 16, the Egyptians announced that seven Israeli tanks had infiltrated to the west bank, of which three had been destroyed and the rest were being pursued.

But by the morning of October 17, the Israelis had managed to reinforce their troops on the west bank, and were able to establish a bridgehead in the zone between the Alligator's Lake and the Great Bitter Lake. The Egyptians attacked the bridgehead, and inflicted heavy losses in men and equipment. Although the Israelis were deeply worried about these losses, General Ariel Sharon, the commander of the Israeli forces on the west bank, according to some reports, disobeyed orders to withdraw, and was able to hold on.

To be able to comprehend fully how the Israelis managed to cross the Suez Canal it is necessary to explain some of the military and geographical conditions that caused and enabled the crossing.

First, the Israelis needed to destroy the formidable Egyptian air defence system built and developed along the Suez Canal in late 1970. They had studied different methods of neutralizing this system with the least possible losses. While the Israelis received drones capable of carrying out strike missions, and ECM equipment to foil SAM radars, they realized that destroying the system from the air would still be a very costly operation for their air force, and decided to do the job in combination with task forces on the ground. (It is safe to assume that the Israelis had laid plans for such a crossing prior to the October war, and possessed the rafts and bridges to carry out the operation.)

The crossing was facilitated by the fact that the Egyptian forces in Sinai were stretched along a 180 kilometre-long strip, and were thus unable to concen-

trate forces all along the front, especially after several days of heavy fighting. Therefore, once the initiative was left to them, the Israelis found it possible to select a weak point in the front, penetrate it, and reach the Canal. The area chosen was the geographical and military separation between the Second Egyptian Army in the north, and the Third Army in the south. The area was one of sand dunes which the Egyptians did not expect the Israelis to pass through, especially as it contained the widest water separation along the Suez Canal. It has been reported that US reconnaissance aircraft and satellites gathered information that was passed to the Israelis concerning the weak Egyptian defences in the Bitter Lakes area.

The Egyptians, despite reported alerts from the Palestine Liberation Army forces on the west bank of the Canal, interpreted the Israeli crossing as a secondary operation to distract their attention from the main battlefield in Sinai, where huge tank battles, described by some commentators as the biggest in history, were raging. The effect of these battles, however, was not only to push the Egyptians back some kilometres but also to widen the Israeli corridor in the central sector and secure an unthreatened supply route to the Israeli forces on the west bank.

Once the ground forces had neutralized a proportion of the SAM air defences, the Israeli air force was able to operate over the battlefield with relatively little danger. The Egyptian ground forces were now in a difficult situation even though they fought back fiercely.

Although Egypt accepted a cease-fire on October 22, the Israelis wished to exploit the vulnerable point which they had found on the west bank and pushed their forces down toward the city of Suez, near the southern mouth of the Canal. In the short-term, the Israelis had clearly won an advantage and managed to push through the already depleted Egyptian defences to cut off the supply routes of the Egyptian Third Army. To accomplish a reversal of the situation — which was possible in the medium-term — the Egyptians would have needed to attack the advancing Israelis from the rear and flank with forces then congregated at Ismailia and to bring up to the Canal elements of the large First Army then deployed around Cairo. But the Egyptian political leadership, apparently militarily cautious and convinced that the mere length and scale of the fighting that had already taken place had sufficed to galvanize the world into action for an Israeli withdrawal, protested instead to the United Nations without concrete results. A second cease-fire took place on October 24, although sporadic fighting continued, and Israel refused to withdraw to the original cease-fire lines of October 22.

THE WAR AT SEA

Naval hostilities took place in October, but did not contribute to the war's outcome. In the opening hours of the war, Syria and Egypt declared the eastern shores of the Mediterranean and all of the Red Sea war zones, and asked all commercial vessels to stay away from these areas until further notice. On the same day, the Egyptian navy attacked Israeli positions on the southern coast of Sinai, and similar raids occurred on the second day of the war. But the initiative in the naval war was left mainly in the hands of the Israelis, who carried out several naval raids against Syrian and Egyptian coastal positions and installations, without corresponding attacks on the Israeli coast by the Arabs.

The most important single naval move by the Arab side during the war was the blockade by Egyptian destroyers of the Bab al-Mandeb, the southern entrance of the Red Sea, to Israeli shipping, in an attempt to refute the Israeli argument that possession of Sharm al-Shaikh is essential to the security of this shipping.

THE LESSONS OF THE WAR: (1) STRATEGY

Many military analysts attribute the initial military success of the Arabs to the effect of surprise. This may be true to a certain extent. While it should not be concluded as a general rule that the army that strikes first has a better chance of victory, it remains very doubtful in the case of the October war that the Arabs could have achieved what they did if the Israelis had been fully mobilized and had fired the first shot of the war. At the same time, however, the Israelis were not altogether unaware of developments, since they had already started to call up some of their reserves on October 4, two days before the war started. The surprise effect was rather a result of the fact that the Israelis underestimated the will and capacity of their enemy.

The main lesson to be learned from the Arab strategy resulted from its adoption of "steam rolling" tactics as against the Israelis' general practice of mobile warfare and penetration in depth. Such a strategy of penetration would have better suited the Syrians, and might have enabled them to reach the western ridge of the Golan, under the air cover provided by the mobile SAM-6 missiles and the Syrian air force, earlier in the war before the Israeli reserves arrived. Israeli supply lines in the Hula Valley would then have been endangered, while Israeli strongpoints could have been left to the Iraqis and infantry. The Syrians fought according to the book, and the military consequences were not as favourable as had been expected.

Some reasons for the strategy actually followed can be attributed to their logistic capabilities, their lack of self-propelled artillery, and an excessive dependence on the air defence system to protect the advancing forces from

Israeli air attacks. But while these factors may make an offensive strategy more difficult, they certainly do not necessarily deprive it of feasibility. Artillery can easily be motorized and the mobility of air defence systems be fully utilized to accompany an army fully determined to adopt an offensive strategy.

The Egyptian strategy was extremely successful in the first phase of the war, but later there were fatal mistakes. The Egyptians ought to have attempted to take the Sinai passes before the arrival of Israeli reserves, thus securing an advanced geographic defence line — rather than the artificial one on the Canal — and preventing the Israelis from reaching the Suez Canal again. Once again, while the kind of weapons available to the Egyptians made this strategy more difficult than a similar one would have been for the Israelis, a full determination to conduct an offensive war could have led to the adaptation of their weapons to suit the strategy. The Suez crossing itself showed how an air defence system, while lacking the overt attack capability of the most modern aircraft, could, when used in conjunction with the Egyptian air force, provide air cover for land forces. As for its mobility, in one night in 1970 the Egyptians had moved SAM-2 and SAM-3 missiles up to twelve miles to the then battle zone on the west bank; to have moved the far more mobile SAM-6 missiles in a similar time toward the Sinai passes in support of an air, armoured and infantry offensive would certainly not have been impossible.

As a price for not following this course, the Egyptians, like the Syrians, failed to exploit the full advantages of their initial success, and lost the initiative to the Israelis. However, matters on the Egyptian front would still have been much improved if stronger battle reserve forces had been kept on the west bank to destroy any Israeli crossing attempt, and the army defending Cairo had been placed at least between Cairo and the Canal to be capable of more flexible use. The mere fact that the Israeli crossing attempt was not anticipated and prevented showed that the Egyptian command failed also to learn one lesson from the 1967 war, that sand dunes are not impassable by tanks and tracked vehicles. Sand dunes were chosen as the geographic point of separation between the Second and Third Armies, and this gave the Israelis their chance of penetration.

In the naval and air warfare, the Arabs were also almost always on the defensive, and allowed the Israeli navy to carry out raids against Syrian and Egyptian naval installations. There is no valid reason for the Arab naval strategy, and for the failure to take the initiative in the sea battles. The Arab air forces, similarly, were not really fully committed to battle during the war and were kept mainly as a strategic reserve, or as a defensive weapon in the hope that the missile systems would destroy enough of the Israeli air force to reduce the latter's superiority and enable the Arab air forces to become a powerful challenge to Israel. Such a strategy would have been valid if there were plans for a long war that might continue for more than a month. But the

outcome of the war showed that the Egyptians seized an early opportunity of a cease-fire.

On the other hand, the Israelis' own dependence on defensive lines emerged as a grave error, as was their dependence on only partially mobilized defence armoured units which did not become fully operative until reserves were mobilized. The Arab armies took over most of the Israeli defence positions in a few hours, and the Israeli major counter-attacks were delayed several days, waiting for the armoured brigades to be brought up to strength. It is very probable, therefore, that the Israelis will modify their service system, and increase the size of their standing army to more than a hundred thousand soldiers to avoid any repetition of these defects.

As for the air, contrary to what many analysts have concluded, the October war proved once again that the major key to military victory is the mastery of the air — in particular possessing air superiority over the battlefield — at any price in terms of aircraft and pilots lost. For in spite of the formidable Arab air defence systems, the Israelis were able to destroy many tanks and vehicles from the air, and this advantage became overwhelming once SAM missile systems on the west bank were destroyed. It may be observed that if the Arabs had an air force comparable to the Israelis, and Israel had been compelled instead to rely on the combined air defence systems of Syria and Egypt, the Israelis would have been outclassed.

The Israeli air strategy of attempting to strike at the economic capability of Syria nevertheless proved to be faulty. First of all, the Syrian economy is based mainly on agriculture, and not on industry. Therefore destroying factories would not in itself bring about a major collapse of the Syrian economy. Second, in a developing society, electricity and oil do not play as important a role in the life of people as in an advanced society. While New Yorkers might suffer greatly from the lack of electricity for lighting, elevators, and home equipment, and from the lack of oil for heating and transportation, Syrian villagers or city-dwellers are less affected. The Israelis had failed to study the American air strategy in Vietnam, where the massive air attacks on factories, water dams, bridges and numerous other targets failed to destroy the will and capacity of the Vietnamese to fight.

THE LESSONS OF THE WAR: (2) WEAPONS

The main Israeli losses in the air resulted from SAM missiles, and chiefly from the new SAM-6 which proved to be very effective in destroying aircraft at medium and low altitudes. (The Arab air defence systems incorporated SAM-2, SAM-3, SAM-6, and large numbers of anti-aircraft guns, some of them radar controlled.) The performance and guidance system of the SAM-6 are not yet known, but it is believed that the missile has a dual or triple guidance

system comprising radar, infra-red and/or optical means, and so far no known and fully effective countermeasures have been devised for it. The Israelis had received advanced ECM equipment from the US to foil the Arabs' SAM-2 and SAM-3 missile systems, but these were ineffective against the SAM-6. The mobility of the latter makes it the most effective of the SAM missiles.

The other surprise of the war was the deadly effectiveness of guided anti-tank missiles at various distances. These missiles allowed infantry to face tanks on equal and even superior terms. A new era in military history has opened when a couple of soldiers armed with some missiles that cost only a few thousand dollars, can destroy several tanks which cost a few hundred thousand dollars each.

The proven effectiveness of anti-aircraft and anti-tank missiles reaffirms that the traditional method of estimating the military balance between two countries is outdated. A more accurate measure would be to weight each weapon system with a certain effectiveness factor, link these by mathematical equations and thereby arrive at an estimate of the true weapons strength of a nation. But it should be noted that the success of the "anti" weapons does not necessarily mean that the tank and the aircraft have become outdated. It rather means that the designers of these weapons can be expected to deviate a little from the traditional lines which they have long accepted. For example, the future tank may be curved, with a low velocity gun, to destroy concrete emplacements and hit infantry concentrations, carrying in addition launching tubes for anti-tank missiles — on condition that a speedier mechanism for reloading the tubes, the slowness of which has so far impeded the use of such missiles by tanks, could be developed.

The October war also demonstrated the value of self-propelled artillery in offence and in defence. Israeli artillery, which is mainly self-propelled, was able to move with the armoured forces from one place to another giving immediate fire support. Arab artillery, towed and dug-in, was more or less stationary, and some time was necessary to change its positions, and to prepare new firing sites. The lack of self-propelled artillery in the Arab armies, which can be remedied by fitting howitzers on a tank chassis, is derived from its absence in the Soviet arsenal.

The use, and the lack of it, of smoke screens, provides another interesting point. Smoke screens were effective in protecting the Egyptian bridges across the Suez Canal from optically guided air-to-surface bombs and missiles, but, strangely, neither the Arabs nor the Israelis used them in tank battles. Smoke screens cannot, of course, be generated to protect every target, and other effective supplementary means must be developed to protect certain targets from attack, especially from the air. It should be noted that most of the Israeli attack aircraft are equipped with inertia navigational systems and gyroscopes,

and almost all of their guided air-to-surface weapons (except for laser-guided bombs) have gyroscopic guidance. The Arabs clearly would be well-advised to attempt to evolve methods to foil these navigational and guidance systems.

WHO WON THE OCTOBER WAR?

Wars are fought for the purpose of improving the political and economic strength of one country as against an enemy, or for preserving a certain political status quo, in the face of the enemy's efforts to change it. The Arabs fought the October war to force the world to implement Security Council Resolution 242 in the Middle East. Israel fought the war to preserve the status quo of her occupation of Arab territory. It is not yet evident that the Israelis will withdraw, but the possibilities of such a withdrawal are certainly greater now than before the war.

On the psychological level, the Arab people and soldiers have gained a new feeling of confidence, while the Israelis are coming to doubt the myth of their invincibility, and to realize that the Arabs can fight effectively. Israeli official circles used to say that Israel was surrounded by militarily secure boundaries: the Golan, the Jordan River and the Suez Canal. Suddenly, the Israeli public have discovered that these boundaries were not after all safe and secure. The October war demonstrated that not only can the Arabs fight, but they can also take the initiative and attack Israel. The Israelis were accustomed to vaunting their air force and armour, but during the war, these two arms sustained the heaviest losses: about 200 aircraft, and 1000 tanks were knocked out from about 490 aircraft and 1900 tanks, according to Pentagon statistics during the war (although later repairs decreased the figures) without achieving a military victory which could justify such losses. And while Israel used to claim that it could defend itself without outside help, the Israeli public found that their country was on the brink of defeat for lack of equipment to sustain an offensive policy, when the massive American airlift rescued it.

Since the October war has thus created a sense of insecurity in Israeli society, while boosting Arab morale, the Arabs have definitely emerged as the beneficiaries psychologically. This situation is reinforced by the fact that, although on the purely military level, the fighting was stopped prematurely and when it was still indecisive, the resulting situation still left Israeli losses the heaviest since 1948, while Arab losses were far less than those of 1967. The war thus changed the Middle East situation in a direction far more favourable to the Arabs than had been the case.