

THE OCTOBER 1973 MIDDLE EAST WAR: A VINDICATION OF ARMOUR

Caecorum in patria luscus rex imperat omnis

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INTRODUCTION

The events of the October 1973 Arab-Israeli war have led many to the conclusion that 'the tank' is dead or, at the very least, mortally wounded. This argument would appear to be based, at least in part, upon one basic and vital misconception: that 'the tank' and 'armour' are identical.

'The tank' has rarely been successful except under the most exceptional circumstances. In order to achieve success, tanks have always had to co-operate with other branches of the army. Over time, those elements of other branches normally co-operating with tanks were provided with mobility and protection approaching that of the tanks themselves. This was the birth of 'armour' as foreseen by Liddell Hart and partially demonstrated by the 'panzerdivisionen' of the 1939–1945 conflict. What is all too often overlooked when considering the operations of these early armoured units, is that the essence of their success lay in the extremely close co-operation of the elements of various branches within these formations.

Similarly, the general purpose nature of armoured formations is not always recognised. Some still appear to see them as highly specialised formations suited only to the performance of a very small number of tasks. Instead, their general purpose nature has been enhanced by the increasing vulnerability of less mobile and less well protected formations. It is in the light of this concept of 'armour', as highly mobile, hard hitting general purpose formations, that this paper is intended to consider the employment of armoured formations in the October 1973 war and the lessons to be drawn therefrom.

The October 1973 war was very largely an armoured one. The only major exceptions were the two canal crossings and even these involved armour. The entire war must therefore be considered. The clearest way of doing this would appear to be to consider the events on the two phases. Any conclusions or lessons will be drawn at the end of each section and separately and more generally for each front. Lastly, an attempt will

be made to come to an overall conclusion as to the effect of the events of October 1973 upon the future of armoured operations.

THE SINAI FRONT

The Egyptian Canal Crossing

The Egyptian intention, on the military level, appears to have been to create a situation forcing the Israeli Defence Force to assault static defences and thereby incurring, hopefully, unacceptable casualties. This was to be achieved by crossing the canal at five points with infantry divisions and seizing a strip of land along the east bank to the depth covered by the air defence system. Once the bridgeheads were reasonably secure, armoured formations would cross and form both a mobile reserve and a threat to the Israeli Defence Force. The operations during this phase went much as intended and made much use of armour.

During the crossing operations, tanks, guns and anti-tank guided missile teams on the specially raised west bank ramparts provided direct fire on the Israeli positions and those tanks in the line.¹ They also provided anti-tank overwatch for the bridgeheads.² Once the eastern embankment had been breached, amphibious armoured personnel carriers crossed the canal and moved up to the positions. Here the infantry debussed and as-

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1. J.M.E. Clarkson: *Spark at Yom Kippur*. (Canadian Defence Quarterly, 1974), p 12; T.N. Dupuy: *The War of Ramadan*. (Army, March 1975), p 20; C. Hertzog: *The War of Atonement*. (Weidenfeld and Nicolson, 1975), p 151; D.K. Palit: *Return to Sinai*. (Compton Russell, 1974), p 79; H. Töpfer: *Nahostkrieg 1973 — Die Ersten Lehren*. (Truppenpraxis, February/April/June 1974), p 413; J. Weller: *Tanks in the Middle East*. (Military Review, May 1976), p 17.
2. C. Hertzog: *op cit*, p 185; B. Hooton: *Chronology of the October War*. (Armies and Weapons No 21), p 41.

saulted them, supported with fire by the armoured personnel carriers.³ PT76's crossed at the same time to provide some armour capability on the east bank at this stage.⁴ As soon as possible, tanks were brought across to help subdue the remaining positions and to form an initial mobile reserve.⁵ These were the tanks integral to the infantry positions.

Simultaneously with the major crossing operations, the 130 Marine Brigade crossed the Great Bitter Lake with its PT76's and BTR50's.⁶ It has been suggested that it was to link up with commando forces at the passes. Alternatively, more in keeping with the overall plan, it may have been intended to cover the seam between the 2nd and 3rd Armies controlling the crossing operations north and south of the lakes.⁷

Be this as it may, it encountered a tank battalion of Colonel Dan's brigade and, its vehicles being no match for tanks, appears to have incurred considerable casualties.⁸ This action may well have been decisive in creating the gap later exploited by the Israeli Defence Force.

In expectation of an armoured reaction, great importance was attached to the early provision of anti-tank cover for the bridgeheads.⁹ Initially, this was provided by the already mentioned forces on the west bank which continued in the overwatch role. During the opening bombardment, commando and infantry anti-tank teams crossed between the Israeli positions. These mined the approaches to the prepared tank positions and set up ambushes (RPG-7, Sagger) at these and along the roads.¹⁰ Much of the first wave then passed through these and the Israeli positions to set up an anti-tank screen some distance inland using similar weapons (transported on special 'buggies') and SA-7's to extend the air-defence umbrella.¹¹ As the operation proceeded, additional weapons were added to the anti-tank system: manhandled B-10 and SPG9 recoilless rifles,¹² GAZ-69 mounted B-11's¹³ BRDM-2 Sagger carriers, tanks and various guns.¹⁴ Some anti-tank weapons and teams may have been lifted across by helicopter,¹⁵ there are also some reports of armed helicopters being used to cover the crossing.¹⁶

The Egyptian operations of this phase presented an interesting example of the strategic offensive/tactical defensive combination. Their use of armour has been outlined in some detail largely because it was part of an operation not normally thought of as suited to armour. The assault on the Bar-Lev positions provided a near perfect example of the

role of armour versus fortifications, but the amphibious aspects are even more interesting. The 130 Marine Brigade conducted what was probably the first formation level operation by amphibious armour. Had it had more potent vehicles and/or better anti-tank support, it might well have succeeded in its mission. Nevertheless, this operation can be seen as a pointer to the future and, together with the efficacy of the amphibious and bridging equipment employed during this phase, as a further indication of the relative ease with which modern forces are able to overcome water obstacles. The only real Egyptian failure during this phase was not to close the gap between the two armies. The anti-tank system has been outlined chiefly in order to indicate what faced the initial Israeli counter-thrusts.

The Israeli intention was to use the Bar-Lev line to hinder an assault and thereafter to conduct a mobile armoured defence in the western Sinai while infantry brigades covered the passes. To this end two armoured brigades were to be forward, with many tanks in prepared positions on the canal and in the second line. Two further armoured brigades would form a mobile reserve.¹⁷ Once the reserve divisions arrived, the Israeli Defence Force would assume the offensive. Great reliance was placed on air support, perhaps to the detriment of artillery.

Political considerations, however, prevented the defensive plan, Shovach-Yonim, being initiated in

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3. J. Weller: *PAC's in the Yom Kippur War*. (British Army Review, April 1975) p 54; D/O: *Mideast Infantry Weapons* (from National Defense reprinted in Military Digest No 26 of Pakistan Army General Staff), p 32.
 4. A.H. Farrar-Hockley: *The Arab-Israeli War, October 1973*. (Adelphi Paper No 111), p 22; D.K. Palit: *op cit*, p 80.
 5. T.N. Dupuy: *op cit*, p 20; J. Weller: *op cit*, p 17.
 6. C. Herzog: *op cit*, p 154; B. Hooton: *op cit*, p 41.
 7. C. Herzog: *op cit*, p 154; B. Hooton: *op cit*, p 141.
 8. C. Herzog: *op cit*, p 161; B. Hooton: *op cit*, p 41.
 9. D.K. Palit: *op cit*, p 62; R.U.S.I.: *Lessons from the Arab-Israeli War*. (Seminar held on 30 January 1974), p 165.
 10. K.S. Brower: *Armour in the October War*. (Armor May/June 1974), p 13; C. Herzog: *op cit*, p 151.
 11. J.M.E. Clarkson: *op cit*, p 12; B. Hooton: *op cit*, p 41; H. Töpfer: *op cit*, p 413.
 12. J. Weller: *op cit*, p 18; Colonel Carmeli.
 13. *Armies and Weapons*. Issue and page numbers unknown. Available in the I.S.S. files; J. Weller: *op cit*, p 18.
 14. J. Weller: *op cit*, p 18.
 15. Dr Suleiman.
 16. B. Hooton: *op cit*, p 41; D.K. Palit: *op cit*, p 66, 84.
 17. C. Herzog: *op cit*, p 6, 7; E. Luttnak and D. Horowitz: *The Israeli Army* (Allen Lane, 1975), p 317.

time.¹⁸ The result was that, when the attack started there were only a handful of tanks actually in position, speedily dealt with by Egyptian anti-tank teams.¹⁹ Only one brigade (Colonel Amnon's) was forward and the bulk of this was located some way to the rear preparing to move forward by 17h00.²⁰ These tanks were now ordered to move forward into their positions and report, attacking any Egyptians on the way.²¹

Apparently not expecting serious opposition, they motored forward by companies and, engaged by tanks and missiles from the west bank as well as by the ambushes, suffered heavily.²²

Next on the scene were elements of the two armoured brigades intended to take over the northern and southern sectors (Colonels Gaby and Dan) allowing Amnon to concentrate in the centre. These attempted to help the remnants of the local forces, reach the strongpoints and generally to assault the bridgeheads. Again operating in small groups, they, too, suffered heavily. A series of counter-thrusts and holding actions now followed lasting through the night and well into the 7th.²³ In these confused and broken up actions all three brigades suffered severe losses: By the morning of 7 October 1973, Gaby was down to ten operational tanks,²⁴ Dan to twenty-three²⁵ and Amnon, by late afternoon, to twenty²⁶ for a total of probably less than fifty by the end of the day, apart from reserves. Apart from having contained many of the Egyptian expansion attempts, the only notable success had been the clash with the 130 Marine Brigade. Running out of tanks and with no likelihood of air support, Major-General Gonen now called off Shovach-Yonim and settled down to wait for the reserves.

The apparently disastrous failure of Shovach-Yonim provided much ammunition for those predicting the end of armour. But armour did not fail, even grossly mishandled as it was, it did succeed in limiting the expansion of the bridgeheads. It is highly questionable whether similar manpower deployed as infantry could have achieved as much for similar casualties, if at all. In this case at least it is probably more valuable to consider the reasons for failure rather than success.

The major error probably lay in initiating Shovach-Yonim one step behind the Egyptians. The attempts to reach positions already held by the enemy and that could be expected to be so held, cost a large part of an armoured brigade for no re-

sult. The forward brigade might have done better to hold, however tenuously, a perimeter until the others arrived. Simultaneously vigorous patrolling would have yielded at least some intelligence. Together, the three brigades could then have conducted battalion or even brigade level 'hit and run' operations to keep the Egyptian forces off balance. Instead, the Israelis gave away the advantages of the terrain and their forté and tried to counter-attack along the entire line with grossly inadequate forces.

At the tactical level they did no better. Attacking in small groups with inadequate infantry and artillery support and, apparently with no real aim except to reach the canal, they allowed the enemy the luxury of, in effect, defeating them in detail. The inability of the Israeli Air Force to provide the expected support merely highlighted the quantitative and qualitative inadequacy of the artillery. Operations of this nature could have been dealt with without anti-tank guided missiles.

The Israeli Counter-attacks

By the evening of 7 October 1973 the first Israeli reserves had arrived allowing divisions to take over the brigade sectors.²⁷ With four divisions deployed (including Brigadier Magen's forces in the north), Gonen now felt strong enough to launch a counter-attack.

This was to comprise two separate divisional assaults, General Adan in the north, General Sharon in the south. Adan was to break into the Egyptian defences while taking care to stay out of range of anti-tank weapons on the embankment. He would then swing west and advance to the canal between the Great Bitter Lake and El-Firdan seizing a limited bridgehead on the west bank just north of the lake. Brigadier Magen's forces would mop up after him. Sharon was to conduct a similar attack once it was clear that Adan's would succeed, until then his division would form a reserve.²⁸

18. C. Herzog: *op cit*, p 53.

19. D.K. Palit: *op cit*, p 79.

20. C. Herzog: *op cit*, p 159.

21. *Ibid*, Colonel Carmeli.

22. K.S. Brower: *op cit*, p 13; J.M.E. Clarkson: *op cit*, p 12.

23. C. Herzog: *op cit*, pp 156–168; B. Hooton: *op cit*, p 42.

24. C. Herzog: *op cit*, p 158.

25. *Ibid*, p 163.

26. *Ibid*, p 160.

27. C. Herzog: *op cit*, p 182.

28. *Ibid*, p 184, 185; B. Hooton: *op cit*, p 42.

However, Adan's brigades appear to have turned south too early thus passing in front of the Egyptians instead of rolling them up.²⁹ As a result only the right flank brigade, Colonel Natke's, was engaged in taking losses, this apparent lack of opposition engendered a certain amount of false optimism in the Israeli command. Probably as a result of this, Southern Command ordered Adan to widen his front and seize three bridges, at Ismailia, at El-Firdan and north of El-Balah Island.³⁰ Himself confident, not yet realizing the true position of his brigades, Adan ordered Gaby to advance on El-Firdan, Arieh (left flank) on Ismailia with Natke probably intended to take the northernmost bridge. At this stage, also, Sharon was ordered south as things seemed to be going well.³¹

The results of the earlier navigational error now became apparent as Arieh's brigade turned out to still be far from the canal and Gaby found himself facing defences that should already have been rolled up.³² Not too happy with his situation, Gaby chose first to probe with one tank battalion.³³ This battalion penetrated some way towards the canal before being engaged, then, however, it lost one third of its tanks. Another attack was now mounted together with elements of Natke's brigade but also proved too weak and failed.³⁴ Some eight-five tanks were lost here.³⁵ Sharon had, in the meantime, been ordered back north and his division spent much of the day fruitlessly motoring through the desert.³⁶

Apart from an operation by elements of Sharon's division to relieve some of the canal positions, the Israeli Defence Force now went over to a mobile defensive in the Sinai.³⁷ Here, however, they proved more successful, defeating two major thrusts, towards Rumani and Ras el Sudr as well as several attacks in the central area. In the case of the first two, the Israeli Air Force was also finally able to take a hand as these passed out of the air defence area.³⁸ In the case of the latter, they had learned their lesson by then. Under bombardment they would withdraw allowing the Egyptians to occupy their positions. Israeli artillery would then engage them, thereafter mechanised infantry would deal with the Egyptian infantry while the tanks dealt with any vehicles.³⁹ This type of fighting continued for some time without the Egyptians making much headway.

With the forces available, it would have been possible to form a two divisional *schwerpunkt* at any one point. Instead, apparently still over-confident regarding their capabilities, the Israelis again

attempted to achieve what was beyond their strength – with similar results to before. To make matters worse, errors and bad luck still further reduced the effective force of the attack. Additionally they were still operating without infantry and with minimal artillery support. Later in the day they showed that they had learned their lesson. The defensive operations of the next days appear to have gone very well, particularly where the Egyptians moved out from under their air defence system.

Apart from the successful defensive battle on the 8th and the thrusts of the 10th, including one towards the passes that was recalled in order to avoid the fate of the others, the Egyptians appear to have contented themselves with a series of more or less forceful expansion attempts. These attacks are of interest not only for the determination with which they were pressed, but also for the continued reliance on foot-mobile infantry. This was to mark Egyptian operations throughout the war. These attacks were always combined arms operations involving artillery preparation, tanks, mechanised and foot-mobile infantry. The latter would often move up during the night and dig in close to, or even behind, the Israeli positions. At a suitable moment during the attack they would then emerge and join the attacking force. Sagger teams were employed to cover the Egyptian flanks.⁴⁰

While perhaps stereotyped by virtue of repetition and limited in their aims, these attacks were carried out skilfully and courageously. The Israeli Defence Force, however, having partially learned its lesson and more skilled in mobile operations, succeeded in holding its own. The Egyptian anti-tank system had again proved itself on the 8th and remained effective. The Egyptians do not, however, appear to have made effective use of their self-propelled anti-aircraft equipment.

The Egyptian Offensive

With the failure of the Israeli counter-attack on the 8th, the Egyptians had achieved much of what

29. C. Herzog: *op cit*, p 185; B. Hooton: *op cit*, p 42.

30. C. Herzog: *op cit*, p 185.

31. *Ibid*, p 188.

32. *Ibid*, p 185; B. Hooton: *op cit*, p 42.

33. Colonel Carmeli.

34. C. Herzog: *op cit*, p 188, 189.

35. B. Hooton: *op cit*, p 42.

36. C. Herzog: *op cit*, p 190.

37. *Ibid*, p 193; H. Töpfer: *op cit*, p 249.

38. D.K. Palit: *op cit*, p 87.

39. LTC Carmeli.

40. C. Herzog: *op cit*, p 199.

they had set out to: Their 'strategic offensive', the crossing, had succeeded better than they had dared hope and their 'tactical defensive' had inflicted heavy losses on the Israelis. The attempts to expand the bridgehead, while not successful, were inflicting casualties and only the north-east and southern thrusts were real failures. Overall, their 'meat-grinder' tactics were producing the desired results in almost continuous action without necessitating exposure to the Israeli Air Force.

By the 10th, however, pressure on the Syrians was such that they were demanding Egyptian action to help relieve it.⁴¹ Much against his better judgement, General Ismail acquiesced and moved his armoured reserves across the canal in preparation for an offensive. However, by now most of the Israeli reserves were at hand and the numerical superiority was no longer as absolute. All that could really be hoped for was to inflict such heavy casualties that forces would have to be withdrawn from the Golan. That this was probably recognised is borne out by the nature of the offensive which does not appear to have been expected to provide a breakthrough.

The offensive comprised four prongs spread along the entire front: In the north elements of the 18 Infantry Division moved towards the coastal road; in the centre the 21 Armoured Division and an armoured brigade of the 23 Mechanised Division launched a pincer movement on Bir Gifgafa while the 4 Armoured Division struck out towards the Gidi pass; in the south elements of the 6 Mechanised and 19 Infantry Divisions moved on Ras el Sudr.⁴² After probing attacks all along the front on the 13th,⁴³ the offensive started early on the 14th.⁴⁴ Advancing behind a heavy artillery barrage, the Egyptian armour does not appear to have been well handled. Sheer numbers and the skill and dash displayed by individual commanders, carried some tanks onto the high ground held by the Israelis, resulting in extremely close range action.⁴⁵ Overall, however, the offensive was not a success and appears to have resulted in proportionally higher losses for the Egyptians.

As a means of taking pressure off the Syrians, this offensive may have been of some use. Seen from any other viewpoint, however, it was a major failure. If an offensive was to be launched at all it should have been, at the very latest, immediately after the failure of the Israeli attack on the 8th. Preferably it should have been initiated on the 7th before too many of the Israeli reserves had arrived. Further, if anything was to be expected of the

offensive, other than inflicting casualties, the forces should have been more concentrated. As it was, the available forces were spread out over the front and forced to advance over open ground towards the high ground held by a near-equal Israeli force. This left no chance for success. This offensive confirmed what the earlier thrusts had indicated – that the Egyptians did not yet have the expertise to conduct mobile operations effectively. At the tactical level, this offensive again demonstrated the Egyptians' inability to handle armour in mobile operations. The use of foot-mobile anti-tank teams during an armoured offensive over open country must have resulted from an overreaction to their successes in the earlier phases. As it was, they appear to have achieved little and lost many.

The Israelis had by now fully learned their lesson and regained their flair for handling armour. Their tanks, hull down on the high ground, firing and moving by platoons or even companies, gave an excellent demonstration of precision firing and handling.⁴⁶ The Sagger carriers, easily recognised, were particular targets. Similarly, the Egyptian foot-mobile teams were engaged with long range machine-gun fire by the Israeli armoured personnel carriers.⁴⁷ Once it was thought sufficient casualties had been inflicted, the Israelis counter-attacked. Now in their true *métier* and accompanied by armoured personnel carriers to deal with RPG-7 and Sagger gunners, they further wore down the Egyptian armour which finally withdrew.⁴⁸ This phase showed not only what can be achieved by armour in the defensive, but also the difficulty of hitting hull-down tanks with anti-tank guided missiles, particularly when under fire.

The Israeli Canal Crossing

With Egyptian armour now written down to a manageable level, Southern command was given the go-ahead for its intended crossing operation.⁴⁹ Such an operation was seen as the only way to break with existing and dangerous, stalemate.⁵⁰ The initial aim appears to have been both to throw the Egyptians off balance and to open a gap

41. B. Hooton: *op cit*, p 44.

42. C. Herzog: *op cit*, p 205; B. Hooton: *op cit*, p 44.

43. C. Herzog: *op cit*, p 203.

44. *Ibid*, p 205.

45. *Ibid*.

46. J. Weller: *op cit*, p 19.

47. *Ibid*.

48. *Ibid*, p 19, 20; D/O *Tank Killers in the October War*. (R.U.S.I. Journal, December 1974), p 33.

49. C. Herzog: *op cit*, p 207; B. Hooton: *op cit*, p 44.

50. C. Herzog: *op cit*, p 200, 201.

in the air defence screen as well as to obtain a bargaining counter. Should the operation be particularly successful, it could be expanded to include the cutting off of some of the Egyptian forces on the east bank.⁵¹

The failure of the Egyptians to cover the Bitter Lakes area had been discovered by a patrol of Adan's brigade during the relief operation by elements of Sharon's division on the 8th.⁵² Southern command's plan envisaged Sharon's division entering this gap and widening it towards the north. This would clear a crossing point on the canal and open the roads to it. The point chosen had, in fact, been previously reconnoitred and prepared. Sharon was also to seize an initial bridgehead on the west bank, allowing the construction of a bridge.⁵³ Thereafter Adan's division and, perhaps, other forces could pass through Sharon's and operate on the west bank.⁵⁴

Sharon intended to achieve this by fixing the local 2nd Army forces with a frontal attack by one brigade while the bulk of his force wheeled south past them and then struck them in the flank and rear. While the roads were being cleared and the flanks of the gap being secured, his paratroop brigade would cross the canal on rubber boats and establish itself on the far side. As soon as possible it would be joined by tanks from Haim's brigade.⁵⁵

While the plan initially appeared to succeed, there were two major problems. Firstly, it had not been realized that the 21 Armoured Division had retired into this area thus greatly increasing the local Egyptian forces.⁵⁶ Secondly, the force that initially cleared the approach road had not stopped to mop up with its infantry.⁵⁷ The cumulative effect of these two factors led to considerable confusion and delay. Finally the crossing force, Adan's division, had to be committed to clearing the approaches.⁵⁸ Matters cannot have been helped much by Sharon's apparent lack of interest in this aspect of the operation. As it was, the resultant heavy fighting lasted until the 18th when the 'Chinese Farm' area was finally taken from the rear and the threat to the bridgehead removed.⁵⁹ On the 18th, also, a bridge was at long last put across, allowing further forces to reach the two brigades (one paratroop, one armoured) that had been across since the 16th.⁶⁰

On the west bank, Haim had decided to use his available force to raid the surrounding country — the bridgehead and the fresh water canal crossings

being held by the paratroop brigade.⁶¹ Quite apart from his successes in destroying equipment and anti-aircraft sites, he thereby succeeded in further confusing the Egyptians who never faced more than a platoon or so of tanks. This may well be the basis of the Egyptian impression at this stage that they were only facing a raid.⁶²

While the operation did, in the end, succeed, it demonstrated some faults. The Israeli Defence Force had, it appears, not yet fully appreciated how to use infantry. In fact they did not appear to have understood the lessons of similar incidents in 1967. Further, Israeli reconnaissance does not appear to have been adequate, viz. the surprise at the presence of the 21 Armoured Division. That their reconnaissance doctrine was possibly faulty is indicated by the use of reconnaissance elements to seize points on the canal rather than to clarify the situation.⁶³ The Israeli Defence Force may by now have regained its skill at handling armour, but it was certainly not yet demonstrating great skill at the command level.

The Egyptians, however, were worse. Up till now they had, except in mobile operations, performed extremely well. Now their command appeared to be unable either to recognise the threat or to counter it. A swift counter-stroke even by a relatively small force at any time before the 18th would probably have sufficed to remedy the situation on the west bank. Instead, they attempted to cut off the approach on the east bank, where the Israeli were strongest.⁶⁴ Even this limited, in concept, counter-action was probably more at a local than a general headquarters⁶⁵ level in its nature. On the other hand, a combination of courage and some skill at night fighting did cause the Israelis some considerable trouble and inflict heavy losses.⁶⁶ The initial Egyptian error lay, of

51. D.K. Palit: *op cit*, p 135.

52. C. Herzog: *op cit*, p 195; B. Hooton: *op cit*, p 42.

53. C. Herzog: *op cit*, p 209.

54. *Ibid*

55. *Ibid*, p 210.

56. *Ibid*, p 212; B. Hooton: *op cit*, p 45; A.H. Farrar-Hockley: *op cit*, p 28.

57. C. Herzog: *op cit*, p 211.

58. *Ibid*, p 223.

59. *Ibid*, p 230.

60. B. Hooton: *op cit*, p 45.

61. C. Herzog: *op cit*, p 222, 229; B. Hooton: *op cit*, p 45.

62. C. Herzog: *op cit*, p 232, 235.

63. *Ibid*, p 212.

64. *Ibid*, chapters 15, 16; B. Hooton: *op cit*, p 45; D.K. Palit: *op cit*, p 140.

65. C. Herzog: *op cit*, chapters 15, 16.

66. *Ibid*, chapter 15.

course, in not covering the Bitter Lakes area from the outset — unless the 130 Marine Brigade was intended to do so, in which case it should have been reinforced after its initial losses.

The Israeli Exploitation

Once the bridges were across, the Israeli forces on the west bank were quickly built up until they comprised elements of three divisions.⁶⁷ Sharon's, Adan's and Magen's. Sharon was to hold the crossing area on both sides of the canal while the remainder of the force moved southwards to cut off the 3rd Army.⁶⁸ Sharon, however, was pressing for a northward operation and may have neglected the east bank position in favour of exerting pressure in this direction.⁶⁹ After heavy fighting, his forces did finally reach the outskirts of Ismailia on the 21st.⁷⁰

Adan moved south on the 18th, seizing the Geneifa Hills. On the 19th, Magen's forces passed through his and the two divisions moved south more or less parallel to each other with Adan to the east.⁷¹ Advancing on Suez, they had probably cut the 3rd Army's major supply routes by the time of the first cease-fire, finally cutting it off during the confused period before the 'final' cease-fire.⁷²

Tactically, the Israeli operations now clearly showed a tendency towards the combined arms doctrine with close armour-infantry co-operation.⁷³ Additionally the Israeli Air Force now effective in this area.⁷⁴ This 'new style' of operation showed itself able to overcome both armoured and anti-tank forces. On the strategic level this operation was clearly in line with the 'indirect approach' doctrine and attained the deserved success.

With major Israeli forces on the west bank, the Egyptians seem to have been at a loss. Unwilling to move forces back across and apparently not desiring to use the reserves covering Cairo, they had little to pit against Operation Gazelle.⁷⁵ In the north a mixed commando/infantry force succeeded in delaying Sharon, largely, it appears, by sheer determination.⁷⁶ In the south, the 3rd Army moved an armoured brigade back across and this, together with other elements of this army, fought a series of delaying actions against the advancing Israelis.⁷⁷ Both armoured operations and anti-tank ambushes were used here but only in the town of Suez itself were the Israelis really put into a difficult position. This action appears to have cost them heavily and indicates that, perhaps even now, they had not fully grasped how

to use infantry⁷⁸ Egyptian resistance, while unsuccessful, clearly showed the increasing quality of their troops — particularly if it is borne in mind that here they were probably fighting on near even terms.

Conclusions and Lessons

More than anything else, the battles of 6, 7 and 8 October 1973 in the Sinai, or rather their apparent results, appear to be at the root of current arguments against armour. It is true that Israeli tank losses were severe, perhaps 300 in these first 72 hours on this front.⁷⁹ But this does not spell the end of armour, several related points must be considered here:

- i. These losses were incurred during a holding action — always the costliest variety, not least because of the defenders difficulty in recovering damaged vehicles.
- ii. During this period, the first two days at least, Israeli armour was wrongly employed and extremely badly handled, as badly as the Egyptian on the 14th/15th, in some ways perhaps worse.
- iii. The terrain and climatic conditions were uniquely favourable to the employment of anti-tank guided missiles.
- iv. The Egyptians deployed a range of weapons in the anti-tank role — from RPG7's via 130 mm guns⁸⁰ to tanks themselves and even SA7's⁸¹ in cases of dire need. During the opening stages at least, Egyptian tanks appear to have been quite successful, particularly firing from the west bank ramparts.⁸² The Egyptians were also very happy with the performance of their recoilless rifles.⁸³
- v. Most importantly, it is difficult to believe that a similar number of men deployed in infantry

67. T.N. Dupuy: *op cit*, p 22; 'KAR': *A personal View of the Yom Kippur War* (British Army Review, August 1975), p 16.

68. C. Herzog: *op cit*, p 238.

69. *Ibid*, p 241.

70. *Ibid*.

71. *Ibid*, p 243.

72. *Ibid*, p 244.

73. *Ibid*, p 250.

74. B. Hooton: *op cit*, p 45.

75. *Ibid*, p 45.

76. C. Herzog: *op cit*, p 241.

77. *Ibid*, p 243.

78. *Ibid*, p 250.

79. D/O: Paper presented at Cairo, October 1975 (Available at I.I.S.S.); B. Hooton: *op cit*, p 42.

80. D.K. Palit: *op cit*, p 65.

81. H. Töpfer: *op cit*, p 413.

82. C. Herzog: *op cit*, p 159.

83. Dr Suleiman.

formations rather than armoured brigades, would have achieved as much — even at the cost of catastrophic casualties. To quote Mr Brower here: '... tanks can be salvaged ... people can't.'

The actions of the 14th/15th once again showed the value of armour, in its true sense, in the defensive. Here the Israelis used classic tactics, allowing the Egyptians to run at them in their positions and, when they felt sufficient casualties had been inflicted, counter-attacking. However, had they counter-attacked more vigorously, they might well have inflicted near fatal casualties on the attacking formations. Probably they were still recovering, physically and psychologically, from the shock of the opening days and were unwilling to take unnecessary risks.

The final operations of the Sinai campaign were a return to the classic indirect approach doctrine, using armour in the previously defined sense. The 'indirect approach' is one of the most elegant and effective military concepts. However, 'the option of indirect response is only open to a fast moving, highly mobile force, it requires speed, firepower and superb control. In other words it requires the tank ...'⁸⁴ For tank read armour. Probably the major lesson of this campaign was that the lessons of World War Two are still valid as regards armour at least. Additionally it was demonstrated that air power can, at least temporarily, be neutralized, that today's infantry has gained in potency and that water obstacles are easier than ever to cross. Particularly the PMP and Gallois (used by the Israeli Defence Force), equipments have proved themselves. There were, of course, many other lessons at all levels not directly related to this subject.

Summing up, it can safely be stated that the operations in Sinai during October 1973 proved that armour is not only viable on the modern battlefield, but vital: no armour, no Operation Gazelle. Perhaps its critics are right about one thing, perhaps 'the tank' is indeed dead at long last — with 'armour' emulating the bird of legend.

THE GOLAN FRONT

The Syrian Offensive

The Syrian plans apparently called for a broad frontal push across the Golan to clear the Israeli forces out of the area. This was to be accomplished by three mechanised divisions: the 7th on the

right, the 9th and the 5th. An independent infantry brigade would cover the right flank while the Israeli observation post on Mount Hermon would be taken by commandos. Two armoured divisions, the 3rd and the 1st, as well as some independent brigades were to form a reserve.⁸⁵

Having overcome the anti-tank ditch with the aid of Armoured Vehicle Launched Bridges,⁸⁶ and bulldozers, the three divisions rolled forward. Their armoured brigades with some 540 tanks took the lead and the advance was given heavy artillery and some air support.⁸⁷ The 7 Mechanised Division, in addition to terrain problems, was hampered by the non-appearance of its covering brigade. Indeed, for a time, it was ordered to halt.⁸⁸ Additionally it faced the tough and particularly well handled 7 Armoured Brigade which also severely hindered the advance of much of the 9 Mechanised Division. This division was more fortunate, however, and gained some ground in the centre as well as making considerable advances with its left wing. The 5 Mechanised Division, on the left of the front, made the most headway.⁸⁹ It and elements of the 9th soon succeeded in pushing back the 188 (Barak) Armoured Brigade facing them.⁹⁰ Understrength at the start (77 tanks) this brigade was reduced to fifteen operational tanks by late on the 6th and one by the late morning of the 7th.⁹¹ The scene was set for a major push over the suitable terrain around the Rafid opening, down the tapline route and into the flank and rear of the 7 Armoured Brigade — overrunning the Israeli headquarters at Naffakh en route. Simultaneously, Syrian forces could thrust towards the B'not Yakov and Arik bridges and towards the southern tip of the Sea of Galilee.

The advance was generally halted during the night for regrouping and replenishment and while the 1 Armoured Division was deployed.⁹² Resuming early on the 7th, the advance now encountered the initial Israeli reserves. Nevertheless, elements

84. K.P. Hein: *Old Lesson Learned*, (Armour, September/October 1975), p 33.

85. D.K. Palit: *op cit*, p 94; C. Wakebridge: *The Syrian Side of the Hill* (Military Review, February 1976), p 22.

86. T.N. Dupuy: *op cit*, p 22.

87. D.K. Palit: *op cit*, p 96; C. Wakebridge: *op cit*, p 22.

88. *Ibid*, p 22; D.K. Palit: *op cit*, p 94, 95.

89. *Ibid*, p 99.

90. T.N. Dupuy: *op cit*, p 23; C. Herzog: *op cit*, chapters 6 and 7.

91. *Ibid*, p 84, 100.

92. D.K. Palit: *op cit*, p 98; C. Wakebridge: *op cit*, p 22.

reached the Israeli headquarters at Naffakh, the outskirts of El Al and two within kilometres of the Jordan. At 17.00, however, just fanning out towards the lip of the escarpment, the Syrian forces were ordered to halt.⁹³ While attacks were resumed later, particularly in the north where the 3 Armoured Division was only committed on the 8th,⁹⁴ this was the effective end of the offensive.

The chief cause of the Syrian offensive's failure must be seen in their failure to form a real *schwerpunkt* opposite the crumbling Israeli right wing. Had both armoured divisions been concentrated here and the attack pressed throughout the night, success on the Golan would have been virtually certain. Instead, valuable forces were used up in frontal assaults in the north. The Syrians also did not do well at the tactical level. Their armour does not appear to have employed fire and movement,⁹⁵ advancing, instead, in virtual phalanxes. Thus they not only presented excellent targets, but were also unable to effectively engage the hull-down Israeli armour. In this terrain, infantry anti-tank teams might have warranted more use, outflanking individual Israeli tanks, for instance. Further, it is not good practice, at the tactical level, to bypass hostile elements unless totally inactive and unable to observe. Earlier and more forceful attempts to eliminate the Israeli positions should have been made.

The Israelis had two armoured brigades under General Eytan covering the Golan positions.⁹⁶ One, the understrength 188th, was forward.⁹⁷ With the opening of hostilities the 7th, recently arrived as a precaution, took over the sector north of Kuneitra leaving the 188th to cover the south.⁹⁸ Between them these two brigades fielded some 177 tanks.⁹⁹ Here the Israelis generally succeeded in reaching their prepared positions. From these and some constructed during the fighting,¹⁰⁰ they conducted a masterly mobile defence. Colonel Avigdor's 7 Armoured Brigade, particularly well handled, held its sector until the Syrians, worn out, withdrew on the 9th.¹⁰¹ Avigdor's near obsession with maintaining a reserve may have been decisive in achieving this.¹⁰² By then, however, he was down to seven tanks and was fighting a confused 360° action.¹⁰³ The 188 Armoured Brigade, already under-strength, had the additional problems of a wider frontage and the Rafid opening to contend with.¹⁰⁴ Not surprisingly it was soon used up, having, however, held long enough for the initial reserves, General Laner's division,¹⁰⁵ to arrive and establish a 'line' of sorts.

Israeli operations during this phase, difficult to describe briefly, present an almost perfect example of an armoured defence at the tactical level. The advance preparation of positions and ramps, in particular, proved useful as did Avigdor's early reconnaissance.¹⁰⁶ Considering the lack of depth of and the critical nature of the actions on the Golan, the committing of reserves as they arrived, even by platoons¹⁰⁷ was the only possibility. Any delay to form larger units would merely have resulted in the Israeli Defence Force running out of tanks on the Golan as is witnessed by the losses of the two armoured brigades initially in the line.

The Israeli Counter-attack

With the arrival of reserves, the Golan was divided between Generals Eytan and Laner commanding north and south respectively.¹⁰⁸ In view of the gravity of the situation, General Peled's division was also despatched to the Golan.¹⁰⁹ Initially the emphasis was on holding, Laner having to establish a 'line' around the Syrian bulge. With Peled's arrival, Northern Command moved to restore the situation in the southern sector. This left Eytan holding in the north with the remnants of the 7 Armoured Brigade and elements of the Golani Infantry Brigade. His 79 Armoured Brigade was under Laner's control and the remnants of the 188th, 11 repaired tanks, only reached him as the Syrians withdrew.¹¹⁰ Joined by the 188th's remnants, Avigdor's 7th launched a minor pursuit operation up to the Purple Line.¹¹¹

The counter-attack plan appears to have called for a pincer movement on Hushniyah as well as a thrust towards Rafid.¹¹² To this end Laner's

93. *Ibid.*

94. 'Insight Team'. Sunday Times: *The Yom Kippur War*. (Andre Deutsch, 1975), p 178.

95. D.K. Palit: *op cit*, p 96.

96. C. Herzog: *op cit*, p 58, 59, 61; C. Wakebridge: *op cit*, p 21.

97. C. Herzog: *op cit*, p 59.

98. *Ibid*, p 67, 78.

99. *Ibid*, p 61; 'KAR': *a personal View of the Yom Kippur War* (British Army Review, August 1975), p 12.

100. C. Herzog: *op cit*, p 78, chapters 6, 7 and 8.

101. *Ibid*, p 113.

102. *Ibid*, p 67, 114.

103. *Ibid*, p 113.

104. *Ibid*, p 113.

105. *Ibid*, p 100; D.K. Palit: *op cit*, p 97.

106. C. Herzog: *op cit*, p 66, 114.

107. *Ibid*, p 100.

108. *Ibid*, p 99.

109. *Ibid*, p 98.

110. *Ibid*, p 112.

111. *Ibid*, p 113.

112. *Ibid*, p 118, 123.

forces would move on Hushniyah from the north and west. Peled would push towards Rafid, detaching one brigade to close the pincers and another to cover his right flank.¹¹³ Having only elements of his division with him, Peled received command of all forces in his area, including Laner's 14th and 19th Armoured Brigades.¹¹⁴

Laner spent much of the 8th covering the Jordan (17 Armoured Brigade) and Eytan's flank (79th) against continuing Syrian attacks. By evening, however, he had begun to advance.¹¹⁵ By the evening of the 9th, having weathered a morning counter-attack on the 79 Armoured Brigade, his forces had reached the vicinity of Hushniyah.¹¹⁶ Peled's forces had started moving early on the 8th, fighting a series of armoured actions and gaining ground until they hit an anti-tank position near Tel Saki. By evening the entire division was tied up here and taking losses.¹¹⁷ Resuming the advance in the morning, his brigades found the defensive position cleared and encountered an armoured brigade in its stead.¹¹⁸ Again engaged in an armoured battle, the division continued advancing with the 14 and 19 Armoured Brigades closing the pincers of Hushniyah at some cost to themselves.¹¹⁹ The Syrian elements cut off in Hushniyah were destroyed by Laner on the 10th.¹²⁰ On the 10th also, Peled attempted a number of individual brigade operations. Meeting strong resistance they could not overcome individually, these incurred considerable losses.¹²¹

In these operations the Israeli Defence Force was more of its old self, scoring a series of successes, albeit at some cost. The concentration of the Israeli Air Force on this front no doubt helped.¹²² However, they do not appear to have made effective use of reconnaissance units. Had they done so, the costly collisions with Syrian anti-tank positions could have been avoided, these being outflanked or properly assaulted. Also, Peled's action on the 10th smacks of overconfidence and/or disregard for armoured doctrine.

Apart from some limited successes against Laner's forces on the 8th, most Syrian attempts to regain the initiative failed. During most of this phase, therefore, they were on the defensive. Unfortunately little information is available on Syrian operations after the first phase. A number of interesting points do, however, stand out. Firstly, the Syrians succeeded in maintaining a 'line' throughout.¹²³ This not only prevented a rout but also rendered the Israeli attack rather more costly than they had probably expected, also slower. The only exception to this is the unfortunate 1 Armoured Division which lost two bri-

gades and many of its services elements in the Hushniyah pocket.¹²⁴ Courageous and well-handle, this Division made a considerable impression on the Israelis,¹²⁵ but its logistic centre at Hushniyah was threatened early and, strangely, not withdrawn. Secondly, the Syrians appear to have made very good use of anti-tank positions fielding a variety of weapons including recoilless rifles, anti-tank guns, BRDM-2 Sagger carriers and possibly, SU100's.¹²⁶ These were usually well sited and inflicted considerable casualties upon the Israelis.¹²⁷ There are only two comments on this rather limited overview: The Syrians were obviously not yet up to the Israeli standard in mobile warfare and, had they not squandered valuable forces in the north and parts of the centre, they could probably at least have saved the 1 Armoured Division.

The Israeli Offensive

With the Syrians pushed back beyond the cease-fire line, it was now felt necessary to inflict losses sufficiently severe to preclude their further participation in the war on any large scale. The Israeli Defence Force could then safely concentrate on Sinai. To the end the Israeli Defence Force would thrust into Syria towards Damascus, forcing the Syrians to fight and take losses.¹²⁸ The offensive would be initiated by Eytan's division with the, now reinforced, 7 Armoured Brigade leading. Two hours later, Laner would attack along the Damascus road with Eytan covering and supporting him on his left. Should the attack here fail, Laner would, instead, pass through Eytan's division and push forward on this axis.¹²⁹

Dividing his force (7 Armoured Brigade and attachments) Avigdor attacked at 11.00 on the 11th. His northern group was to seize Hader and Magrat Beit Jan, covering his left flank and clearing the way for a possible further advance. Facing a tank supported infantry brigade, it gained its objectives by the late afternoon of the 12th.¹³⁰ The southern group operated in

113. *Ibid*, p 123, 118.

114. *Ibid*, p 118.

115. *Ibid*, p 121.

116. *Ibid*, p 123.

117. *Ibid*, p 121.

118. *Ibid*, p 124.

119. *Ibid*, p 124, 125.

120. *Ibid*, p 125.

121. *Ibid*, p 127.

122. *Ibid*, p 126.

123. D.K. Palit: *op cit*, p 103.

124. C. Herzog: *op cit*, p 127.

125. *Ibid*, p 122, 125.

126. *Ibid*, p 121, 123; J. Weller: *op cit*, p 34.

127. C. Herzog: *op cit*, p 121, 123, 125.

128. *Ibid*, p 128.

129. *Ibid*, p 129.

130. *Ibid*, p 130, 131.

support of Laner, taking important high ground and, in particular, the Tel Shams feature covering the approach to Sa'sa. Facing a similar force, but less fortunate, it was held up repeatedly by anti-tank guided missile teams at Tel Shams. An attempt by a tank company to storm this position resulted in the loss of six of its tanks for no gain. Finally, on the 13th, a night attack by paratroops succeeded in taking this feature.¹³¹ Eytan's division had now reached its objectives and appears to have remained static here.

Led by Ran's 17 Armoured Brigade, Laner's division attacked at 13h00. The leading elements took heavy losses from artillery fire and were also soon heavily engaged with anti-tank defences. Two tanks, however, succeeded in reaching the Khan Araba cross-roads. This was immediately exploited with the 79 and 19 Armoured Brigades passing through and swinging south. These were, however, cut off for a time when a by-passed Syrian force closed the road in their rear. This was dealt with by paratroops. That losses had been heavy is indicated by the fact that Ran, albeit most heavily engaged, was down to five operational tanks by evening.¹³² On the morning of the 12th Laner renewed his attack with a sweeping 'right hook' via Nasej towards Knaker, intending to out-flank Sa'sa. This attack had to be halted, however, with the approach of an Iraqi force from the south.¹³³

A series of engagements with the Iraqis and Jordanians now followed, the latter having arrived on the 13th.¹³⁴ Laner now went over to a mobile defensive, limiting offensive operations to the taking of important features. On the 17th Peled's division took over responsibility for the southern sector of the new enclave, regaining its 20 Armoured Brigade and again taking command of Laner's 19th.¹³⁵ The 20th had been transferred to Laner on the 12th as reinforcement.¹³⁶

Operations during this phase were generally dominated by the Israeli flair for mobile warfare. They do, however, appear to have had some considerable difficulty in overcoming Syrian anti-tank defences. Additionally, they demonstrated both an ability to misuse armour (Tel Shams) and that they still had not grasped the importance of early and effective mopping-up (Khan Araba). While scoring kills at impressive ranges in daylight, Israeli armour was hampered by its lack of night-fighting equipment during the entire war. This phase includes a particularly good example in the action at Um Butne where eight infra-red equipped Syrian tanks appear to have caused considerable confusion and damage.¹³⁷ During this phase the Israelis, Eytan

to be exact, made considerable use of anti-tank raids by infantry and paratroop groups.¹³⁸ Additionally, there were, of course, the heliborne ambushes of an Iraqi armoured column.¹³⁹ Both showed an interesting combination of Israeli night-fighting tradition and Arab anti-tank tactics. The heliborne raids on the armoured column, in particular, were an interesting example of future possibilities.

The Syrian defence plan appears to have been based upon a series of static defences 'concentric' on Damascus. These comprised large numbers of mutually supporting positions built into the basalt ridges of this region as well as numbers of dug-in tanks.¹⁴⁰ Well laid out and hardened, they do not appear to have halted the direct Israeli thrust on Damascus. However, being static, they were vulnerable to being outflanked. This vulnerability was increased by the widening gap between the 9 and 5 Mechanized Divisions resulting from the ever lengthening front as the Syrians withdrew.¹⁴¹ The extremely dangerous Israeli exploitation of this gap was stopped by the appearance of elements of the Iraqi 6 Armoured Division from the southeast.¹⁴² Further to the west, the Jordanian 40 Armoured Brigade closed the remaining gap with its arrival north of Sheikh Meskine.¹⁴³

The Iraqi 6 Armoured Division went into action at the end of a 1 000 kilometre move with only a minimal pause.¹⁴⁴ In view of this, their ability to operate at all effectively must redound to their credit. Their first attack had been by one brigade only and, while forcing the recall of the Israeli thrust towards Knaker, had taken losses. The first major attack followed at 03.00 on the 13th by two brigades. This, however, ran into a carefully constructed trap and failed disastrously.¹⁴⁵ Further, often heavy, attacks also failed to provide any marked gains. Poor co-operation between the Arab armies gravely diminished their effectiveness, sometimes resulting in accidental clashes.¹⁴⁶

131. *Ibid*, p 132, 133.

132. *Ibid*, p 134.

133. *Ibid*, p 137.

134. *Ibid*, p 139.

135. *Ibid*, p 141.

136. *Ibid*, p 147.

137. *Ibid*, p 141.

138. *Ibid*, p 139.

139. E. Luttwak and D. Horowitz: *op cit*, p 390; D.K.

Palit: *op cit*, p 110.

140. D.K. Palit: *op cit*, p 105; E. Luttwak and D. Horowitz:

op cit, p 391.

141. D.K. Palit: *op cit*, p 105, 109.

142. C. Herzog: *op cit*, p 37.

143. D.K. Palit: *op cit*, p 112, 115.

144. *Ibid*, p 107.

145. C. Herzog: *op cit*, p 138; D.K. Palit: *op cit*, p 112.

146. C. Herzog: *op cit*, p 140, 142; D.K. Palit: *op cit*,

p 115.

These forces did, however, succeed in preventing any further expansion of the Israeli enclave.

The static defences worked well except for the abovementioned weakness. Had the armoured divisions still been effective, this might not have been as critical as it was. As it was, the timely appearance of the Iraqis and Jordanians remedied the situation. While their mobile operations were not generally successful, the Arabs here, as in Sinai, fought well. During this phase, at least, the Syrians appear to have made considerable and effective use of conventional anti-tank guns. Here, also, it seems that many anti-tank guided missiles fell short.¹⁴⁷ The major weakness of Arab operations in this phase lay in the lack of co-operation among the various forces. Closer co-operation might have made it possible to reduce the Israeli enclave.

Conclusions: Lessons Learnt

Few would not agree that armour was the dominant branch on the Golan and, later, in Syria — albeit often in a nearly 'all tank' form. Used to good effect by both sides in offensive and defensive operations, it suffered no dramatic reversal at the hands of other branches. The failure by the Israelis to break through the Syrian defensive positions can hardly be seen as a failure of armour. Such a breakthrough would have required considerable artillery and infantry support. Instead, the Israelis attempted to outflank the positions, failing only when tied down by the arrival of Iraqi and Jordanian armoured forces.

The initial, tactically mobile, defence by the Israelis may yet be recognized as a classic of its kind. Had the Syrians made more use of anti-tank teams operating ahead of and with their armour, however, the Israeli lack of artillery and mechanized infantry would have made itself felt. Once on the offensive, the Israelis demonstrated much of their flair for mobile warfare. A number of weaknesses, however, became only too readily apparent:

- i. A tendency to attempt the seizure of positions by all tank forces as at Tel Shams.
- ii The attachment of insufficient importance to mopping up and securing communications as demonstrated at Khan Araba.
- iii A weak or faulty reconnaissance doctrine. This was well demonstrated by General Laner's surprise at the appearance of an Iraqi force on his right flank. Had he had reconnaissance or other elements screening it, he would hardly have been, almost disastrously, surprised.

Both sides violated Guderian's *klotzen, nicht kleckern* rule. In the defensive both did so successfully, in the offensive both suffered setbacks as a result. In the opening phase the Israelis had little choice: lack of depth limited them to a tactically mobile defence. Combined with a high attrition rate, this required forces to be sent into combat as they arrived at the front. Any delay might have resulted in the war spilling over onto Israeli territory. It would definitely have meant the loss of the heights which the reserves might find impossible to regain. Similarly, had the Iraqis not attacked when they did rather than waiting for the bulk of the division, Laner would have outflanked Sa'asa and, perhaps, caused that part of the line to be cleared. On the other hand, the Syrian failure to employ the mass of their armour in the initial onslaught, allowed the Israelis the luxury of facing odds of 3 : 1 (540 : 177) rather than the markedly higher ones theoretically possible. There is, of course, the question of whether the terrain permitted the employment of more tanks in the opening move. On the Israeli side examples of dispersion of effort are to be found in General Peled's actions on the 10th and the tank assault on Tel Shams.

While the Israelis had demonstrated the effectiveness of mobile defence, it fell upon the Syrians to show what can still be done with static defences. They did demonstrate that well designed static defences can stop, or at least blunt, an armoured thrust.

They also, however, demonstrated that mobile covering forces are essential if such defences are not to be outflanked or, if breached at one point, rolled up. Before reaching their static positions, the Syrians made very good use of a combination of *pakfronten*, tanks and artillery — the latter two covering the withdrawal of the anti-tank weapons once these had blunted the Israeli thrust at any given time and place. Particularly interesting to note was their continued, effective, use of conventional anti-tank guns and recoilless rifles. Anti-tank guided missiles were less dominant on this front, probably largely because of terrain factors.

Overall, it was armour that decided — from almost overrunning the Golan, via defending it, to finally stopping further expansion of the new Israeli enclave. This performance, in terrain not generally suited to armour, conclusively demonstrated its continuing viability. Operations of this campaign

147. S.L.A. Marshall: *Tank Warrior in the Golan* (Military Review, January 1976), p 6, 8.

also showed the continuing validity of many basic elements of armoured doctrine.

CONCLUSION

The two preceding sections of this article have outlined the employment of armour during the 'October War.' Additionally, it has been attempted to highlight particular points of interest, notably examples, regrettably abundant, of the aberrant employment and handling of armour by both sides. This section, after some brief concluding comments on armour in this conflict, will move on, again briefly, to consider the future of armour in the light of this experience. More so even than the preceding ones, this section will reflect the writer's personal opinions.

At the tactical and technical level this conflict abounds with lessons for armour, including, for instance: The effectiveness of firing by platoons, the value of prepared tank positions, the volatility of the M-48's hydraulic fluid, the photo-flash tendency of the BMP76's magnesium-alloy armour and the vulnerability of armoured personnel carriers generally to HES.¹⁴⁸ At the operational level, however, there is rather less than might have been expected. In general it tended to confirm the validity of most current thinking on 'armour'. Most importantly, it confirmed the continuing validity of the 'armour' concept as earlier outlined. Once the Israelis had adopted this, they began to master the situation. This is partly, the costly nature of delaying actions must be remembered, confirmed by Colonel Töpfer's figures relating tank losses of the first four days to the overall loss. For the Israelis this ratio lies at 1 : 1²/₃.¹⁴⁹

Other lessons at the operational level of direct consequence to armour, include:

- i The confirmation of the relative ease with which water obstacles may be overcome.
- ii The growing importance of night-fighting capability. This aspect has generally been neglected in this paper for want of corroborated information. It does appear, however, that the Arab forces and the Syrians and Iraqis in particular, made considerable use of pre-dawn attacks. Additionally, many anti-tank guns were equipped with light-intensification devices, presumably to take over from the anti-tank guided missiles as primary weapon after dark.
- iii The confirmation of the effectiveness of modern anti-aircraft equipment. The air aspect has also been neglected here, largely for space

reasons. Largely due to the air defences, the only major contributions of air power lay in blunting the final stages of the Syrian offensive and in attacks on Egyptian thrusts. In each case, however, the brunt was borne by Israeli Armour.

- iv The confirmation of the continuing validity of the 'indirect approach' concept.
- v The resurgence of anti-tank capabilities.

This last point, especially in regard to anti-tank guided missiles, has been largely responsible for the current 'anti-armour' trend. The motto appears to be: it can be destroyed, therefore it is of no use. While it is true that the newer anti-tank guided missiles are impressive weapons, they do still have considerable weaknesses, shared with the older ones. Probably their major weakness lies in their relatively low speed and resultant long time to target. While they remain guided rather than homing weapons, human limitations will prevent this being much reduced from its current average of 10–15 seconds. This weakness brings with it three major problems:

- i In poor visibility conditions, night, rain or smoke, it may not be possible to keep the target in sight for the entire period. Additionally, when using light-intensification devices, there is the problem of the bright tracking flare.
- ii Terrain conditions may be such as to allow the target to move out of sight after the missile has been fired. An average tank could cover 100 metres plus in this time. Such movement on the part of the tank could be random or as a result of noting the missile's firing.
- iii Having noted the missile's firing, the hostile forces can put fire, machine-gun, direct, artillery, rocket launcher or mortar on the supposed control point. The gunner and control units are often soft targets. Such fire will often result in loss of control over the missile.

Other problems of anti-tank guided missiles include the possibility of the wire snagging and the distance required to gain control of the missile – rendering short range engagements difficult. More exotic is the result of high explosive fire between the firer and the target. The detonation's shock waves can set up oscillations in the twin control wires. Charged as they are and moving in the earth's magnetic field, this can result in false signals

148. High explosive squash head, also HEP – high explosive plastic.

149. H. Töpfer: *op cit*, p 414.

being received by the missile. All the above is not to say that anti-tank guided missiles are not effective – they are very much so – but simply that they are not perfect and that they are possible to deal with. This was, of course, shown during the 'October War' when the Israelis used some of the missile's weaknesses against them.

That anti-tank guided missiles were, in fact, not quite as effective as is sometimes supposed is borne out by the fact that, even employed *en masse* as they were, they did not destroy even nearly the bulk of Israeli armour lost. This is indicated by various sets of figures which vary from 15% via 25% to 33%.¹⁵⁰

In view of the effectiveness of the other anti-tank weapons deployed as well as of tanks and artillery and the close range weapons, the 15% figure is probably nearest the mark. Even for the early phase, a figure in excess of 25–30% is unlikely if one bears in mind the same factors. The bulk of Israeli armour was probably destroyed by tank fire¹⁵¹ – as unpalatable as this fact may be to them. This appears particularly to have been the case on the Golan front.

Other anti-tank weapons will not be discussed here in detail, but they, too, have weaknesses which can be exploited. Newer concepts in this field include terminally guided artillery projectiles, rather dependant on a plethora of designators and excellent communications, as well as a variety of air launched weapons. One concept more difficult to deal with is that of the new anti-vehicle mines which can be dispensed by aircraft or rockets.

Whereas previously the main, non-armoured, threat to armour was seen to lie in air power, it is now seen in the newer anti-tank weapons. The 'October War', however, showed that both can be overcome. This factor and the results achieved by armoured forces during this war make it possible to regard the events of October 1973 as a conclusive vindication of armour – not only did it fulfil its usual tasks, it also overcame weapons specifically intended to stop it and employed *en masse*.

Armour will, of course, have to adapt in order to maintain its position. An initial step might be an increase in the complement of indirect fire weapons in armoured units. It may now also pay to include an infantry element in tank battalions and vice versa. Following the French

example of 50 : 50 would probably not be good : such units are at a loss facing, for instance, a pure tank force of a similar level (eg : Battalion : Battalion). On the whole, the current doctrine of creating combat teams by mixing components of various battalions is probably still the most adequate. Excellent training is, however, required if such a system is to succeed. The need for additional infantry (1 : 1 basis?) and supporting arms elements may well spell the demise of the brigade as we know it. Future armoured formations will probably lie between the current brigade and division levels in size. One option is represented by the proposed new British and French systems : combat groups controlled directly by the division, cutting out the brigade level. An alternative would lie in somewhat larger brigades operating under a corps level headquarters.

Protection will no doubt continue to improve with newer materials coming to the fore. Already many tanks are almost invulnerable (over their frontal arc) to all but the heaviest weapons. Laterally, stowage boxes and various stores give a certain degree of additional protection against most hand held weapons. On this subject, the large number of armoured personnel carriers destroyed during this conflict suggests that armoured personnel carriers should be given protection similar, if not equal, to that of the tanks they are supposed to accompany. Should such new armoured personnel carriers be based upon the battle tank chassis, powerpack, etc, the resultant economies of scale could absorb much of the additional cost. Such standardization would also be advantageous operationally. Further, the MICV approach is likely to have gained support as a result of the new realization of the anti-tank threat, particularly in its multi-turreted form. As regards fire-power little need be said. The gun has again proved itself as the best armament for the battle tank, particularly with armour piercing discarding Sabot rounds and still more so with these rounds in their fin stabilized form. More interesting may now, however, be shown in newer cannister and HE rounds to help deal with anti-tank teams. A modern version of the old *Nahverteidigungswaffe* may also be indicated here. With the progressive introduction of the newer fire control systems, as in the Leopard II prototypes and the AMX10RC, the gun will not only retain its lead over the missile at current optimum ranges, but will extend these.

150. C. Herzog: *op cit*, p 272 – note 'hit', even fewer destroyed; A.H. Farrar-Hockley: *op cit*, p 31, 22.

151. A.H. Farrar-Hockley: *op cit*, p 31, 22.

It must be noted that the missiles effective range is limited not so much by its performance, as, so far, is the gun, as by the ability of its team to acquire targets at extreme ranges.

Armour in the future will tend even more towards the combined arms approach. Its formations will include self-propelled guns, anti-aircraft tanks (gun and missile), armoured engineer vehicles and, probably, reconnaissance vehicles in greater proportion than before. The latter, in particular, may prove useful in helping armour avoid situations similar to some of those encountered in October 1973. Armoured mortar carriers and multiple rocket launchers also should prove of interest. More than ever before these will be true general purpose formations with great firepower, mobility and protection. These will not, of course, be able to accomplish all tasks or even all they can, equally well. Armour cannot and does not expect to out-class other branches on, as it were, their own ground. Like the kind of beasts with which it, or more correctly, the tank, has been compared, it merely represents what is probably the best all-round force available in its field. It is not, for instance, as powerful in some respects as artillery, but the latter, like the rhinoceros, while considerably more powerful is also markedly less mobile. Perhaps the greatest impact of the latest Arab-Israeli war lies in the reaffirmation of armour's general purpose nature and the greater realisation of the necessity for a combined arms approach to armoured forces and their close co-operation with other branches.

In closing, it must be admitted that armour is and always will be, vulnerable. This was no new discovery of the October war and in this armour is not alone. Here it is possible to return to the, perhaps not entirely apposite motto: 'In the land of the blind, the one-eyed is king.'

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