The New Pentomic?

by John Moore

Evidence of modern high-intensive combat in Ukraine highlights the difficulties on the modern battlefield of concentrating enough forces to achieve decisive success at the tactical and operational level. The ubiquitous nature of drone technology makes it increasingly difficult not to be rapidly identified and face effective and timely depth fire of increasing accuracy and flexibility. Along with cheaper satellite and electronic intelligence technology, as well as the rich information environment created by social media, these sources have created for the first time in military history an almost transparent battlefield for both sides.

The result has been seen most evidently in Ukraine where the ability to manoeuvre any above company sized formation on the battlefield has led to such units being rapidly identified and met with devastating fire. This was highlighted in the Ukrainian summer counter-offensive of 2023. Or more correctly, what transpired to be a series of unconnected and uncoordinated counter attacks that disintegrated into squad or platoon sized advances from treeline to treeline or from hamlet to hamlet, where obstacle crossing became difficult in the extreme and increasingly time consuming. In such conditions a decisive operational scale breakthrough was impossible. The conflict rapidly turned into an attritional battle within fixed defences. A grinding struggle which will go to the side with the greater depth of resources both in material and manpower.

The difficulty of exploitation has been compounded by the need for forces once they have broken into the enemy position to dig-in and seek cover to avoid being identified and struck by the inevitable response from artillery, first person view (FPV) and tactical drones. It means that any breakthrough has difficulty in maintaining impetus unless reserves are immediately on hand. The premium on defence becomes one of dogged resistance in fixed positions as a means of slowing any attack, reducing one's own vulnerability, whilst mobility, the characteristic of warfare that has so sought after this last 150 years, brings greater risk of being located and struck.

This vulnerability will apply to any element of armed force that requires fixed infrastructure. For example, airpower will be increasingly vulnerable to precision strike weapons launched from hundreds of kilometres away, whilst sea power will be pushed further away from the coast and where naval bases will be vulnerable to the same deep strike as airpower to missiles. Greater resources will have to be dedicated to resilience and protection through the deployment of missile defences, pre-emptive strikes in depth and again constant dispersion of assets.

So, is there a solution to the need to reintroduce decision on the modern battlefield if an attritional struggle is to be avoided?

A Blast From The Past

Perhaps the problems faced by armed

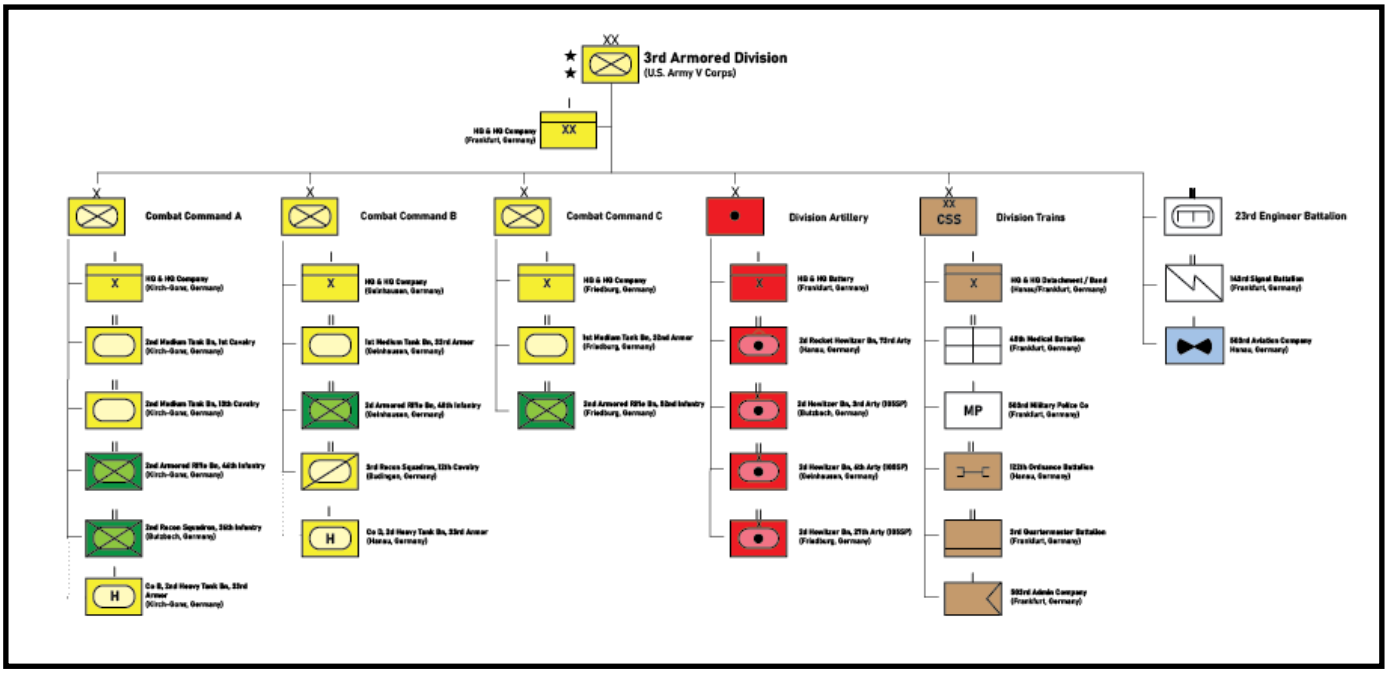

Figure 1. 3rd Armored Division Pentomic Organizational Structure *(U.S. Army Graphic)*

forces in the past may provide some pointers. In the 1950s the US Army was faced with a problem of operating large formations for effect and to achieve decision on what was perceived to be a nuclear battlefield. The existing divisional structure of regiments and brigades made the manoeuvre formations vulnerable to a tactical nuclear strike, especially so if the division was massing to achieve a breakthrough. The aim was to balance survivability created by increased dispersion with the ability to bring enough mass and firepower at the critical point to achieve a breakthrough and then to be able to exploit to decisive depth.[1]

The solution as it was perceived was the creation of the Pentomic division built around five combat teams (hence the 'pent'); formed on the core of around 4-5 infantry companies with support from armour, artillery, and engineers as required. In modern parlance a reduced regimental or reinforced battalion combat team. The key point was that the battalion command would no longer exist as the main manoeuvre unit and the traditional "triangular" divisional structure would disappear. Depth fire would be provided by divisional long-range artillery including nuclear tipped rocket artillery. It was felt that under nuclear strike conditions enough combat capability would be retained and be mobile enough (it was envisaged that infantry would be mounted on armoured personnel carriers (APCs)) to achieve decisive mass at key points and be able to exploit. There was an assumption that once a breakthrough had been achieved then the threat from enemy nuclear firepower would recede as the defender would be striking behind their own lines.

The experiment did not last long as the expense of mechanisation and a change towards flexible response rather than nuclear warfighting led to a return to a more conventional structure. That was compounded by the US Army's increasing involvement in Vietnam and a focus on counter-insurgency warfare.

Furthermore, at a more fundamental level regardless of these changes in war-fighting doctrine, the practicalities of maintaining a span of command of five combat units both at divisional and combat team level was proving difficult with the technology of the time. This, alongside having to coordinate fire support, provide timely intelligence and sustainable logistics resulted in the concept being ultimately abandoned.[2]

Is The Pentomic The Way Forward?

The nature of modern high intensity combat as described above drives the need for a means of producing decision on the battlefield, if attritional war is to be avoided.

A devolved battlefield organisation as envisaged within the Pentomic concept should:

Increase survivability. The defender would have to ruthlessly prioritise or dissipate effort in countering a number of tactical offensive operations each with the potentially to achieve a breakthrough. Offensive action must be based on the assumption that any build-up or unit on the line of approach will be identified and countered. By dispersing to smaller combat units this is less likely to be achieved or at least face the defender with the quandary of having to choose were to focus their own defensive effort.

Rapid, concerted and contiguous offensive action could enable a decision. Yes, there will be losses, but it should not lead to the complete failure to mount offensive action. The defender will in turn have to commit his own forces and firepower which can create opportunities for a flexible attacker. It should be noted from experience in Ukraine that main front line combat units do seem to be around company sized. That formation size has enough combat power to achieve local success while having enough resilience to sustain combat for a useful length of time. Such a new "Pentomic" structure would operate at not just the combat team level but use the flexibility of the company structure within that battle group/combat team. Each in turn being its own "Pentomic" combat unit. Improved situational awareness at every command level would provide that flexibility.

It would provide the means to exploit as even if the break-in force is expended then there should be additional units that can make use of that opportunity. Such opportunities are likely though, to be fleeting.

Enable depth fire to be directly connected to decision on the ground. Otherwise, such fire, no-matter how effective, becomes an attritional tool.

Stress the defender as the potential for multiple thrusts exists in a divisional area. This if connected to simultaneous supporting depth fire has the potential to disrupt or delay the defender's response.

Likewise on the defence such a Pentomic structure has sufficient reserve potential to meet a range of attacks and will require increased effort by an attacker to neutralise a defence in depth and use that most precious of assets – time. A dispersed Pentomic defence based on areas of concealment such as villages, towns, wooded and rough terrain can allow for gaps as these can be covered by precision fire at every level and improve unit survivability.[3]

So, it would seem something similar to the Pentomic structure may have something to teach in terms an answering the battlefield problems of today. In terms of issues like command, control, communications, and intelligence (C3I), technology has moved on significantly. Even the smallest unit has, through FPV drone technology, the means of battlefield reconnaissance and precision strike. Whilst distributed command systems have great resilience and an ability to jump echelons in terms of targeting. Whilst higher command echelons will have a clearer picture which should enable them to pre-empt the requirements of

engaged combat units and provide battlefield deconfliction on a messy front. It may be able to prioritise effort when opportunities emerge not immediately apparent to the units in combat.

Problems?

We should not under emphasise the point that a range of issues exist that would still create difficulties for more dispersed operations as outlined above.

C2. For effective use of such a Pentomic concept command would have to be distributed forward at the tactical level to best exploit success and ensure survival. Neighbouring and supporting units would have to react accordingly either in being 'pulled' towards that success or continuing active operations to pin the enemy or even exploit opportunities as the opponent reacts to a breakthrough elsewhere. So C2 will not just have to be vertical but horizontal within the division if rapidly emerging opportunities can be exploited. Higher command echelons, from the divisional above should have a greater view of the deeper battle so can focus on the commitment of reserves whilst providing depth fire not just to disrupt the defender at the operational level but with precision weapons should be able to contribute to the tactical battle.

The swiftness of a defender's response. It is clear from operations on the Ukraine that any breakthrough can be quickly stymied or sealed off by rapid reaction by artillery and FPV drones. It has created a dynamic where any unit involved in a breakthrough immediately goes to ground to secure its immediate gains. Creating the time for reserves to be deployed by the defender. In fact, operations outside any form of cover have become problematic, canalizing any advance and make its route predictable. Even the best protected of modern armoured vehicles is vulnerable in the open to everything from precision artillery, anti-tank guided missiles (ATGMs) and drones. To minimise losses there is a powerful trend towards dispersal and cover; yet which reduces impetus and the chances of exploitation.

Logistics remains as ever problematic. To sustain a breakthrough logistics needs to be timely and robust and able to withstand the disruption which will come. How can you ensure the ready supply to dispersed forces to ensure the ability to continue the fight? Technology may provide some solutions such as heavy lift drones or even robot vehicles. But it may be that the battlegroups detailed above have to be treated as logistically expendable. That is once they have consumed fuel and ammunition, in in effect that fighting power, they have to be replaced by other fully stocked battlegroups to ensure the continued advance or even to secure the ground seized.

Time expensive activities such as obstacle clearance, bridging and stocking of logistics all face the risks of being identified and vulnerable to a response from fire, whilst the defender can develop his own response and counteraction.

Ultimately any success will depend on a high level of initiative and a willingness to gamble on success. This will have implications for training and leadership at every level.

Simultaneous action across a broad front may the only way of creating a dynamic situation and enough doubt in the defender's mind that their response is constrained. Allowing for something that looks like exploitation and success. The "Schwerpunkt" will be where it is found in the course of offensive operations and not pre-ordained focus of operation. The focus for achieving success may rest with breadth rather than the assumption of achieving mass and depth on a short section of the front.

All the above point to what would be seen in past military theory and doctrine as the classic mistake of the dissipation of forces, when under current conditions such a broad dispersed approach may be the only way success is achieved. All this at what would been seen as achieving success only at the tactical level, rather than at the operational level where decision has been sought over the last 100 years.

Experience from the Ukraine has highlighted the difficulty of identifying the culmination point. On a transparent battlefield it is clear that some operations have culminated before they have begun as accurate depth fire, the ability to generate obstacles such as scatterable mines disrupt offensive operations before even reaching the departure line. Is it by maximising the potential actions available at the divisional level a means of mitigating this risk?

Moreover, does all the above really point to a more active form of attritional conflict where ultimately victory does ultimately go to the big battalions? Such an outcome would raise a question mark over the whole nature the Western approach based on relatively small numbers of regular forces with exquisite equipment. In the case of the British Army would it be better in 2024 to have any army with 1000 upgrade Chieftains than one of a 148 Challenger IIIs? Yes, a loss of some combat power with the ability to achieve simultaneous actions across a wide front with resilience to persevere? It sounds more like 1917 than 2017.

An Exquisite Capability?

In the 50's the Pentomic division was seen as potential solution to the tactical and operational problems of a nuclear battlefield, but it was seen in the context of a mass army. The US army by the 1960s consisted of 1,000,000 men in 16 divisions.[4] This was sustained by a conscription system and with a significant reserve capability. What we see in the Ukraine is the fact that there is no substitute for mass and that within this context being small highly trained and with exquisite equipment is no longer enough. Whether in terms of equipment or manpower you can never have enough "stuff". A lack of mass of a transparent battlefield will, no matter how good

those forces, be disrupted by enemy fire, will not have the resources to stretch the enemy across a wide front creating the opportunities for success, or simply sustaining combat. Small forces no matter how good cannot be in two places at one nor can they fight continuous battles without relief.

Conclusion

Every war went it is fought has its unique features making it different from its predecessors. What we need to create is a military organisation that has the ability to achieve decision on the battlefield but has the resilience to sustain combat whilst responding to the unique tactical operational and technological circumstances it faces. The most successful armies (actually military systems) are the ones that learn quickest.

Mr. Jonathan Robert Moore is a retired British civil servant who served with the United Kingdom's (UK's) Ministry of Defence (MOD). He graduated with a degree from Manchester University, England.

Notes

[1]Captain J House, Towards Combined Arms Warfare, Combat Studies Institute Research Survey 2, 1984; Major R Doughty, The evolution of US Army Doctriner1946-76, Major J Smith, Pentomic Doctrine: A model for Future War, School of Advanced Military Studies 1994.

[2]The Pentomic structure did not apply to the US Army's armoured division where the long standing "combat command" organisation was felt flexible enough to fight in the manner described above.

[3]The original Pentomic doctrine posited a similar concept in defence as a means of surviving tactical nuclear strikes. Smith Ibid.

[4]P Tsouras, Changing orders, p.89

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"Blitzkrieg"