The fighting soldier, warrior or informant?

J. Meijer

1. Introduction

'A great part of the information that reaches us in a war is contradictory, an even larger part is wrong, and by far the most is highly dubious'. In the view of the nineteenth-century Prussian strategist Carl von Clausewitz the value of information is described in a rather pessimistic vein. A full century later the value of information is unquestioned, and there are only luxury problems concerning the way to control the inexhaustible flood of information, the determination of which information at which particular moment is relevant for whom, and how to avoid 'information overload', for instance. In the present, ever-expanding information world, one thing is clear: the advancing information technology will influence the behaviour of the soldier quite drastically. Hitherto unthinkable activities will become reality in the near future, and the role and value of the fighting soldier and his group will acquire a different significance. In this article I want to describe this different role of the soldier. I will begin with a short retrospect, followed by a picture of the soldier at the beginning of the twenty-first century. Subsequently, I will attempt to describe the possible development of the 'soldier as informant', simultaneously pointing out the limitations of this source of information. I conclude by answering my self-imposed question: 'The fighting soldier, warrior or informant?'

The title of the article identifies the fighting soldier as the central person. That is not a coincidence, but it is founded on the fact that there has been a programme in the Royal Netherlands Army for some time now with the appealing name 'Soldier Modernisation Programme' (SMP). Its central theme is the increase of the effectiveness of the fighting soldier, while not forgetting his other non-fighting brothers. In the course of the article I will from time to time refer to the SMP. For the sake of the readability of this article the term 'fighting soldier' will be alternated with others. The article has been written on a personal basis and consequently it does not have the status of a formal army document.

2. The past

The fighting soldier of the past

Since time immemorial the soldier has been used as an instrument of battle, and there are dramatic examples of commanders who did not worry about a man more or less. The term 'cannon fodder' was not invented for nothing in this respect. In spite of the low esteem of the battle power of the individual soldier, which lasted for centuries, there were some attempts to develop and improve instruments for the soldiers with which to fight and preferably win battles. In this long line of developments the cudgel became a very handy and effective rifle, the harness an effective fragmentation and bullet proof vest, and the banner a radio. Characteristically these developments were often directed at only one aspect of the soldier's equipment and generally there was not too much concern for an integral approach. The result was a literally overweight soldier, slowly sinking away into the mud, unaware of his position, let alone that of his mates.

The fighting soldier as informant in the past

1600, The Battle of Nieuport. Who does not know this famous date, even if at the same time we have hardly an idea where Nieuport is situated or what exactly took place there? Just a

short reminder. In June 1600 the army of the Republic of the Seven Provinces under the command of Prince Maurice marched into Flanders. After an amphibious operation, unique for the Netherlands, a famous battle was fought against the Spanish oppressor on and near the beaches and dunes of Nieuport.

Figure 1: The soldier of the past

The tactics used at the time were based on the employment of cavalry as the surprise element, exploiting initial success, artillery as a support element, and the soldiers, the infantry, as the manoeuvre element. The role of the soldier was primarily that of conducting close battle, his colourful uniform giving information to the commander as to where exactly his unit was locked in battle. Literally flying the banner was, certainly at the time, a matter of life and death. At the time of WWI the role of the soldier was still almost the same as during the Battle of Nieuport, but during and certainly after WWII this began to change greatly, partly because of instruments such as the radio, radars and binoculars becoming available, though slowly at first. It was recognized that the foot soldier was more than mere battle power personified, and that he could be inestimable as supplier of information. In 1960 Lieutenant Colonel US Army Irving Heymont (1960) wrote about this:

> Ground reconnaissance is the best known method of gaining tactical information and is performed by personnel manning observation posts and/or surveillance devices […] Army troops infantry, armor and engineer elements are best suited for patrolling.

It was characteristic that the role of the soldier and certainly his group became more important, but the information flow was in principle only directed vertically and bottom-up. The exchange of information inside the group, the horizontal information flow, was limited to flag and sound signals and, wherever possible, human voice. Top-down provision of information was very much in its infancy at the time. The issue of orders was in practice the only moment when the subordinate got information. The further one was removed from the source of information in hierarchy and distance, the more the information diminished, the victim usually being the ignorant fighting soldier.

3. The present

The Soldier Modernisation programme

'Lessons learned' of the conflicts fought in the last twenty years of the past century indicated that a drastic change with regard to the fighting soldier was in order. Simultaneously, an ever-increasing pace of technological developments and capabilities fuelled this feeling. The emergence of the computer and positioning devices is a good example of this. In NATO context a number of activities were undertaken with respect to the soldier, mainly focusing on a feasibility study. It was investigated whether the technological developments as foreseen in the nineties could also benefit the fighting soldier. The outcome was extremely positive and the consequence was that in 1994 the idea of increasing the effectiveness of the fighting soldier was laid down in an international programme. The Netherlands too joined the bandwagon and around 1995 the SMP activities were started in the Royal Netherlands Army, at first under the auspices of the Infantry Training Centre and since January 1997 as an independent programme directly controlled by the Army Staff. *The policy framework SMP*, a document agreed upon by the Dutch parliament (Kamerstuk, 1997), outlines the targets of SMP in general terms (Meijer, 1997). A major point is the increase of the effectiveness of the fighting soldier on foot by optimizing his equipment and devices. The optimalization process has to be balanced between five *capability areas*: lethality, mobility, sustainability, survivability, and command and control. The equipment of the Dutch soldier is known for its high quality, but in spite of this the setting up of an integral programme is justified.

Figure 2: The modern soldier

One reason for this is the absence of coherence in the soldier's equipment, many pieces being not very compatible with each other, which results in sub-optimal functioning and a high total weight. In addition, as yet limited use is made of all sorts of modern, recently developed devices already used in the civilian world. An example of this is information technology with its almost unlimited possibilities due to the advancing miniaturization. There are also many possibilities for new fabrics with a very small volume and weight that can give protection as well as comfort. At the beginning of the twenty-first century we see a fighting soldier whose equipment is changing fast and we are facing the need to be constantly on the look out for improvements in ever-returning cycles.

The fighting soldier on the brink of the twenty-first century
In the past few decades spectacular developments have demanded everyone's attention: much improved tanks, helicopters (transport and combat), high-tech frigates, a multifunctional landing and transport vessel, etc. In this turmoil of *developments* attention for the improvement of the equipment of the fighting soldier lagged behind at first. However, the tasks for the armed forces have undergone drastic changes as a result of global developments. The fixed pattern, established over decades, of operational deployment in pre-determined areas went overboard. The North German plains were replaced by, for instance, Cambodia, Bosnia and Eritrea. On a global scale the Gulf War was the first clear indication that the changed tasks and world-wide deployment, accompanied by geographical and climatic aspects, would also have far-reaching consequences for the fighting soldier. A more recent example is the Dutch deployment in Bosnia, where tanks and other armoured vehicles fulfil an important role, but where the real work is mainly done by the foot soldier. It consists, amongst others, of observing and reporting, carrying out foot patrols, searching of houses, villages and areas. Essential elements are showing armed presence, the interaction with the local population, and perhaps most importantly, being an informant.

The fighting soldier in the twenty-first century, a look into the near future
It is very likely that in the very near future drastic changes are going to take place in the way of operating of units. In this context there is already talk of digitalized battalions, mainly consisting of digitalized (fighting) soldiers. To get an impression of the equipment of such a warrior, some pieces of equipment will be surveyed here.

Figure 3: Optimal observation

The infantryman (let us assume that this arm is leading the way) is equipped with a so-called Soldier Digital Assistant (SDA). This device is at the heart of the whole concept of the digitalized soldier and is mainly intended for the determination of his position. Not only his own position is displayed, but also that of his group members, as the SDAs of the individual infantrymen communicate with each other. The SDA is fitted out with integrated navigation modules, based on the long-serving Global Positioning System, and an Inertial Navigation System (INS), which is intended as a back-up for the navigation system. Making use of step counting and the measuring of air pressure differences, INS is capable of indicating the position of the user in case of a breakdown of the navigation modules. Apart from that, SDA is fitted out with a digital compass, which can be used not only for the infantryman himself, but also for his weapon (observation and aiming).

Operating the SDA, the soldier's central computer, is extremely simple and to a large extent takes place through voice recognition. The integrated digital map does not only display the soldier's own position but also that of the group members, the commander and any possible obstacles, like mines, etc.
An opponent's discerned position is automatically displayed as well. Warnings of opponents or other threatening situations are conveyed by vibrations from his battlefield watch. The integrated soldier radio ensures the fully automatic transfer of messages or images by order of the soldier. The radio, as it were, searches the receiver in the digital field and generates just enough energy to guarantee a 100% certain reception of the message. There is automatic switching between the group net, the platoon net and the Battlefield Management System (BMS). This system is a network of automated systems which acquire, process, present and distribute information for the execution of the operational task, from the single platform, e.g. the armoured infantry vehicle, up to battalion size. Another aspect of the new equipment is an all-conditions independence with regard to observation. The rifle is fitted out with sights, capable of always generating an optimal image. They contain a state-of-the-art digital camera, night vision and thermal imaging. Due to this technology it is possible to observe even when there is minimal light (e.g. the light of stars and moon) or through difference in temperature of objects against their environment. There is also a built-in identification module allowing Identification Friend or Foe (IFF).

The relevance of the near future vision
The picture described above could be a Vernean fantasy for some, but I am convinced that within a decade or so such a digitalized infantry group will be active, indeed. That this development will have enormous consequences for the deployment and actions of dismounted units is also evident. Command and control will become much more direct and clear, the decision making process will be fed by *real-time information* and less founded on conjecture. Units of this type will be able to act much more independently, with a guaranteed exchange of information with the higher echelon. Existing tactical procedures at group and platoon level are based on the unit acting without any ICT means. The real challenge therefore is to recognize the consequences of the introduction of these devices at relatively short notice and to anticipate timely on them. Education and training requirements will have to be adapted as well.
Of course it is possible that some of the described devices may break down for some reason or other and in the development process this eventuality is taken into account. The system has a built-in automatic priority that will become active the moment there is a failure. Thus, the radio will receive the remaining energy the longest, and weapons can still be operated purely mechanically. It is extremely important that in their education and training soldiers are still taught and trained how to survive under abominable circumstances and to keep on carrying out their tasks, however more difficult.

4. The future

The certainties
In the policy formulated by the Army Staff certain ideas about the (fighting) soldier have also been incorporated. As Major General Mammen, Director of the Policy and Planning Department of the Army Staff, once said:

> *The role of the fighting soldier will be and remain of essential importance. Irrespective of how superior our weapon systems and materiel may be, the foundation of our armed*

> *forces is the soldier, for in the last instance he is the only instrument for really gaining territory, in its general sense* (Mammen, 1999).

The saying 'Peacekeeping is not a soldier's job, but only a soldier can do it', leaves no uncertainties about the role of the soldier in the present-day peace support operations.
More aimed at the role of information is a statement from the Army's *Policy Vision Command and Control* (2000):

> With the help of modern technology the individual soldier must acquire a picture of what goes on around him, and this picture will be transmitted to the other individuals in his direct vicinity.

The current doctrine documents stress the concept of sustained battle and, independent of daylight and weather, units must be capable of acting with various degrees of swiftness, as required by moment or place. One condition for this is full 'Night Capability' of the ground component, including that of the fighting soldier.
It is certain that technological development will continue at an ever-increasing pace and result in devices that will lend themselves excellently for application. The name SMP already indicates that it is not an exclusively Dutch programme, but that it has a strong international orientation. It is therefore not a surprise that we, in the Netherlands, will now and in the future make use of the experiences and current developments of our allies. Starting points for this co-operation have been identified among the NATO members, such as the systems approach and the use of the same criteria with regard to lethality, mobility, survivability, sustainability and command and control. The role of the fighting soldier is secure in the future; his value is broadly understood as combat power and as source of information.

The limitations
The *Command and Control Vision* (2000), already quoted above, in the same passage also indicates a limitation:

> In the development of (soldier) systems it has to be taken into account that a soldier will have to be able to fight and that the application of technology must not lead to the soldier being more occupied with his (information) system than with his weapon.

In the drive for more developments, especially those in ICT, there is always the danger of overdoing it. Too much of a good thing, too much information, will lead to uncalled for effects, especially for the fighting soldier. In the SMP these limitations have been recognized and they are incorporated into the realization. The designers are asked to make things as simple as possible; the computer must be operable with three switches; build in filters; make automatic what can be made automatic, etc. When acquiring new materiel, only choose those modules that have proven to yield operational surplus value. Adopt an evolutionary acquisition policy and make maximum use of existing (partial) products available on the commercial market. From the start, involve the future user in the development and testing; he has got to work with it and he will only do so if he has confidence in it.

5. Conclusion

A statement from Lieutenant General Paul J. Kern, US Army: 'If we are really good, and we are, the soldier of 2025 will be as effective as the tank of 1995'. It is rather forceful language to compare the combat and information power of the future fighting soldier to the

effectiveness of the fire power, observation and information capability of the modern Leopard 2A4 tank. Is this an instance of American bluff or does this general have a realistic view of the future? In this article I have stated that for much of the past the development of the soldier hardly got any attention; there was barely any difference between the foot soldiers in the Battle of Nieuport and the infantry in the Battle of the Marne in 1914. The middle of the twentieth century saw the beginning of a change in thinking and acting for the soldier. This change has continued until today, going faster all the time, and will eventually lead to a fully developed soldier fighting system, which in its turn will be part of a comprehensive information system.

Finally, the answer to the question whether the fighting soldier will be a warrior or informant. Now and doubtless in the future the soldier is and will be a fighting system, deployable in any imaginable scenario and under any circumstance anywhere in the world. The ever-improving image of his surroundings, however, will make his information capability greater. The answer to the question is therefore: the fighting soldier, an informative warrior.

References

Beleidsvisie Commandovoering (2000), [Policy Vision Command and Control] Landmachtstaf [Army Staff], Den Haag

Heymont, I. (1960), *Combat Intelligence in modern Warfare* Stackpole, Harrisburg

Kamerstuk (1997), Document 25 600 X, nr. 22, Tweede Kamer der Staten Generaal [Second Chamber of the States General, Document], Den Haag

Mammen, H.D.(1999), *De gevechtssoldaat, zijn rol in de (nabije) toekomst* [The fighting soldier, his role in the (near) future], Keynote address, MoD, Landmachtstaf [Army Staff], Directie Beleid &Planning, Den Haag

Meijer, J. (1997), *Beleidsraamwerk Soldier Modernisation Programme* [Policy Framework Soldier Modernisation Programme] Landmachtstaf [Army Staff], Directie Beleid & Planning, Den Haag