KEY NOTE ADRESS AT ASSOCIATION OF OLD CROWS

Over the past few months a group of dedicated and passionate electronic warfare professionals have been coming together to discuss and plan the revival of the Aardvark's Roost, the local chapter of the Association of Old Crows. With electronic warfare forming an integral part of the strategic defence packages it necessitated the electronic warfare community to get together and pool their knowledge and experience to optimise the utility of these systems.

The importance of electronic warfare is well documented. Since the electro magnetic spectrum was used during the 20 th century for warfare purposes, Electronic Warfare was developed to provide the edge in battles and today Electronic Warfare is seen as a major force multiplier.

As early as the start of the 1st World War it can be argued that Electronic Warfare had a significant influence on the outcome of the conflict, which changed history.
One example was during the Battle of Tannenberg (Prussia) during Aug 1914 where the Germans destroyed the Tsar's Armies. It was so ~~morally~~ demoralising that the Russian Army never recovered from this. Failure to properly protect its communications fatally compromised the Russian Army in its advance and led to their disastrous defeat by the Germans under Ludendorff and Hindenburg at the Battle of Tannenberg. Similarly, the interception and decryption of the Zimmerman telegram was an important factor in the US decision to enter the First World War. The Zimmermann Telegram was intercepted and decoded by the British cryptographers of Room 40.[1] The revelation of its contents in the

American press caused public outrage and contributed to the United States' declaration of war against Germany.

In the Battle of Tannenberg Communication Intelligence was used successfully by the Germans, by not only determining the opponent's order of battle but also by having tactical information available when the final offensive took place. It provided the defenders with intelligence so that they could concentrate their forces on critical areas and time their counter offensives to precision.

ELINT and electronic warfare became critical parts of the Battle of Britain. R.V. Jones was a key scientist in the "Battle of the Beams", defeating Nazi radio navigation systems. While the ULTRA COMINT successes against the Germans were not declassified until 1975, Winston Churchill paid homage to electronic warfare, and its companion ELINT, in his series on the Second World War: "During the human struggle between the British and the German Air Forces, between pilot and pilot, between AAA batteries and aircraft, between ruthless bombing and fortitude of the British people, another conflict was going on, step by step, month by month. This was a secret war, whose battles were lost or unknown to the public, and only with difficulty comprehended, even now, to those outside the small scientific circles concerned. Unless British science had proven superior to German, and unless its strange, sinister resources had been brought to bear in the struggle for survival, we might well have been defeated and destroyed."[7]..

You must have noticed that I used examples from the 1st + 2nd WW. Since then the use of electronic warfare increased/improved exponentially where today it is equal to fire power if not more important.

The Peace Keeping operations in which the SANDF is currently involved in are typical low intensity type of operations. The potential threat is in most cases rather unsophisticated but this does not mean that it does

not require sophisticated equipment to ensure the safety of our troops and assets.

To illustrate the point one just has to take a closer look at the Infra Red Based Man Portable Air Defensive Systems (MANPADS) threat.

Analysis of aircraft losses due to enemy action since the 1960s shows that at least 70% of all losses were attributed to passive heat seeking i.e. Infra Red (IR) guided missiles. This might appear surprising considering that radar guided SAM systems have longer engagement ranges, are faster, have higher manoeuvring potential, carry larger warheads and are equipped with proximity fuses.

The first air-to-air IR missiles appeared in the 1950s. The technology allowed more compact missile designs and made it possible to develop shoulder launched missiles, which became operational by the 1960s.

IR MANPADS are relatively cheap, quite robust, easy to operate and being passive, very difficult to detect which is why most aircraft that were shot down never knew what hit them! They also do not require the infrastructure often associated with radar guided SAM deployments which is often a dead giveaway of their presence.

Vast quantities of MANPADS have been manufactured (more than 700,000 produced since 1970). Large numbers were proliferated during the Cold War and immediate post Cold War era. Substantial quantities also found their way into the hands of "non state" organizations or the

so-called "asymmetric" threat environment. An estimate by Jane's Intelligence Review of Feb 2003 put this number as high as 150000.

Intelligence regarding the whereabouts of MANPADS, especially in the hands of "non state" organizations, is usually vague and unreliable. This in turn makes it difficult to anticipate where and when to expect MANPADS attacks.

Advanced new seeker head technology, improved rocket motors and aerodynamic refinements have further increased the performance and effectiveness of MANPADS significantly as 2nd and 3rd generation MANPADS appeared by the 1980s. Their performance was improved in terms of lethal range, minimum launch angle, manoeuvring potential and all aspect engagement angles. They also became more electronic countermeasure (ECM) resistant.

MANPADS therefore became even more lethal and specifically against more vulnerable platforms such as helicopters, light aircraft and commercial and military type transport aircraft and especially during approaches and departures. The slower speed of these platforms forces them to spend more time within the kill zones of MANPADS compared to high performance fighter and strike aircraft.

At least 35 MANPADS attacks on civilian aircraft are on record. Twenty four were shot down killing about 500 people in the process.

The role of Electronic Warfare and the importance thereof is therefore undiminished. This is especially important where there is a false sense of security during peace support missions. Intelligence is difficult to

come by. In many cases there are a number of role players such as the local military, UN and also . There is no front line of own troops. Very little governess and order exists outside the capitals of some Central African States where we operate with mainly fix wing transport aircraft. These aircraft and their crews need to be protected with state of the art equipment, which operates independently.

The importance of Electronic Warfare in the rest of the world is emphasized at the Association of Old Crows based in the US which boast with a membership of over 12,000 in 47 countries and it is actively engaged in advocating for the Electronic Warfare and Information Operations mission areas. At the Association of Old Crows convention held at the end of October there were over 138 exhibitors with representation from over 90 companies - a clear indication of the continued importance of the electromagnetic spectrum to the war fighter and industry alike. It is with this in mind that I find it encouraging to see that a new attempt is being made to get the local Aardvark Roost of the Association of Old Crows organisation established.

Dialog between all relevant Electronic Warfare parties - the military user, Armscor, the industry and research institutes is extremely important to ensure we anticipate and prepare ourselves properly against the current and future threats we will be facing. I have no doubt that you will have a fruitful conference and wish you well for the Electronic Warfare challenges in the years ahead."