



MILITARY COMMUNICATION: ITS ROLE IN THE DEFENSE OF A COUNTRY

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Abstract

This paper discusses on the topic of Military communication and its importance. Research is discussed on topics such as mediums of communication for the military, profits of having a good communication system in the military, and safeguarding communications from unwanted personnel, via encryption. Research indicates that a good communication in the military has shown a significant advantage to the same.

*Keywords:-Mediums of communication, Defense systems, Profits of communication
Encryption*

Introduction

In September of 1939, leading the German invasion of Poland, World War 2 begun. This war is, to date, the deadliest conflict in human history. Enigma was an encryption device made by Germany, which encoded letters from messages to different letters such that the chances of you guessing a letter correctly was approximately 1 in 1.59×10^{20} , which is 159 followed by 18 zeros. This gave Germany a huge advantage, since they could intercept and decrypt British messages much easier, whilst for the British it was nearly impossible. Alan Turing, in 1940, devised a machine to decrypt enigma letters, which were intercepted everyday via radio. This gave the Allies an advantage again, as they were able to collect valuable information such as dates and locations of naval attacks. This feat has been said to reduce the duration of the war by 2-3 years, saving millions of lives. This shows us the importance of communication in the military and in the defense of a country as a whole.

Theory

First of all, we must actually know what communication really is. Communication is any act of sharing or exchanging information with another individual or group. In the context of the military, this can mean a lot of things, such as:

- The exchange of orders from an authority to the army.
- Sharing information during or after a mission.
- During a time of crisis, sharing instructions to people for their safety.

And a lot more. To communicate, devices are made. In the military, sometimes they are modified to make them safer and make it harder for the enemy to get hands on internal information. Devices used can include:

- Radio systems
- Military phones that are modified to use VoIP



- Intercom devices
- Remote control systems
- Data link systems

Etc.

Communication systems are also used for controlling defense systems. Some defense systems that are not autonomous need to be controlled by humans using remote systems. This eliminates the need of humans to be staffed at defense and even attacking systems 24 hours a day.

However, what advantages will a country that has modern communication have against a country without sufficient communication? Firstly, the former will be much more organized, since managing a huge army without good communication is troublesome. The former will also be able to respond to threats faster. The former will be able to plan and coordinate attacks faster and easier. Good communications help get valuable information of the enemy. These, among others, are great advantages and make it near impossible for the enemy to be triumphant.

However, having good communications is nothing if they aren't safe; If it is easy for the enemy to get information, then that would be a massive disadvantage. So how is information safeguarded from the wrong hands? Encryption. Encryption is a process in which an original text, called 'Plain text' is converted into complex code called 'Cipher text'. This makes it much, much harder for unauthorized personnel to get information. The military uses two types of encryption, AES-128 and AES-256. The former is used for unclassified data, while the latter for highly classified data. The numbers at the end refer to the length of string of information. AES-256 is thought to be nearly unbreakable by brute force, since for any string of information, the number of possible combinations is approximately 1.1×10^{77} . That's an astronomically big number.

Experimental

15 people were asked the question, 'Do you think that communication is necessary for the defense of a country?'. Following are the results from this survey:

Table 1: Results of survey 1

| | Yes | No |
|---------------|-----|----|
| No. of People | 14 | 1 |

This clearly shows us that the general perception of people is that communication is necessary for the defense of a country.

Result

Research shows that communications is vital for defense of a country. Without good communication, defense would be much less organized and coordinated.

Conclusion

We can see the advantages of having good communication from research. It is used for control of defense systems. Medium of communications have to be chosen carefully, each device has a specific use. Also, safeguarding information is crucial, and encryption is used mainly.

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