

CONTENTS

Part one-Visual Signals to the mechanical age

Page 3.	Introduction
---------	--------------

- 4 Signals-You have a message
- 5 D-Day. Hugh Patterson
- 6 The message stays the same, its the delivery that changes
- 7 Sending a message
- 8 Keep it secret
- 9 Common ciphers WW1 and WW11
- 11 Keeping the message secret
- 13 Alberti wheel and Vigenere cipher
- 14 Cipher of Mary Queen of Scots
- 15 Black Chambers
- 16 Mechanical Age. Telegraph stations

Part two-The electro-mechanical age

- Page 17 Electric telegraph and Morse code
 18 Telegraph and Morse code on the battlefield
 10 World Wor technology
 - 19 World War-technology
 - 21 Both sides intercepted messages
 - 22 Visual Signals brought back
 - 23 A secret war Jan 1917 Zimmerman telegraph
 - 25 1917 a year of change
 - 27 1918 Stormtroopers and ciphers
 - 28 Between the wars

Part three- The electric age

- Page 29 Electo Mechanical
 - 30 WWII Technology changes
 - 31 Radio signals ENIGMA
 - 32 Signals Intelligence-Y stations
 - 33 Y-station direction finding
 - 34 Analysis Wars X stations
 - 36 ENIGMA and The Bombe
 - 37 Lorenz and Collosus
 - 39 Operation Bodyguard
 - 42 After the War ENIGMA and Lorenz.

INTRODUCTION

On the 29th October 2020, Paul Woodage of WW2 TV invited Ken Lloyd and Terri Mcgillivray for a Podcast on 'Signals' As a primer for his audience to further podcasts on a force multiplier in World War II.

The podcast theme was 'the message; the method; the moment'. Throughout time, messages rarely change. The method for sending the message is usually at the cutting edge of available technology. The moment at which a message is received determines it's value. Timliness and the ability of the receiver to use the information wins battles.

Following the podcast, there were requests for the information and slides to be presented in a written format.

The information for this presentation came primarily from public sources and interviews. The prime guiding source for the content came from "The Code Book"



by Simon Singh, a wonderful primer for understanding the world of secrets.

Ken Lloyd and Terri Mcgillivray

https://vintagesignalsteam.ca/

vintagesignalsteam@gmail.com

SIGNALS-"YOU HAVE A MESSAGE"

'You have a Message'

For more than 2,000 years messages have been sent and received. A birthday invitation sent by a roman soldier's wife on the frontier of Britain and the message signed "Heil Hitler" by a German ENIGMA operator in 1940 follow a similar and recognized style for writing a message. The format for messages rarely changes, but the sending of the message is at the forefront of available technology.



The story of messages is our story.

It is why a Scottish Queen was executed; the reason the Battle of the Somme was so bloody; why the United States joined in the First World War and the reason Hitler failed to stop the Allied landings on D-Day.

Secrets in messages need to be protected. Codes and ciphers from early history have been adapted and reused to protect the information. The terminology used when deciphering messages, would still be recognized by cipher clerks from the European Black Chambers of the 16th century. The German storm troopers crashing through the trenches in 1918, used a cipher that a Roman in 200 BC would recognize. Even the 'ENIGMA' poly alphabetic cipher wheel created by Scherbius and Ritter in 1918 was first conceived in the 15th century.

This is a story of how information has been passed through time and events this changed. "You have a message."

D-DAY 6th JUNE 1944 Hugh Patterson, Dispatch Rider 2nd Canadian Division

"You are going to smell burning equipment." The Beach Master, in charge of moving troops off the Invasion Beach walked down the sand to Hughie. "You are going to smell death. Do not look left or right. Follow me"

Hugh Patterson, from Caledonia, Ontario joined the Royal

Canadian Corps of Signals in June 1942. On D-Day+2 Hughie was a Dispatch Rider in 2nd Divisional Signals splashing off a landing craft ramp and pushing his motor bike up 'Juno' Beach, Normandy.

There were columns of rising smoke and in the smoke the smell of oil; salt water; and the sound of shouted orders.

Hughie said "some of us did look, there were bloated animals, a great number of German soldier corpses; we went to a small village to find 2 Division Headquarters. We slept in slit trenches ..., that night we got mortared... In the morning the wheat field in front was littered with the corpses of German Paratroopers."



Hughie and the 24 Dispatch Riders (DRs) who landed with him carried critical maps and orders between the units of the Canadian 2nd Division.

Riding motorcycles or driving Jeeps the DR, delivering dispatches to units close to the enemy.

Hugh needed to know where the enemy were.

But where was the enemy?

Hitler boasted his Panzer attack would drive the Allies into the sea.

It was now the second day of the Normandy invasion and no massive counter attack, any delay to the Panzers arriving was good news for a Dispatch Rider.

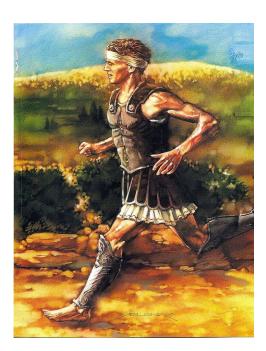


The message stays the same It's the delivery that changes

A message is carried; the technology changes. In 490 BC Pheidippides ran and carried the dispatch of the Greek victory over the Persians at Marathon,



In 1916 with the ANZACs in Gallipoli, dispatches galloped on horseback along the coast road avoiding Turkish snipers.



In 1939 with the speed of

the Blitzkrieg, Dispatches were speedily carried by motorcycle

Delivering a message can be broken down into:

- The Message. Keep the message safe
- The Method protect the Method of sending the message
- The Moment. Deliver the message in time to an organization that can use the information

Messages are meaningless unless the organization can understand the message, has the technology to use the information and the hard power to action the information.

