

Navajo Code Talkers

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Introduction

How to secretly send a message ?

- Steganography

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- Cryptography

How to secretly send a message ?

- Steganography
- Cryptography

But also..

- Translation of the message into an obscure language



Code talkers appeared in the first half of 20th century

Meeting of two conditions :

- The existence of the radio and the phone
- By that time, most of the cipher machines were too slow and fragile to be used for tactical field communications



Figure 1 – The SIGABA

Plan :

- Relation between the Navajos and the US in the late of the 19th century
- How Navajo code talkers have been recruited
- Study of the Navajo code
- Recognition and current situation of the Navajos

Navajos and US in the late of the 19th century

But

- The long walk
- Boarding schools

The long walk

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- Why they were being relocated
- How long it would take to get there

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- The journey lasted 18 days
 - Nearly 2000 Navajos died

Boarding schools

around 1900 : many American Indian children were in church-operated boarding schools



Boarding schools

They were forced to

- Speak in English
- Give up their traditional clothing
- Drop their native names
- Become Christian

Navajos as code talkers : how they have been recruited

- Preliminary : the code talkers during the WWI
- Pacific war and the idea of Philip Johnston
- The demonstration

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- First use of native American code talkers : Cherokee

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- Reaction of Germany

Pacific war and the idea of Philip Johnston

Philip Johnston



- 1942 : he proposed to the Marine Corps that Navajos and other tribes could be recruited as code talkers
- The major general Clayton Barney Vogel accepted to test the idea

The demonstration

Johnston recruited four bilingual Navajos and they went to Camp Elliott for a demonstration.



Camp Elliott, California

- Two of the Navajos translated in Navajo typical military field orders and sent it to their companions
- The companions translated the message in English

The demonstration

Example,

*"Enemy expected to make tank and dive bomber attack
at dawn."*

became...

The demonstration

Example,

"Enemy expected to make tank and dive bomber attack at dawn."

became...

"Enemy tank dive bomber expected to attack this morning."

The demonstration

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Translation was done in 20s.

The demonstration

- May 1942 : 29 Navajo code talkers are recruited
- 375 to 420 Navajos participated to the program

Navajo and Navajo code

- Why the Navajo language was a good choice
- How it works
- Evolution of the code
- Some flaws of the code
- Efficiency of the Navajo code talkers

Why the Navajo language was a good choice?

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- It remained mostly "unwritten"
- Complex grammar
- Imposture aren't easy to make

How it works

Because of a lack of military terms, a code was needed.

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- Dictionary for common military words



NAVAJO CODES NAME OF SHIPS		
SHIPS	TOH-DINEH-IH	SEA FORCE
BATTLESHIP	LO-TSO	WHALE
AIRCRAFT	TSIDI-MOFFA-YE-HI	BIRD CARRIER
SUBMARINE	BESH-LO	IRON FISH
MINE SWEEPER	CHA	BEAVER
DESTROYER	CA-LO	SHARK
TRANSPORT	DINEH-NAY-YE-HI	MAN CARRIER
CRUISER	LO-TSO-YAZZIE	SMALL WHALE
MOSQUITO BOAT	TSE-E	MOSQUITO

<https://www.cia.gov/news-information/featured-story-archive/2008-featured-story-archive/navajo-code-talkers/>

How it works

- A phonetic alphabet table

A	Ant	WOL-LA-CHEE
B	Badger	NA-HASH-CHID
C	Cat	MOASI
D	Devil	CHINDI
E	Ear	AH-JAH
F	Fox	MA-E

Figure 2 – correspondance for some letters

<https://www.cia.gov/news-information/featured-story-archive/2008-featured-story-archive/navajo-code-talkers/>

Evolution of the code

- The original dictionary of 211 terms has been progressively expanded to 411
- Multiple words to spell one letter

A	Ant	WOL-LA-CHEE
A	Apple	BE-LA-SANA
A	Axe	TSE-NILL

Figure 3 – multiple correspondances for one letter

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Some flaws of the code

Modern standards not respected :

- Non uniqueness of the translations of a message

On the field :

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Modern standards not respected :

- Non uniqueness of the translations of a message
- Kerckhoffs's principles aren't observed

On the field :

- Different evolutions of the code appeared
- Some battalions didn't have code talkers

Efficiency of the Navajo code talkers

Battle of Iwo Jima (1945) :

- Six Navajo Code Talkers sent more than 800 messages.

" Were it not for the Navajos, the Marines would never have taken Iwo Jima."

Major Howard Connor, signal officer of the Navajos at Iwo Jima

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- The only spoken military code never to have been deciphered.

Conclusion :

- Recognition of Navajo code talkers
- Current situation

Recognition of Navajo code talkers

Vietnam War : End of the use of Navajo code talkers

- Declassification of the program (1968)

Beginning of recognition of code talkers

- 1982 : Certificate of Recognition
- 2000 : they received medals from the US Congress
- 2008 : signature of the Code talkers recognition



Bronze copy of the congressional gold metal awarded to navaho code talkers

Current situation

- Poor conditions life
 - Unemployment
 - Health problems
- There is still some lack of respect



https://warriorpublications.files.wordpress.com/2017/11/trump_navajo.jpg?w=604

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