

Navajo Code Talkers and Technology

Panel

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Outline

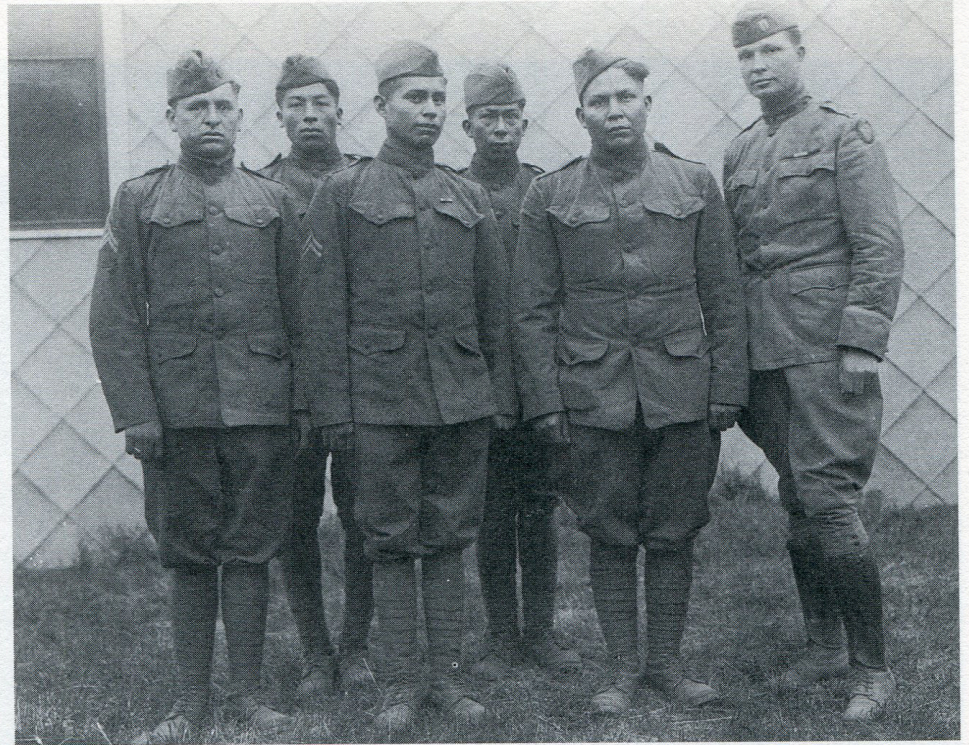
- Introduction
- Presentation by Bill Toledo
- Panel
- Why in LAF
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Introduction

- What is code talking?
- What was code talking...
- A language that was developed by the US military to communicate secret messages during WWII.
- It was based on Native American languages (Navajo, Comanche, Choctaw...)

Coded messages and war

- Prior use of Native American languages:
Oklahoma Choctaws
during WWI
(Meadows, 2002).

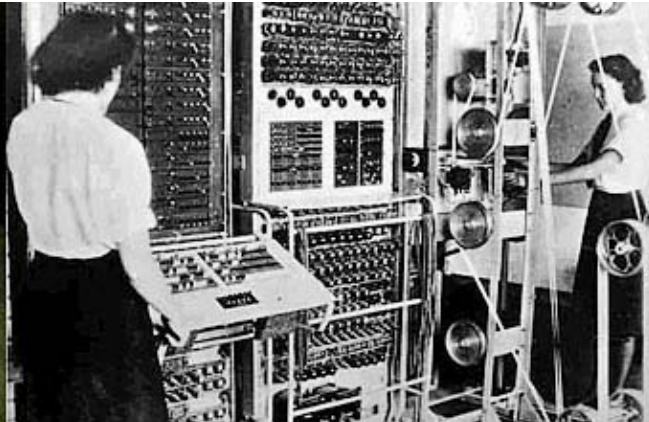


Choctaw "Telephone Squad," at Camp Devons, Massachusetts. Wanamaker Collection W6451, William Hammond Mathers Museum, Indiana University.

Coded messages and war

- Alan Turing and the development of “Colossus” a computer that was used to decode the German’s secret language called “Enigma” in the WWII (Kurzweil, 1990).

Enigma and Colossus



The first electronic digital computer used to “crack” coded messages

Enigma machine

[Image: “100 años de Alan Turing” -www.nistido.com]

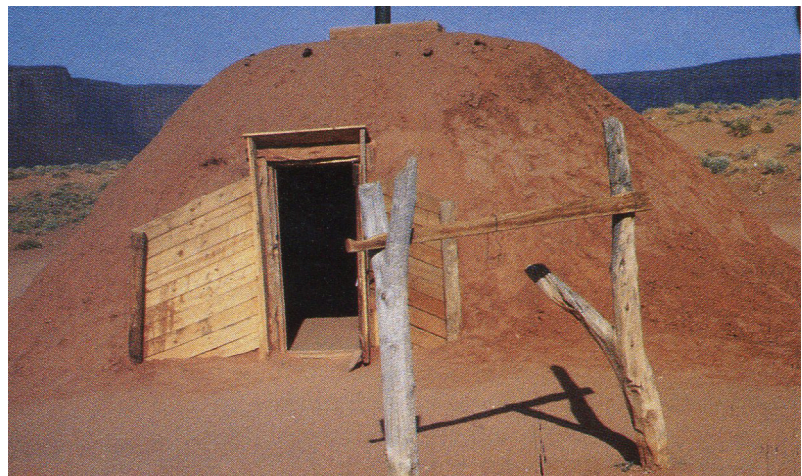
Code talking in WWII

- 17 Comanches (European theater)
- 300-400 Navajos (Pacific theater)



[Guadacanal camp- Official Marine Corps archives]

Left their reservations to
fight the war



[Navajo Hogan- "Winds of freedom" Bixler, 1992]

Code talking in WWII

- Phillip Johnson, a son of a reservoir missionary thought of himself as Navajo.
- In 1941 he presented the idea to a Colonel:
 - “What would you think of a device that would assure you of complete secrecy when you send or receive messages on the battlefield” [...] “That will always used orally, by radio or telephone, and never reduced to writing that would fall into the enemies hands”



[Phillip Johnson- Official Marine Corps archives]

Code talking in WWII

- The code was worked out by the Navajos after Philip Johnston's idea, and
- Following Pearl Harbor, it was approved as a pilot project. 300-400 talkers learned and used the code.



[Code talkers- "Winds of freedom" Bixler,1992]

Code talking in WWII



[Code talkers- "Winds of freedom" Bixler,1992]

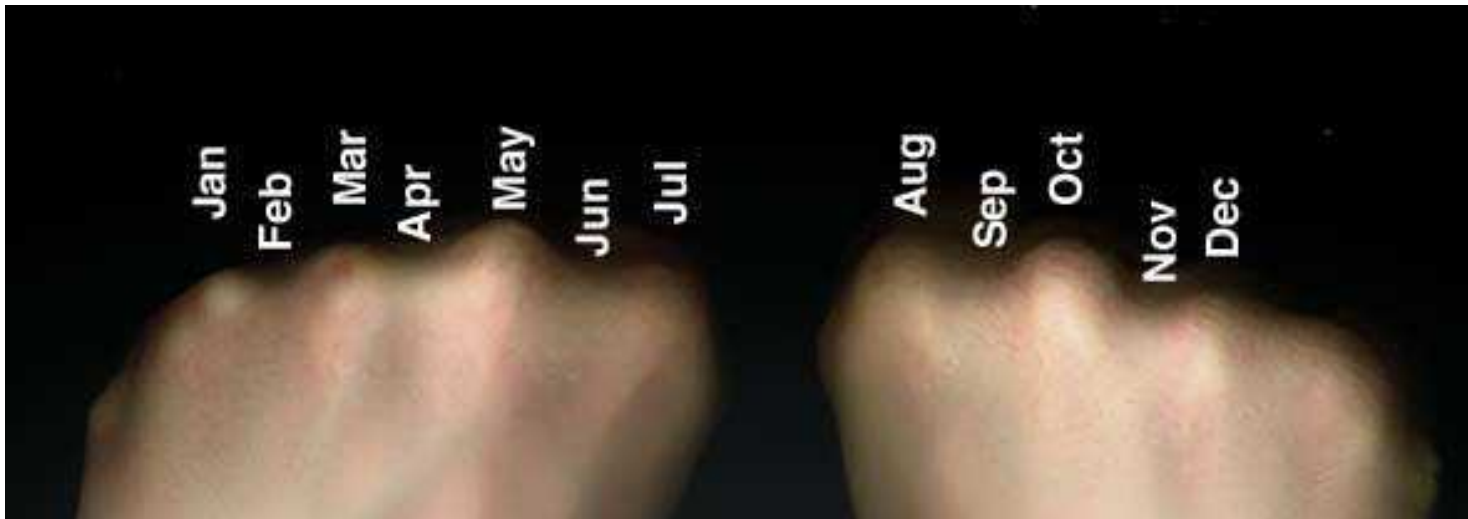
The code was never broken

Navajo code

- Navajos were used to mnemonic devices in their communication: devices such as a pattern of letters, ideas, or associations that assists in remembering something. (message sticks, smoke signals)
- Sending and receiving messages during war was important for them.

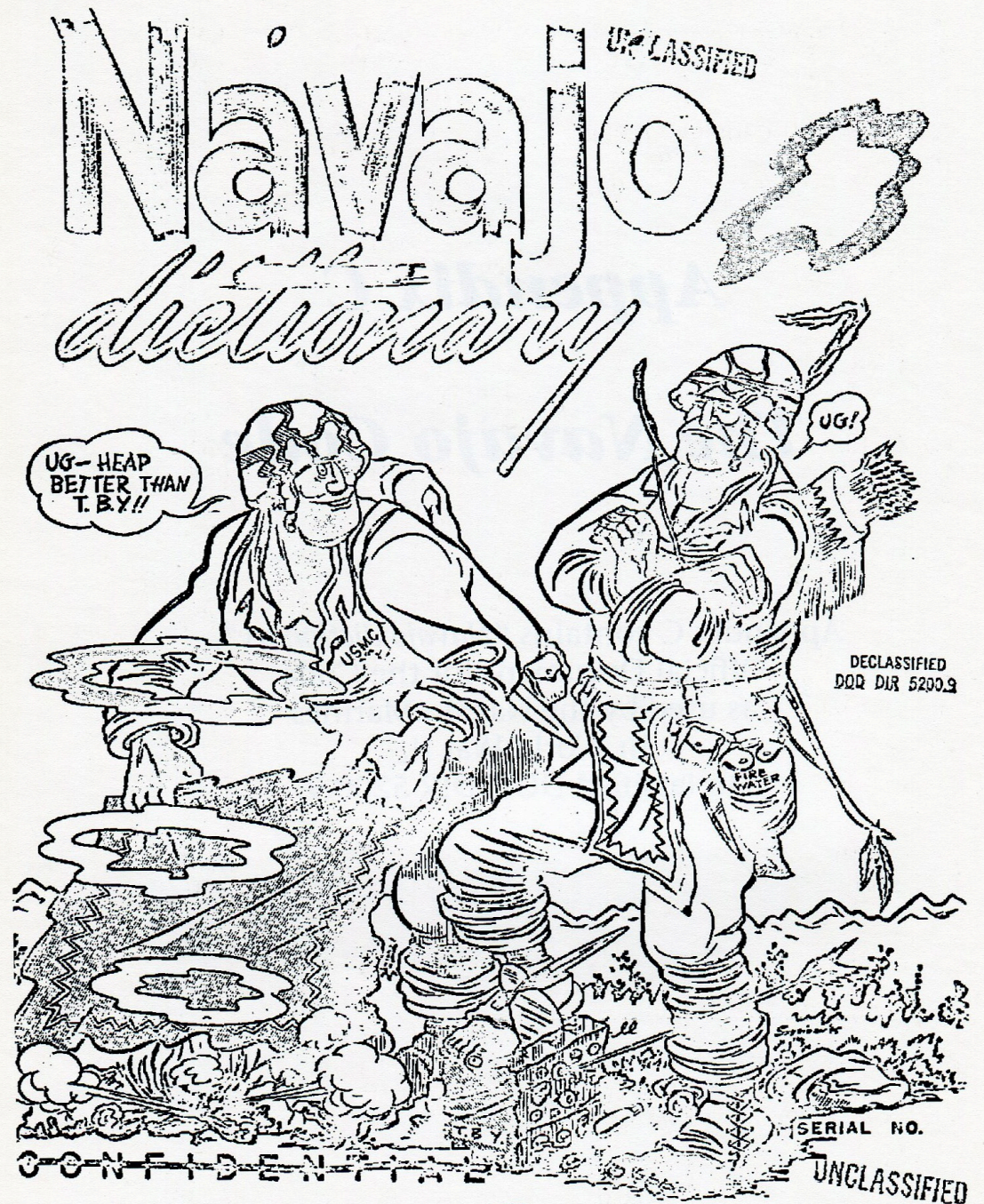
Mnemonic code

A device by which one can **remember** a **string of data** or formulae; for instance, "**M**y **v**ery **e**ccentric **m**other **j**ust **s**erved **u**s **n**oodles" is a mnemonic for remembering the (now) 8 planets in the solar system in the order of their distance from the sun. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.



[Days of the months from knuckles of the hands by Daniel P. B. Smith]

The Navajo code



[The navajo code- United States Marine Corps Historical Center]

Navajo code

LETTER	NAVAJO WORD	LITERAL TRANSLATION
A	WOL-LA-CHEE	ANT
A	BE-LA-SANA	APPLE
A	TSE-NILL	AXE
B	A-HASH-CHID	BADGER
B	SHUSH	BEAR
B	TOISH-JEH	BARREL

P	CLA-GI-AIH	PANT
P	BI-SO-DIH	PIG
P	NE-ZHONI	PRETTY
Q	CA-YEILTH	QUIVER
R	GAH	RABBIT
R	DAH-NES-TSA	RAM
R	AH-LOSZ	RICE
S	DIBEH	SHEEP
S	KLESH	SNAKE
T	D-AH	TEA
T	A-WOH	TOOTH
T	THAN-ZIE	TURKEY
U	SHI-DA	UNCLE
U	NO-DA-IH	UTE
V	A-KEH-DI-GLINI	VICTOR
W	GLOE-IH	WEASEL
X	AL-NA-AS-DZOH	CROSS
Y	TSAH-AS-ZIH	YUCCA
Z	BESH-DO-TLIZ	ZINC

TORPEDO PLANE	TAS-CHIZZIE	SWALLOW
OBSERVATION PLANE	NE-AS-JAH	OWL
FIGHTER PLANE	DA-HE-TIH-HI	HUMMING BIRD
BOMBER PLANE	JAY-SHO	BUZZARD
PATROL PLANE	GA-GIH	CROW
TRANSPORT	ATSAH	EAGLE

NAMES OF SHIPS

SHIP	NAVAJO WORD	LITERAL TRANSLATION
SHIPS	TOH-DINEH-IH	SEA FORCE
BATTLESHIP	LO-TSO	WHALE
AIRCRAFT CARRIER	TSIDI-MOFFA-YE-HI or TSIDI-HEY-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

Panel

Bill Toledo

Navajo Code Talker for three years from October 1942 to October 1945. He served in many engagements including the Battle of Bougainville in the British Solomon Islands, and the battles for Guam and Iwo Jima.



Panel

- Is this a “social technology”?
- How can this codes used besides war situations?
 - Indexing files (Vannevar Bush, 1945)
 - History of computing