

Kryptos 8: Challenge 1 Solution

The ciphertext is in a series of personal ads in a newspaper. The method of enciphering has not been given but the backstory hints that it is low tech. All but the first messages don't make a lot of sense which suggests that either the plaintext is somehow hidden in the message in plain sight (e.g. steganography) or some simple code has been used. If you google the first message "Knowledge is power" you will see that it is a quote attributed to Francis Bacon – a hint that maybe Bacon's cipher was used. Bacon's cipher replaces each letter by a string of 5 characters (or bits if you like). This is consistent with the 5 letter words used in the ads. Bacon's cipher works as follows¹:

Letter	Code	Binary	Letter	Code	Binary
A	aaaaa	00000	N	abbaa	01100
B	aaaab	00001	O	abbab	01101
C	aaaba	00010	P	abbba	01110
D	aaabb	00011	Q	abbbb	01111
E	aabaa	00100	R	baaaa	10000
F	aabab	00101	S	baaab	10001
G	aabba	00110	T	baaba	10010
H	aabbb	00111	U, V	baabb	10011
I, J	abaaa	01000	W	babaa	10100
K	abaab	01001	X	babab	10101
L	ababa	01010	Y	babba	10110
M	ababb	01011	Z	babbb	10111

Since the ads are not comprised of only a's and b's we can guess the letters translate to a's and b's. A common way to do this is split the alphabet in half. Trial and error reveals that any of the letters A-M correspond to an "a" (or "0") and N-Z correspond to "b" (or "1"). Each five letter word in the ad will translate to one letter as follows.

¹ Source: https://en.wikipedia.org/wiki/Bacon%27s_cipher

First Ad: JM – Get to:

AD: A L E R T B A S E D C O R A L T E M P O
Bacon: a a a b b a a b a a a b b a a b a b b
PT: D E N V

AD: F E R A L S C A L E
Bacon: a a b a a b a a a a
PT: E R

Second Ad: JM – Pick Up Location:

AD: S L E E K N E A R S L I G H T P A S T E
Bacon: b a a a a b a a b b a a a a b b a b b a
PT: R U B Y

AD: F L O U R M O C H A D R A P E G R I P E
Bacon: a a b b b a b a a a a b a b a a b a b a
PT: H I L L

Third Ad: JM – Time:

AD: R E E F S G L O B E P L A N T A B O D E
Bacon: b a a a b a a b a a b a a b b a a b a a
PT: S E V E

AD: B O R E D H O U S E C R E W S
Bacon: a b b a a a b b b a a b a b b
PT: N P M

The full message is:

Get to: Denver

Pick up Location: Ruby Hill

Time: Seven PM