

Encoding

If keywords are MORNING and GOOD, then encoding is

MORNIG A B C D E F H J K L P Q S T U V W X Y Z	English: MAHS Y OBJTZRCKUNOLVIEPWGFQX Code : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Coding: G H I J K L M N O P Q R S T U V W X Y Z A B C D E F Alpha-2: O P Q R S T U V W X Y Z A B C D E F G H I J K L M N Beta: 3) O P Q R S T U V W X Y Z A B C D E F G H I J K L M N 4) D E F G H I J K L M N O P Q R S T U V W X Y Z A B C
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Beginning of
message: THERE ARE RE PORTS
Encoding O Q H N Z P Y W Q H I I Q W R

Decoding

1. Compute $I, C, \frac{-1}{N(N-1)} \sum f_i (f_i - 1)$
 = about .065 + for 1 alphabet
 = .044 for 5 alphabets
 2. Split into 4 or 5 or 6 alphabets (if 4 alphabets, first alphabet uses letters in positions 1, 5, 9, ..., $4k+1$, second alphabet uses 2, 6, 10, ..., $4k+2$, ..., third alphabet uses 3, 7, 11, ..., $4k+3$, ..., fourth alphabet uses 4, 8, 12, ..., $4k$, ...)
 3. Form histograms for each alphabet and align histograms to match (approximately) the frequencies. When matched 3 or 4 columns should be void (no occurrences) and a keyword should appear in some column [in above encoding scheme, the keyword in some column would be GOOD]. Letters in keyword column should be collapsed to letter A, letters in column to right of keyword column should be collapsed to letter B, etc. — this reduces polyalphabetic code to single-coded alphabet.

Note: In histograms, have 2 copies of each alphabets (52 letters) to it easy to align offset alphabets

 4. Break single-alphabet code.